MULTI-LEVEL CONCEPTUALIZATION OF QUANTITY IN MODERN ENGLISH

Svetlana N. Stepanenko (a)*, Tatiana A. Perelygina (b)
*Corresponding author

(a) Assistant Professor, Belgorod State National Research University, 85 Pobedy Str., Belgorod, 308015, Russia, SStepanenko@bsu.edu.ru
(b) Assistant Professor, Belgorod State National Research University, 85 Pobedy Str., Belgorod, 308015, Russia, perelygina@bsu.edu.ru

Abstract

The present paper deals with the study of the role of language in forming of the content of the concept QUANTITY, which includes basic and particular characteristics. The authors attempt to describe the language means of quantity conceptualization at different levels in modern English. Analysis of the range of quantitative meanings formed by the language units of quantitative semantics, both lexical and grammatical, in the sentence under the influence of additional linguistic factors of quantity conceptualization is carried out. Cognitive and language mechanisms of quantity conceptualization are also described. The study of the ways and means of language conceptualization of quantity is performed in the static and in the dynamic aspects. The latter implies taking into account the moment of the quantitative sense forming in the sentence-utterance. Thus, the paper presents the main findings concerning the specifics of each level in the process of quantity conceptualization. The authors also demonstrate that the concept under analysis is one of the fundamental ones in the person’s conceptual system and its importance is reflected in the system of English language. When studying the processes of language conceptualization of quantity in modern English, the employ the cognitive approach, because it makes possible to evaluate the role of a person in comprehension and forming of the quantitative senses and meanings.

Keywords: Basic characteristic, cognitive mechanisms, concept QUANTITY, language mechanisms, linguistic factor, peculiar characteristic.
1. **Introduction**

The researches, currently being carried out within the fieldwork of cognitive linguistics, are concerned with both, the ontological essence of language as a means of communication and knowledge storage, and the processes of comprehension of the world and gaining knowledge about it by means of language. The active role of a person in the cognitive processes is realized on the basis and with the help of the language. This active role manifests itself in the linguistic meanings and senses forming, as well as in the linguistic forms and units choice, which implies a significant influence of the linguistic units and categories on the processes of conceptualization and categorization.

The strategic aim of conceptualization implies the accumulation of the knowledge about the world by means of the revealing of the new conceptual characteristics of an entity in the course of human life and activities. The objects of conceptualization in this case are the phenomena, events and their features as the common knowledge about the world; and its results are the concepts as the units of the collective knowledge. When the process of conceptualization is viewed from such a perspective, the object of the linguistic analyses is the linguistic units representing this concept and its properties in the language system (Boldyrev, 2017).

The questions connected with the study of the correlations between the language and cognitive structures are central in the research of quantity conceptualization process in modern English.

2. **Problem Statement**

The scientific problem of the present study is connected with the necessity to describe the peculiarities of forming of the knowledge about the quantitative aspects of the world. We execute this by means of the analysis of the linguistic units’ semantics at the different levels in modern English. The relevance of the cognitive approach when studying the processes of language conceptualization of quantity is explained by its capability to assess the role of a person in comprehension and forming of the quantitative senses and meanings taking the cognitive and linguistic mechanisms into account.

3. **Research Questions**

In the present study, we focus on the exploration and clarification of the specific features and the role of the linguistic levels of quantity conceptualization in modern English through identification the language and cognitive mechanisms of quantity conceptualization as well as the additional linguistic factors, participating in the quantity conceptualization process. Investigation of the concept QUANTITY’s content is executed by means of the analysis of the semantics of the language units and categories representing this concept, as well as quantitative senses expressed by these language units in the verbal and cognitive activity.

4. **Purpose of the Study**

The aim we pursue is to study and describe what language levels, i.e. what units and categories are engaged in quantity conceptualization in modern English.
The scientific novelty lies in the complex study of the ways and means of language conceptualization of quantity not only in the static aspect, but also in the dynamic one, i.e. in the moment of the sentence-utterance production. Our hypothesis is that the process the quantitative senses forming by means of the language units at different levels is integrative and multiple-factor. So at each level the process of quantity conceptualization has its own specification dependent on the level peculiarities from the viewpoint of its participation in the world conceptualization, the language and cognitive mechanisms of conceptualization and additional linguistic factors influencing this or that quantitative sense forming.

5. Research Methods

To execute the research we employ conceptual analysis (Kubryakova, 1992) and conceptual-representative analysis (Besedina, 2006) as commonly used methods of cognitive research in linguistics. The implementation of the first method, allows identifying the structure of knowledge, standing behind the language means representing it (Besedina, Shemaeva, Borisovskaya, & Zimovets, 2015). So, it is aimed at detecting and specification of the content of the concept under study – conceptual characteristics of QUANTITY – by means of linguistic units and categories representing the concept QUANTITY meanings, their dictionary definitions and real context of use. Adopting a fresh perspective, we also turn to conceptual-representative analysis, as a newly derived method of cognitive researches in linguistics, which implies further development of the conceptual analysis method and aims at investigating a concept’s content and the role of each linguistic level in its representation (Besedina, Stepanenko, Fedotova, & Sherstyokova, 2014). Thus, the analysis is performed in two directions: from linguistic content to conceptual and vice versa.

6. Findings

6.1. Concept QUANTITY as Conceptual System Entity

There are some common ideas in understanding of a concept in the framework of cognitive linguistics. They are connected with the recognition that a concept is an ideal, abstract unit, a sense a person operates with it in the process of speech and mental activity, a quantum of structured knowledge (Boldyrev, 2014); its flexible structure being in constant development represents the results of a human cognition and is used in the speech production (Besedina et al., 2014).

QUANTITY is an abstract concept: it does not have a denotation that exists as a separate subject of objective reality, while its connection with ostensiveness is not lost completely, because there is always a proportion of perceptivity in an abstract name (Kubryakova & Iriskhanova, 2007).

The content of the concept QUANTITY in modern English is represented by a set of its characteristics that differ in the degree of abstractness. Its most abstract and regular characteristics are “discreteness” and “non-discreteness”, that is why they are regarded as basic (Stepanenko, 2017b). Due to the dynamic nature and flexible structure of the concept QUANTITY, its content can be enriched by the new conceptual characteristics reflecting the objective and subjective quantitative features of objects and phenomena. These new, additional characteristics may differ in the degree of abstraction, but, as a rule, they specify the basic characteristics in the content of QUANTITY, which gives reasoning to qualify
them as particular (Stepanenko, 2017b). The replenishment of the concept QUANTITY's content by the new conceptual characteristics leads to its volume increase, which reflects the specifics of human knowledge. Consequently, the structure of the QUANTITY, as an operational unit of objectified knowledge about the quantitative characteristics of objects and phenomena of the objective world, is not rigid, and the mutual arrangement of its conceptual characteristics – basic and particular ones – does not have a strict sequence and is individual in nature (depends on the conditions of this concept forming).

With the generalities mentioned above and bearing in mind that any concept exists in two modes, i.e. as a knowledge unit and as a knowledge structure (verbalized concept) indexed in linguistic forms (Kubryakova & Demyankov, 2007), we can symbolically sketch the concept Quantity (Figure 01).

![Concept Quantity](https://example.com/concept_quantity.png)

**Figure 01.** Concept Quantity

Further, we address the linguistic forms indexing Quantity as a knowledge structure to theoretically explain and practically show the process of quantity conceptualization at different levels in modern English.

### 6.2. Levels and Mechanisms of Conceptualization of Quantity in Modern English

As a person does not reflect the world in language but designs it in the consciousness by means of language (Boldyrev, 2015a, 2015c, 2016), and as language refers to concepts in the mind of the speaker rather than to objects in the external world (Evans & Green, 2006), it is possible to conclude that language as one of a person’s cognitive abilities provides entry of data about the quantitative characteristics of the objective world in the conceptual system of the person. It also helps to generalize all "quantitative" information entering by means of the other channels. In other words, language provides access to QUANTITY concept, irrespective of the way of its forming, at the same time language itself is only one of the ways of its forming in human consciousness. At the same time, language creates variable ways of representation of quantity (Stepanenko, 2017a). We have found out that QUANTITY being a basic concept of the conceptual system is widely represented in the system of English language: both at the lexical and grammatical levels.
Lexical Conceptualization of Quantity

Lexis, being directly connected with the person’s objective world, with his or her sociohistorical experience and cultural and national peculiarities, reflects a naive picture of the world, i.e. natural rubrication of the experience (Panasenko, 2015); ontology of the world and results of its cognition: knowledge of concrete objects, phenomena, their characteristics and categories (Boldyrev, 2007). Thus, the specifics of quantity conceptualization at the lexical level is that the person comprehends quantitative characteristics of the world in its single objects and concepts, i.e. quantity conceptualization process at the lexical level is connected with forming of the percepts and knowledge about the quantitative characteristics of the natural and inner world. The quantitative characteristics of the objects are those having the quantitative measures of calculation, such as number of objects, measures of space (length, width, height, volume) and physical parameters (growth, weight, age), etc. Quantitative lexicon reflects a certain part of the picture of the world, and conceptualization of quantity at this level of language is connected with ability of a person to distinguish this or that actual at the moment quantitative characteristic of an object or a phenomenon of reality.

One of the features of conceptualization at the lexical level, which is very important for the present research, is connected with two functions of language: coding and manipulating (Pavilyonis, 1983). Thanks to the first one, language is able to symbolically fix QUANTITY in the conceptual system. Thanks to the latter, language can build this concept in the conceptual system. This allows us to distinguish two aspects of the concept QUANTITY: 1) conditional, i.e. a fixed sense of the corresponding expression; 2) practical, i.e. descriptive sense, assuming construction of a certain concept of the perceived object in the conceptual system.

The noted specifics of the lexical conceptualization lets us consider nomination of the quantity and quantitative characteristics of various objects, attributes and actions as the language mechanism of quantity conceptualization allowing the use of lexical units of different parts of speech. We also take into account the cognitive mechanisms underlying the conceptualization process. Cognitive mechanism is understood as a way of mental modification, modelling, and configuration of conceptual structures (Maslova, 2015). The cognitive mechanisms of quantitative meanings forming at the lexical level are profiling as a cognitive process of distinguishing of major and minor, i.e. a profile and a baseline (Langacker, 1991), afi gure and a ground (Talmy, 1985) and focusing as a cognitive process of highlighting of some components of a cognitive context irrespective of their importance (Boldyrev, 2004).

Here we come to the description of the linguistic factors of lexical conceptualization of quantity in modern English, which add to the concretization of the generalized quantitative senses in the sentence-utterance. The linguistic factors that influence the process of quantitative sense forming at the level of lexis are semantic, which presupposes taking into consideration the quantitative semantics of lexical units, involved in the process of conceptualization, and contextual, which is connected with the context of the whole sentence, i.e. the whole complex of the elements of the sentence-utterance creating conditions for these or those quantitative meanings forming.

Further, we are going to demonstrate the process of QUANTITY conceptualization at the level of lexis practically.
Lexical means of quantity conceptualization in modern English are numerous and include nouns, adjectives, verbs, pronouns and adverbs. Here, we attempt to show the principles of the analysis of the language means involved in process of lexical conceptualization of quantity on the example of nouns.

It is possible to conditionally divide the nouns of quantitative semantics into three groups: 1) the quantitative nouns like a pair, a couple, a duet, etc.; 2) the nouns denoting some period of time like a week, a fortnight, a month, a year, etc.; 3) the nouns denoting conventional units of measurement like a mile, a yard, a pound, a degree, etc.

The nouns of the second group, for example, belong to the means of lexical conceptualization, which form a quantitative sense "exact quantity" within the sentence-utterance, and this is reflected in the dictionary definitions. For example, decade – a period of ten years (Hornby, 1992). The given definition illustrates that the nouns of this group denote the period of a certain extent, i.e. the time span having exact duration.

To confirm this we will give an example of the real use of the nouns of this group, e.g. …Bishop Aringarosa had spent the last decade of his life spreading the message of “God’s Work” (Brown, 2003). Here, the action expressed by a verb-predicate occupies a time span equal to ten days. Such understanding of quantity takes place due to profiling of the basic characteristic "discreteness" in the content of the concept QUANTITY. In this case, it is of the exact nature. Under the influence of the contextual factor, the nouns denoting a period of time form a number of quantitative senses, such as "total duration of a time span", "period of duration of an action", "frequency of an action performance".

Now we will illustrate in details, for example, the specifics of the sense "frequency of an action performance". This quantitative sense is formed under the influence of the contextual factor implying the use of a noun, denoting a period of time in combinations designed on models Num times a N; every NumNpl. Position N and Npl is occupied by the noun denoting a period of time, e.g. …Langdon had been stunned to learn the planet Venus traced a perfect pentacle across the ecliptic sky every eight years (Brown, 2003). In the given example, the action, expressed by a verb-predicate, is performed with a frequency of every eight years. The particular conceptual characteristic "frequency" is at the heart of this sense forming. It actualizes in the content of the concept QUANTITY as a result of focusing under the influence of the contextual factor. In fact, it specifies the basic characteristic "discreteness", which in this case is of the exact character.

The sense "frequency of an action performance" can have inexact character as well. It gets the approximate nature, for example, when the contextual factor implies the use of a noun, denoting a period of time, in combinations designed on the model Num1 or Num2/Num1 - Num2/Num1, Num2 times a N, e.g. Slim comes in sometimes two, three times a night (Steinbeck, n.d.). In the given example, the noun denoting a period of time convey quantitative meaning "frequency of an action performance". However, in this case it is of the approximate nature which is caused by the contextual factor. The particular conceptual characteristics "frequency" and "approximateness" focusing in the content of the concept QUANTITY are at the heart of this quantitative sense forming. Their actualization results in the inexact nature of the basic characteristic "discreteness" profiled in the content of the concept QUANTITY.

The results of the analysis of all the lexical means of quantity conceptualization we have had at our disposal are summed up in Table 01.
Table 01. Results of Lexical Means of Quantity Conceptualization Analysis

<table>
<thead>
<tr>
<th>Language means of quantity conceptualization</th>
<th>Language mechanism of quantity sense forming</th>
<th>Cognitive mechanism of quantity conceptualization</th>
<th>Additional linguistic factor of quantity conceptualization</th>
<th>Characteristic actualized in the content of the concept QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nouns</td>
<td>Nomination of quantity</td>
<td>Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, additivity, periodicity, frequency, partitiveness, parametricity</td>
</tr>
<tr>
<td>Adjectives</td>
<td>Nomination of quantity</td>
<td>Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, additivity, parametricity</td>
</tr>
<tr>
<td>Verbs</td>
<td>Nomination of quantity</td>
<td>Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, frequency</td>
</tr>
<tr>
<td>Pronouns</td>
<td>Nomination of quantity</td>
<td>Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, additivity, repetitiveness</td>
</tr>
<tr>
<td>Adverbs</td>
<td>Nomination of quantity</td>
<td>Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, duality, additivity, totality, singularity</td>
</tr>
</tbody>
</table>

- **Grammatical Conceptualization of Quantity**

Peculiarities of quantity conceptualization by means of grammar are connected with the fact that in grammar (in morphology, word formation and syntax) the most important part of conceptual information of different level of complexity, the most essential (in terms of language) quantitative senses are fixed. In its grammatical categories language fixes the outside world characteristics, which are the most regular and less subjected to the influence of these or those factors. Due to this, they are expressed in language in a greater degree of obligation and regularity. In general, grammatical categories determine how the knowledge about the world as it is, is schematized in accordance with the rules and principals of verbal communication (Boldyrev, 2015b).

Morphology, as it is widely recognized, conceptualizes the world in the strictly set parameters, allowing variability only in the content of these parameters (see, for instance, (Besedina, 2015)). Originality of conceptualization at the level of morphology is manifested in its ability to provide the conceptual framework for the lexically expressed conceptual material and, in a certain way, it serves lexis. Morphological conceptualization of quantity is carried out at the level of lexico-grammatical word classes’ semantics. It is fulfilled by means of morphological forms of number of nouns and degrees of comparison of adjectives and adverbs. The cognitive mechanisms, which serve the process of morphological conceptualization of quantity, are those of abstraction and profiling. Abstraction is a process of mental extraction of the most essential content-related characteristics and connections and abstraction from other, particular characteristics and connections in the concept’s content (Besedina, 2017). Thus, the most generalized, i.e. basic characteristics “discreteness” and “non-discreteness” in the
concept QUANTITY’s content are extracted by means of abstraction and other, additional, i.e. particular characteristics in its content – by means of profiling.

At the level of word-building the language mechanisms of quantity conceptualization are those word-building formants, which have the quantitative semantics. As it is known, the function of the word-building categories in the processes of the world conceptualization consists in their orientation on systematization of different aspects of human experience. In this case the cognitive mechanisms, serving the quantitative senses forming, is concretization, connected with the stuffing of the schematized cognitive picture of some object with the particular signs and properties. Concretization, as one of the ways of conceptual content formatting at the level of word-building, is based on the nature of word-building formants. On the one hand, they concretize the categories of thingness, procedurenness and attributeness, which are built in the corresponding parts of speech; on the other hand, they render concrete the meanings of the grammar categories representing these parts of speech. In other words, word-building formants in the course of generation of a derivative promote the emergence of the quantitative meaning in its semantics.

At the level of syntax the coordination of encyclopedic and language knowledge about the quantitative characteristics becomes evident. If lexis participates in conceptualization of a certain part of the picture of the world and structures the conceptual contents, the morphology provides a net, a frameworkfor the conceptual material expressed lexically (Besedina, 2006, 2018), the syntax promotes conceptualization of the interconnected elements of the picture of the world. To put it otherwise, at the level of syntax the meanings, learnt as a result of realization of the connections, relations and combination of certain lexemes, are revealed (Furs, 2017). This feature defines the specifics of syntactic conceptualization of quantity. The language mechanism of conceptualization of quantity at the level of syntax is the syntactic constructions having the system quantitative meaning. The cognitive mechanisms of the quantitative meanings forming at the level of syntax are those of profiling and focusing.

The linguistic factors that influence the process of quantitative sense forming at the level of lexis are semantic, which presupposes taking into consideration the quantitative semantics of lexical units, involved in conceptualization, and contextual, which is connected with the context of the whole sentence. As far as the additional linguistic factors as the conditions providing the process of quantitative meanings forming at the level of grammar is concerned, they are semantic and contextual ones. In some cases, the sense-forming role belongs to the syntactic factor. Its influence is determined by structure of the sentence-utterance. The role of the listed factors varies at each sublevel, involved in process of grammatical conceptualization of quantity.

Thus, the language means of different levels perform their own specific functions in the course of quantity conceptualization. That is why they do not duplicate each other. In other words, conceptualization of quantity has its peculiar character at each language level. Lexis and grammar as two main subsystems of language, structure conceptual contents as follows: lexis provides its transfer, and grammar provides the organization of a framework of forms in which this contents pours out. This is the fact that allows us to consider the process of quantity conceptualization in each case as lexical conceptualization and grammatical (morphological, word-building and syntactic) conceptualization.
Further, we are going to illustrate the process of QUANTITY conceptualization at the level of grammar both in static and dynamic aspects.

Grammatical means of conceptualization of quantity in modern English are morphological categories of number of nouns and degrees of comparison of adjectives and adverbs, word-building formants of quantitative semantics, syntactic constructions with systemic quantitative meaning.

Further we will track the features of grammatical conceptualization of quantity at the syntactic level, for example, where quantitative semantics of the constructions *used to /would + Infinitive; be /get used to + Gerund* act as the language mechanism of quantitative senses forming.

It is possible to identify their quantitative semantics addressing lexicographic sources: *used to + Infinitive* – *done regularly in the past but is not done now* (Sinclair, 1990); *would + Infinitive* – *often done; be /get used to + Gerund – accustomed to; familiar with* (Hornby, 1992). Considering the given definitions, it is possible to conclude that these constructions have systemic quantitative meaning and express the generalized sense "inexact quantity".

The constructions formed on the above-mentioned models represent the language mechanism, forming a number of quantitative senses within the sentence-utterance under the influence of the contextual factor, such as "action regularly repeating in the past", "action often repeating in the past", "habitual action in the past".

Now we will illustrate the idea expressed, analyzing a number of real examples of these syntactic constructions use.

The sense "action regularly repeating in the past", for example, is conveyed by the syntactic construction *used to + Infinitive* under the influence of the contextual factor implying the use of the adverbials, indicating the frequency of the action performance, within the sentence-utterance, e.g. *I used to pick up five dollars now and then riding guard* (Short, 1971).

The sense "action often repeating in the past" is formed by means of the syntactic construction *would + Infinitive*, e.g. *Sometimes I’d look around the room and stare at all those simple broken limbs in envy* (Johnson, 1996). The example illustrates that the adverbial, indicating the actions performance frequency, represents a sense-forming element of the context.

The given real contexts of the use of the syntactic constructions having the systemic quantitative meaning allow considering them synonymous as they are generally used to express the actions repeating in the past. The base for the forming of the mentions senses is formed by the particular characteristics "repetitiveness" and "frequency", which are focused in the content of the concept QUANTITY in the background of the basic characteristic "discreteness". This basic characteristic is activated due to the cognitive mechanism of profiling.

The results of the analysis of all the grammatical means of quantity conceptualization we have had at our disposal are summed up in Table 02.
Table 02. Results of Grammatical Means of Quantity Conceptualization Analysis

<table>
<thead>
<tr>
<th>Language means of quantity conceptualization</th>
<th>Language mechanism of quantity sense forming</th>
<th>Cognitive mechanism of quantity conceptualization</th>
<th>Additional linguistic factor of quantity conceptualization</th>
<th>Characteristic actualized in the content of the concept QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Nouns Forms</td>
<td>Abstraction Profiling</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, separability, sortness, fractionality, pairedness, additivity, spatiality, totality, collectiveness, portionness, partitiveness, indefiniteness, singularity</td>
<td></td>
</tr>
<tr>
<td>Degrees of Comparison of Adjectives and Adverbs Forms</td>
<td>Quantitative semantics</td>
<td>Abstraction Profiling</td>
<td>Non-discreteness, greater degree of attribute intensity, oppositeness, inequality, graduality, the greatest degree of attribute intensity, prominence, irrelatively great degree of attribute</td>
<td></td>
</tr>
<tr>
<td>Word-Building Formants</td>
<td>Concretization</td>
<td>Semantic Contextual</td>
<td>Discreteness, non-discreteness, singularity, additivity, repetitiveness, frequency, indefiniteness, recursiveness, n-foldness, parametricity</td>
<td></td>
</tr>
<tr>
<td>Syntactical Constructions</td>
<td>Profiling Focusing</td>
<td>Semantic Contextual</td>
<td>Discreteness, frequency, repetitiveness, indefiniteness</td>
<td></td>
</tr>
</tbody>
</table>

Thus, in this article we have presented a cognitive overview of language conceptualization of quantity at different levels in modern English. The findings of our research reveal key-aspects regarding the language conceptualization of quantity. In our approach, we have laid special emphasis on the fact that quantity is an entity of a conceptual character, turned to the units of ontological order, on the one hand, and to a language system, on the other hand. The quantity presented in language appears to be already undergone the human perception, i.e. this is the quantity conceptualized by means of a certain language. We have shown that the process the quantitative senses forming at different language levels is complex and involves many factors, which should be taken into account to understand the essence of quantity conceptualization.

7. Conclusion

Existence of the entire system of various means representing the concept QUANTITY at different levels in modern English confirms its importance both for the conceptual system, in general, and for the forming of the conceptual space of a language, in particular. We have also demonstrated that QUANTITY is one of the most important concepts in the human’s conceptual system, as the more significant a certain
concept for the human cognition is, the more complex system of language means and forms it can be expressed by.

A cognitive perspective on quantity conceptualization in modern English, appears to demonstrate that the language conceptualization of quantity leads to the forming of language knowledge of two types: 1) verbalized knowledge of quantity as anthological substance reflected in the lexical meanings of the language units, i.e. the knowledge about concept QUANTITY itself and 2) knowledge of language forms, their meanings and categories which reflect the specifics of the language organization and representation of the knowledge about quantity in the language. Correspondingly the knowledge about quantity is structured and comprehended in the language as the notion about quantity in general, the notion about quantitative characteristics of the group of subjects and the notion about quantitative characteristics of static and dynamic features.

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