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SEMANTIC PROFILING OF VERBAL MARKERS OF BASIC EMOTIONS: A CORPUS-BASED ANALYSIS AND IMPLICATIONS FOR LARGE LANGUAGE MODELS

The article **aims** to identify the semantic, syntactic, and discourse-pragmatic parameters of verbal markers of basic emotions in contemporary English and to demonstrate how such parameters can support a more fine-grained representation of emotional meaning in large language models. The analysis focuses on verbs that encode joy, anger, sadness, fear, and disgust, because verbal encoding reveals not only the naming of an affective state but also its dynamic unfolding, causation, target orientation, aspectual behavior, and typical argument structure. The study is grounded in corpus linguistics and draws on the British National Corpus and the Corpus of Contemporary American English.

The methodological toolkit combines the extraction of target verbs, frequency and genre distribution analysis, collocational analysis, concordance reading, and the comparison of recurrent syntactic patterns. The corpus findings are interpreted through functional-semantic and discourse-pragmatic analysis in order to reveal preferred combinatory patterns, complementation types, constraints on tense and aspect, and different degrees of emotional intensity. Scientific novelty.

The novelty of the article lies in treating verbal markers of basic emotions not as isolated lexical items but as multidimensional semantic profiles integrating lexical meaning, grammatical behavior, collocational preferences, and recurrent discourse scenes. The paper also offers a systematic cross-category comparison of five emotional domains specifically from the perspective of their relevance for large language models: synonym disambiguation, control of argument structure, modelling of intensity, and preservation of emotional coherence in generated discourse. The analysis demonstrates that emotion verbs display stable and differentiated profiles. Joy verbs tend to construe reactive, event-bound, and often communal evaluation; anger verbs activate metaphors of internal pressure, heat, and explosion; sadness verbs foreground processual loss and ritualized contexts; fear verbs divide into anticipatory-cognitive and physiological-reactive subtypes; and disgust verbs encode high-intensity moral aversion toward a direct object.

These **results** can be used in corpus-based lexicography, the construction of linguistically informed benchmarks for LLM evaluation, prompt design, and further research on the interaction of lexical semantics, syntax, discourse, and artificial intelligence.

Key words: verbal emotion markers; basic emotions; corpus linguistics; semantic profiling; Large Language Models (LLM).

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СЕМАНТИЧНЕ ПРОФІЛЮВАННЯ ДІЄСЛІВНИХ МАРКЕРІВ БАЗОВИХ ЕМОЦІЙ: КОРПУСНИЙ АНАЛІЗ ТА ІМПЛІКАЦІЇ ДЛЯ ВЕЛИКИХ МОВНИХ МОДЕЛЕЙ

Статтю присвячено встановленню семантичних, синтаксичних і дискурсивно-прагматичних параметрів дієслівних маркерів базових емоцій у сучасній англійській мові та з'ясуванню того, яким чином такі параметри

можуть бути використані для точнішого моделювання емоційного змісту у великих мовних моделях. У центрі уваги перебувають дієслова, що репрезентують емоції радості, гніву, смутку, страху та відрази, оскільки саме дієслівний спосіб кодування емоцій дає змогу побачити не лише називання стану, а й його динаміку, каузативність, спрямованість на об'єкт, аспектуальну організацію та типову аргументну структуру.

Дослідження виконано в межах корпусної лінгвістики з опорою на *British National Corpus* та *Corpus of Contemporary American English*. Застосовано методи суцільної вибірки цільових дієслів, аналізу частотності та жанрового розподілу, колокаційного аналізу, дослідження конкордансів і зіставлення типових синтаксичних моделей. Опис профілів дієслів поєднано з функційно-семантичним та лінгвопрагматичним аналізом, що дало змогу виявити типові патерни сполучуваності, моделі керування, обмеження на вживання видо-часових форм і різний ступінь інтенсивності емоційного переживання.

Наукова новизна праці полягає в тому, що дієслівні маркери базових емоцій описано не як ізольовані лексеми, а як багатовимірні семантичні профілі, у яких поєднуються лексичне значення, граматична поведінка, колокаційні переваги та типова дискурсивна сцена вживання. Уперше в межах однієї розвідки системно зіставлено п'ять емоційних полів саме з погляду придатності отриманих профілів для задач великих мовних моделей: розпізнавання тонких відмінностей між синонімами, дотримання аргументної структури, відтворення градацій інтенсивності та забезпечення емоційної когерентності у згенерованому тексті.

Доведено, що дієслова базових емоцій мають чітко диференційовані профілі: дієслова радості тяжіють до реактивно-подієвої та комунально-оцінної моделі; дієслова гніву актуалізують метафори внутрішнього тиску, нагрівання і вибуховості; дієслова смутку пов'язані з процесуальністю втрати та ритуалізованими контекстами; дієслова страху розщеплюються на очікувально-когнітивний і соматично-реактивний підтипи; дієслова відрази виразно кодують інтенсивну морально-оцінну аверсію. Отримані результати можуть бути використані для укладання корпусно верифікованих словників емоційної лексики, побудови лінгвістично мотивованих *benchmark*-наборів для LLM, удосконалення промптів, а також для подальших досліджень взаємодії лексичної семантики, синтаксису та штучного інтелекту.

Ключові слова: вербальні маркери емоцій; базові емоції; корпусна лінгвістика; семантичне профілювання; великі мовні моделі (LLM).

Relevance of the Research Problem. The linguistic representation of emotion remains one of the most productive fields of contemporary philology because it lies at the intersection of lexical semantics, grammar, discourse studies, cognitive linguistics, and digital language technologies. In recent years, the problem has acquired renewed relevance for at least two reasons. First, corpus linguistics has made it possible to describe emotional meaning on the basis of attested usage rather than introspection alone; this shift allows researchers to identify collocational preferences, genre distribution, and recurrent syntactic patterns that are invisible in purely dictionary-based descriptions. Second, the rapid development of large language models has intensified the need for explicit linguistic knowledge about subtle meaning differences within emotional vocabulary, because statistically plausible generation does not automatically guarantee semantically precise or pragmatically appropriate emotional wording (O'Keeffe & McCarthy, 2022; Sabour et al., 2024; Chen et al., 2024).

Whereas nouns such as *anger*, *fear*, *grief* or *disgust* and adjectives such as *angry*, *afraid*, *sad* or *delighted* have received extensive scholarly attention, verbs remain comparatively underdescribed despite the fact that they are central to the verbalization of emotional events and processes. A verb

does not merely name an emotion; it organizes the emotion as something experienced, displayed, directed, caused, intensified, prolonged, or resisted. Compare, for example, the difference between the noun phrase *a feeling of fear* and the verbal pattern *to dread the consequences*: the first labels a state, while the second construes an anticipatory cognitive stance directed toward a projected event. Similarly, *to mourn a loss* and *to grieve for someone* are close in meaning, yet they differ in their preferred discourse environments and degrees of ritualization. Such distinctions matter for linguistic theory and for computational applications alike.

For this reason, the present study treats verbal markers of basic emotions as semantically rich units whose meaning unfolds through a combination of lexical content, argument structure, collocational behavior, aspectual preferences, and recurrent discourse frames. This perspective is particularly relevant for computational systems. Recent benchmarks in emotional intelligence and empathy, including EmoBench and Emotion-Queen, show that the evaluation of LLMs has moved beyond coarse sentiment polarity toward the modelling of nuanced emotional reasoning, empathic adequacy, and emotionally coherent response generation (Sabour et al., 2024; Chen et al., 2024). A philologically grounded account

of emotion verbs can therefore serve as an empirical bridge between corpus semantics and AI-oriented language modelling.

Analysis of Recent Research and Publications. The study of emotion in language has developed through several converging traditions. In the cognitive-semantic tradition, emotions are examined as culturally structured and conceptually organized meanings rather than mere psychological labels. Wierzbicka argues that emotion terms are deeply embedded in language-specific conceptual systems and therefore require careful semantic explication instead of intuitive equivalence across languages (Wierzbicka, 1999). Kövecses, in turn, demonstrates that emotional meaning is systematically shaped by metaphorical models such as heat, pressure, burden, movement, or containment, which are especially visible in the verbal domain, for example in patterns such as *to seethe*, *to boil with anger*, or *to tremble with fear* (Kövecses, 2000).

A second line of research concerns the linguistic categorization of emotions. Ekman's model of basic emotions remains influential as a heuristic framework for selecting a limited but representative set of emotional domains, while prototype-based approaches show that emotion categories are internally graded and organized around central exemplars rather than strict boundaries (Ekman, 1992; Shaver et al., 1987). From a philological perspective, this is important because the semantic center of a category is not distributed evenly across parts of speech. Some emotions are more prototypically nominalized, others adjectivized, whereas verbs often encode the experiential or eventive dimension of the same category.

A third strand of scholarship comes from corpus linguistics and usage-based approaches. Corpus-based methods make it possible to move from abstract lexical definition to patterns of actual use. As O'Keeffe and McCarthy emphasize, corpus linguistics is not only a repository of examples but also a methodology for identifying recurrent phraseology, grammar-in-context, and discourse regularities (O'Keeffe & McCarthy, 2022). This insight is directly relevant for emotion verbs, since their meaning is strongly conditioned by the constructions in which they occur. In this respect, Levin's verb-class approach and Goldberg's constructional perspective remain methodologically valuable: verbs should be interpreted

alongside the argument structures and constructions that activate their typical meanings (Levin, 1993; Goldberg, 1995).

Finally, recent research at the intersection of linguistics and natural language processing highlights the growing importance of affective meaning for contemporary AI systems. Surveys of affective linguistics and NLP demonstrate that emotional language cannot be reduced to simple polarity or lexicon lookup, because it involves figurative meaning, contextual modulation, intensification, interpersonal stance, and discourse positioning (Ji et al., 2022; Zhang et al., 2026). Work on LLMs further shows that current models often approximate emotional language statistically while still struggling with fine distinctions among near-synonyms, with control of complementation patterns, and with emotionally appropriate text generation in context (Bender et al., 2021; Sabour et al., 2024). Nevertheless, despite the growing number of studies on affective computing, emotion recognition, empathy, and sentiment classification, the semantic profiling of verbal markers of basic emotions remains insufficiently elaborated. This gap motivates the present article.

Purpose of the Study. The aim of the article is to construct corpus-based semantic profiles of verbal markers of the basic emotions of joy, anger, sadness, fear, and disgust in contemporary English and to determine how these profiles can inform linguistic interpretation and improve the treatment of emotional language in large language models.

Presentation of the Main Research Findings.

Corpus Base, Material Selection, and Profiling Procedure. The empirical basis of the study consists of two reference corpora that provide complementary coverage of present-day English usage: the British National Corpus and the Corpus of Contemporary American English. The use of these corpora enables comparisons across British and American data, spoken and written registers, and fiction, news, popular magazines, and academic discourse. The analysis focuses on a compact but representative set of high-prototypicality verbs: *rejoice*, *delight*, *exult*, *cheer*; *fume*, *rage*, *seethe*, *bristle*; *grieve*, *mourn*, *lament*, *sorrow*; *dread*, *fear* (Fig.1), *tremble*, *quake*; *loathe*, *abhor*, *detest*, *revolt*. The units were selected because they function as main verbs denoting emotional experience, expression, or causation, and because they are sufficiently frequent to yield stable usage profiles in the corpora.

Corpus of Contemporary American English

Fig. 1. Contextual Patterns of *Fear* in the Corpus of Contemporary American English

The semantic profile of each verb was reconstructed through several mutually complementary procedures: frequency and genre observation, collocational analysis, concordance reading, and the examination of preferred syntactic frames. The goal was not to reduce meaning to a single dictionary gloss but to describe how each verb behaves in authentic discourse. Special attention was paid to transitivity, the presence or absence of clausal complements, preferred semantic types of subject and object, aspectual preferences, adverbial modification, and metaphorical extensions. This procedure follows a usage-based principle: stable co-occurrence and grammatical patterning reveal which dimensions of emotional experience are linguistically foregrounded.

Joy: Reactive Eventfulness and Communal Evaluation. The verbs of joy reveal that positive emotion in English is not encoded as a homogeneous semantic field. *Rejoice* and *exult* typically construe joy as a reactive event, that is, as an affective response to a preceding stimulus or change in circumstances. They prefer intransitive or complement-taking patterns such as *rejoice at the news*, *rejoice in the outcome*, or *rejoice that someone is safe*. A concordance-type example, such as *The community rejoiced at the announcement* illustrates the eventive and socially shared nature of the experience. The verb does not merely indicate that the participants were happy; it frames joy as a public, often collective reaction to news, recovery, victory, or deliverance.

Delight shows a different profile. In verbal use it frequently enters a causative frame: *The performance delighted the audience*; *The result delighted her*. Here, pleasure is construed not as a spontaneous emotional eruption but as an effect produced by an external stimulus. This makes *delight* especially important for distinguishing experiencer-subject from stimulus-subject configurations. An LLM that treats *rejoice* and *delight* as freely interchangeable may generate grammatically acceptable but semantically distorted sentences because the verbs activate different mappings between participant roles and emotional perspective.

The aspectual behavior of joy verbs is equally revealing. Progressive forms such as *was rejoicing* are comparatively restricted and usually occur in deliberately elevated, narrative, or ceremonial contexts. This suggests that the core construal of *rejoice* is bounded and reactive rather than durative. The collocational environment confirms this interpretation: *success*, *victory*, *return*, *news*, *salvation*, and *togetherness* are typical semantic attractors. Thus, the verbal profile of joy in English is organized around event-triggered evaluation, frequently with a communal dimension. This profile differs markedly from the adjectival coding of positive affect, where *happy* or *pleased* may describe a stable, less event-bound state.

Anger: Internal Pressure, Heat, and Escalation. The field of anger is one of the clearest examples of how verbal semantics interacts with metaphorical conceptualization. Verbs such as *fume*, *seethe*, and *rage* are strongly associated with

the metaphor of internal heat and pressure. They often appear in intransitive frames and combine with adverbials or prepositional phrases that specify duration, cause, or direction: *He was left fuming for days after the decision; She seethed with resentment; The minister raged against the measure.* Such constructions foreground anger as a developing process of internal accumulation and outward release rather than as a static property.

Even closely related verbs within this field are not synonymous in a simple sense. *Seethe* typically profiles restrained but intense inward agitation, frequently compatible with an image of suppressed emotional boiling. *Rage*, by contrast, is more externalized, often associated with overt verbal or behavioral manifestation, conflict, and public confrontation. *Fume* occupies an intermediate position: it can denote visible irritation, but it also retains the idea of unresolved internal pressure. *Bristle* differs still further, as it often marks a shorter reaction of offended defensiveness or instant resistance, for example *She bristled at the remark.* In discourse, *bristle* is compatible with face-threatening interaction, whereas *seethe* more often describes prolonged internal emotion.

From a grammatical point of view, anger verbs show a strong affinity with progressive forms such as '*is seething*' or '*was fuming*'. This pattern is not incidental. It encodes anger as temporally extended and internally active, which distinguishes it from verbs of disgust, which usually resist the progressive. The collocational network of the anger field also contains morally and politically charged nouns such as *injustice*, *insult*, *humiliation*, *resentment*, and *indignation*. Accordingly, anger verbs in English frequently mediate between emotion and evaluation: they not only express negative feelings but also index a perceived violation of norms, dignity, or expectation.

Sadness: Processual Loss and Ritualized Contexts. The verbal marking of sadness is structured around loss, duration, and social ritual. *Mourn* and *grieve* are semantically close, yet corpus evidence suggests that they occupy different discourse scenes. *Mourn* strongly gravitates toward explicitly named loss events, especially death and public commemoration: *The nation mourned the death of the writer; The family mourned their loss.* The verb is therefore compatible with collective and ceremonial settings, where grief becomes socially visible. *Grieve*, in contrast, more

often emphasizes the internal and protracted process of suffering: *She continued to grieve for her mother; They were still grieving after the accident.* In this way, English distinguishes between public mourning and personal grieving without turning the two into fully separate categories.

Lament broadens the field by connecting sadness to evaluative commentary. The object of lament is not always a deceased person or an irreparable loss; speakers may *lament a decline*, a failure, a missed opportunity, or the state of society. As a result, lament occupies a borderline position between sadness and criticism. *Sorrow* as a verb is less frequent and more stylistically marked, but precisely for that reason, it reveals the literary elevation of emotional diction. The relative rarity of some items within the field is methodologically important: semantic profiling must account not only for core frequency but also for register markedness and stylistic distribution.

The sadness field also illustrates how prepositional patterns help specify the direction of emotion. Combinations such as *grieve for*, *mourn for*, and *lament over* identify the target or cause of the emotion and often add a durative nuance. Compared with nouns such as grief or sadness, verbs make the processuality of loss more explicit. They encode the emotion as something one does, undergoes, or remains engaged in over time. This makes the verbal profile of sadness particularly valuable for discourse analysis and for narrative generation, where temporal unfolding is crucial.

Fear: Anticipation versus Physiological Reactivity. The field of fear is internally stratified into at least two major subtypes: anticipatory-cognitive and physiological-reactive. *Dread* and *fear* in verbal use often construe the emotion as an orientation toward a projected negative scenario: *I dread the thought of going back; She feared that the plan would fail.* The direct object or clausal complement is typically future-oriented and undesirable. In other words, the semantics of dread are bound to anticipation and the construction of mental scenarios. This distinguishes it from mere naming of an emotional state and explains why dread strongly favors complements referring to possibility, obligation, or forthcoming consequence.

By contrast, *tremble* and *quake* foreground bodily manifestation. Their subjects are experiencers, but the verbs themselves encode visible somatic response rather than the abstract emotional eval-

uation that motivates it: *Her hands trembled with fear; He quaked at the sound of the explosion.* These verbs, therefore, connect the semantics of emotion with embodiment. They are also compatible with a broader range of causes, including fear, cold, weakness, excitement, and shock, suggesting that emotional interpretation depends more heavily on collocates and contextual cues.

This internal division has important consequences for semantic precision. A system that treats dread, fear, tremble, and quake as interchangeable members of a single fear set will flatten the difference between cognitive anticipation and physical reaction. For philological analysis, the contrast shows that the language distributes one emotional domain across distinct layers of experience. For LLM design, the contrast can be operationalized in benchmark items that test not only emotional category recognition but also the ability to match the correct subtype to the appropriate syntactic and discourse context.

Disgust: Moralized Aversion and Object Orientation. The field of disgust is characterized by strong object orientation and high evaluative intensity. Verbs such as *loathe*, *detest*, and *abhor* are predominantly monotransitive and encode sustained aversion toward a direct object: *She loathed the hypocrisy of the political class; They abhor cruelty in any form; He detested violence.* Unlike many anger verbs, these units do not usually depict emotional build-up or explosive release. Instead, they profile a stable, categorical stance of rejection. This explains their strong preference for the present simple and their comparatively weak compatibility with the progressive.

Another important feature is the object's moralization. While one may casually dislike a film or a meal, to loathe or abhor something typically implies that the object violates the speaker's ethical, aesthetic, or ideological standards. Corpus contexts frequently include nouns such as *hypocrisy*, *violence*, *cruelty*, *corruption*, or *injustice*. Thus, the verbal semantics of disgust overlap with moral judgment more strongly than many dictionary definitions suggest. It is not merely affective repulsion but value-laden rejection.

The verb *revolt* occupies a more complex position because it may function transitively, intransitively, and within constructions that foreground either the source of aversion or the experiencer's reaction. Precisely because of this flexibility, it is

useful for demonstrating that semantic profiling cannot rely only on synonym lists. What matters is the recurrent structural behavior of the verb in context. In the disgust field, therefore, semantic description must integrate intensity, object type, moral framing, and aspectual restriction.

Implications for Large Language Models. The corpus profiles described above have direct implications for large language models. Recent work on the evaluation of emotional intelligence and empathy shows that LLMs are increasingly assessed not only on sentiment classification but also on emotional reasoning, emotional application, empathy, and the ability to produce contextually appropriate responses (Sabour et al., 2024; Chen et al., 2024). Yet these higher-order tasks still depend on lower-level linguistic distinctions. If a model confuses *rejoice* with *delight*, or dread with tremble, its output may remain superficially fluent while becoming semantically misaligned with the situation it describes.

Three implications are especially important. First, semantic profiles can be used to construct benchmarks. Items may be designed to test whether a model respects complementation patterns, for example, the preference of dread for a future-oriented object or clausal complement, or the resistance of abhor to the progressive.

Second, the profiles can support data curation and fine-tuning by providing linguistically motivated minimal pairs and near-synonym contrasts. Third, they can improve prompt design, since prompts that specify emotional dynamics, temporal structure, and participant roles are more likely to elicit precise language than prompts that request only a general emotional tone.

At the same time, the article does not claim that corpus profiles alone solve the problem of affective modelling in AI. As Bender et al. note, large models may generate plausible sequences without possessing explicit grounded understanding in a human sense (Bender et al., 2021). Nevertheless, usage-based profiles are valuable because they externalize precisely those regularities that remain implicit in purely distributional training. In this respect, corpus philology and AI research are complementary rather than competing domains.

Conclusions and Prospects for Further Research. The study has shown that verbal markers of basic emotions in contemporary English form differentiated semantic profiles that cannot

be reduced to broad affective labels. Joy verbs are predominantly reactive and frequently communal; anger verbs foreground internal pressure, heat, and outward escalation; sadness verbs encode loss as a process and often interact with ritualized or socially framed contexts; fear verbs divide into anticipatory-cognitive and physiological-reactive subtypes; disgust verbs express high-intensity, object-centered, and morally charged aversion. In all five fields, the interaction of lexical meaning with argument structure, collocational preference, aspectual behavior, and discourse setting proves crucial for interpretation.

These findings confirm that the verbal domain offers a particularly informative entry point into the study of emotional meaning, because verbs

make visible the dynamic, relational, and eventive organization of emotion in language. The article also demonstrates that corpus-based semantic profiling can contribute not only to linguistic theory but also to current work on large language models by supplying empirically grounded distinctions that matter for emotional coherence and precision in generated discourse.

Prospects for further research include expanding the verbal inventory beyond high-prototypicality items, including spoken interaction and digital discourse in greater detail, comparing English data with Ukrainian and other languages, and developing benchmark resources that test LLM performance on emotionally nuanced verb semantics rather than on polarity alone.

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