

Situating metaphors: A corpus-based, cognitive approach to spatial metaphors in specialized discourse

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Goal:

'Space', 'place' and 'location' are not only objects of study but also central theoretical concepts in the geo-sciences. Yet, different sub-disciplines in geography **construe these concepts** differently (see example box below). At the same time, spatial concepts are central in fields such as linguistics to model interaction, variation and change in language. **It is only a full understanding of the underlying (often relatively abstract concept) that allows us to meaningfully apply them across disciplines.** Typically, scientists make use of metaphor to conceptualise relatively abstract 'target domains' such as a THEORY in terms of more concrete notions or 'source domains'. We use a corpus of abstracts from the geo-sciences and metaphorical pattern analysis to investigate the metaphorical base for the construction of the relatively abstract notions of SPACE, PLACE and LOCATION.

Research Questions:

The umbrella question of how geographic concepts can be automatically identified, formally described and used in further linguistic discussions is disentangled to the following set of research questions:

- 1) Which **SPACE, PLACE and LOCATION concepts can be automatically identified** in a corpus of geographic publications?
- 2) What does a cognitive linguistic approach **to SPACE and PLACE in geography** reveal about their **underlying metaphorical structuring**?
- 3) Can productive **SPACE metaphors** from geography lead to **novel insights on how spatial linguistic processes can be approached**?

Theoretical Framework

Cognitive Metaphors – *Metaphors we think by*

- Metaphor is a tool for "understanding and experiencing one kind of thing in terms of another" (Lakoff & Johnson, 1980: 5)
- Novel metaphors make coherent certain aspects of (new) experiences, thus have the power of defining reality
- Scientific discourse – epistemological value: history of science as a "passing and shifting of metaphors" (Giles, 2008: 2)

SPACE as a Source and Target Domain

SD: diffusion/spread of language change across slippery space to sticky places Meyerhoff & Niedzielski (2003: 545) < Markusen (1996)

TD: In the modeling and simulation world, *space and time are powerful allies ...* (AAG, 2011, 1201101634)

Methodological Approach

Scientific Geographic Corpus

Three years (2010-12) of abstracts submitted for the annual Meetings of the *American Association of Geographers* (AAG). Corpus: only titles and the body of the abstract (no keywords included)

Year	2010	2011	2012	Total
No. of words	1,226,695	1,135,503	1,339,898	3,702,096

Table 1: AAG Abstracts corpus – composition

The *AAG Abstracts* are copyright to the Association of American Geographers; pre-processed data courtesy of André Skupin.

Automatic Metaphor Identification

Metaphorical Pattern Analysis (MPA)

A metaphorical pattern "... is a multi-word expression from a given source domain (SD) into which one or more specific lexical items from a given target domain (TD) have been inserted." Stefanowitsch (2006: 66)

Examples:

- 1: "[...] place is defined as any entity that has a **name and a physical location**." (Dalvi et al. 2014)
- 2: "Place is space to which **meaning** has been attached." (Carter et al. 1993)
- 3: "A global sense of place'. This is the specifically geographical version of the more general social scientific argument about 'the **relational construction of identity**.'" (Massey 2002)

Preliminary Results

SPACE and PLACE as TD

SPACE IS A MOVING OBJECT (culture-specific mapping)

- ① Place is examined using the Polynesian metaphor of "the canoe" as a vehicle in which we remain "here", while *space and time move beneath us*, bringing new destinations to us ... (AAG, 2010, 1201000302) these events are also *situated in space and time...* (AAG, 2010, 1201002637)

PLACE AS EMERGING FROM PRODUCTION

- ② Co-operatives, *Place Production* and Political Transformation (AAG, 1201003742)

Comparison of SPACE and PLACE as TD

SPACE and PLACE as container and/or background

→ analysis of co-occurring spatial prepositions

	<i>in</i>	<i>across</i>	<i>over</i>	<i>through</i>	Total
<i>space</i>	156 (45.6)	65 (19)	78 (22.8)	43 (12.6)	342
<i>place</i>	230 (94.7)	6 (2.5)	4 (1.7)	3 (1.2)	243

Table 2: Co-occurrence with spatial prepositions (raw frequencies; percentages in brackets)

Discussion and Future Work

Advantages and limitations

Advantage:

MPA allows us to move beyond introspection and serendipity.

Limitations:

limited set of target domain lexical items limits metaphorical mappings retrieved from the corpus

MPA based on clusters limits the analysis to frequent collocations (Stefanowitsch analysed a complete concordance of the TD lexical item)

Problem: a lot of the frequent clusters aren't metaphorical

e.g. 'sense of place', 'as a place'

- ① The past three decades have seen the Spanish autonomous region of Catalonia renegotiate its *sense of place*, not only in relation to Madrid but also in relation to the European Union and the rest of the world. (AAG, 1201002052)

Problem: SPACE is both TD and SD

→ Search for target domain item retrieves a lot of 'noise' from corpus

Complement corpus-driven with corpus-based analysis of source domain items (work in progress)

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