

Quantitative Functional-Semantic Field in English And Uzbek: Core-Periphery Model and Typological Asymmetries

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Abstract: This paper systematizes quantitative markers in English and Uzbek within the functional-semantic field framework using a core-periphery model. It inventories grammatical, lexical and syntactic means of quantification, assigns them to the core, near periphery and far periphery based on paradigmatic and semantic criteria, and highlights typological asymmetries such as analytic versus agglutinative coding, as well as countability and determination gaps. The study employs componential semantic analysis, contrastive typology, corpus-informed observations and field modeling. The findings show that while the core layer is largely universal (numerals, number/plurality, basic quantifiers), peripheral zones exhibit stronger language-specific patterns, including Uzbek derivational and distributive morphology and English determiner-driven quantification. The model has implications for translation, corpus annotation and pedagogy.

Keywords: Quantification; functional-semantic field; core-periphery; quantifiers; plurality; countability; determination; contrastive linguistics; corpus analysis.

Introduction: The category of quantity is a central phenomenon in the language system that links lexical-grammatical and formal-semantic levels: it encodes not only exact numbers, but also the scope of a set, degrees of partitioning, gradation and evaluative meaning. In the study of quantification, the functional-semantic field (FSF) approach associated with A. V. Bondarko's school is particularly productive, because it interprets a content invariant across units of different levels (morphology, lexis, syntax and pragmatics).

Since English is predominantly analytic and Uzbek is agglutinative, quantitative meaning relies on different coding strategies. In English, in addition to the plural suffix, determiners and quantifiers (a/an, the, many/much, few/little, all, each/every) form an integrated system. In Uzbek, the plural marker -lar, collective formats -lab/-larcha, distributive -tadan, the counting word ta, numeral lexemes and quantitative pronouns (hamma 'all', ba'zi 'some', har bir 'each') constitute the main elements of the quantitative field.

A key problem emphasized in the dissertation is that

Uzbek has not developed a countable–uncountable opposition as an independent grammatical category, whereas in English this distinction is closely tied to quantifier selection and determination. As a result, translation and lexicographic practice face a 'countability gap' and a 'determiner gap', which must be addressed through scientifically grounded compensation strategies.

The purpose of this article is to model the core and peripheral layers of the quantitative FSF in English and Uzbek, to present typological asymmetries in a systematic way, and to generalize the results in the form of conclusions oriented toward translation, corpus annotation and pedagogical applications. The study addresses the following research questions: (1) What is the inventory of the main quantitative devices in the two languages? (2) How can their core–periphery hierarchy be justified? (3) What consequences does the analytic vs agglutinative contrast have for quantitative semantics? (4) How are countability and determination gaps compensated in each language?

METHODS

The material comprises units that express quantitative meaning, including numerals and numeral phrases, plural markers, quantifiers, quantitative pronouns, distributive and collective forms, measurement expressions, and degree adverbs indicating quantity–intensity. As noted in the dissertation, the observations were supported by data from national and English corpora as well as contexts drawn from literary and academic texts.

The study integrates the following methods: (a) componential lexical-semantic analysis to identify the same structure and meaning relations of quantitative units (synonymy, antonymy, hypernymy–hyponymy, polysemic extension); (b) contrastive-typological comparison to determine differences between analytic and agglutinative models of quantification in English and Uzbek; (c) corpus-informed observation to

evaluate register distribution and collocational preferences; and (d) functional-semantic field modeling to differentiate the core, near periphery and far periphery according to paradigmatic salience and the degree of semantic generalization.

The core–periphery criteria include: (1) formal systematicity (the degree of morphological categorization), (2) proximity to the semantic invariant (directness of quantitative meaning), (3) combinatorics and distribution (breadth of usage), and (4) the share of pragmatic/expressive components (as an indicator of peripheralization).

RESULTS

The results demonstrate that a three-layer structure of the quantitative functional-semantic field (core – near periphery – far periphery) is consistently observable in both languages. Table 1 presents the modeled layers in a concise format.

Layer	Uzbek means (examples)	English means (examples)	Typological note
Core	numerals; plural suffix -lar; ko'p/oz 'many/few'; counting word ta; distributive -tadan	plural -s/-es; a/an; many/much; few/little; all; each/every	Core units encode quantity directly and show the highest degree of systematicity.
Near periphery	collective -lab/-larcha; quantitative pronouns (hamma 'all', ba'zi 'some', har bir 'each'); comparative constructions (ko'proq/kamroq 'more/less')	partitives with of (a piece of); a lot of/plenty of; more/less; some/any (context-dependent)	The balance between morphological and lexical mechanisms becomes more visible at this layer.
Far periphery	hyperbole and idioms (bir dunyo 'a world of', ming bor 'a thousand times'); degree adverbs (juda 'very', nihoyatda 'extremely'); intonational–pragmatic devices	hyperbolic quantifiers (tons of, heaps of); discourse markers; prosodic emphasis	Evaluativity and expressiveness dominate; translation often requires modulation.

Note: The items in Table 1 summarize the core–periphery principles described in the dissertation; in real-text analysis, they vary by register and context.

1) Universality at the core: numerals and number/plurality indicators provide the most prototypical quantitative coding. However, numeral–noun agreement differs: in Uzbek, numeral + noun typically appears in the singular (5 ta kitob 'five book'), whereas English requires plural marking (five books).

2) The countability gap: in English, the countable–uncountable distinction determines quantifier choice (many vs much; few vs little). In Uzbek, general quantifiers such as ko'p 'many/much' and oz 'few/little' do not require countability parameters at the

grammatical level. Consequently, quantifier differentiation in translation is often reconstructed from context.

3) The determination gap: English articles a/an and the encode the quantity–definiteness interface, whereas Uzbek typically expresses comparable meanings through the numeral bir 'one' or via discourse context. Therefore, even when core quantitative units match, determiner equivalence often requires peripheral compensation.

4) Language-specificity in the periphery: Uzbek

collective -lab/-larcha and distributive -tadan provide morphologically compact encoding; English tends to express parallel meanings through analytic constructions (dozens of, each, per, and of-phrases).

5) Expressive quantity: hyperbolic units and idioms (bir dunyo, ming bor; tons of, heaps of) belong to the far periphery and encode evaluative meaning alongside quantity. In such cases, translation often prioritizes preserving pragmatic effect over preserving exact numerical value.

DISCUSSION

The model suggests that the core of the quantitative functional-semantic field is close to cross-linguistic universals, whereas peripheral zones are more strongly shaped by typological and cultural factors. In analytic systems (English), quantitative semantics is differentiated primarily through determiners and quantifiers; in agglutinative systems (Uzbek), derivational and distributive affixes function as key compensatory resources.

The countability and determination gaps have direct consequences for translation practice. Translating from Uzbek into English typically requires the explicit insertion of plural morphology and determiners; translating from English into Uzbek often involves contextual reconstruction or reduction of determination. These effects are also relevant for corpus annotation and machine-translation pipelines: formal encoding of countability and definiteness parameters together with quantificational markers may improve output quality.

From a pedagogical perspective, the FSF model helps learners see hidden parameters behind seemingly simple equivalents such as ko'p/oz. In English pairs such as many vs much and few vs a few, quantity is encoded together with evaluation and discourse positioning. Accordingly, teaching materials should introduce core devices early, while peripheral variation should be staged gradually across registers and genres.

As a limitation, the article provides a generalized account of the integral model proposed in the dissertation. More fine-grained corpus-statistical descriptions of peripheral units and an expanded diachronic layer remain tasks for further research.

CONCLUSION

The quantitative functional-semantic field in English and Uzbek was modeled using the core-periphery principle, demonstrating that the core layer tends toward universality, whereas peripheral zones are more dependent on typological and cultural factors.

The absence of an independent grammatical countability category and a determiner system in

Uzbek, contrasted with the determiner-driven and countability-sensitive quantification of English, creates translation 'gaps' that require compensatory strategies.

The proposed FSF model can serve as a methodological basis for choosing translation strategies, optimizing bilingual dictionary entries, enhancing corpus annotation, and teaching quantitative semantics in a systematic way.

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