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COGNITIVE MODELLING
OF *EARTH / GROUND* CONCEPTUAL DUPLEX
IN THE ENGLISH WORLDVIEW

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This article is performed within cognitive linguistics and reveals the type of the concept as the conceptual duplex. Its conceptual space is formed by two (or more) doublet concepts and verbalised by partially overlapping names the concepts. The properties of the conceptual duplex are represented with the example of the concept EARTH / GROUND. Cognitive modelling of lexical polysemy defines the meanings of the polysemantic nouns *earth* and *ground*. These meanings are organised within the conceptual network and distributed between the conceptual domains. The conceptual duplex EARTH / GROUND forms a conceptual base of the concept resting on the internal forms of the two names of the concept "soil, land surface" which constitute its integral and differential parts. The integral part is represented by the meanings: "dry land", "land surface", "soil", "country", "territory" which are common for EARTH and GROUND. Differential parts EARTH / GROUND are represented by differential meanings.

Key words: concept EARTH / GROUND, conceptual domain, conceptual network, lexical meaning, polysemy, sense, synonymy.

Давиденко І.В. Когнітивне моделювання дублетного концепта ЗЕМЛЯ – EARTH / GROUND в англійській мовній картині світу. У статті, яку виконано у руслі когнітивної лінгвістики, виокремлюється дублетний тип концепту, чий поняттєвий простір утворено двома (і більш) поняттями – дублетами і вербалізовано іменами кожного з них, які частково перетинаються. Властивості дублетності розкриваються на прикладі концепту ЗЕМЛЯ – EARTH / GROUND. За допомогою когнітивного моделювання лексичної полісемії виводяться значення полісемантичних іменників *earth* і *ground*. Ці значення упорядковуються за моделлю концептуальної мережі та розподіляються між поняттєвими доменами. Поняттєву основу концепту становить ідеографічний дублет EARTH / GROUND у відповідності до внутрішніх форм двох імен концепту "ґрунт, поверхня землі", які утворюють його інтегральну й диференційні зони. Інтегральна зона представлена значеннями "суша", " поверхня землі ", "ґрунт", "країна", "територія", спільними для лексем *earth* і *ground*. Диференційні зони EARTH / GROUND представлені відмінними значеннями цих лексем.

Ключові слова: концепт ЗЕМЛЯ, концептуальна мережа, концептуальний домен, лексичне значення, лексико-семантичний варіант, полісемія, синонімія.

Давыденко И.В. Когнитивное моделирование дублетного концепта ЗЕМЛЯ – EARTH / GROUND в английской языковой картине мира. В статье, выполненной в русле когнитивной лингвистики, выделяется дублетный тип концепта, понятийное пространство которого образовано двумя (и более) понятиями – дублетами, и вербализовано частично пересекающимися именами каждого из них. Свойства дублетности раскрываются на примере концепта ЗЕМЛЯ – EARTH / GROUND. С помощью когнитивного моделирования лексической полисемии выводятся значения полисемантических существительных *earth* и *ground*. Эти значения упорядочиваются по модели концептуальной сети и распределяются между понятийными доменами. Понятийную основу концепта составляет идеографический дублет EARTH / GROUND, соответствующий внутренним формам двух имен концепта "почва, поверхность земли", которые образуют его интегральную и дифференциальные зоны. Интегральная зона представлена значениями "суша", "поверхность земли", "почва", "страна", "территория", общими для лексем *earth* и *ground*. Дифференциальные зоны EARTH / GROUND, представлены отличными значениями этих лексем.

Ключевые слова: концепт ЗЕМЛЯ, концептуальная сеть, концептуальный домен, лексическое значение, лексико-семантический вариант, полисемия, синонимия.

The object of the study is EARTH / GROUND conceptual duplex in the English worldview. The purpose of the study is to define the conceptual duplex, and to suggest methods of the analysis of this type of concepts. The material of the study was derived from English-English dictionaries, thesaurus dictionaries, encyclopedias, and texts in the English language of XV– XXI centuries.

The latest studies of lexical concepts with several names (for example, concept FAITH / TRUST/ BELIEF [10], or concept HOUSE / HOME [5; 9]) express the idea about the absence of any certain correspondence between the linguistic symbol (or a lexeme) and the concept: a concept can be represented by various lexemes, and one lexeme can appeal to various concepts. So, S.A. Zhabotyns'ka suggests a specific type of concepts – the **conceptual duplex** based on ideographic duplets which have an integral part and differential parts, and are represented in the language by the names of this concept.

This article is aimed to analyze a lexical conceptual duplex constituted by various senses of the polisemous nouns – names of the concept. These methods of analysis are to solve the current problem of the cognitive linguistics – the correspondence between a lexeme and its meanings, and to determine the conceptual duplex characteristics.

The conceptual duplex EARTH / GROUND in the English language is represented by the following lexemes-synonyms: *earth, ground, land, soil*. Their meanings vary from 12 and 12 for *earth* and *ground* to 6-2 for any other synonym; the total meaning of *earth* and *ground* includes all the meanings of their synonyms, this confirms the idea that both polysemous lexemes – *earth* and *ground* – are the names of the concept EARTH / GROUND (compare: "the name of a concept is the lexeme representing the meaning of the concept up to the highest degree (in the most complete way)" [1, p. 35]).

The methods of linguistic and cognitive analyses of the conceptual duplex EARTH / GROUND include determination of the senses of the polysemous lexemes – *earth* and *ground,* which partially synonymous character results in the formation of the conceptual duplex.

The **etymological layer** of the concept EARTH / GROUND is formed by the concepts "soil" and "land

surface",which can be found in the etymons of the lexemes *earth* and *ground: earth (n.)* – O.E. *eorpe* "ground, soil, dry land", "the material world", from P.Gmc. *ertho* "ground", from PIE root *er* – "earth, ground"; O.E. *grund* "bottom, foundation, ground, surface of the earth", "bottom of the sea", from P.Gmc. *grundus* "deep place" [3].

The conceptual modelling of the conceptual duplex EARTH / GROUND, based on the senses of its names – lexemes *earth* and *ground,* is fulfilled in three stages. The author of this conceptual modeling is S.A. Zhabotyns'ka [6–8].

At the first stage the author determines meanings of *earth (n.)* and *ground (n.)* using their lexical meanings and builds up the conceptual nets of polysemy of these lexemes [2012, 2013]. The conceptual model is stratified into frames. Frames should be considered as tools of mentality which provide the arrangement of the information [6]. All the propositions, consisted of the logical subject and predicate, are thematically grouped and serve for building frame-nets of certain domains. The conceptual networks are built up using the basic frames [6].

As the following step, one should identify the domains for the senses within the networks of polysemy. Domain is a structure of some background knowledge [12], a cognitive entity, mental experience, representational space or a concept or conceptual complex [14; 15, p. 147].

The analysis aims to compare the networks of polysemy to the identified domains, which are the space of realization for the lexical meanings of *earth (n.)* and *ground (n.)* lexemes, and finding their integral and differential meanings.

The conceptual duplex EARTH / GROUND is based on integral and differential senses of *earth (n.)* and *ground (n.)* lexemes.

According to dictionaries [11, 13, 16-19], *earth (n.)* has 12 lexical meanings:
1. "the world we live in, the **globe**"; 2. "the third **planet** from the Sun"; 3. "the loose soft material that makes up a large part of the surface of the ground and consists of disintegrated rock particles, mould, clay, etc; **soil**"; 4. "the dry **surface** of this planet as distinguished from sea or sky"; 5. "worldly or temporal **matters** as opposed to the concerns of the spirit"; 6. "the **inhabitants** of this planet"; 7. "the **hole** in which some

species of burrowing animals, esp foxes, live"; 8. "**dust, flesh**"; 9. "the **country**"; 10. "a **connection** between an electrical circuit or device and the earth, which is at zero potential; a terminal to which this connection is made"; 11. "(Chemistry) <u>rare earth</u>, <u>alkaline earth</u>"; 12. (Astrology) of or relating to a group of three signs of the zodiac, Taurus, Virgo, and Capricorn.

These senses have their own connections / ties which can be reproduced with the help of basic frames propositions [4]. The integration of these schemes helps to build up the conceptual network of polysemy for *earth (n.)* lexeme, which profiles its senses within **six domains**:

(1) domain PLACE / LOCATION: "the world we live in, the **globe**"; the dry **surface** of this planet as distinguished from sea or sky"; "the **hole** in which some species of burrowing animals, esp foxes, live"; "the **country**";

(2) domain UNIVERSE / SPACE: "the third **planet** from the Sun";

(3) domain GEOLOGICAL ENVIRONMENT / LITHOSPHERE: "the loose soft material that makes up a large part of the surface of the ground and consists of disintegrated rock particles, mould, clay, etc; **soil**"; "(Chemistry) <u>rare earth</u>, <u>alkaline earth</u>";

(4) domain MANKIND / HUMANITY: "worldly or temporal **matters** as opposed to the concerns of the spirit"; "the **inhabitants** of this planet";

(5) domain ELECTRICITY: "a **connection** between an electrical circuit or device and the earth, which is at zero potential; a terminal to which this connection is made";

(6) domain ASTROLOGY: (Astrology) of or relating to a group of three signs of the zodiac, Taurus, Virgo, and Capricorn.

According to dictionaries [11; 13; 16-19], *ground (n.)* has 12 lexical senses:

1. "the land **surface**"; 2. "earth or soil"; 3. "(plural) the **land around a dwelling** house or other building", "country"; 4. "(sometimes plural) an **area of land** given over to a purpose (football ground"; 5. "**matter** for consideration or debate; **field of research** or inquiry"; 6. "a position or viewpoint, as in an **argument** or controversy"; 7. position or **advantage**, as in a subject or competition"; 8. "(often plural) **reason**"; 9. "the prepared **surface** applied to the support of a painting";

10. "the **first coat of paint** applied to a surface"; 11. "the **bottom** of a river or the sea"; 12. "(plural) sediment or dregs, esp from coffee"; 13. "(mainly British) the floor of a room"; 14. "(cricket) the area from the popping crease back past the stumps, in which a batsman may legally stand"; 15. "a mesh or network supporting the main pattern of a piece of lace"; 16. "(electrical, US & Canadian) a connection between an electrical circuit or device and the earth, which is at zero potential, also called: earth; a terminal to which this connection is made".

These senses have their own hierarchy and can be reproduced with the help of propositions of the basic frames and the conceptual network of polysemy within eight domains:

(1) domain PLACE / LOCATION: "the land **surface**"; "(plural) the **land around a dwelling** house or other building"; "country"; "(sometimes plural) an **area of land** given over to a purpose (football ground"; "(mainly British) the floor of a room";

(2) domain GEOLOGICAL ENVIRONMENT / LITHOSPHERE: "earth or soil"; "the **bottom** of a river or the sea";

(3) domain FINE ARTS: "the prepared **surface** applied to the support of a painting"; "the **first coat of paint** applied to a surface";

(4) domain COMMUNICATORY PHENOMENA: "**matter** for consideration or debate; **field of research** or inquiry"; "a position or viewpoint, as in an **argument** or controversy"; position or **advantage**, as in a subject or competition"; "(often plural) **reason**";

(5) domain SPORTS: "(cricket) the area from the popping crease back past the stumps, in which a batsman may legally stand";

(6) domain ELECTRICITY: "(electrical, US & Canadian) a connection between an electrical circuit or device and the earth, which is at zero potential, also called: earth; a terminal to which this connection is made";

(7) domain SEWING / NEEDLEWORK: "a mesh or network supporting the main pattern of a piece of lace";

(8) domain FOOD PROCESSING: "(plural) sediment or dregs, esp from coffee".

So, the polisemous nouns *earth* and *ground* represent the EARTH / GROUND concept (within the domains PLACE / LOCATION, UNIVERSE / SPACE, GEOLOGICAL ENVIRONMENT /

LITHOSPHERE and MANKIND / HUMANITY) (see picture 1) and other concepts (within other domains, which their senses profile in). Such domains as ASTROLOGY, ELECTRICITY, FINE ARTS, COMMUNICATORY PHENOMENA, SPORTS, SEWING / NEEDLEWORK and FOOD PROCESSING are not relevant for the EARTH / GROUND concept. The integral domains for the polisemous nouns *earth* and *ground* are: PLACE / LOCATION, GEOLOGICAL ENVIRONMENT / LITHOSPHERE, ELECTRICITY; this confirms their synonymy, partial exchangeability and ability to supplement each other.

The integral senses for the both lexemes – *earth* and *ground* – within the domains PLACE / LOCATION, GEOLOGICAL ENVIRONMENT /
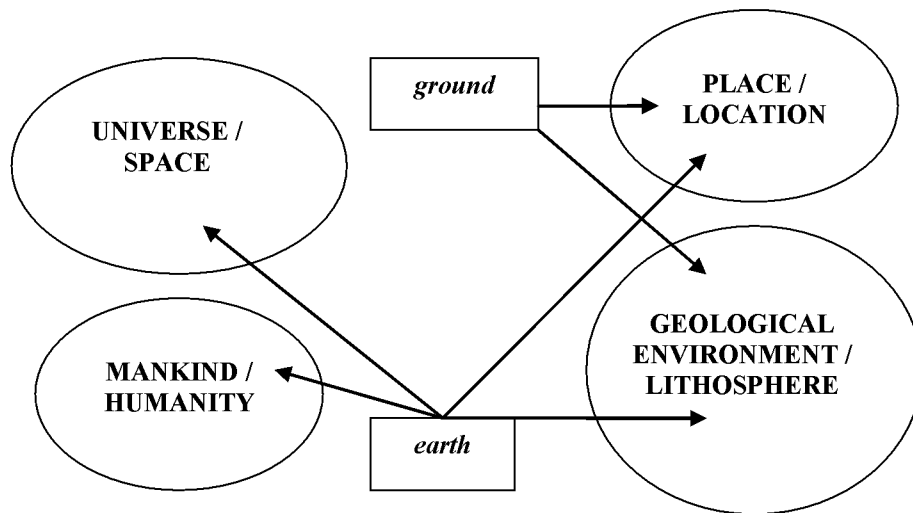
LITHOSPHERE are: 1. "place of living"; 2. "dry surface of this planet"; 3. "country"; 4. "soil"; and within the domain ELECTRICITY are: a connection between an electrical circuit or device and the earth, which is at zero potential, also called: earth; a terminal to which this connection is made".

Multiple senses of the two lexemes – *earth* and *ground* – are blended together within a model of the EARTH / GROUND conceptual duplex. This model has an integral part and two differential parts. The **integral part** is constituted by the senses "place of living"; "dry surface of this planet"; "country", "soil" shared by the lexemes *earth* and *ground*. The differential parts are formed by the senses which are specific for each lexeme (see table 1 and picture 1).

Table 1

**EARTH / GROUND conceptual duplex:
integral and differential parts**

EARTH / GROUND conceptual duplex		
EARTH differential part	**EARTH / GROUND integral part**	**GROUND differential part**
"the world we live in, the **globe**"	"place of living"	"(plural) the land around a dwelling house or other building", "country";
"the **hole** in which some species of burrowing animals, esp foxes, live"	"dry surface of this planet"	"(sometimes plural) an area of land given over to a purpose (football ground";
"the third **planet** from the Sun"	"country"	"(mainly British) the floor of a room"
"(Chemistry) <u>rare earth, alkaline earth</u>"	"soil"	"the bottom of a river or the sea"
"worldly or temporal **matters** as opposed to the concerns of the spirit"		
"the **inhabitants** of this planet"		

Picture 1. EARTH / GROUND conceptual duplex within domains

In the world view there is a special type of concepts, the conceptual duplex, which semantic space is formed by two or more doublets, and is verbalised by the nouns, representing each concept, which senses have the integral part [2]. The EARTH / GROUND concept is a conceptual duplex in the English world view. This concept is a complex mental essence, appealed to by its two names – lexemes *earth* and *ground* and synonyms relevant for each sense of these lexemes.

The suggested methods of analysis of conceptual doublets are based on the research in the cognitive polysemy, and has good prospects for future conceptual researches within other languages.

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