

## Structural-semantic Modeling of Lexico-semantic Fields of Negative Emotions in English: Evidence from *Anger* and *Grief*

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### ABSTRACT

*The study of emotional vocabulary occupies an important position in contemporary linguistics due to its close relationship with cognition, culture, and communication. However, despite the increasing interest in emotional semantics, the internal structure of lexico-semantic fields representing negative emotions has not been sufficiently investigated using large-scale corpus data. The present article aims to analyze the structural and semantic organization of the lexico-semantic fields of two fundamental negative emotions in English – anger and grief. The research is based on the field approach combined with corpus-based frequency analysis using data from the Corpus of Global Web-Based English (GloWbE). The analysis demonstrates that each emotional domain forms a hierarchically organized system consisting of a core, a perinuclear zone, and a peripheral zone. The core of the field is represented by a dominant lexeme with the highest degree of semantic generalization, whereas the perinuclear zone includes lexical units specifying intensity, manifestation, or experiential aspects of the emotion. Peripheral elements demonstrate weaker semantic connections to the core and are characterized by greater contextual dependence. The findings confirm that the field model provides an effective framework for describing the structural organization of emotional vocabulary and contributes to a deeper understanding of how negative emotional experience is conceptualized and verbalized in contemporary English.*

**Keywords:** Lexico-semantic field; negative emotions; anger; grief; field model; perinuclear zone; corpus linguistics; emotional vocabulary; GloWbE

#### INTRODUCTION

The linguistic representation of emotions has become an important area of research in contemporary linguistics, particularly within the frameworks of cognitive linguistics and lexical semantics. Emotional concepts are reflected in language through complex systems of lexical units that form structured semantic domains.

One of the most productive approaches to the study of lexical organization is the theory of lexico-semantic fields, which considers vocabulary as a system of interconnected lexical units united by a common semantic feature (Apresyan 1995; Verdiyeva 1986).

Research in cognitive linguistics has shown that emotional concepts are structured around culturally and cognitively significant prototypes. According to Kövecses (2000), emotions are conceptualized through networks of related lexical and metaphorical expressions that reflect shared cognitive models. Similarly, Wierzbicka (1999) argues that emotional concepts are encoded in language through specific semantic structures that reveal culturally shaped patterns of emotional experience.

Despite significant progress in the study of emotional semantics, several important research gaps remain. First, many studies of emotional vocabulary focus primarily on conceptual metaphors or cultural interpretations of emotions, while the systemic lexical organization of emotional vocabulary has received less attention. Second, the majority of studies rely on introspective semantic analysis rather than large-scale corpus data, which limits the empirical validity of the results. Third, the internal hierarchical structure of lexico-semantic fields representing negative emotions has not been sufficiently modeled using quantitative linguistic methods.

Therefore, the present study aims to investigate the structural and semantic organization of the lexico-semantic fields of the

negative emotions anger and grief in contemporary English using corpus-based frequency analysis.

The objectives of the study are:

- to identify the core, perinuclear, and peripheral components of the fields anger and grief;
- to analyze the semantic relations between lexical units within these fields;
- to demonstrate the role of corpus frequency in determining the hierarchical organization of emotional vocabulary.

#### MATERIALS AND METHODS

The empirical material for the present study was obtained from the Corpus of Global Web-Based English (GloWbE), which contains approximately 1.9 billion words collected from twenty English-speaking countries (Davies 2013). This large-scale corpus provides extensive data for analyzing lexical usage in contemporary English and enables the identification of frequency patterns across different varieties of the language.

The research methodology combines several complementary approaches, including frequency-statistical analysis of corpus data, the field approach to lexical semantics, and morphological as well as semantic analysis of lexical units. The primary criterion for assigning lexical units to specific zones of the lexico-semantic field is their absolute frequency in the GloWbE corpus, which reflects the conceptual prominence of lexical items in representing particular emotional states.

In addition to quantitative frequency data, several qualitative parameters were also taken into account. These include the degree of semantic generalization of a lexical unit, its level of emotive specialization, and the degree of contextual dependence of its meaning. Based on the combination of these quantitative and qualitative criteria, each lexico-semantic field was modeled as a hierarchical structure consisting of three interconnected zones: the core, the perinuclear zone, and the periphery.

## RESULTS AND DISCUSSION

The corpus analysis demonstrates that the lexico-semantic field of “anger” represents a hierarchically organized lexical system centered around the dominant lexeme anger. This lexical unit forms the core of the field, as it directly denotes the emotional state and demonstrates a high frequency of occurrence in the GloWbE corpus (61,227 occurrences). Due to its semantic generalization and conceptual neutrality, anger functions as the primary nominative unit representing the emotion.

The perinuclear zone of the field includes lexical units that maintain a direct semantic connection with the core concept while specifying particular forms or intensities of anger. These units include the nouns rage, wrath, outrage, and frustration, the verb snap, and the adjectives angry, furious, and annoyed. The relatively high frequency of these lexemes indicates their importance in describing different manifestations of anger in natural language use. At the same time, their meanings are more specific than that of the core lexeme because they describe particular emotional reactions rather than the generalized emotional state itself.

The peripheral zone contains lexical units with weaker semantic ties to the core concept and greater contextual dependence. These include the nouns resentment, irritation, annoyance, and indignation, the verbs provoke, irritate, fume, and seethe, as well as the adjectives irritated, bitter, and resentful and the adverbs angrily, bitterly, and furiously. These lexemes typically describe secondary emotional reactions, behavioral manifestations of anger, or evaluative aspects of the emotional state. Their peripheral position reflects the fact that they do not directly denote anger itself but rather its consequences, triggers, or expressive forms.

The distribution of lexical units presented in Table 1 demonstrates that the internal structure of the lexico-semantic field of anger is determined not only by frequency but also by the degree of semantic specialization. Lexical items in the perinuclear zone represent the most typical and semantically

close manifestations of anger, while peripheral elements show broader meanings and stronger dependence on context.

Table 1. *Lexico-semantic field of the emotion anger (based on GloWbE corpus data)*

Part of speech	Lexeme	Frequency (GloWbE)	Zone of the field
noun	anger	61227	core
noun	rage	20719	perinuclear
noun	wrath	12392	perinuclear
noun	outrage	15133	perinuclear
noun	frustration	29974	perinuclear
noun	resentment	10321	peripheral
noun	irritation	5998	peripheral
noun	annoyance	5084	peripheral
noun	indignation	4073	peripheral
verb	snap	16193	perinuclear
verb	provoke	7984	peripheral
verb	irritate	2609	peripheral
verb	fume	609	peripheral
verb	seethe	262	peripheral
adjective	angry	77634	perinuclear
adjective	furious	13328	perinuclear
adjective	annoyed	15633	perinuclear
adjective	irritated	6223	peripheral
adjective	bitter	30450	peripheral
adjective	resentful	2599	peripheral
adverb	angrily	3785	peripheral
adverb	bitterly	4991	peripheral
adverb	furiously	3093	peripheral

The lexico-semantic field of “grief” represents another important domain of negative emotional vocabulary in English. The core of the field is formed by the lexeme grief, which functions as the basic nomination of deep sorrow associated with loss. In the GloWbE corpus this lexeme demonstrates a frequency of 23,682 occurrences. According to the *Longman Dictionary of Contemporary English* (2014), grief denotes “extreme sadness, especially because someone has died,” which confirms its central role in representing the concept of sorrow.

The perinuclear zone of the field includes lexical units that represent intense or prototypical manifestations of sorrow. These include the nouns *sorrow*, *misery*, *despair*, and *heartache*, the verbs *grieve* and *mourn*, and the adjectives *grief-stricken*, *heartbroken*, and *sorrowful*. These lexical units are semantically close to the core concept because they directly describe emotional states associated with deep sadness and loss.

The peripheral zone includes lexical items with broader meanings and lower degrees of emotive specialization. Among them are the nouns *sadness*, *melancholy*, *distress*, *loss*, and *pain*, the verbs *weep*, *lament*, *suffer*, and *cry*, as well as the adjectives *sad*, *mournful*, and *distressed*. Although some of these lexemes demonstrate high frequency in the corpus, they cannot be considered core elements of the field because their meanings extend beyond the emotional domain of grief. For example, the lexemes *loss* and *pain* are characterized by significant polysemy and can refer to physical, social, or abstract experiences rather than exclusively to emotional sorrow.

The data presented in Table 2 confirm that the hierarchical structure of the lexico-semantic field of grief is determined by both frequency patterns and semantic specialization. While the lexeme *grief* occupies the central position in the field, other lexical units represent different degrees of semantic proximity to the core concept and reflect the complex linguistic representation of sorrow in English.

Table 2. *Lexico-semantic field of the emotion anger (based on GloWbE corpus data)*

Part of speech	Lexeme	Frequency (GloWbE)	Zone of the field
noun	<i>grief</i>	23682	core
noun	<i>sorrow</i>	12543	perinuclear
noun	<i>misery</i>	18273	perinuclear
noun	<i>despair</i>	18622	perinuclear
noun	<i>heartache</i>	3219	perinuclear
noun	<i>sadness</i>	15420	peripheral
noun	<i>melancholy</i>	4522	peripheral
noun	<i>distress</i>	18919	peripheral
noun	<i>loss</i>	216798	peripheral

noun	pain	185268	peripheral
verb	grieve	4484	perinuclear
verb	mourn	5034	perinuclear
verb	weep	5374	peripheral
verb	lament	4359	peripheral
verb	suffer	76118	peripheral
verb	cry	57505	peripheral
adjective	grief-stricken	473	perinuclear
adjective	heartbroken	2654	perinuclear
adjective	sorrowful	1479	perinuclear
adjective	sad	115171	peripheral
adjective	mournful	1126	peripheral
adjective	distressed	7642	peripheral
adverb	sadly	53950	peripheral
adverb	deeply	66255	peripheral

#### CONCLUSIONS

The present study has examined the structural and semantic organization of the lexico-semantic fields of two fundamental negative emotions in contemporary English – anger and grief. Using corpus-based frequency analysis in combination with the field approach to lexical semantics, the research has demonstrated that both emotional domains exhibit a clear hierarchical structure consisting of a core, a perinuclear zone, and a peripheral zone.

The analysis has shown that the cores of the examined fields are represented by single dominant lexemes (anger and grief) that possess the highest degree of semantic generalization and function as the primary nominative units of the corresponding emotional states. The perinuclear zones include lexical units that maintain a direct semantic connection with the core while specifying the intensity, manifestation, or experiential dimension of the emotion. In contrast, peripheral elements are characterized by weaker semantic ties to the core and demonstrate broader semantic scope and stronger contextual dependence.

An important finding of the study is that the hierarchical structure of emotional vocabulary cannot be determined solely on

the basis of frequency indicators. Although corpus frequency provides valuable quantitative evidence for identifying dominant lexical units, the classification of lexical items within the field also depends on qualitative parameters such as semantic specialization and conceptual relevance. This is particularly evident in the field of grief, where highly frequent lexemes such as loss and pain remain peripheral due to their broad polysemy and lack of exclusive emotive reference.

From a theoretical perspective, the results confirm the explanatory potential of the lexico-semantic field model for describing the internal organization of emotional vocabulary. The combination of corpus linguistics and field-based semantic analysis makes it possible to identify hierarchical relationships between lexical units and to reveal the mechanisms through which emotional experience is structured and verbalized in language.

Overall, the findings contribute to a deeper understanding of the linguistic conceptualization of negative emotions in English and demonstrate the effectiveness of corpus-based methods for the systematic study of lexical-semantic structures. Future research may expand the scope of the analysis by including additional emotional domains and by conducting cross-linguistic comparisons that would allow researchers to explore cultural and typological differences in the linguistic representation of emotions.

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