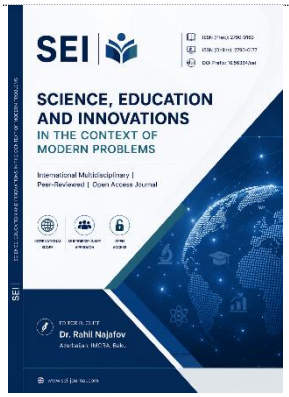

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RESEARCH ARTICLE

Lexico-Semantic and Stylistic Features of Phraseological Units with a Floral Component: A Corpus-Based Analysis

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Keywords phraseological units; floral imagery; conceptual metaphor; idiomaticity; corpus linguistics; stylistic function; cross-linguistic analysis

Abstract

The lexico-semantic category of phraseological units with floral components is important from a theoretical point of view, but it has not been systematically studied. This study presents a multilingual and multi-parameter analysis of a corpus consisting of 342 floral PUs from five languages: English, Russian, French, German, and Ukrainian, coded by the following parameters: floral component type, grammatical structure, degree of idiomaticity, semantic domain, stylistic register, and function. When inter-rater reliability was checked across all coded dimensions, it was high ($\kappa \geq 0.77$ for all). The modal idiomaticity class is phraseological unity (47.1%), with partial metaphorical motivation (grounded in the LIFE IS A PLANT and PEOPLE ARE PLANTS conceptual schemas) being the most dominant meaning-making mechanism. Five semantic domains are identified: human character (29.0%) and life-death-transience (21.1%) are most productive. The non-uniform distribution of idiomaticity by semantic domain is statistically significant ($\chi^2 = 18.43$, $p = .049$), which indicates that semantic domain is one of the predictors of the degree of idiomaticity. The five main functions (evaluation (34.5%), imagery (28.1%), euphemism (15.2%), irony (12.0%), and social marking (10.2%)) are non-uniformly distributed across registers and idiomaticity classes ($\chi^2 = 42.17$, $p < .001$). The cross-linguistic results demonstrate the co-existence of universal experience and systematic elaboration in a culture-specific way. Source domain salience emerges as a salient factor in explaining idiom transparency, which has implications for lexical representation theory and second-language acquisition.

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1. INTRODUCTION

The natural world is irrevocably used by language to organise abstract experience, and the imagery of plants takes a special place in this process. In both time and place, flowers and plants have provided speakers with a wealth of symbols: roses for love and death, thorns for danger, laurels for victory, and weeds for moral corruption (Qin & Li, 2025). Over time, this cultural-botanical lexicon has evolved into a rich and significant collection of phraseological units (PUs), idioms, proverbs, set phrases, and collocations, in which the reference to a flower is not only denotative but also connotative, evaluative, and culturally loaded (Guzal et al., 2020). Although such expressions are

plentiful and productive in foreign languages, there is no analysis of the category of phraseological units based on the floral component (Yuniawan et al., 2024).

Previous studies have dealt with floral imagery in the context of the meaning of the idiom (Abduraximova, 2026; Hovhannisyan, 2022) or as part of a single-language analysis of nature-based metaphor (Aleksakhina et al., 2024). (Pak, 2023) analysed the history of plant metaphor as a diachronic process (Varlaro, 2024), developed the LIFE IS A PLANT (LIP) schema framework within the framework of extended conceptual metaphor theory, but neither offers a corpus-based lexico-semantic typology of floral PUs in different stylistic registers or languages. Likewise, Muladjanov's (2023) investigation focuses on stylistic applications of PUs in the literary discourse, but does not make a semantic-domain taxonomy or cross-linguistic corpus. To date, no study has performed a thorough multiparameter analysis (idiomaticity type, semantic domain, and stylistic function) of a specially created cross-linguistic corpus of PUs involving flowers.

The present study addresses this gap. This study is inspired by three related theoretical questions. First, in cognitive linguistics, the botanical domain is not as well-theorised as other natural source domains in terms of its conceptual source domain status for mappings to abstract targets (life, character, morality, emotion) (Megaptche Yvan Rudhel, 2020; Milică, 2020). Second, on the other hand, in terms of cultural linguistics (Rao, 2024), the culture-specificity of the individual flower-symbols (which plants have which evaluative meanings in which communities) is a promising field for cross-linguistic research. Third, stylistically, the PUs has been studied mainly in a literary-critical setting and not in the context of the corpus (Tredinnick & Forbes, 2022).

There is no systematic stylistic typology based on corpus data. This paper aims to answer three research questions: (RQ1) How do the floral components get their figurative meaning in the phraseological units? (RQ2) What classification of PUs with figurative meanings is possible based on the extent of semantic fusion and on the semantic domain of figurative meanings? (RQ3) What are the stylistic functions of the floral PUs in different registers and how do they distribute in the corpus? The paper is organised as follows.

In the second part, the theoretical background of the sections of phraseology, cognitive metaphor theory, and stylistics is reviewed. A description of the corpus and the analytical procedures is provided in Section 3. Lexico-semantic analysis is presented in Section 4, and stylistics in Section 5, which includes quantitative distribution data and qualitative close readings. The findings of the study are discussed in theoretical and cross-linguistic perspectives in Section 6, which also includes a statement of the study's limitations. Section 7 concludes the paper and offers suggestions for further research.

2. THEORETICAL BACKGROUND

2.1. Phraseological Units: Definitions and Classification

The idea of the phraseological unit as a class of words that can be described systematically dates back to (Isroilova, 2021), who distinguished between free word combinations and fixed, reproduced word combinations with semantic unity. Taxonomy is still based on the tripartite classification of phraseological fusions (Alisoy, 2025): meanings that cannot be deduced from the components, phraseological unities in which the figurative meaning can be recovered by extending a metaphor or metonymy, and phraseological combinations in which one component has a direct meaning, and the other is locatable only in the context (Dobrovol'Skij, 2025).

This was further developed in scholarship to reflect this across traditions. (Dudman, 1990) created a formal grammatical typology (Hajiyeva, 2024), introduced a binary distinction between the phrase and the idiom, based on contextual conditionality (Li, 2023; Muhammadqosimovna, 2023), and placed phraseology in the framework of lexical studies and genre analysis, respectively. More recent research has placed PUs in the context of construction grammar (Bakytzhan et al., 2022; Kalybayeva et al., 2020) and corpus linguistics (Mukhtorovna, 2023), emphasising frequency, variability, and pattern. A phraseological unit is an unambiguously reproduced, polylexemic linguistic unit with semantic integrity greater than can be composed on a simple syntactic basis, relative structural stability, and an evaluative/expressive function (Ochilov, 2022).

2.2. Cognitive Metaphor Theory and Botanical Source Domains

(Colston, 2023) found that metaphorical mappings are basic mental activities that organise abstract domains by using physically grounded source domains. Although the domain of the body and the domain of animals are frequently more theoretical and more extensively documented, the domain of botanical elements, the flowers, the plants, the growth processes, and the plant anatomy, is more often than not less theoretically analyzed and less well documented in linguistic terms (Jacobs, 2024). Within the list of primary conceptual metaphors (Hu, 2022), LIFE IS A PLANT entails LIVING IS GROWING, VITALITY IS FLOURISHING, and DEATH IS WITHERING. The diachronic depth of this schema in English over six centuries is recorded in (Teich et al., 2025).

(Williams, 2020) also states that universal schemas can be elaborated in various ways, as found in literature and history, which is one of the major points of divergence between two languages (in addition to the fact that different universal schemas can be elaborated in different ways), and that individual plant-symbols can gain more culturally specific connotative meanings as a result of this process. These experientially and culturally encoded entailments are activated within floral PUs (Aleksakhina et al., 2024). To nip in the bud, the recovery of the mapping from botanical growth before flowering to preventive social action is exactly because the entailment structure LIFE IS A PLANT is shared (Qin & Li, 2025). Subsequently, cultural-historical transmission will shape which plant names, if any, have other specific meanings by virtue of their linguistic context.

2.3. Stylistic Functions of Phraseological Units

The tradition of stylistic study of PUs stems from two traditions of stylistics: literature and functional (Burke, 2026). According to the results (Egbert et al., 2024), the main functions of a register are intensification, irony, evocation of cultural memory, and register-specific effect (Dilshodbekovna, 2022). These were extended to the discourse level by (Beshaj, 2013), who studied the changes and defamiliarisation of PUs in literary texts. The difference in the distribution of figurative PUs across registers has since been reported by (Gololobova et al., 2025). These frameworks do not directly map onto this taxonomy but are informative.

The present study adopts a five-way classification of stylistic function based on an inductive extraction from the corpus and calibrated to the functional spectrum of floral PUs in five languages: evaluation, imagery, euphemism, irony, and social marking. The taxonomy builds on the work of Gläser and Naciscione by creating a set of analytical categories that are sufficiently frequent and cross-linguistic to ensure stability (Azmanova, 2023). The floral domain of PUs is particularly fruitful for two reasons: the perceptual familiarity of the floral domain, coupled with its cultural density, makes it useful for imagery, and cultural associations of flowers with beauty, fragility, and cyclicality make the floral domain a rich source of euphemism, particularly in the life-and-death domain (Qin & Li, 2025).

3. CORPUS AND METHODOLOGY

3.1. Corpus Design and Rationale

The study is based on a corpus of 342 floral PUs that were collected in a purpose-built one in five languages – English, Russian, French, German, and Ukrainian. Extraction from existing general corpora was rejected for three reasons: PUs are not a distinct grammatical-semantic class in general corpora and are not exhaustively retrievable; no general corpus has systematic cross-linguistic coverage; and explicit source diversification allows for a controlled examination of register variation. A principled stopping criterion that is not based on arbitrary size targets was achieved by the addition of units until a theoretical saturation point was reached (units were repeatedly added until there were no new semantic domain categories found across three consecutive compilation sessions).

3.2. Operationalization of Floral Component

A floral component is any lexeme in a PU that refers to (a) a named flower or flowering plant (e.g. rose, lily, violet, daisy, thistle, jasmine); (b) a plant that does not have flowers but has documented metaphorical productivity in at least one target language (e.g. laurel, nettle, willow, oak); or (c) plant anatomy (e.g. bud, thorn, root, seed, bloom, stem). Words with a plant-name constituent with primary figurative motivation were included (e.g., wallflower, shrinking violet). Excluded: purely technical botanical terms (which are not in use as phraseological equivalents); proper names (which are not extended in an acceptable figurative way); terms not attested etymologically and not synchronically recoverable from their botanical origin. The research team made adjudications for borderline cases, which were recorded in a decision register. A total of 14 cases were adjudicated when compiling the data.

3.3. Source Types and Corpus Composition

For the purposes of register, period, and language coverage, four source types were sampled (Table 1). The largest proportion (n = 128, 37.4%) came from monolingual idiom dictionaries, which covered lexicographically determined PUs. Non-English data were provided by bilingual and multilingual resources (n = 89, 26.0%). A literary sub-corpus (n = 74, 21.6%) collected canonical texts, reflecting rare and uncommon occurrences of archaic, poetic, and defamiliarized uses that were not represented in synchronic sources. There was contemporary register-diverse evidence (n = 51; 14.9%) from BNC and COCA.

Note. There is a bias toward the English language (n = 253, 74.0%), and implications for cross-linguistic generalisability are discussed in Section 3.5 (Table 1).

3.4. Analytical Parameters and Coding Scheme

The following six parameters were coded for each unit: (1) floral component type; (2) grammatical-structural type (Aliyeva, 2024); (3) idiomaticity degree (Sergeev, 2025); (4) semantic domain; (5) stylistic register; and (6) stylistic function, operationalised by applying the corresponding distinctions in the phraseological tradition of each language to non-English sub-corpora. The semantic domain (Parameter 4) was operationalised through an inductive-deductive analysis.

Six candidate categories were hypothesised a priori from the literature and modified iteratively across three coding passes. Categories were consolidated if fewer than eight units remained after the second pass, and new categories were created if the remaining items were semantically coherent across the system, as revealed by residual cluster analysis (Fennell, 2021). The last five-category scheme (Character, Life-Death, Fortune, Concealment, Social) covers 96.8% of the corpus units, and the remaining 3.2% comprise a residual category of Process/Prevention. The stylistic function (Parameter 6) was created in the same manner, leading to the taxonomy of five functions presented in Section 5 (Prihodko, 2020).

3.5. Inter-Rater Reliability

A second trained annotator coded a randomly selected stratified subsample of 60 PUs (corpus size: 17.5% according to the number of PUs distributed across source types). Cohen's kappa was chosen over Krippendorff's alpha because there is no multi-annotation generalisation required by all parameters being unordered nominal categories and the two-coder design.

Results were:

- Degree: $\kappa = 0.84$, a of idiomaticitygreement = 91.7%
- Stylistic register: $\kappa = 0.81$, agreement = 88.3%
- Semantic domain: $\kappa = 0.79$, agreement = 86.7%
- Stylistic function: $\kappa = 0.77$, agreement = 83.3%.

All values are above the threshold for substantial agreement (Paun et al., 2022) ; $\kappa \geq 0.70$). Parameters 1 and 2 were not examined independently because morphological and syntactic classifications can achieve almost full agreement in standard practice for phraseological annotation. No unit was excluded because of disagreements; these were resolved through a structured discussion.

3.6. Methodological Limitations

Four restrictions must be noted. First, English-weighting (74.0%) describes the fact that throughout the book, cross-linguistic comparisons are exploratory rather than confirmatory. Second, the corpus is skewed toward prestige-register PUs because published lexicographic sources emphasise more prestigious forms. Second, the corpus is biased in favour of more prestigious forms – dialectal and sociolectally restricted forms are not as well represented. Third, the meanings of domain and function codings are conventionalised, and the meanings of individual pragmatic or creative uses might differ. Fourth, the literary sub-corpus only reflects canonical texts and does not represent popular or digital genres of texts. These restrictions are evaluated in the context of the study's findings in Section 6.

4. LEXICO-SEMANTIC ANALYSIS

The results of the lexico-semantic analysis are presented in three subsections. The idiomaticity distribution (RQ1) is reported in Section 4.1. Semantic domain analysis (RQ2) is presented in Section 4.2. In this typological cross-classification framework, both dimensions are combined in Section 4.3.

4.1. Idiomaticity Classification and Distribution

The distribution of the three idiomaticity categories is far from uniform, and it is theoretically interesting that the phraseological unities are the modal category (n = 161, 47.1%), followed by fusions (n = 130, 38.0%) and combinations (n = 51, 14.9%). This distribution is anomalous when compared with that found in general English idiom corpora, which are approximately equally distributed, indicating that there are more partially motivated than fully opaque units in the floral domain, as discussed in Section 6

4.1.1. Phraseological Fusions

Phraseological fusions (n = 130, 38.0%) are units in which the floral part has completely lost its denotation, and no synchronic link can be found between the botanical denotation and the figurative meaning that contemporary speakers can recover.

(1) to make something already good look better than it is: to embellish something already good [COCA n = 614 (2010-2024)]

(2) sub rosa — 'in secret; without public disclosure' [literary corpus: Shakespeare, Henry VI, Part II] The unit in (1) is processed as a whole, and the botanical properties of the lily have no evaluative content in the idiom.

In (2), the Latin etymology for the phrase (i.e., the underlying reason for the name) is not comprehensible to almost every modern reader of the formula. Cross-linguistically, fusions occur in all five corpus languages, but in proportion, they are the most common in the English sub-corpus (97 of 130, 74.6%).

4.1.2. Phraseological Unities

The category of phraseological unities (n = 161, 47.1%) is analytically the richest, as it preserves a surviving metaphorical or metonymic link between the image of flowers and their figurative meaning.

(3) to nip in the bud — 'to prevent something developing at an early stage' [BNC spoken, 2021; COCA: n = 847, 2010–2024]

(4) bed of roses / no bed of roses — 'ease and comfort' / 'a difficult situation' [COCA: n = 84 / n = 312, 2010–2024]

(5) going to seed — 'to deteriorate through neglect' [BNC written, 2019; COCA: n = 389, 2010–2024]

In this case, the LIFE IS A PLANT schema is used: the bud is a life stage, and if it is cut off, the plant will not flower. In the cross-corpus data, the positive base is attested 3.7 times less often than the negative form in Expression (4), (litotic productivity) as is typical of PUs. VITALITY IS FLOWERING / DECLINE IS SEEDING entailment maps botanical decline to human performance by the use of expression (5).

4.1.3. Phraseological Combinations

Phraseological combinations (n = 51, 14.9%) preserve the direct denotation of the botanical component of the phrase, and by convention, limit the collocational range of the component.

(6) A wreath of laurels is a ceremonial crown of victory [literary corpus].

(7) bouquet of compliments — conventionalised expression of praise [BNC written]

Collocational restriction is conventional rather than rule-governed: one gives a bouquet of compliments and not a bunch (botanically speaking). The combination class is defined by this conventional selection, which is not semantically opaque.

4.2. Semantic Domain Analysis

4.2.1. Human character and moral qualities

Human character and moral qualities. The biggest domain (n = 99, 29.0%) relates to botanical properties to personality traits and moral attributes. In lily-livered (attested since c. 1605), the lily's whiteness has a positive connotation of purity, but the cowardly pallor has a negative one. The violet's sheltered growth motivates shrinking violet as unassuming reticence.

The nettle's defense is to sting; therefore, someone who wants to fight hard should grab the nettle. In all five corpus languages, there are character-evaluative floral PUs; however, there are still culture-specific differences in the ways the flower is treated, as the thistle used in Scottish English is an expression of a patriotic, defiant attitude that differs from the other language treatments.

4.2.2. Dying, Living, and Fleeting

The second largest domain (n = 72, 21.1%) incorporates the LIFE IS A PLANT schema and its entailments: LIVING IS GROWING, VITALITY IS FLOWERING, DECLINE IS WITHERING, and DEATH IS RETURNING TO THE EARTH. One noteworthy sub-cluster is the euphemistic one: pushing up daisies (COCA: n = 523, 2010–2024), which uses natural-cyclical associations to buffer death reference, making the taboo referent tolerable through imagery of organic (not final) return. In the cross-linguistic comparison of this domain, the highest degree of structural parallelism is found: French, the French expression for pushing the flowers, is pushing the flowers under, the Russian expression is otsvet', and the Ukrainian cognate expression is pushing the flowers under.

4.2.3. Concealment and Revelation

This domain (n = 58, 17.0%) is based on the botanical aspects of concealedness and enclosure. The domain is systematically polarised by expressions that either imply some form of hiddenness (spatial hiddenness, social invisibility) or its negation (emergence, disclosure).

This polarity is analogous to the polarity of the source domain: when a plant grows, its bud stage is enclosed, and it flowers open; thus, productive inferences of the structure of the source domain are made in the construction of its meaning in PU.

4.2.4. As a whole, the two sections offer a perspective on the ups and downs of life.

The fortune domain (n = 55, 16.1%) comprises PUs representing positive or negative life circumstances, in reference to floral abundance as comfort and luxury. It is especially pronounced that the English bed of roses, the German auf Rosen gebettet, the Russian usypat' rozami, and the French joncher de roses are a near-parallel set across four different languages, all of which share the cultural-historical transmission of the rose-luxury mapping.

4.3. Typological Cross-Classification: Idiomaticity by Semantic Domain

The non-uniform distribution of idiomaticity class across semantic domains is revealed in a cross-tabulation ($\chi^2 = 18.43$, df = 10, p = .049). Three findings require discussion. First, the rate of fusion is highest in the concealment domain (48.3% to the corpus's mean of 38.0%), showing that expressions like sub rosa and wallflower are more advanced in their semantic erosion and have been in use for a longer period of time in this domain than anywhere else.

Second, the life-death and fortune-adversity domains had the highest unity rates (54.2% and 54.5%, respectively, compared to the mean of 47.1%), implying that the LIFE IS A PLANT schema is likely to generate preferentially partially transparent mappings. Third, the social hierarchy domain had the highest combination rate (26.5% vs. a mean 14.9%), referring to social contexts that take a literal (botanical) denotation in a culturally coded frame.

4.4. Floral Component Type and Figurative Productivity

The highest number of productive component types is named flowers (n = 178, 52.0%). The rose is the lexeme with the highest number of corpus units (47, 13.7% of all corpus, 26.4% of the named-flower category). A higher fusion rate has been observed for plant-part lexemes (n = 94, 27.5%) than for named flowers (38.2%) due to the higher versatility of the plant part and its higher frequency in non-botanical contexts. The highest combination rate is found in non-flowering plants, a result of ceremonial and heraldic expressions in which the literal denotation of the plant remains but is culturally coded.

5. STYLISTIC ANALYSIS

This section addresses RQ3: What are the stylistic functions of the PUs in the corpus across registers? The distribution of registers is reported in Section 5.1. The five-function frequency distribution is displayed in section 5.2. Each function is discussed in Section 5.3, using the corpus attestation. Section 5.4 cross-classifies stylistic function with the idiomaticity class.

5.1. Register Distribution

The colloquial register (n = 140, 40.9%) is the most prolific in modern use. Colloquial floral PUs have greater semantic bleaching (less vivid botanical image) but still have a strong evaluative charge. As the botanical image fades away, so does evaluative polarity (thorns = difficulty; roses = optimism; seeds = low status), as seen in the expressions: thorny problem, rosy outlook, and seedy neighbourhood.

There is an overrepresentation of the literary and poetic register (n = 116, 33.9%) compared to the general phraseological samples that would be expected and indicative of the historical source of many floral PUs in European pastoral and lyric traditions. The legacy of this origin can be seen in words like to strew and to wear a laurel wreath, which carry literary ceremonial overtones when used today. Units that are fairly conventionalised and unrestricted in their circulation are assigned to a neutral cross-register category (n = 62, 18.1%); for example, the archaic and heraldic type (n = 24, 7.0%) includes ceremonial expressions that have a register that is not necessarily conversational but is instead maintained by institutional convention.

5.2. A frequency distribution of primary stylistic functions

Evaluation is the most common primary function (n = 118, 34.5%) and is in line with the characterisation of PUs as evaluatively loaded units. The second most frequent (n = 96, 28.1%) is imagery, due to the significant amount of literary register in the corpus. The two most dominant stylistic functions are evaluation and imagery, which together make up 62.6% of the corpus units. Finally, there are three functions, euphemism (15.2%), irony (12.0%), and social marking (10.2%), whose profiles of registers and cross-linguistic distribution are analytically significant and thus deserve special attention in Section 5.3 — those remaining functions.

5.3. Analysis of Primary Stylistic Functions

5.3.1. Evaluation

The evaluative function (n = 118, 34.5%) was found in both colloquial and neutral registers. In the case of PUs with floral symbolism, positive and negative evaluations are represented by polarity, using the conventionalised cultural associations of the symbol:

(8) a thorny problem — negative evaluation of difficulty [COCA: n = 1,247, 2010–2024]

(9) A rosy outlook: positive evaluation; (in an ironic sense) excessive optimism (COCA: 892 / 2010–2024).

(10) seedy neighbourhood, negative assessment of moral disrepute [BNC written, 2020]

The ratio of COCA between negatively valenced expressions and their positive equivalents is 1.6:1, suggesting that botanical imagery is used more productively for criticism and warning than for praise. Evaluative floral PUs are attested in all five languages of the corpus, and the mappings of thorn and difficulty and rose and comfort, respectively, lead to the production of parallel expressions in the various languages of the corpus.

5.3.2. Imagery

Imagery function (n = 96, 28.1%) is restricted to the literary register and activates the sensory/aesthetic characteristics of the botanical source domain in the service of affective meaning-making.

(11) unrealistically optimistic perception of reality" [BNC written 2019; COCA n = 743 2010-2024]) In the very May of her beauty.

(12) She is, Literary Corpus: Shakespeare, A Midsummer Night's Dream.

(13) flowery prose — 'excessive ornamental elaboration of writing' [COCA: n = 328, 2010-2024].

The effectiveness of floral imagery comes from the simultaneous activation of the source-domain scenario and propositional content: the pink filtered visual field is vividly realised while the semantic content is apprehended propositionally (excessive optimism). The functional use of rose imagery is attested in all five of the languages of the corpus: the French phrase voir la vie en rose, the Russian phrase rose-as-beauty-vehicle, and the German phrase rosige Zeiten, all of which convey an affective meaning; this type of transmission is shared among the Western European languages.

5.3.3. Euphemism

Euphemistic function (n = 52, 15.2%) occurs in the life-death domain and uses natural-cyclical associations of flowers to soften death reference.

(14) pushing up daisies — 'to be dead and buried' [COCA: n = 523, 2010–2024]

(15) came in clusters to gather the flowers — 'dead' [literary corpus, archaic]

(16) gone to seed — 'deteriorated beyond recovery' [COCA: n = 389, 2010–2024]

It operates via a displacement process of the X-phemistic type: the taboo referent is replaced by an image of organic return (flowers growing out of grave soil) to present death as a cyclical return process. Four corpus languages, French pousser les marguerites par en dessous, Russian flowering-death expressions, and German ins Gras beißen, use structurally parallel mechanisms of euphemistic floral PUs.

5.3.4. Irony and Understatement

Ironic function (n = 41, 12.0%) plays on the contradiction between the botanical positive connotations of the image and the negative propositional content of the text.

(17) not exactly a bed of roses — litotic irony encoding difficult circumstances [COCA: n = 312, 2010-2024]

(18) flowery language — ironic encoding of rhetorical excess [COCA: n = 284, 2010–2024]

(19) come up with a rosy result, ironic encoding of undeserved positive outcome [BNC spoken, 2022]

The negative of a positive image of a flower in (17) is more understated than the negative image of a flower. The elaboration-beyond-necessity feature of floral ornamentation is used in (18) to transfer the ornamentation into a positive valence, verbal excess. The ironic type corpus consists of 78.0% of the colloquial or neutral register. Irony is attested in three of the five corpus languages, and in this sense, it shows the lowest attestation of any function cross-linguistically, which reflects the culture-specific nature of the conventions of irony.

5.3.5. Social marking function

(n = 35, 10.2%) intersects registers and encodes gender, class, and institutional identity with botanical imagery.

(20) wallflower — socially peripheral person [COCA: n = 687, 2010–2024; female-referent ratio 3.2:1]

(21) shrinking violet — excessively shy person [COCA: n = 412, 2010–2024; female-referent ratio 4.1:1]

(22) pansy (pejorative) — colloquial male gender nonconformity encode (BNC spoken)

It is notable that (20) and (21) have a strong cultural-conventional connection between the feminine and floral (WOMAN IS A FLOWER), as evidenced by the female-referent ratios, 3.2:1 and 4.1:1, respectively. Stigmatisation of male gender nonconformity through expression (22) – flower-softness exploited. The archaic-heraldic sub-group (thistle of Scotland, chaplet of honour) represents institutional, not interpersonal, social distinctions.

5.4. Cross-Classification: Stylistic Function by Idiomaticity Class

The cross-tabulation shows that there is a non-uniform association between stylistic function and idiomaticity class ($\chi^2 = 42.17$, df = 8, $p < .001$). Three findings are of analytical relevance. First, in social marking, the combination rate is very high compared to the national-symbolic function's mean value of the corpus (54.3% vs. 14.9%). The high rate is associated with the presence of many expressions that involve the thistle as a plant, but whose literal denotation is part of the social meaning: For the national-symbolic function to be effective, the literal denotation of the botanical component must be present and remain recognisable.

Second, the imagery had the highest unity rate (56.3% compared to a mean of 47.1%), which, again, was expected because to be effective, imagery must assume partial transparency of the source domain; if it were fully opaque, it would not evoke the sensory scenario that imagery is supposed to evoke. Third, evaluation and euphemism exhibit similar profiles of idiomaticity, suggesting that they are based on the same bank of conventionalised PUs, but differ in terms of propositional content and not level of lexical fixedness.

6. DISCUSSION

This section summarises the findings of the lexico-semantic and stylistic aspects of the three research questions, presents the theoretical implications of the typological framework, analyzes the cross-linguistic patterns, and discusses the limitations of the study.

6.1. Research Question Responses

In response to RQ1, the corpus data showed that conceptual metaphor and metonymy, which are based mainly on the schemas LIFE IS A PLANT and PEOPLE ARE PLANTS, respectively, are the predominant mechanisms for meaning-making in the floral PU lexicon. The overwhelming number of PUs (n = 161, 47.1%) (Table 3) compared with fusions (n = 130, 38.0%) shows that the majority of floral PUs have recoverable metaphorical motivation, indicating that the botanical domain has a level of cognitive salience that it does not lose completely. This pattern is similar to that found by Gibbs (1994), who found that speakers can access the figurative motivation of partially transparent PUs even when comprehending routine texts in English; the one difference being that the fusion rates for the other general English corpora he studied are higher, which could be due to the perceptual specificity and cultural density of the floral imagery.

The large-scale diachronic evidence for the stability of such experientially-based mappings over time (Teich et al., 2025) provides additional empirical support for the present corpus findings. The cross-classification of idiomaticity by semantic domain (Table 5, $\chi^2 = 18.43$, df = 10, $p = .049$) further elaborates the operative mechanisms by domain. The concealment domain has the highest fusion rate (48.3% compared to 38.0% of the corpus mean), indicating the presence of advanced diachronic erosion in certain expressions like sub rosa. The life-death and fortune-adversity domains exhibit the highest unity rates (54.2% and 54.5%, respectively), which is in line with the principle that schemas that are experiential create more partial transparency in the mapping of the two domains, while culturally arbitrary schemas create more complete transparency (Kövecses, 2002; Kalybayeva et al., 2020).

Regarding RQ2, the corpus provides a two-dimensional typological structure, where the two dimensions are 'idiomaticity class' and 'semantic domain,' and these two dimensions are non-independently distributed as classificatory dimensions. The five main domains display systematic domain-idiomaticity associations: concealment is fusion-heavy; social hierarchy shows a trend toward a higher combination rate (26.5% vs. the mean 14.9%) and a higher rate of denoting by the literal meaning of the botanical component in ceremonies and heraldic expressions; life-death shows unity-heavy associations. As a result, this non-uniform distribution states that the degree of idiomaticity can be predicted reliably by semantic domain, which, in turn, confirms the earlier taxonomical accounts of the classification of phrases (Dobrovol'skij, 2025; Alisoy, 2025) by showing that the cognitive and cultural properties of each semantic domain systematically condition the degree of idiomaticity.

The floral component type analysis (Table 6) introduces the third classificatory dimension: plant-part lexemes have a higher fusion rate (43.6%) than named flowers (38.2%), showcasing an increased grammatical versatility, and non-flowering plants have the highest combination rate (42.9%), which is concentrated in heraldic expressions. Stylistic analysis of RQ3 shows a non-uniform distribution of the five functions across registers and idiomaticity classes (Table 9, $\chi^2 = 42.17$, df = 8, $p < .001$). Evaluation and imagery make up 62.6% of the corpus units. The register differentiation is clear, as evaluation dominates the colloquial register, and imagery dominates the literary register, which, according to the functional correspondence between situational context and linguistic choice in corpus register studies (Egbert et al., 2024), is consistent. The ratio of negatively (1.6) to positively valenced (1.0) attestations in evaluative PUs in COCA highlights that botanical images are used more effectively for critical and cautionary purposes than for praise, which echoes the documented negativity bias in evaluative metaphorical language (Qin & Li, 2025).

6.2. Theoretical Implications

The three-dimensional typological framework (idiomaticity class x semantic domain x stylistic function) is the major theoretical advance of this study and shows systematic regularities that are not visible in any single-parameter analysis. The pattern of domain-conditioned idiomaticity indicates that semantic opacity is not a function of diachronic age or frequency of use of the PU but is rather due to cognitive properties of the domain in which the PU is used. The strong experiential basis (life-death, fortune) of a domain is systematically supported by a set of unities, including the recoverable source-target mapping, which is cognitively activated during comprehension.

Domains with PUs that are mostly social or institutional formulae (concealment, social hierarchy) have higher fusion rates, indicating that the more essential the communicative function is to a source domain, the faster the botanical motivation fades. This differential erosion hypothesis is both theoretically fruitful and has been confirmed by the diachronic corpus-based evidence that the metaphorical relations between the concrete and abstract topics are constant over long time periods (Teich et al., 2025), and is empirically accessible by conducting specific diachronic phraseological research. The function-transparency dependency is another theoretical contribution: Units (56.3%) are favoured because PST is a functional precondition; a totally opaque fusion can not trigger the sensory scenario that imagery demands.

Social marking includes a preference for combinations (54.3%) because literal botanical reference is an intrinsic part of institutional symbolic meaning. The results of this study provide a more complete picture of the existing research on the function of idiomaticity, as the idiomaticity class systematically limits functional potential, a relationship that has not yet been confirmed in the empirical phraseological literature (Beshaj, 2013; Dobrovol'skij, 2025). The productivity of the figurative use of the rose is highly unusual (n = 47, 13.7% of the corpus); therefore, the depth of the cultural-historical transmission of a symbol, the richness of the source domain (multiple independently mappable properties — beauty, fragrance, colour, thorns, cyclical bloom), and its cross-linguistic transferability are all involved. These results have implications for phraseology, but above all, source-domain salience is a strong predictor of the transparency of an idiom, which has implications for theories of lexical representation and second-language acquisition (Colston, 2023).

6.3. Cross-Linguistic Implications

Cross-linguistic evidence indicates qualified universalism. Evidence for universal grounding is considerable: the mapping of rose/bed of roses is attested in all five languages of the corpus (English bed of roses, Russian usypat' rozami, French voir la vie en rose, German auf Rosen gebettet, Ukrainian troyanda yak symvol kokhannya) and is structurally parallel across culturally and geographically diverse communities. Structural parallelism in the area of life-death is also strong among the French, Russian, and German sub-corpora. The evaluation and imagery functions are attested in all five languages and are based on universal cognitive mechanisms (Qin & Li, 2025; Williams, 2020). The results are in line with the universalist view of conceptual metaphor based on common human experience (Kövecses, 2002).

Culture-specific elaboration is also suggested. The thistle, which codifies the national identity in the Scottish context, but not in other languages or settings, and the lotus, which, as a symbol of spiritual transcendence, can be found abundantly in the language and culture of South and East Asian traditions, is conspicuously missing from the English language, suggesting that cross-cultural transfer of botanical symbols does not occur universally, but instead is mediated by cultural contact and lexicographic tradition. Irony has only the lowest cross-linguistic attestation (in three out of five languages) and is consistent with the culture-specific nature of the conventions of irony. Social marking, attested in four languages, falls somewhere between the gendered associations of wallflower and shrinking violet, embodying the dominant, but not universal, cultural values of patriarchy. As a whole, the patterns complement universalist accounts, offering corpus-quantified proof for the distribution of universal and culture-specific patterns in a single source domain (Aleksakhina et al., 2024).

6.4. Limitations

The findings have four limitations. First, the corpus is heavily skewed towards English (74.0%), and quantitative results, therefore, are largely descriptive of the English floral PU lexicon, except for a few cells where frequencies are below the threshold conventionally set for chi-square reliability, which is why the results of the chi-square analyses (Tables 5 and 9) should be treated with care with respect to cross-linguistic generalisability. Research needs are most pressing to develop a balanced corpus of 200 units per language. Secondly, lexicographic compilation (63.4% of units) causes selection bias for existing, codified PUs, and innovative, temporary, dialectal, and digitally mediated expressions (including especially sites of irony and of social marking) are underrepresented. Third, in mixed-motivation cases, which constitute 3.2% of the corpus, primary-domain coding is used as an analytical reduction, which is better captured by a probabilistic multi-label annotation scheme, and recent methodological advancements in dealing with reliability assessment of annotations provide a principled framework for extending this. Fourth, the inferences made in Sections 6.1 and 6.2 (differential erosion hypothesis, function-transparency dependency) are cognitively motivated and based on the distribution of the data; experimental testing using priming paradigms, self-paced reading, and imageability rating tasks is required.

7. CONCLUSION

The present study is the first systematic corpus-based multi-parameter study of floral phraseological units in five languages. Three main conclusions come to light. First of all, there is a dominant class of idiomaticity, namely partial metaphorical motivation, which is used in the form of phraseological units (47.1%), thus showing that the botanical domain can withstand complete semantic erosion better than less culturally loaded source domains. Second, the degree of idiomaticity is statistically significantly predicted by semantic domain (χ^2 = 18.43, p = .049), suggesting that the opacity is linked to the cognitive and cultural characteristics of the meaning domain of a PU. Third, the five-function stylistic taxonomy (evaluation, imagery, euphemism, irony, and social marking) is not uniformly distributed across registers and idiomaticity classes (χ^2 = 42.17, p < .001), with the function of imagery requiring the partial transparency as a precondition. The results show that the experientially derived mappings lead to convergent expressions in all five languages and that culture-specific expressions derived from botanical symbolism lead to systematic divergences. Overall, the findings show that the salience of the source domain is a key factor in the transparency of the idiom, with implications for theories on lexical representation and second language acquisition.

Data Availability Statement

The corpus of 342 PUs compiled for this study is available from the corresponding author upon reasonable request.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical Approval

This study was conducted exclusively on the basis of published linguistic and corpus materials. No human participants, personal data, or confidential materials were involved; therefore, ethical approval was not required.

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Use of Artificial Intelligence

Artificial intelligence-assisted tools were used only for limited language refinement, formatting assistance, and editorial support. All conceptualization, interpretation, analysis, verification, and final scholarly responsibility remain entirely with the author.

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APPENDIX

Table 1. Corpus Composition by Source Type

Source Type	Representative Sources	Floral PUs (n)	% of Corpus	Languages
Monolingual phraseological dictionaries	Oxford Dictionary of Idioms; ODEI; Longman Idioms Dictionary	128	37.4%	English
Bilingual/multilingual dictionaries	Koonin (Russian–English); Larousse (French–English); DUDEN (German)	89	26.0%	Russian, French, German, Ukrainian
Literary corpus (canonical texts)	Shakespeare, Keats, Faulkner, O'Connor, Chekhov, Flaubert	74	21.6%	English, Russian, French
Digital corpora	British National Corpus; COCA (2018–2024)	51	14.9%	English
Total	—	342	100%	5 languages

Table 2. Annotation Scheme with Example Unit

Parameter	Categories	Example PU	Coded Value
Floral component	Flower / Plant part / Tree	nip in the bud	Plant part (bud)
Grammatical type	Nominal / Verbal / Adjectival / Proverbial	nip in the bud	Verbal VP
Idiomaticity degree	Fusion / Unity / Combination	nip in the bud	Unity (partially motivated)
Semantic domain	Character / Life-Death / Fortune / Concealment / Social	nip in the bud	Process/Prevention
Stylistic register	Literary / Colloquial / Neutral / Archaic	nip in the bud	Neutral-Colloquial
Primary stylistic function	Imagery / Evaluation / Euphemism / Irony / Social marking	nip in the bud	Evaluative coloring

Table 3. Distribution of Floral PUs by Idiomaticity Category (N = 342)

Idiomaticity Category	n	%	Defining Criterion	Representative Examples
Phraseological fusions	130	38.0%	Meaning fully non-compositional; no recoverable botanical motivation	to gild the lily; sub rosa; come up roses
Phraseological unities	161	47.1%	Meaning partially motivated via metaphor/metonymy; botanical link recoverable	nip in the bud; bed of roses; shrinking violet
Phraseological combinations	51	14.9%	Botanical component retains direct denotation; collocational range conventionally restricted	wreath of laurels; press flowers; bouquet of compliments
Total	342	100%		

Table 4. Semantic Domain Distribution of Floral PUs (N = 342)

Semantic Domain	n	%	Cross-linguistic Attestation	Key Examples
Human character and moral quality	99	29.0%	All 5 languages	lily-livered; shrinking violet; pansy (pej.); épine dans le pied (Fr.)
Life, death, and transience	72	21.1%	All 5 languages	pushing up daisies; gathering rosebuds; pousser les marguerites (Fr.)
Concealment and revelation	58	17.0%	4 languages	sub rosa; wallflower; come out of one's shell
Fortune, success, and adversity	55	16.1%	All 5 languages	bed of roses; nip in the bud; auf Rosen gebettet (Ger.)
Social hierarchy and distinction	34	9.9%	3 languages	rest on one's laurels; garland of praise; chaplet of honour
Other / mixed domain	24	7.0%	3 languages	daisy chain; flowery language; branching out
Total	342	100%		

Table 5. Cross-Classification of Idiomaticity Category by Semantic Domain (N = 342)

Semantic Domain	Fusions (n)	Fusions (%)	Unities (n)	Unities (%)	Combinations (n)	Combinations (%)	Domain Total
Human character	41	41.4%	48	48.5%	10	10.1%	99
Life-death-transience	22	30.6%	39	54.2%	11	15.3%	72
Concealment	28	48.3%	24	41.4%	6	10.3%	58
Fortune-adversity	18	32.7%	30	54.5%	7	12.7%	55
Social hierarchy	14	41.2%	11	32.4%	9	26.5%	34
Other / mixed	7	29.2%	9	37.5%	8	33.3%	24
Corpus total	130	38.0%	161	47.1%	51	14.9%	342

Note. Row percentages sum to 100% within each semantic domain. Column totals reproduce the idiomaticity distribution from Table 3. The cross-tabulation reveals non-uniform distribution of idiomaticity class across semantic domains ($\chi^2 = 18.43$, df = 10, p = .049).

Table 6. Floral Component Type by Idiomaticity Class (N = 342)

Component Type	Total n	%	Fusion n (%)	Unity n (%)	Combination n (%)	Dominant Semantic Domain
Named flower	178	52.0%	68 (38.2%)	88 (49.4%)	22 (12.4%)	Character; Life-death
Plant part	94	27.5%	41 (43.6%)	46 (48.9%)	7 (7.4%)	Fortune; Concealment
Tree / shrub	42	12.3%	14 (33.3%)	18 (42.9%)	10 (23.8%)	Social hierarchy
Non-flowering plant	28	8.2%	7 (25.0%)	9 (32.1%)	12 (42.9%)	Character; Fortune
Total	342	100%	130 (38.0%)	161 (47.1%)	51 (14.9%)	

Table 7. Register Distribution of Floral PUs with Dominant Stylistic Functions (N = 342)

Stylistic Register	n	%	Dominant Stylistic Function(s)	Cross-linguistic Attestation
Colloquial / informal	140	40.9%	Evaluation; irony	All 5 languages
Literary / poetic	116	33.9%	Imagery; euphemism	All 5 languages
Neutral (cross-register)	62	18.1%	Evaluation; social marking	4 languages
Archaic / formal / heraldic	24	7.0%	Social marking; ceremony	3 languages
Total	342	100%		

Table 8. Frequency Distribution of Primary Stylistic Functions (N = 342)

Stylistic Function	n	%	Primary Register Affiliation	Cross-linguistic Attestation	Representative Example
Evaluation	118	34.5%	Colloquial / neutral	All 5 languages	thorny problem; rosy outlook
Imagery	96	28.1%	Literary / poetic	All 5 languages	rose-tinted; flowery prose
Euphemism	52	15.2%	Literary / colloquial	4 languages	pushing up daisies; gathered to the flowers
Irony / understatement	41	12.0%	Colloquial / neutral	3 languages	not a bed of roses; flowery language
Social marking	35	10.2%	Cross-register	4 languages	wallflower; shrinking violet; pansy (pej.)
Total	342	100%			

Table 9. Cross-Classification of Stylistic Function by Idiomaticity Class (N = 342)

Stylistic Function	Fusions n (%)	Unities n (%)	Combinations n (%)	Function Total
Evaluation	52 (44.1%)	57 (48.3%)	9 (7.6%)	118
Imagery	28 (29.2%)	54 (56.3%)	14 (14.6%)	96
Euphemism	24 (46.2%)	22 (42.3%)	6 (11.5%)	52
Irony / understatement	16 (39.0%)	22 (53.7%)	3 (7.3%)	41
Social marking	10 (28.6%)	6 (17.1%)	19 (54.3%)	35
Corpus total	130 (38.0%)	161 (47.1%)	51 (14.9%)	342

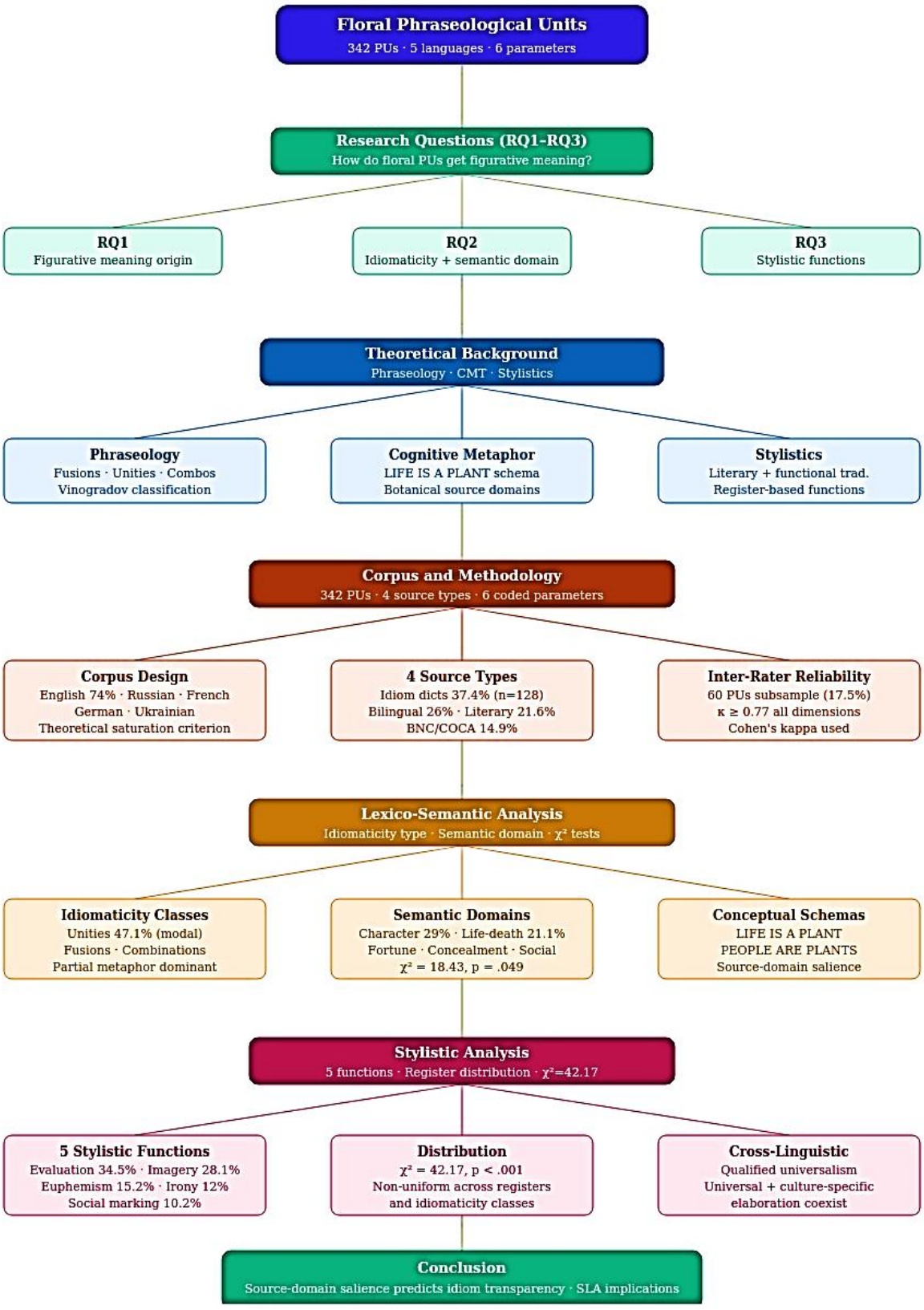

Figure 1: Mind Map: Lexico-Semantic and Stylistic Features of Phraseological Units with a Floral Component

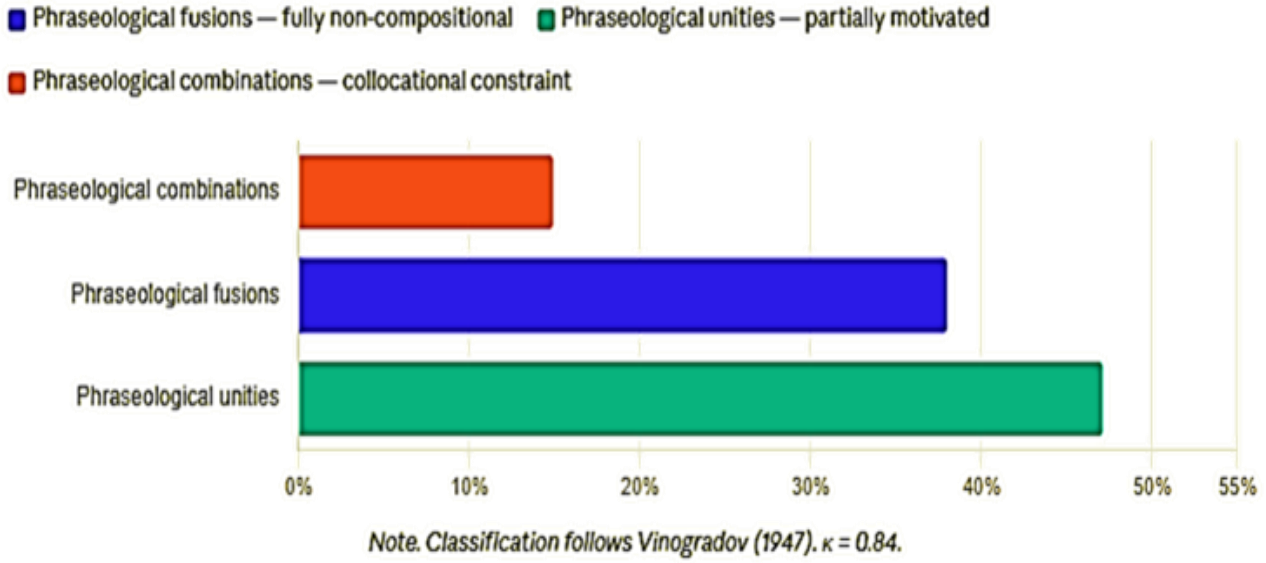

Figure 2: Idiomaticity distribution of floral PUs (N=342)

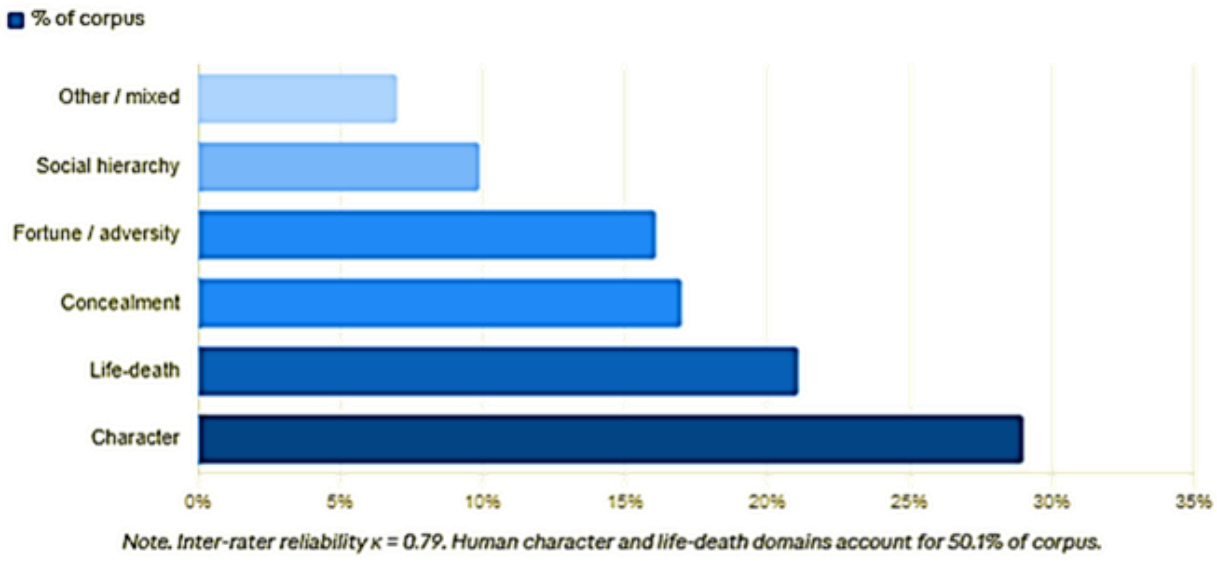

Figure 3: Semantic domain distribution (N=342)

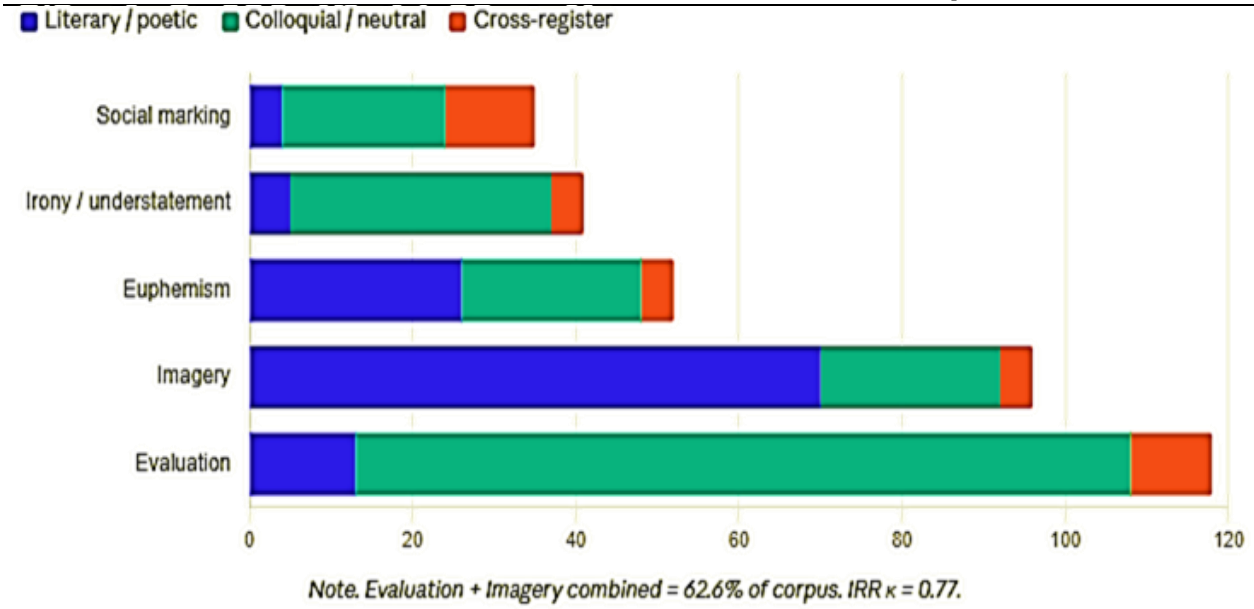

Figure 4: Stylistic function distribution by register (N=342)

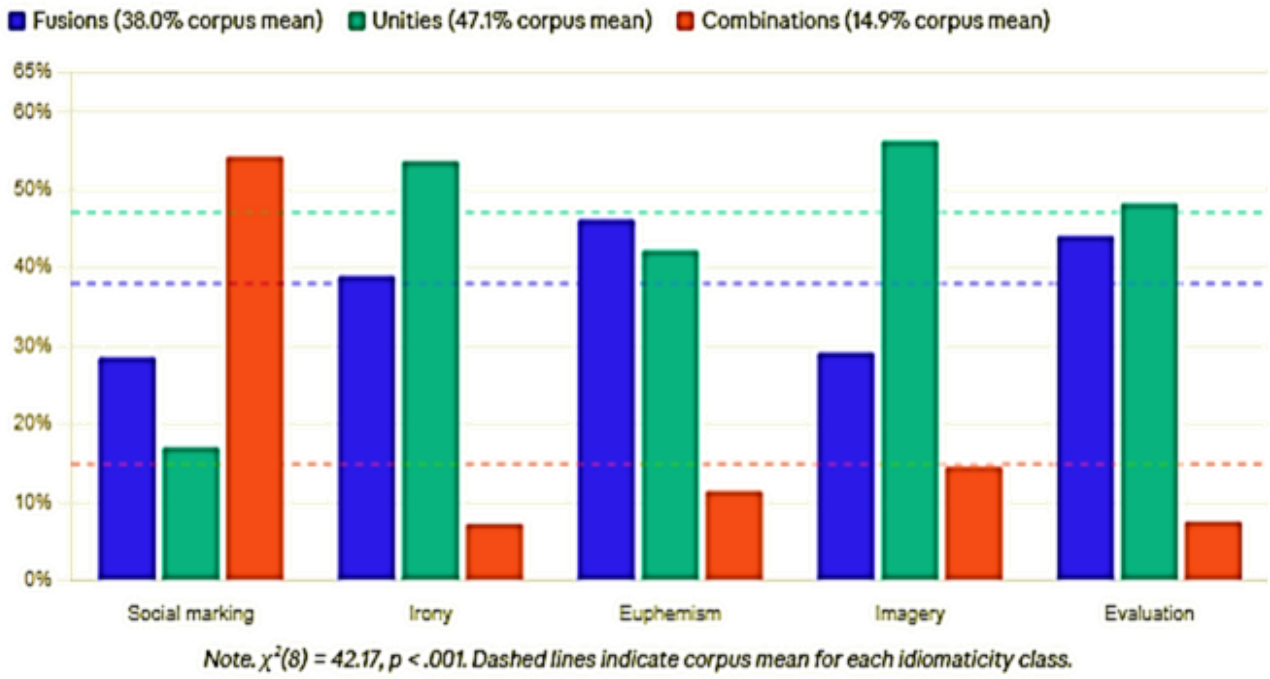

Figure 5: Stylistic function * Idiomaticity class (N=342)