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<http://www.supportscience.uz/index.php/ojp/about>**COGNITIVE-PRAGMATIC MECHANISMS OF INFORMATION STRUCTURING IN SCIENTIFIC TEXT AND PRINCIPLES OF THEIR STUDY IN THE ABSTRACT****Mavjuda Khudayorovna Eshchanova**

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ABOUT ARTICLE

Key words: information structuring, cognitive pragmatics, given–new information, theme–rheme, Functional Sentence Perspective, research article abstract, move structure.

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Abstract: The research article abstract is a highly condensed genre in which writers must package the essential content of a study for rapid processing by readers. This paper offers a theoretical-analytical account of the cognitive-pragmatic mechanisms that govern the structuring of information in scientific text and derives principles for studying these mechanisms in the abstract. Integrating three explanatory layers – the cognitive-pragmatic organisation of given and new information, the theme-rheme dynamics of Functional Sentence Perspective, and the rhetorical move structure of the abstract – the study argues that information structuring in the abstract is driven by cognitive economy and relevance, and that each rhetorical move carries a characteristic information-structure signature. On this basis, a set of methodological principles for the corpus-based study of information structuring in abstracts is proposed.

**ANNOTATSIYADA ILMIY MATNDA AXBOROTNI TUZILMALASHTIRISHNING
KOGNITIV-PRAGMATIK MEKANIZMLARI VA ULARNI O'RGANISH
TAMOYILLARI**

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MAQOLA HAQIDA

Kalit	so'zlar:	axborotni	Annotatsiya:	Tadqiqot	maqolasi
tuzilmalashtirish,	kognitiv	pragmatika,	annotatsiyasi	yuqori	darajada

ma'lum va yangi axborot, tema–rema, gapning funksional istiqboli, ilmiy maqola annotatsiyasi, ritorik harakatlar tuzilmasi.

ixchamlashtirilgan janr bo'lib, unda mualliflar tadqiqotning asosiy mazmunini o'quvchilar tomonidan tezkor idrok etilishi uchun qisqa va lo'nda shaklda ifodalashlari kerak. Mazkur maqolada ilmiy matnda axborotni tuzilmalashtirishni boshqaruvchi kognitiv-pragmatik mexanizmlarning nazariy-tahliliy tavsifi berilib, ushbu mexanizmlarni annotatsiyada o'rganish tamoyillari ishlab chiqiladi. Tadqiqotda uchta tushuntirish darajasi — ma'lum va yangi axborotning kognitiv-pragmatik tashkil etilishi, funksional gap istiqbolining tema–rema dinamikasi hamda annotatsiyaning ritorik harakatlar tuzilmasi — integratsiya qilinadi. Tadqiqot natijalari shuni ko'rsatadiki, annotatsiyada axborotni tuzilmalashtirish kognitiv tejamkorlik va relevantlik tamoyillari asosida amalga oshadi hamda har bir ritorik harakat o'ziga xos axborot-tuzilmaviy xususiyatga ega. Shu asosda annotatsiyalarda axborotni tuzilmalashtirishni korpus asosida o'rganish uchun metodologik tamoyillar majmui taklif etiladi.

КОГНИТИВНО-ПРАГМАТИЧЕСКИЕ МЕХАНИЗМЫ СТРУКТУРИРОВАНИЯ ИНФОРМАЦИИ В НАУЧНОМ ТЕКСТЕ И ПРИНЦИПЫ ИХ ИЗУЧЕНИЯ В АННОТАЦИИ

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О СТАТЬЕ

Ключевые слова: структурирование информации, когнитивная прагматика, данная и новая информация, тема–rema, функциональная перспектива предложения, аннотация научной статьи, структура риторических ходов.

Аннотация: Аннотация научной статьи представляет собой высококонцентрированный жанр, в рамках которого авторы должны представить основное содержание исследования в максимально сжатой форме для его быстрого восприятия читателями. В статье предлагается теоретико-аналитическое описание когнитивно-прагматических механизмов, регулирующих структурирование информации в научном тексте, и формулируются принципы изучения этих механизмов в аннотации. В исследовании интегрируются три объяснительных уровня — когнитивно-прагматическая организация данной и новой информации, тема-рематическая

динамика функциональной перспективы предложения и риторическая структура аннотации, представленная последовательностью коммуникативных ходов. Обосновывается положение о том, что структурирование информации в аннотации определяется принципами когнитивной экономии и релевантности, а каждый риторический ход характеризуется специфической информационно-структурной конфигурацией. На этой основе предлагается комплекс методологических принципов корпусного изучения структурирования информации в аннотациях.

Introduction. The abstract of a research article is among the most information-dense genres of academic writing. Confined to a small textual space, it must convey the purpose, method, and principal findings of an entire study in a form that allows readers to decide, within seconds, whether to read further. This double constraint – maximal content under minimal length – makes the abstract a privileged site for observing how writers structure information. The way given and new information is distributed, how the message unfolds from one clause to the next, and how propositional content is compressed are not stylistic accidents but manifestations of deeper cognitive-pragmatic mechanisms [1, p. 27].

Three research traditions offer complementary accounts of these mechanisms. The cognitive-pragmatic tradition treats information structuring as the packaging of a message according to the assumed knowledge state of the addressee: Chafe's notion of information packaging [1], Prince's taxonomy of given–new information [9], and Lambrecht's model of the mental representation of discourse referents [7] describe how speakers signal whether an entity is already active in the reader's consciousness or newly introduced. Relevance theory adds that speakers structure utterances so as to maximise cognitive effect for minimal processing effort [11]. The Functional Sentence Perspective (FSP) of the Prague School provides the structural counterpart: Daneš's theory of thematic progression [2], Firbas's notion of communicative dynamism [3], and Halliday's theme-rheme system [5] describe how each clause proceeds from a point of departure (theme) to its informative core (rheme), and how these choices chain across a text.

The third tradition – genre analysis describes the abstract as a sequence of rhetorical moves [12; 6], while Lorés has shown that the abstract can be read not only as a rhetorical structure but also as a thematic organisation [8, p. 281]. However, these three layers have rarely been integrated,

and the cognitive-pragmatic and FSP apparatus has not been systematically applied to the abstract as a genre, particularly in a cross-linguistic perspective that would include agglutinative languages such as Uzbek, where information status is frequently signalled by morphology and word order rather than by article systems [4; 10]. The aim of this paper is therefore twofold: (1) to characterise the cognitive-pragmatic mechanisms of information structuring operating in the scientific abstract, and (2) to derive a set of principles for studying these mechanisms empirically. The study addresses two questions: How is information structured across the rhetorical moves of the abstract? What methodological principles should guide the corpus-based analysis of this structuring?

Material and Methods. The study adopts a theoretical-analytical, corpus-informed approach. Its analytical framework integrates three layers. The cognitive-pragmatic layer draws on the given–new distinction and its refinements [1; 9; 7]: referents are classified according to their information status (discourse-new versus discourse-old, hearer-new versus hearer-old). The FSP layer applies theme–rheme segmentation and Daneš’s three basic patterns of thematic progression – linear, constant, and derived [2]. The rhetorical layer uses the conventional move structure of the abstract (Purpose, Method, Results, Conclusion) [12; 6].

As material, an illustrative sample of research article abstracts from the humanities and social sciences was examined. The analytical procedure comprised the following steps: segmenting each abstract into clauses (T-units); identifying theme and rheme in each unit; coding referents for information status; typing the thematic progression; and relating the resulting patterns to the rhetorical moves. The analysis presented here is qualitative and illustrative: it describes the mechanisms and their linguistic realisation rather than their frequency. The quantitative distribution of these features across an Uzbek subcorpus, its English parallel translations, and native-English abstracts is reserved for the subsequent full corpus study.

Results. The analysis indicates that information structuring in the abstract is governed by cognitive economy and that the distribution of given and new information is closely aligned with the rhetorical moves.

Distribution of given and new information. Under severe length constraints, the abstract minimises given (background) information and foregrounds new information, especially in the Results move, which typically carries the highest communicative dynamism [3]. The opening Background move establishes a minimal common ground through generalisations and definite reference, whereas the Purpose and Results moves introduce discourse-new content.

Thematic progression. Abstracts characteristically combine linear and constant progression [2]. Consider a typical opening: “Research article abstracts perform a gatekeeping function in academic communication. This function is realised through a conventional rhetorical structure.” Here the rheme of the first clause (the gatekeeping function) becomes the theme of the second – a

linear progression that builds cohesion while advancing new content. Constant progression, by contrast, is frequent in the Method move, where a single thematic referent (the study, the analysis) is maintained across clauses.

Information density and packaging. The abstract compresses multiple propositions into single clauses through nominalisation and passive constructions, yielding high lexical density. This packaging is a cognitive strategy: it allows the writer to present a complex argument as a manageable set of informational units [1, p. 30].

Crucially, each rhetorical move exhibits a characteristic information-structure signature, summarised in Table 1. This mapping constitutes the empirical basis for a principled analysis of the abstract.

Table 1. Information-structure signature of the rhetorical moves of the abstract

Move	Information-structure mechanism	Typical realisation
Background	establishes given / common ground	generalisation, present tense, definite reference
Purpose	introduces discourse-new goal	“this study/paper” as theme; self-mention
Method	constant progression; dense packaging	nominalisation, passive, stable theme
Results	highest new information (peak CD)	presentational structures, end-focus
Conclusion	re-packages new as given	anaphoric summary, evaluation

On the basis of this analysis, five principles for the study of information structuring in abstracts can be formulated: (i) the clause / T-unit should serve as the unit of analysis, with explicit theme–rheme segmentation; (ii) referents should be coded for information status following a given–new taxonomy [9]; (iii) thematic progression should be typed according to Daneš’s patterns [2]; (iv) information density should be measured (lexical density, nominalisation rate); and (v) the information-structure layer should be integrated with the rhetorical move layer, since each move has a distinct signature. For cross-linguistic work, a sixth principle applies: language-specific means of marking information status – word order, morphology, focus particles – must be taken into account.

Discussion. The results suggest that the abstract is a genre in which cognitive economy and relevance directly shape linguistic form. Because processing effort must be minimised for the reader, the writer packages propositions densely and orders them so that the most valuable new information – the findings – receives informational prominence [11; 3]. In this sense the theme–rheme organisation of the abstract is not autonomous but subordinated to its rhetorical purpose: the information-structure choices realise the communicative goals of the moves.

The integration of the three layers – cognitive-pragmatic, FSP, and rhetorical – is the principal theoretical contribution of the study. It shows that an adequate account of the abstract cannot rest on move analysis alone, nor on sentence-level FSP alone, but requires their combination within a cognitive-pragmatic frame. This integrated apparatus has direct implications for cross-linguistic research. In English, information status is signalled largely by article systems and word order; in an agglutinative language such as Uzbek, it is signalled by flexible word order, case marking, and focus constructions [4; 10]. Consequently, the same rhetorical move may be realised through different information-structure means in the two languages, which makes the abstract a productive object for contrastive corpus analysis.

The limitation of the present study is that its findings are qualitative and illustrative. The frequency of each progression pattern, the lexical-density values, and the cross-linguistic differences must be established statistically in a full corpus study before firm generalisations can be drawn.

Conclusion. This paper has argued that information structuring in the scientific abstract is governed by cognitive-pragmatic mechanisms – the packaging of given and new information under the constraints of cognitive economy and relevance – and that these mechanisms are realised through theme–rheme dynamics that are, in turn, subordinated to the rhetorical moves of the genre. By integrating the cognitive-pragmatic, FSP, and rhetorical layers, the study has proposed a set of methodological principles for analysing information structuring in abstracts. This integrated framework provides an analytical apparatus for subsequent comparative corpus research on the abstract across languages, including the contrastive study of Uzbek and English.

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