LingBaW

A peer-reviewed online journal

czasopisma.kul.pl/LingBaW

LingBaW

Linguistics Beyond and Within

VOLUME 5 (2019)

THE JOHN PAUL II CATHOLIC UNIVERSITY OF LUBLIN KUL 1918

LingBaW

A peer-reviewed online journal *https://czasopisma.kul.pl/LingBaW*

LingBaW

Linguistics Beyond and Within

VOLUME 5 (2019)

THE JOHN PAUL II CATHOLIC UNIVERSITY OF LUBLIN KUL 1918

Editorial Team

Editorial Board

TYPESETTING: Karolina Drabikowska

COVER DESIGN: Wojciech Malec

The journal is peer-reviewed. A list of reviewers is published annually on the journal's website at: https://czasopisma.kul.pl/LingBaW/reviewers.

e-ISSN: 2450-5188

PUBLISHER:
The John Paul II Catholic University of Lublin
Al. Racławickie 14
20-950 Lublin, Poland

PUBLISHING HOUSE:
KUL University Press
ul. Konstantynów 1H
20-708 Lublin, Poland
phone: (+48) 81 454-56-78
e-mail: wydawnictwo@kul.pl

EDITORIAL OFFICE ADDRESS:
Institute of Linguistics
The John Paul II Catholic University of Lublin
Al. Racławickie 14
20-950 Lublin, Poland
e-mail: lingbaw@gmail.com

Articles

LingBaW

Linguistics Beyond And Within 5 (2019), 7-16

Explaining IT programming concepts using NSM explications: The case of 'variable' and 'constant'

Bartłomiej Biegajło
Siedlce University of Natural Sciences and Humanities, Poland

Abstract
The paper seeks to explore a practical application of Natural Semantic Metalanguage in defining two core concepts in computer programming, i.e. the concept of a variable and the concept of a constant. The investigation of both programming concepts is carried out with reference to Apple's Swift programming language, which is now the dominant language in creating applications designed for Apple's devices. The explications of a variable and a constant developed in this paper are tentative definitions of the most fundamental functionalities behind the two programming concepts. They are meant to ease the learning experience of programming enthusiasts who are at the early stages of their learning path.

Keywords: Natural Semantic Metalanguage, Swift programming language, explications, variable, constant

1. Introduction

As everyday users of a number of electronic devices, we are in constant need of passing various types of electronic data between a plethora of electronic machines. Vast amounts of data travel among users of mobile phones, tablets, laptop computers, desktop machines as they communicate with servers distributed around the world. Users can manipulate data – change their contents, add new items, delete unnecessary parts, or remove them altogether and, essentially, store them in memory of a device. Data are crucially virtual in form, which means that they are not tangible objects that can be physically experienced by touching them or feeling them. However, at the same time, data require some physical location to store the very contents these data contain.

We, the users, or participants of this continuous exchange of digital information are frequently unaware of the complex, yet very well defined rules that govern the flow of data. It is for the convenience of an end-user that the architecture of modern software is designed in such a way as to make the so-called user-experience (UX) pleasant and intuitive. Apple's online documentation concerning *Human Interface Guidelines* is a clear indication of what the company puts to the front of its UX:

> 'The best apps find the correct balance between enabling users and avoiding unwanted outcomes. An app can make people feel like they're in control by keeping interactive elements familiar and predictable, confirming destructive actions, and making it easy to cancel operations, even if they're already underway.'
>
> (Apple *Human Interface Guidelines*)

Apple's attitude towards the visual components of apps is not exclusive. In her bestselling book, *Practical UI Patterns for Design Systems*, Diana MacDonald reiterates a conclusion which echoes Apple's guidelines but entails a broader range of online user experience: "UI patterns (user interface patterns) are found in the digital sphere of websites, applications, native mobile apps, and other software or devices" (2019: 2). She also contends that "the small, reusable UI solutions found in these patterns can then be composed together to build cohesive, intuitive experiences that resonate with people" (2019: 11). In a nutshell, this is a win-win situation as these solutions are both familiar to the users and constitute a reusable source to app developers.

2. Under the hood

The visual layer of apps underlies user's digital experience, and for the vast majority of people, this is the sole quality to assess in judging whether an application is useful or not. However, UI constitutes just a front side of an app – it is simply an intuitive navigation tool which allows the manipulation of different types of data. The machinery that governs the exact routes taken by these data is a line of code written in one of the programming languages distributed free of charge and widely available to programmers around the world. In a most basic scenario, a skilled programmer writes a set of instructions which are then interpreted by a machine which in turn performs a set of actions based on the available instructions. The difficulty in developing such instructions lies in the fact that they should account for all the possible actions taken by a user, including the ones which, more often than not, can hardly be predicted. These skills come with experience, and this type of programming activity is known as backend programming. In other words, backend programmers are responsible for connecting the front side of an app (hence: frontend developers) with a set of instructions that can further be sent to an interpreting machine for reading and responding (hence: backend developers) and, eventually, sending back any data that are requested by a user working on his/her personal device.

There are different programming languages which developers use to create a meaningful user experience. A predefined set of syntactic rules must, by necessity, govern all those languages. Violating any of those rules leads to what developers call 'a crash of an app'. Although programming languages are examples of artificial languages, their elementary structures bear clear resemblance to how natural languages are organised into a set of meaningful units. Their syntax and semantics (keywords) and the specific manner in which the two must be combined into readable instructions in order for the interpreter to 'comprehend' them are the essence programming. Likewise, as is the case with any natural language, bad grammar results in bad communication.

The optimistic part of programming is that all of the commercial programming languages employ either the same or just slightly differing concepts which developers reuse to organise data flow. These concepts might include variables, constants, strings, numbers, Booleans,

arrays, dictionaries, sets, loops, functions, object-oriented programming and many more essential keywords that might well sound utterly foreign to a non-programmer. To make a life of a developer easier, all of these concepts are assigned specific predefined keywords which an interpreting machine can recognise and read in real-time. Learning basic programming concepts can take some time; however, it is possible to understand the essential syntax in a matter of one/two weeks as Bruce Tate indicates in his somewhat very optimistic book title *Seven Languages in Seven Weeks. A Pragmatic Guide to Learning Programming Languages* (2010).

The less optimistic part of programming, however, is turning these rudimentary concepts into a combination of meaningful expressions where, say, an array is in a dialogue with a function, or a class is supposed to fetch data from a function and assign them to a variable that eventually supplies a dictionary for later use. A parallel experience happens when one learns a natural language – although, after some time and effort, one can understand individual words, or even basic sentences, it is still extremely tough to maintain a fluent conversation in that language. Tate compares learning to programme with learning how to swim: "no amount of theory is a substitute for diving into the pool and flailing around in the water gasping for air" (2010: 14). Practice is the keyword for any learning path. While it is true that, especially in the case of learning how to programme digital applications, theory amounts to a convenient springboard for practice, novice programmers cannot ignore getting acquainted with basic programming concepts if they intend to start a fully-fledged career in the industry.

The following discussion will therefore invariably have to touch upon theoretical underpinnings of the two most basic concepts in programming, i.e. the concept of a variable and the concept of a constant. The programming language which this overview will be referring to is the Apple's flagship Swift programming language; however, the mechanism of using the concepts of a variable and a constant can be found in any programming language accessible in the public domain. Apple's rich and meticulous documentation secures a convenient reference source and, although full documentation is freely available on their website, in order to make navigation through Apple's numerous digital references easier, the following study will be referring to Apple's latest e-book on Swift language released by their programming community.

3. Theoretical background

The programming concepts of a variable and a constant are the most basic and most easy-to-grasp means for storing data. According to Apple's guide, *The Swift Programming Language*, "Swift uses variables to store and refer to values by an identifying name. Swift also makes extensive use of variables whose values can't be changed. These are known as constants" (2019: 49). As simple as the explanation apparently sounds, it merits a question of whether there is a need for any more descriptive words to be supplemented in an attempt to turn this definition into an even more exhaustive example of unambiguous meaning.

The primary focus of this paper is to apply the theoretical framework of Natural Semantic Metalanguage to develop explications of two programming concepts and to test them against a largely unexplored domain of linguistic enquiry, possibly helping programming newcomers

arrange their programming knowledge into a transparent and accessible reference book/e-book/app. Due to reasons of space, I am not going to provide a detailed overview of the methodology of Natural Semantic Metalanguage (for an up-to-date, almost handbook-like account of the nuts and bolts of NSM, see Goddard 2008, 2018a; Goddard and Wierzbicka 2014). However, a few introductory remarks are essential to grant this paper a solid theoretical foothold.

Natural Semantic Metalanguage has a history of research spanning more than 40 years. It was formally devised by Anna Wierzbicka who continually credits Andrzej Bogusławski to be her major inspiration: "my own interest in the pursuit of non-arbitrary semantic primitives was triggered by a lecture on this subject given at Warsaw University by the Polish linguist Andrzej Bogusławski in 1965" (1996: 13). Today, as Bogusławski admits, "there is a real school of semantics (with the label *NSM* – coming from 'natural semantic metalanguage') led by Wierzbicka (the 'second-in-command' is Cliff Goddard), […] its site has been, for thirty years now, in Australia" (2011: 80). In the simplest possible explanation, NSM is "the conceptual shared core of all languages [which] can serve as a neutral metalanguage for describing and comparing languages and all culture-specific discourses" (Wierzbicka 2013: 2). Elsewhere, Wierzbicka complements the above by stating: "the concomitant claims is, of course, that every word (other than the members of the basic 'alphabet') can be defined" (1992: 22). The very term in parenthesis, 'the basic alphabet' which Wierzbicka refers to, is a paraphrase of Leibniz's catchy expression – 'the alphabet of human thoughts': "Leibniz believed that every human being is born with a set of innate ideas which become activated and developed by experience but which latently exists in our minds from the beginning" (1992: 8). The 'innate ideas' seen from the perspective of Natural Semantic Metalanguage are part and parcel of human nature, they are therefore at the disposal of all human beings, regardless of the cultural background, language and geographical location. Wierzbicka further declares that "all complex thoughts – all meanings – arise through different combinations of simple ideas" (1992: 8) which NSM labels as semantic primes: "the elements which can be used to define the meaning of words (or any other meanings) cannot be defined themselves; rather, they must be accepted as 'indefinibilia', that is, as semantic primes, in terms of which all complex meanings can be coherently represented" (Wierzbicka 1997: 25). Goddard illustrates this assumption adding that "they [i.e. semantic primes] are simple and intuitively intelligible meanings grounded in ordinary linguistic experience" (2010: 462) which suggests that semantic primes are translatable cross-culturally as opposed to more complex words which are outside the bounds of NSM.

The extensive research carried out within NSM allowed NSM scholars to posit 65 semantic primes (also called 'semantic universals', or 'semantic primitives' to denote the same concept in a somewhat more powerful manner) which the scholars believe to constitute "the metalanguage of semantic representation [which] may be viewed as the smallest 'mini-language' with the same expressive power as the full natural language" (Goddard 1994: 12). It is simply a tool made out of any natural language (the assumption being that semantic primes connote exactly the same meaning, regardless of the language they are translated into) which is used to talk about less simple concepts found in those languages. Below is a complete list of 65 English semantic universals, otherwise known as non-definables, which the NSM scholars use to describe words,

expressions and concepts, i.e. definables, whose premise, according to NSM, is outside the category of primes.

I, YOU, SOMEONE, SOMETHING~THING, PEOPLE, BODY	Substantives
KIND, PART~HAVE PARTS	Relational substantives
THIS, THE SAME, OTHER~ELSE	Determiners
ONE, TWO, SOME, ALL, MUCH~MANY, LITTLE~FEW	Quantifiers
GOOD, BAD	Evaluators
BIG, SMALL	Descriptors
KNOW, THINK, WANT, DON'T WANT, FEEL, SEE, HEAR	Mental predicates
SAY, WORDS, TRUE	Speech
DO, HAPPEN, MOVE	Actions, events, movement
BE (SOMEWHERE), THERE IS, BE (SOMEONE/SOMETHING)	Location, existence, specification
(IS) MINE	Possession
LIVE, DIE	Life and death
TIME~WHEN, NOW, BEFORE, AFTER, A LONG TIME, A SHORT TIME, FOR SOME TIME, MOMENT	Time
PLACE~WHERE, HERE, ABOVE, BELOW, FAR, NEAR, SIDE, INSIDE, TOUCH	Space
NOT, MAYBE, CAN, BECAUSE, IF	Logical concepts
VERY, MORE	Augmentor, intensifier
LIKE	Similarity

Goddard (2018b: 63)

This very sketchy overview of Natural Semantic Metalanguage certainly neither accounts for the potential of the theory, nor for its inherent pitfalls. One such pitfall can be identified when one intends to examine the tenets of NSM from the point of view of translation studies. Research suggests that it is not a single concept/word that matters the most, but a whole, unified text is seen to determine the interpretation (which again, might be highly subjective) of a message/image/the type of imagination a given writer puts forward. Support for these reservations can be found particularly in functional theories of translation (Reiss 2000, 2004; Reiss and Vermeer 2013; Snell-Hornby 1995; Vermeer 2012). A recent direct critical assessment of NSM, addressing Wierzbicka's framework from the viewpoint of translation studies is Blumczyński (2013) who, among other things, stresses the importance of context in translation and the resulting unavoidable differences in individual interpretation of texts, including interpretation of separate words and/or concepts.

On the other hand, extensive literature exists whose primary aim is to further investigate and test NSM in different cultural contexts. Wierzbicka (2014: 247) supplements a selection of languages studied in the NSM framework and, according to these data, there are almost 30 world languages under scrutiny with a similar number of scholars devoted to the NSM research agenda. Finally, to partly defend legitimate criticism aimed at NSM, I want to quote Bert Peeters and Maria Giulia Marini who are engaged in exploring the potential usefulness of NSM in the field of medicine: "the ultimate aim of narrative medicine is not to replace evidence-based medicine, but to *supplement* it, with resulting benefits for both sides" (2018: 264, original emphasis) – the key conclusion being that the rigour of NSM's semantic analysis strives not to provoke misunderstandings and confusion but rather intensify and aid everyday communication. It is in this vein that the following study is understood to continue.

Wierzbicka is keen to look at NSM as a "supplementary *lingua franca* that can be used to explain ideas and meanings which go beyond scientific vocabulary and may entail such public spheres as international relations, politics, business, law, education, ethics, and can generally assist in any situation where the underlying objective is to achieve best-possible clarity in terms of what one wants to say"[1] (2017: 23). She never mentions information technology (IT) and this study aims to fill this missing area.

4. Old programming concepts in new programming languages

Out of a long list of programming concepts, a variable and a constant stand out as one of the most basic constructs that enable to organise digital data into a reusable repository. Apple reference book for Swift programming language has this to say about its modern and relatively young invention: "Swift is a new programming language for iOS, macOS, watchOS, and tvOS app development. Nonetheless, many parts of Swift will be familiar from your experience of developing in C and Objective-C" (2019: 49). Typically, as is the case with most modern programming languages, Swift builds on the core assumptions of a set of older languages, i.e. a C programming language and its slightly younger brother, Objective-C (which are still in wide use today, especially Objective-C, which was the first commercial language used by Apple). The problem with older programming languages is while they are still efficient commercially in selected areas of web services, they sometimes tend to pose a serious challenge in terms of human readability, particularly for newcomers, i.e. people with no or little technological background. In an attempt to address these issues, developers and software architects found it their duty to create programming languages whose syntax and semantics would be able to generate a familiar feeling of reading a line of code just as a sentence in a natural language (typically, English) is read. Judging how successful these noble attempts have been is not within the scope of this paper. However, it suffices to say that the IT industry is estimated to require of thousands of professionals to meet the growing needs of the market.

5. NSM explications of a variable and a constant

The case of a programming concept of variable is no exception when it comes to inheriting the used and tried programming constructs from languages originating from the 20th century. Apple plainly confirms this historical attachment: "like C, Swift uses variables to store and refer to values by an identifying name" (2019: 49). Additionally, "Swift also makes extensive use of variables whose values can't be changed. These are known as constants and are much more powerful than constants in C" (2019: 49). In other words, it is safe to assume that a variable and a constant are examples of unique labels, i.e. containers capable to storing data. It is worth noting that since the only difference between a variable and a constant is their capacity for mutability, the following discussion will focus on providing an explication of a variable first and

[1] Unless otherwise stated, this and all further translations from Polish are mine.

then, the next step would be to alter the component which points to the changing character of the two concepts.

In order for a variable (and a constant as well) to play its usual role in a software programme, it has to fulfil the following pre-requisite: "constants and variables associate a name (such as maximumNumberOfLoginAttempts or welcomeMessage) with a value of a particular type (such as the number 10 or the string "Hello")" (Apple 2019: 50). There are different naming conventions for variables and constants; however, the essentials remain unchanged – it is 'something' which contains 'something else' inside. Below is a tentative, first approximation of the NSM explication of the concept of variable:

variable:
a. there can be something inside it

The opening component (a) points to the main function of a variable (and a constant as well), i.e. in the present context, it has to, by necessity, contain some value stored inside.

Although not mentioned in the book explicitly, Apple's Swift language, just as any other programming language, allows a variable/constant to store precisely one value at a given time in the lifespan of an application/programme. Storing multiple values inside one 'label'/'container' is possible; however, it would require a completely different type of storage arrangement which Apple refers to as 'collection types'. None of this is the concern of the present discussion; however, the single-data storage capacity that a variable/constant is equipped with by default has to be included in the explication. Component (b) and component (c) are a tentative proposition to cover features specific both to a variable and a constant, i.e. it is technically impossible to have more than one value stored in a variable or a constant:

variable:
a. there can be something inside it
b. this something inside is one thing
c. this something inside cannot be two things

The formal vocabulary to use if we intend to create a variable (and a constant as well) is, according to Apple, declaring a variable and/or a constant: "constants and variables must be declared before they're used" (2019: 50). Additionally, in line with one of the underlying assumptions behind any programming language, which put heavy emphasis on conciseness and readability, also in the case of Apple's Swift language, the rule of compactness is observed unconditionally: "you declare constants with the 'let' keyword and variables with the 'var' keyword" (2019: 50). The following is a classic example which reappears in different programming tutorials:

var welcomeMessage = "Hello world"

What this crucially implies is that a developer declared a variable and named it 'welcomeMessage'. The variable contains one value (component (b)); in this case, the value is of type string: 'Hello world' (a string is a piece of text) which also offers some tangible support for the presence of component (c) in the proposed explication. What is more, Swift language

has an in-built list of specific types of values that can be passed into a variable/constant, including numbers (floats and doubles), Booleans and strings. In case of a variable which, unlike a constant, can manipulate its contents, one has to exercise extra caution not to mix different types of values in one variable: "once you've declared a constant or variable of a certain type, you can't declare it again with the same name, or change it to store values of a different type" (Apple 2019: 53). Swift is also strict in disallowing transformation of a variable into a constant and vice versa: "nor can you change a constant into a variable or a variable into a constant" (2019: 54). In light of these observations, the explication of the concept of variable requires an update:

variable (var) of kind X:
a. there can be something inside it
b. this something inside is one thing of kind X
c. this something inside cannot be two things of kind X
d. many things of kind X can be inside it at many times
e. … one thing at one time, another thing at another time

In order to account for the fact that a variable can be passed values of a specific type only (strings, floats, integers, etc.), the very title of the explication has taken a slightly different shape. Now the concept of a variable is described in a manner that implies its capacity to accept a restricted number of value types; 'variable (var) of kind X' limits the scope of values that a given instance of a variable can store. Additionally, supplementing the heading of the explication with a 'var' keyword by which Swift formally recognises that it is, indeed, a variable that is being created, provides more clarity in terms of what a programmer is working with and would be particularly helpful for those who are already familiar with the naming conventions adopted in Swift.

Alternative versions of components (b) and (c) further emphasise the point that apart from allowing precisely one value to exist inside a variable, it can accept only one value of a given type ('of kind X'). This changed design appears to correspond well with the heading of the explication and, arguably, would be the preferred version of the explication.

Since it is self-evident that the present discussion is focused on two distinct programming concepts, there appears to be no sound reason to supplement the explication with a component related to unlawful alteration of variables into constants and constants into variables. The very heading of the explication suggests that a variable is a separate and autonomous concept, which is not meant to be confused with a constant.

Eventually, components (d) and (e) point to the distinguishing feature of Swift's variables, i.e. their hardwired capacity for mutability. Values stored inside a variable can and are well expected to change in the course of an application's/programme's lifespan as long as they conform to the initial type declared at the point of declaration. It is the actions taken by the end-user that condition these changes to happen and components (d) and (e) clearly imply that a variable is open to assigning new values.

In light of the discussion above, we are now ready to try and delineate the underlying difference between a variable and a constant using NSM:

constant (let) of kind X:
a. there can be something inside it
b. this something inside is one thing of kind X
c. this something inside cannot be two things of kind X
d. at all times this one thing is always the same thing

The explication of a constant is one component shorter than the parallel explication of a variable as the essence of difference lies in the fact that, unlike in the case of a variable, a constant is principally an example of an immutable 'container' (component (d)). Constants will never change; their value (one and only one) will always remain the same ('one thing […], at many times') and since no change in value is expected, it follows that a constant keeps the same type of value ('of kind X') throughout the execution of a programme.

6. Conclusions

Academic literature discussing Natural Semantic Metalanguage provides plenty of evidence that the somewhat provocative claim of there being a set of semantic primes available in any natural language can, in fact, serve its purpose. The purpose of NSM is to make complex concepts more readily comprehensible across different languages. Concepts analysed in this paper might not fall into the category of being overly obscure or perplexing; they were chosen, first, because they are a starting point for anyone who begins their journey with programming and, second, because of their apparent simplicity, a justified assumption could be initially entertained that it was relatively easy to come up with readable and straightforward explications. This was, however, not the case, as the core explication of the concept of a variable, which shares the majority of its components with the explication of the concept of constant, underwent many changes and corrections before arriving at the final result. The question of readability proposed by the explications provided in this paper might be challenged, as unconditional reliance on 'indefinables' exclusively seems to result in explications, which could be readable and comprehensible only for readers who have already been exposed to the basic programming concepts. The vague nature of programming concepts requires a degree of abstract thinking, which can be learnt through practice. The type of reductionism or reductive paraphrase pursued here calls for a certain amount of initial programming knowledge to refer to. However, it does not exclude the usability of the proposed explications as a quick and accessible reference point for beginners.

The two explications included in this study make no claim to be exhaustive and are open to further amendments. The realm of IT seen from the viewpoint of semantics is heavily underexplored and calls for further research is more than justified. Understanding the meaning of programming concepts, such as a variable and a constant among several other more complex programming constructs, remains problematic for industry newcomers. Simple definitions, emulating a dictionary entry, definitions which could be available instantly via an app or a digital collection of NSM explications might serve as a useful aid in developing skills which are so much sought-after on the market today.

References

Apple. 2019. *The Swift Programming Language (Swift 5.1)*.

Blumczyński, P. 2013. Turning the Tide: A Critique of Natural Semantic Metalanguage from a Translation Studies Perspective. In C. O'Sullivan (ed.), *Translation Studies, Vol. 6, 3*, 261–276. London: Taylor & Francis.

Bogusławski, A. 2011. A Note on Apresjan's Concept of 'Polish School of Semantics'. With an Appendix. In A. Bogusławski (ed.), *Reflections on Wierzbicka's Explications & Related Essays*, 79–95. Warszawa: BEL Studio.

Goddard, C. 1994. Semantic Theory and Semantic Universals. In A. Wierzbicka and C. Goddard (eds.), *Semantic and Lexical Universals*, 7–29. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Goddard, C. 2008. Natural Semantic Metalanguage: The State of the Art. In C. Goddard (ed.), *Cross-Linguistic Semantics*, 1–34. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Goddard, C., and A. Wierzbicka. 2014. *Words and Meanings. Lexical Semantics Across Domains, Languages, and Cultures*. Oxford: Oxford University Press.

Goddard, C. 2018a. *Ten Lectures on Natural Semantic Metalanguage: Exploring Language, Thought and Culture Using Simple, Translatable Words*. Leiden: Brill.

Goddard, C. 2018b. Minimal English: The Science Behind It. In C. Goddard (eds.), *Minimal English for a Global World. Improved Communication Using Fewer Words*, 29–70. Cham: Palgrave Macmillan.

MacDonald, D. 2019. *Practical UI Patterns for Design Systems*. New York: Apress.

Peeters, B., and M. G. Marini. 2018. Narrative Medicine Across Languages and Cultures: Using Minimal English for Increased Comparability of Patients' Narratives. In C. Goddard (ed.), *Minimal English for a Global World. Improved Communication Using Fewer Words*, 259–286. Cham: Palgrave Macmillan.

Reiss, K. 1971/2000. *Translation Criticism: Potential and Limitations*, trans. by Erroll F. Rhodes. Manchester: St Jerome.

Reiss, K. 1981/2004. Type, Kind and Individuality of Text: Decision Making in Translation, trans. by Susan Kitron. In L. Venuti (ed.), *The Translation Studies Reader*, 168–179. London/New York: Routledge.

Reiss, K., and H. Vermeer. 1984/2013. *Towards a General Theory of Translational Action: Skopos Theory Explained*, trans. by Christiane Nord. Manchester: St Jerome.

Snell-Hornby, M. 1988/1995. *Translation Studies: An Integrated Approach*. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Tate, B. 2010. *Seven Languages in Seven Weeks. A Pragmatic Guide to Learning Programming Languages*. Raleigh, North Carolina: The Pragmatic Bookshelf.

Wierzbicka, A. 1992. *Semantics, Culture, and Cognition. Universal Human Concepts in Culture-Specific Configurations*. Oxford: Oxford University Press.

Wierzbicka, A. 1996. *Semantics. Primes and Universals*. Oxford: Oxford University Press.

Wierzbicka, A. 1997. *Understanding Cultures Through Their Keywords. English, Russian, Polish, German, and Japanese*. Oxford: Oxford University Press.

Wierzbicka, A. 2013. Translatability and the Scripting of Other Peoples' Souls. In A. McWilliam (ed.), *The Australian Journal of Anthropology 24*, 1–21. Hoboken, New Jersey: Wiley Online Library.

Wierzbicka, A. 2014. *Imprisoned in English. The Hazards of English as a Default Language*. Oxford: Oxford University Press.

Wierzbicka, A. 2017. *W co wierzą chrześcijanie? Opowieść o Bogu i o ludziach*. Kraków: Wydawnictwo Znak.

Vermeer, H. 1989/2012. Skopos and Commission in Translational Action. In L. Venuti (ed.), *The Translation Studies Reader*, 191–202. London/New York: Routledge.

Online source

Apple. *Human Interface Guidelines*.
https://developer.apple.com/design/human-interface-guidelines/ios/overview/themes/. Access: Sept. 24, 2019.

LingBaW *Linguistics Beyond And Within 5 (2019), 17-28*

Slang in animated cartoons: Translation peculiarities

Kateryna Bondarenko
Volodymyr Vynnychenko State Pedagogical University, Ukraine

Abstract
The research focuses on analysing the function of slang in modern cartoons (*Madagascar 2*, *Kung Fu Panda*, *Shrek*, *Open Season*, C*ars*) as well as translation strategies used to convey accurate meaning. Our data from film scripts (163 examples containing slang terms) has proved that slang, as an important part of cartoons' verbal component, should be and mainly retained in translation. Excerpts from original cartoons scripts show slang use, that may function both for the protagonists' characterisation and for the mapping of humor (carnivalesque) world picture. Componential analysis of meaning – breaking down the sense of slang terms into their minimal distinctive features – was used to determine the meaning of lexemes and reconstruct semantic domains actively verbalised by slang.

The assumption has been made that due to the universality of domains slang can be potentially translated in most cases. Componential analysis is particularly applicable to semantically related lexemes (in one language or comparable ones).

A thorough analysis of slang translation showed the employment of the following strategies: stylistic compensation (50.3%), literal translation (44.7%), omission (4.9%) and cultural equivalence (0.1%). As seen, a substantial proportion of the slang words can be translated from English into Ukrainian without significant loss of meaning. The neutralisation of slang appears to be inevitable in some cases.

Keywords: slang, carnivalesque, translation strategy

1. Introduction

Slang is often seen as a linguistic phenomenon that is unsuitable for translation. Due to socio-linguistic variables and pragmatic functions slang terms are often thought of as belonging to a restricted group that shares a common experience (Balabin 2002; Hudmanyan, Pletenets'ka 2014). According to Adams (2012), "Slang is biologically based because all of our cognitive abilities are in the brain and slang is a product of those abilities, the potentials, drawn out by social interaction" (Adams 2012: XIII). Let us consider, for instance, the following slang term and its translation into Ukrainian (from the source and target script of C*ars*):

(1) ST: *You are dead, farm girl?*
TT: *Гаплик, село неасфальтоване!*

In English slang, *farm girl* in the source text (ST) means 'an independent female who has grown up on a farm and can drive anything with four wheels'. It may acquire the extra meanings of 'simplicity', 'modesty', 'unpretentiousness'. The Ukrainian concept of a village girl is mainly verbalised using slang terms with core elements 'female' and 'rural', sometimes implying narrowmindedness or vulgarity as in *бичка, маланка* etc. The suggested in the target text (TT) *село неасфальтоване* lacks 'female' and 'driving' semes yet may serve as a partial equivalent due to its relation to rural life and a 'naivety' connotation.

The reasons for using slang are universal: slang rebels against standard language through the use of terms not defined in standard language, making a conversation seem informal, suggesting 'insider-knowledge' with the people to whom you are speaking and displaying the speaker's attitude (Adams 2012). The basic concerns are consistent in slang as they do in much that is human: sex, money, intoxication, fear (of others), aggrandisement (of oneself) (Peters 2011). The following remark suits the modern understanding of slang:

> 'Slang is the language that says no. Born in the street it resists the niceties of the respectable. It is impertinent, mocking, unconvinced by rules, regulations and ideologies. It is a subset of language that since its earliest appearance has been linked to the lower depths, the criminal, the marginal, the unwanted or even persecuted members of society. It has been censored, ignored, shoved to one side and into the gutter from where it is widely believed to take its inspiration and in which it and its users have a home. It remains something apart, and for many that is where it should stay.'
>
> Green (2014: 6)

With regard to the complexity of the linguistic phenomena the concept of P. Newmark is chosen for the analysis. Newmark's idea was that the translator should decide how much attention he has to pay to the target language readers. This attention can partially be explained by the function of the text: the expressive, the informative and the vocative. The core of the vocative function of language is the addressee who is called upon to act, think or feel, or in a word, to react in the way intended by the text (Newmark 1991). We believe that while watching the cartoon the recipient is expected to have fun first of all but quite often we find an implicit or explicit ideological framework, for example, representing political regimes or "Dreamworkification" in *Shrek* (Nieguth & Lacassagne 2011). As Newmark (1991) points out, "The first factor in all vocative texts is the relationship between the writer and the readership. The second factor is that these texts must be written in a language that is immediately comprehensible to the readership. Vocative text requires "communicative" approach, while the expressive text a "semantic" one. Cartoons translation can be approached to both communicatively and semantically due to expressivity, ideology and polysemiotic character of the data (Newmark 1991: 41).

One should also take into consideration the polysemiotic nature of audiovisual texts when the issues of space and time accompany the shift from one language and culture to another (Gottlieb 1994). E. Mattielo indicates that most difficulties arise because the translation requires a lot of effort to find similar modes of expression for parallel social sets (Mattielo 2007). The potential possibility to achieve semantic equivalence is based on several assumptions: all languages have equal value, and different genius; everything can be translated from one language into another due to broad communality; there are no sacred or special languages and

therefore, all languages have the same limitations and rules (Nida, Taber 2003). The semantic approach is used in this research since to trace strategies for the translation of slang in spoken dialog (Hamaida 2006).

This study will focus on the use of slang in five contemporary cartoons: *Madagascar 2*, *Kung Fu Panda*, *Shrek*, *Open Season*, *Cars*, as well as on its translation into Ukrainian. The objectives of the research are: to identify the slang functions in the source text and describe the translation strategies applied in the target text.

To achieve the research aims, all slang words and phrases from *Madagascar 2, Kung Fu Panda, Shrek, Open Season, Cars* scripts (163 examples containing slang terms) were defined with the help of The New Partridge Dictionary of Slang and Unconventional English (Partridge 2006). They were classified according to shared and differentiating features (semes). Breaking down the sense of a word into its minimal distinctive features was particularly important both for determining the meaning of the lexemes and for detecting the corresponding semantic groups. Furthermore, the Ukrainian scripts of the films were used to compare the SL dialogues regarding slang terms of the films with their given translation.

The qualitative descriptive method was used to meet the objectives of the research. The slang expressions are marked, classified according to semantic ideographic principles, selected and analysed with regard to slang theory and translation strategy theory (Ulvydienė & Abramovaitė 2012).

1.1. The data

1.1.1. Slang functions in animated cartoons

Ontologically, slang's coinage and circulation comes rather from the wish of the individual to distinguish himself through oddity or grotesque humor (Hotten 1972). Slang acts as a linguistic means liberating carnivalesque laughter (Yelistratov 1995). A carnivalesque worldview presupposes the mocking of the dominant value system and is a verbal revolt against hierarchy and restrictions (Bakhtin 1984).

> 'These occasions built a second world and a second life outside officialdom, a world in which all … people participated more or less, in which they lived during a given time of the year. If we fail to take into consideration this two-world condition, neither … cultural consciousness nor the culture … can be understood. To ignore or underestimate the laughing people … also distorts the picture of European culture's historic development.'
>
> Bakhtin (1984: 6)

Cartoons present a substantial number of slang words and expressions that make a significant fragment of a carnivalesque world picture.

1.1.2. Slang as a means of characterising the protagonist

The use of slang provides clues to the identity and personality of a character (Trudgill 2000). Dialects, accents and slang reflect communicative patterns that are believed to be prototypical for a given social group (Giles et al. 1991). Cartoon protagonists can be best identified and marked through their use of language. Slang elements constitute their dialogues serving as markers of their individuality. The fast, modern and "arrogant" sports car, Lightning McQueen, from the *Cars* movie is a good example of such a manner of speaking:

(2) ST: *Hey, fellas, how do you think I'd look in Dinoco blue?*
TT: *Гей, хлопці, як мені буде в кольорах Дайнащось?*

The word *fella* designating an attractive male implies that a handsome exterior mask an unintelligent or at least light-minded personality.

(3) ST: *While I'm stuck here paving this stinkin' road, Chick's in California schmoozing Dinoco.*
TT: *Поки я кладу цю смердючу дорогу, Шик у Каліфорнії клеїть Дайнощось!*

The lexeme *schmooz*e literally signifies 'to gossip; to chat, to engage in idle talk; to network; to persuade someone indirectly'. In the TT the translator adds a sexual implication as *клеїть* meaning 'to take on a romantic or sexual partner'.

(4) ST: *I'm in hillbilly hell! My IQ's dropping by the second!*
TT: *Я здохну в цьому Задрипанську. Я здурію!*

Hillbilly hell is used for nominating a remote, rural area, isolated and somewhat out of touch with modern culture. The cartoon audiovisual settings add to the concept of an old-fashioned provincial town as compared with that of Lightning McQueen's dream city.

At the same time there exist certain patterns with regard to the protagonists' speech peculiarities. The trickster archetype is one of them (Bassil-Morozow 2013). The Trickster is an archetypal psychic structure of extreme antiquity. In his clearest manifestations, he is a faithful reflection of an absolutely undifferentiated human consciousness, corresponding to a psyche that has hardly left the animal level. The Trickster's most disquieting quality is his lack of consciousness. He does stupid things and gets himself into ridiculous situations. Although not evil, his unconsciousness and un-relatedness lead to outrageous behavior. The Trickster manifests a dichotomy of qualities; some seem superhuman while others are inferior to the average person. The Trickster crosses boundaries and confuses previously known distinctions. He is a troublemaker, trying to assist while also causing problems, a wanderer who wants to be free of the constraints of the collective, which only serve to bind and limit him (Jung 1969).

Mater from *Cars* – one of the slickers, whose suspension is a little rusty and whose crusty cabin has seen better times – Martin, the zebra from *Madagascar*, The Donkey from *Shrek* – are all characters that are perpetually talkative, supportive and never malicious, providing their friends (protagonists, as a rule) with both positive spins and hard but necessary truths in the face of adversity. The Trickster archetype is subject to the consequences of their own foolishness because they lack the ability to feel shame. However, with the Trickster's lack of shame, their

tongue is not constrained and often moves us past limitations and assumptions that might otherwise restrain the society. In the cartoons, the Trickster usually acts as a help-mate and is substandard both in appearance and speech. For example, The Donkey (*Shrek*) is the friendly beast. He accompanies Shrek on his quest to rescue Princess Fiona. Also, Donkey helps Shrek by distracting the dragon for a while.

(5) ST: *You're a mean, green, fightin' machine. Together we'll scare the spit out of anybody that crosses us.*
TT: *Ти – мужній зелений бойовик. Удвох ми залякаємо всіх, хто криво гляне!* (*Shrek*)

Fightin' machine refers to a person who is superior to others, having a wide knowledge in a certain field. *The Donkey* seems to be mocking Shrek's uncertainty and making himself a motivational pillar of support.

(6) ST: *I'm the world's best backwards driver! ou just watch this right here, lover boy.*
TT: *Вріжусь? Тю! Та я – найкращий зник задом наперед. Осьо, дивись, як треба, ухажор!* (*Shrek*)

The dictionary definition suggests the idea of a *lover boy* as a sexually promiscuous man. In the context of this cartoon, the sports car attempts to attract a girl. The use of slang by tricksters and other characters should be viewed as a rebellion against narrow-mindedness and las a means of laying out beliefs that serve the core conflicts in the cartoons.

1.1.3. Slang as a means of revealing the peculiarities of the environment

In dealing with slang terms from all the cartoons, we encountered more than a just a mixture of them. We used slang term definitions from dictionaries for semantic decomposition to identify the domains mostly verbalised by slang terms. These domains are mainly relevant to human physiology, emotions and social life. Lexemes semantically related to the same domain have been listed together to build a semantic map (consisting of lexical-semantic groups) of the cartoons verbalised by slang words.

The primitive values that underlie slang are an integral part of humor culture; yet these reproductive, social, ego-instincts are seen as inappropriate, and consequently require extra lexicalisation. Slang is a language pulsating nerve, and unlike standard language, does not conform to political correctness rules and is free to nominate the realia-taboo. Its mechanisms correlate rather with primeval instincts ruled by "childishly simple-minded censors" (Freud 1928) than with civilized cultural layering. The primeval worldview preconditions special values ("forbidden wishes") – human survival and successful reproduction being the most valuable. The latter is perceived unconsciously but remains the core principle of slang.

The "Human being nominations (intellectual, intellectual-emotional, intellectual-emotional-physical state, property, quality)" domain attracts 27.1% of slang terms detected.

(7) ST: *Then why are you bringing him up, you lemon?*
TT: *Це тому ти привів його сюди, дурбецало!* (*Cars*)

(8) ST: *Mack? I ain't no Mack! I'm a Peterbilt, for dang sake! Turn on your lights, you moron!*
TT: *Я – не Мак, я – Пітербілт, дурнику! Фари увімкни, лажак* (*Cars*)

(9) ST: *You big tube, you numpty, you big lassie's blouse.*
TT: *Придурок, маніяк, подушка дивана* (*Madagascar 2*)

The lexemes *lemon*, *moron*, *tube* denote 'a simple-minded fool', implicitly 'a despicable or contemptible person'. Ukrainian slang suggests a vast list of synonyms nominating fools, idiots, despicable people (*придурок, дурбецало, лажак* etc) – so all English slang terms can be successfully rendered into the TT without neutralising.

22.43% of all slang terms detected belong to the "Human being nominations (physical, physiological, mental condition, gender, age)" domain:

(10) ST: *The chicks love that romantic crap!*
TT: *Дівки люблять романтичну лажу* (*Shrek*)

(11) ST: *Hey, fatso, shove off. You're snapping my spine here.*
TT: *Сунься, жиртрест, бо хребет мені розчавиш* (*Madagascar 2*)

The slang term *chicks* stands for *'young women, girls'*, *fatso* – for 'an obese person'. Their Ukrainian slang counterparts *дівки* and *жиртрест* render the same semantic meaning.

It should be mentioned that modern cartoons contain topics or elements that make the story much more adult than expected. The cartoons analyzed contain substandard language, pop culture references etc. Appealing to a more adult audience, despite the films gearing towards families, leads to adult topics appearing in the movies. Sexual relations are under discussion in almost all the cartoons analysed:

(12) ST: *But, oh, he was a persistent little bugger for a two-cylinder.*
TT: *А він впертий був кавалер, та ще й двоциліндровий.* (*Cars*)

The word *bugger* signifies 'a regular fellow', but *two-cylinder* characteristics imply sexual power beyond the average. The Ukrainian slang term *кавалер* suggested in TT bears an extra seme of flirtation or love-making.

(13) ST: *Don't worry. You can flirt around with Mr. Hot Pants after I'm gone.*
TT: *Фліртуватимеш з Трах-Трах, коли мене не буде.*

The slang expression *hot pants* denotes sexual desire explicitly and is rendered by a full Ukrainian equivalent *Трах-Трах*, which is vulgar and obscene.

(14) ST: *I like 'em big. I like 'em chunky. I like 'em big. I like 'em plumpy. I like 'em round. With something, something. They like my sound. They think I'm funky!*
TT: *Люблю великих, Люблю товстеньких, Люблю великих, Люблю пухкеньких, Люблю кругленьких, З таким такеньким, Що люблять співи, бо я – крутелик!* (*Madagascar*)

The slang term *funky* is polysemantic and may stand for 'bad, distasteful, dirty, smelly, earthy, fundamental, emotional, fashionable'. In the context of the cartoon the term also implies sexuality that is neutralised in the translation (*крутелик* may stand for 'someone of excellence' but does not imply any sexual meaning).

The concept of sexual proactiveness implying promiscuity is also verbalised actively by slang terms like *beast – 'a very unattractive woman, especially if sexually proactive')*:

(15) ST: *Oh, no. The woman-beast is torturing him again. That looks like fun!*
TT: *Та тьотя знову його катує!* (*Madagascar 2*)

As seen, slang terms used in the studied cartoons mainly belong to the domains related to physiology and social life. Successful human survival and breeding is perceived mostly unconsciously but remains the principle at the core of the studied phenomena essence. The primitive values underlie slang as an integral part of humor culture. The reproductive, social, ego-instincts are seen as inappropriate, and consequently become targets for slang terms concentrations in certain domains. The "Human body nominations" domain contains 9.35% of all the data.

(16) ST: *Yeah, like when you beat me on the butt?*
TT: *Він вкусив мене за дупу* (*Kung Fu Panda*)

(17) ST: *Well, I have to save my ass.*
TT: *Мушу рятувати гузно.* (*Open Season*)

All the lexemes mentioned above refer to buttocks, so scenes from the movies do. The suggested Ukrainian *дупа* and *гузно* refer to the same denotate and are absolute equivalents to *butt* and *ass*. The following suggests slang neologism with the meaning of 'testicles' with the audiovisual setting contributing to the humoristic scene. In the target text the slang term is rendered explicitly with *панденята* 'baby pandas'.

(18) ST: *My tenders.*
TT: *Мої панденята.*

There is a fair amount of what can been termed body prejudice (pressure to be young, fit, with no evidence of any disability or disease or weakness in the body). The body serves as a universal domain for carnivalesque (humour culture) as such, and the slang terms nominating body and its functions are present in every living language.

> '… the bodily element is deeply positive. It is presented not in a private, egoistic form, severed from other spheres of life, but as something universal, representing all the people. As such it is opposed to severance from the material and bodily roots of the world; it makes no pretense to renunciation of the earthy, or independence of the earth and the body. We repeat: the body and bodily life have here a cosmic and at the same time an all-people's character; this is not the body and its physiology in the modern sense of these words, because it is not individualized. The material bodily principle is contained not in the biological individual…, but in the people, a people who are continually growing and renewed… This exaggeration has a positive, assertive character. The leading themes of these images of bodily life are fertility, growth, and a brimming-over abundance. Manifestations of this life refer not to the isolated biological individual, not to the private, egotistic 'economic man,' but to the collective ancestral body of all the people.'
>
> Bakhtin (1984: 18)

"Familiar, friendly, emotional address forms" domain lexemes make up 25.23% of all the data collected:

(19) ST: *Look, pal, I don't know who you think you are!*
TT: *Слухай, пацан, я не знаю, хто ти такий…;* (*Cars*)

(20) ST: *Respect the classics, man. t's Hendrix!*
TT: *Шануй класиків, чувак. Це – Хендрікс* (*Cars*)

(21) ST: *Playtime is over, pal.*
TT: *Це добре, малий, та ігри закінчились.* (*Cars*)

The slang terms *pal, man, dude, kid* used as an affectionate term of address, are quite numerous and presumably lead a conversation towards informality. In the translation absolute equivalents (*пацан, чувак, малий*) are suggested.

The "Human being nominations with regard to social property, social status, activity, functions; personal and social relations, contacts" domain attracts 4.67% of all the data.

(22) ST: *Is it true you've been in rehab? – Was McQueen your prisoner? – Shoot, no! We're best buds!*
TT: *Вас що, тримали в полоні? Чи був МакКвін заручником? Тю, та ні!!! Ми – дружбаки!* (*Cars*)

The terms *buds* and *дружбаки* denotating 'a close friend' maintain the relation of semantic equivalence.

The "Abstract nouns: situations, actions, circumstances" domain attracts 6.55% of all the corpus analysed.

(23) ST: *His magnificent antlers, a testament to his great prowess… …his strength, his masculinity, his awesomeness! his super- incredible coolness! his amazing kick-butt-ocity!*
TT: *Його величні роги – свідоцтво його чоловічої доблесті, це – його сила, його мужність, його шикарність, його супер-неймовірна крутість, його здатність накрутити хвіст кому завгодно!* (*Madagascar 2*)

The slang term *coolness* implies the state of being of a higher standard and is equivalent to *крутість.* The neologism *kick-butt-ocity* derived from *to kick one's butt* 'to defeat someone or something decisively' has the same meaning when rendered as the Ukrainian slang phrase *накрутити хвіст* with the same meaning.

The concept of slang suggested here is consistent with lexical theories that see words and word groups as cognitively structured and linked into networks. Personal lexicographic experience of compiling an English-Ukrainian slang dictionary based on semantic-ideographic principles shows the universality of basic semantic domains – slang in the contrasted languages is concentrated within the domains correlated with successful survival and human breeding (Бондаренко, Гась 2018).

> 'It subscribes to nothing but itself – no belief systems, no true believers, no faith, no religion, no politics, no party. It is the linguistic version of Freud's id, defined by him in 1933 as 'the dark, inaccessible part of our personality […] It is filled with energy reaching it from the instincts, but it has no organization, produces no collective will, but only a striving to bring about the satisfaction of the instinctual needs subject to the observance of the pleasure principle.' It is hardly surprising that in English slang it, translating id from the Latin and the original German, can mean sex or either of the bodily parts it requires for consummation. So be it.'
>
> Green (2010)

The mentioned domains productivity is predetermined by a specific carnivalesque (humour) world mapping (Grace & Tobin 2002; Gilmore 1998) with a heavy emphasis on sex, physiological and social deficiencies etc.

1.1.4. Translation peculiarities

As proved by many scholars, audiovisual translation tends to tone down substandard language and this mitigation is typical for children's films (Mattiello 2009). 163 specifically chosen segments in which slang terms appear in the source texts have been analysed in order to determine the frequency in the strategies the translators used. The semantic meaning of slang terms in the source text have been checked in *The Concise New Partridge Dictionary of Slang and Unconventional English.* The corresponding terms in the target text underwent semantic decomposition with the help of contemporary Ukrainian slang dictionaries (Stavyts'ka 2003; Kondratiuk 2006).

Among 163 slang translation cases the following translation strategies have been detected:

1) Stylistic compensation. Compensation is the most frequently used strategy in the translation of the animated cartoons as there are many slang terms and expressions that do not have absolute equivalents in the target language. 50.3% slang terms were neutralised or mitigated and translated by the standard terms with the same semantic meaning.

(24) ST: *Pretty lousy friend I guess.*
TT: *Поганий я друг.*

The adjective *lousy* refers to 'contemptible, shoddy, bad'. Because of the association with body lice, the term was deemed vulgar if not taboo in the US and is rendered in TT as *поганий* – with the general meaning of 'bad'.

(25) ST: *He's really quite a chatterbox. Talk, you boneheaded dolt!*
TT: *Це він соромиться, а так він страшне базікало. Балакай, телепню!*

The slang term *chatterbox* means 'a very talkative person; conventionally contemptuous, but often affectionate'. In TT the translator uses *базікало* 'a talker' – a colloquial lexeme in Ukrainian. As seen absolute equivalence is not maintained. However, the border between slang and colloquial words and expressions is questionable, because certain slang words may pass into colloquial language and even further into standard speech (Cuddon 1991).

As seen, the discussed source-target pairs mostly cover the same denotative meaning, the translator transfers the semantic content of the ST slang terms but does not convey the register. Standard terms suggested by the translators can be used in both formal and informal settings and do not seem to carry any attitude and consequently may lead to the losses of the cultural significance. In most cases the translator uses compensation when no equivalents are found in the target language. But there are certain concepts verbalised by sets of synonyms in Ukrainian slang, for instance those referring to effeminateness, weakness (*тюфтель*, *дупка* etc) or talkativeness (*баклан*, *тріпло*, *тринділо* etc). Presumably mitigation cannot be explained by

linguistic reasons only, but rather depends on factors outside the translators' team control, such as lip sync, time slots etc.

2) Literal Translation. 44.78% of the slang terms in the studied cartoons were translated literally – with semantic meaning maintained as well as the corresponding sociostylistic register. The present study shows that translators managed to render almost a half of ST slang terms into terms with the same level of formality in the TT.

(26) ST: *Oops. I hate to be a party pooper Zuba!*
TT: *Не люблю бути кайфоломщиком, Зубо.*

The expression *party pooper* has the meaning of 'a killjoy; a spoilsport' and is directly rendered by a Ukrainian slang term *кайфоломщик* with exactly the same meaning.

(27) ST: *Nobody goes AWOL on my watch.*
TT: *Ніяких самоволок на моїй варті!* (*Cars*)

The terms *AWOL* and *самоволка* with the denotative meaning of 'absent without official leave' are absolute equivalents and used to be army jargon terms in the past.

3) Omission (4.9%). Omission of slang may neutralise the negative effect and adapt the inappropriate words for the recipients. However, an identical effect can hardly be achieved then. Sometimes the omission is explained by some extralinguistic factors.

(28) ST: *Crazy hot-rodder.*
TT: *Ненормальний!*

The absence of a Ukrainian counterpart for *hot-rodder* (successfully rendered in other episodes by *гонщик*) shows that translators should pay attention to the internal characteristics of audiovisual translation, in which parts of the original dialogue can be condensed or omitted.

4) Cultural equivalence (0.02%)A paraphrasing strategy that results in cultural equivalence implies rendering realia absent or insignificant in the target culture. Their number is not that big due to the globalised market the cartoons are made for, but some realia are preserved and require domestification.

(29) ST: *Fascist! Commie!*
TT: *Фашист!* (*Cars*)

At the beginning of the 21st century the concept of communism was not as negatively connotated in Ukraine as it used to be in the USA. The lack of connotation presumably led to omission in the translation. It should be noted that nowadays the translator would definitely retain the *Commie* factor with regard to the political situation changes (de-communisation) in Ukraine.

(30) ST: *You need a little R and R. Recharge the old batteries. But you know, after a while, why didn't you go back? – I fell in love. – Oh. – Yep. – Corvette? – No. I fell in love with this.*
TT: *Іноді треба спинитись, підзарядити акумулятори. Але з часом? Чого ти не вернулась? – Я закохалась. – О! – Так. – Якийсь мерс? Ні. Я закохалась в ось це.* (*Cars*)

Corvette cars are not very popular in Ukraine and consequently a direct equivalent lacks the connotation present in the source text. Ukrainian *мерс* (slang term denoting Mercedes car) stands for *Corvette*, because it has the connotative meaning 'of excellent quality, worth admiring' (may cause jealousy – as it does in the cartoon).

Slang is inherently linked to the socio-cultural setting within which a text is created, but its national specificity is usually neutralised in audiovisual products meant for broadcasting worldwide.

2. Conclusions

Slang has always been one of the most challenging linguistic phenomena for audiovisual translation since slang has always been linked to society and its verbal manifestation. As demonstrated in the study, slang terms are employed in the cartoons so as to identify characters, enhance the impression of informality and contribute to a carnivalesque (humour) world picture embodied in the cartoons. As for the Ukrainian translation of *Madagascar 2*, *Kung Fu Panda*, *Shrek*, *Open Season*, *Cars* the present study shows that stylistic compensation, literal translation, omission and cultural equivalence are the basic strategies used by the translators.

It is found that semantic equivalence achieved through the strategy of literal translation constitutes 44.78% of the time. As seen, regarding slang terms, one can transfer the same sociostylistic level of the source text into the target text without any major difficulties. An omission strategy constitutes only 4.9%, proving that translators try to keep slang terms and not lose their impact and cultural significance.

The possible lack of acceptable equivalent slang terms in the TC is not the only reason for mitigating slang terms in translation. The internal characteristics of audiovisual translation often make translators use compensation strategies to achieve the result. To conclude, it can be safely suggested that a greater use of slang terms may be seen in the future as a way to compensate for the loss of other items in specific types of audiovisual texts.

References

Adams, M. 2012. *Slang: The people's poetry*. Oxford University Press.
Bondarenko, K, and S. Gas. 2018. *Detabooing in dictionaries and translation*. Bogucki Wydawnictwo Naukowe.
Bakhtin, M. 1984. *Rabelais and his World*. Vol. 341. Indiana University Press.
Balabin, V. 2002. *Contemporary American Military Slang as a Translation Problem*. K.: Logos.
Bassil-Morozow, H. 2013. *The trickster in contemporary film*. Routledge.
Cuddon, J. A. 1991. *The Penguin Dictionary of Literary Terms and Literary Theory*. London: Penguin Books.
Freud, S. 1928. Humour. *The International Journal of Psychoanalysis* 9: 1–6.
Giles, H., Wilson, P., and A. Conway. 1981. Accent and lexical diversity as determinants of impression formation and perceived employment suitability. *Language sciences* 3(1): 91–103.
Gilmore, D. D. 1998. *Carnival and culture: Sex, symbol, and status in Spain*. Yale University Press.

Gottlieb, H. 1994. Subtitling: diagonal translation. *Perspectives, Studies in Translatology* 2: 101–121.

Grace, D. J., and J. Tobin. 2002. Pleasure, creativity, and the carnivalesque in children's video production. *The arts in children's lives,* 195–214. Springer Netherlands.

Green, J. 2010. What is slang. Retrieved from http://jonathongreen.co.uk/the-job/

Green, J. 2014. *The Vulgar Tongue: Green's History of Slang*. Oxford University Press, USA.

Hudmanyan, A., and Y. Pletenets'ka. 2014. Translation of Jargons, Slangs and Pejorative Vocabulary of American Feature Films. Naukovi zapysky [Nizhins'koho derzhavnoho universytetu imeni Mykoly Hoholya]. Ser.: *Philolohichni nauky* (3): 58–61.

Hamaida, L. 2006. Read my Lips: Gaps in meaning between spoken and subtitled dialog. MuTra 2006 –Audiovisual Translation Scenarios: Conference Proceedings.

Hotten, J. C. 1972. *The Slang Dictionary*. Rowman & Littlefield Publishers.

Jung, C. G. 1969. Archetypes of the collective unconscious. In R. F. C. Hull (trans.). *The collected works of C. G. Jung.* 2nd ed., 3–41. Princeton, NJ: Princeton University Press.

Kondratiuk, T. 2006. *Slovnyk suchasnogo ukrayinskogo slenhu*. Kharkiv: Folio.

Mattiello, E. 2009. Difficulty of slang translation. *Translation Practices: Through Language to Culture,* 65–83.

Newmark, P. 1991. *About Translation*. Clevedon: Multilingual Matters Ltd.

Nieguth, T., and A. Lacassagne (eds.). 2011. *Investigating Shrek: Power, Identity, and Ideology*. Springer.

Nida, E. A., and Ch. R. Taber. 2003. *The Theory and Practice of Translation*. Leiden: Koninklijke Brill.

Partridge, E. 2006. *The New Partridge Dictionary of Slang and Unconventional English: JZ* (Vol. 2). Taylor & Francis.

Peters, M. 2011. Screaming Yellow Zonkers! Green's Dictionary is the Bible of Slang. Culture magazine.

Stavyts'ka, L. 2003. *Korotkyi slovnyk zhargonnoyi leksyky ukrayins'koyi movy*. Kyiv: Krytyka.

Victor, T., and T. Dalzell. 2007. *The concise new Partridge dictionary of slang and unconventional English*. Routledge.

Trudgill, P. 2000. *Sociolinguistics: An introduction to language and society*. Penguin UK.

Ulvydienė, L., and B. Abramovaitė. 2012. Literary Style in Translation: Slang in JD Salinger's The Catcher in the Rye. *Studies About Languages* 20: 100–108.

Yelistratov, V. S. 1995. Argo i kultura [Argot and Culture]. Moscow, Moscow State Univ. Publ.

LingBaW

Linguistics Beyond And Within 5 (2019), 29-45

Verb-particle constructions in Cognitive Linguistics perspective: Compositionality behind selected English phrasal verbs

Izabela Jarosz
Maria Curie-Skłodowska University, Poland

Abstract
The developments in Cognitive Linguistics have made it possible to uncover multiple meanings of composite structures to the effect that more and more scholars have become interested in the issue of semantic relations in verb-particle constructions. With only a handful of those focusing on both elements of such constructions, many of them have directed their research towards the study of particles exclusively. The current paper aims to advance the study on phrasal verbs by offering a new outlook on their compositional nature. In order to achieve a desired aim, the principle of partial compositionality is adopted here. Hence, apart from focusing on both the verb and the particle, the senses that go beyond those comprising the composite parts receive considerable attention in this study. The phrasal verbs singled out for the purpose of the analysis include: *get* and *take* with selected spatial-orientational particles.

Keywords: compositionality, conceptualization, phrasal verbs, semantic network

1. Introduction

Traditional approaches to language considered phrasal verbs (PV)[1] in terms of arbitrary and unpredictable linguistic units impossible to outline any compositionality (e.g. Celce Murcia and Larsen Freeman 1983). In most cases, PV were analysed with regard to their syntactic structure (Bolinger 1971, or Fraser 1976). Among others, it was Linder (1981) who first looked at PV in Cognitive Linguistics (CL) perspective, applying Langacker's space grammar in their analysis. Together with her followers (Morgan 1997; Hampe 2000; Rudzka-Ostyn 2003; Olson 2013; Mahpeykar and Tyler 2014), it has been evidenced that PV have their non-arbitrary,

[1] Generally, in the literature on phrasal verbs, there is a distinction between verb + preposition constructions, *e.g. run into*, and verb + particle constructions, e.g. *put up* (*cf.* Bolinger 1971; Fraser 1976; Celce-Murcia and Larsen-Freeman 1983). In this paper, we shall mainly focus on phrasal-verbs being the verb-particle construction type.

compositional nature organised in a relatively systematic manner. The rules of compositionality and their appliance in PV analysis are, therefore, explained in the current section of this paper.

1.1. Compositionality in CL

Generally, as Evans and Green (2006: 450) notice, the principle of compositionality requires that the meaning of a complex expression results from the meanings of its parts and the way of their combination. In formal semantics, the meaning has been affected merely by the grammatical structure, this resulting in the claim that the properties of a composite structure can be fully determined by the properties of its component elements and the way of their combination. Still, Sweetser (1999: 129) notices that being "a central fact of language […] [compositionality] has been given inadequate treatment in formal semantic models." She opposes the view that compositionality is merely the sum of composite elements and argues that it is "the interpretation [which] suggests that a variety of mechanisms may be involved in their semantic composition" (p. 131). Meaning is not just a set of binary features, but a representation that incorporates certain interactions and viewpoints. As Taylor (2002: 589) continues, the whole unit only partially results from the meanings of its component elements.

> '… the interpretation we give to a linguistic expression typically goes well beyond what is actually said [and consequently] the meaning of a complex expression is rarely, if ever, [fully] 'compositional.' That is to say, complex expressions nearly always have a meaning that is more than, or even at variance with, the meaning that can be computed by combining the meanings of the component parts.'
>
> Taylor (2002: 13)

In other words, the meaning of a composite structure does not merely embrace the semantic content of its composite parts, but it also contains senses that are wider or different than those parts. Apart from this, as Taylor (2002: 98) argues, a composite expression incorporates interpretation based on conceptual knowledge that "goes beyond what is actually symbolized in a complex expression." Strictly speaking, although relies on it, a composite unit itself does not contain conceptual knowledge necessary for its interpretation.

Much in similar vein, Langacker (1987: 281) notices that the sense of a composite structure "is experientially distinct from the recognition of the individual components plus instructions for their integration, and it may involve entities and specifications beyond those provided by the components." The elements, therefore, only partially contribute to the meaning of a complex expression. Langacker (1987: 278) explains that "linguistic convention cannot provide a fixed, unitary expression for every conceivable situation that a speaker might wish to describe [as it contains only] a limited inventory of fixed expressions" which code merely some aspects of complex conceptual knowledge and a set of conventional patterns that allow combination of these conceptualizations when necessary." To put it bluntly, in many cases, the speaker might wish to symbolize a complex conceivable situation, but there is no fixed expression that would describe it fully. Hence, s/he puts their conception into smaller, separate and overlapping language chunks that can be reflected in linguistic symbols. This serves to mirror the speaker's intended expression of a conceivable situation.

For Tyler and Evans (2003: 8), a linguistic form contains the central[2] meaning while the extended senses can only be reconstructed and, therefore, are not packed into the linguistic form. It is the language user who has to reconstruct the extended senses on the basis of background knowledge. This results in a situation where only those parts of meaning that are necessary to understand a given context are reconstructed.

> '… interpretation [… understood as] meaning construction is not simply the result of compositionally adding linguistic items. […] Utterances […] provide only minimal prompts for meaning construction. […] The source of much of the information which is necessary to establish an interpretation is not conventionalized information associated with a lexical item.'
>
> Tyler and Evans (2003: 8)

The aforementioned postulations are in accord with Goldberg's (1995: 13) claim about a construction wherein "something about its form, meaning, or use is not strictly predictable from other aspects of the grammar," or in other words, from the component parts. She argues that "compositionality in a weakened form [means that] the meaning of an expression is the result of integrating the meanings of the lexical items into the meanings of constructions (p. 16) [being] typically associated with a family of closely related senses rather than a single, fixed abstract sense" (p. 31). To put it bluntly, the meaning of a complex structure does not only contain the meanings of its component elements, but also the senses closely related to them.

Additionally, according to Langacker (1987: 448) "the degree to which the value of the whole is predictable from the values of its parts" is a process that can be quite difficult at times. This happens because the element parts are not simply building blocks[3] that can be assembled and disassembled freely. Apart from the conceptual knowledge that needs to be packed into overlapping language chunks, the influence of one unit upon another during their combination seems to add more complexity to the process of untangling the semantic composition. The latter, known as coercion, is defined by Taylor (2002: 589) as "the phenomenon whereby one unit forces a change in the specification of a unit with which it combines. This amounts to saying that "one unit 'coerces' its neighbour, forcing a change in its specification" (p. 330). Once the coercion occurs, as Taylor (2002: 588) continues, the complex element is likely to evidence the property of bondedness which makes it difficult to identify the component parts of the unit. In other words, "[t]he units become 'bonded' in a relatively unanalysable structure."

In general, as regards compositionality, CL opposes the view that the element parts fully contribute to the meaning of the composite unit. There is also conceptual knowledge that is reconstructed on the basis of our background knowledge. Although the reconstructed part of the meaning cannot be packed into the unit, it typically belongs to the network of closely related senses of the composite structure. Moreover, one composite part might influence its neighbour

---

[2] In this paper, the term *central* refers to the basic meaning of physical nature while *extended* is used to mean 'non-basic' and is not strictly physical or spatial. The expressions *figurative* and *metaphorical* refer to 'non-physical' meaning. The term *additional sense/meaning* is used with reference to the meaning that is not part of the composite elements that form PV.

[3] Evans (2007: 14) explains that the term *building block metaphor*, coined by Langacker, refers to the principle of compositionality in formal linguistics which holds that "the meaning of a complex expression is the result of compositionality adding the meaning of the individual units."

so that their contributions are not equal. Having the aforementioned postulations in mind, let us now move to the issue of phrasal verbs analysed in CL perspective.

1.2. Phrasal verbs in CL

Among others, it is Linder (1981) who provides us with the analysis of verb-particle constructions in CL perspective. Using Langacker's framework of space grammar, Linder (1981: 246) gives an account of the relationship between the trajector (TR) and the landmark (LM) in her analysis of PV. Focusing on verb-particle structures with *out* and *up*, she claims that PV have both concrete and abstract meanings where each set has a separate, unified network organized in a fixed manner. The main source of meaning for the verb-particle construction is mainly determined by the particle. The study, therefore, focuses on how the central meaning for each particle gives rise to the rest of its extended senses.

Advancing on Linder's study, Morgan (1997) applies the conceptual metaphor theory in analysing English phrasal verbs where "both the verb and the particle […] contribute semantically to the verb-particle construction" (p. 327). According to Morgan (1997: 355), in constructing phrasal verbs, there are four possibilities for meaning extensions where both the verb and the particle are literal, or both are metaphorical, the verb is metaphorical and the particle is literal, or the verb is literal and the particle is metaphorical. Still, only in the literal sense of both elements there is a common literal source domain for the verb and the particle. In all the other combinations, there are two different source domains. As Morgan (1997: 338) specifies, it is crucial to establish the literal senses of the verb and the particle and then take into account their metaphorical extensions.

Rudzka-Ostyn (2003) explains the compositional meaning of PV in CL perspective, attempting to solve the didactic problems posed by those composite structures. Her approach is presented in the learning materials for EFL students. Rudzka-Ostyn (2003: 9–11) focuses there on a central image schema and the relationship between TR and LM. The motivation behind the extended meanings of English particles is explained on the basis of the conceptual metaphor theory proposed by Lakoff (1987). There is no division into central and extended senses of the particle and not much attention is drawn to the semantic contribution of the verb. What she focuses there on is the same particle combined with different verbs. The main aim is to provide a workbook that meets the criteria of pedagogical grammar[4] where the semantic gradation from literal to figurative meanings takes its prime.

Tyler and Evans (2003) do not focus on phrasal verbs, but on prepositions that can take part in verb-particle constructions. Tracing the meaning extension through polysemy, they develop the Principled Polysemy Model offering clear principles for analysing semantic networks. Their research on prepositions involves identification of the central meaning from which the other senses are extended systematically. In their approach, the linguistic expression contains only the central meaning while the extended senses are to be reconstructed on the basis of our background knowledge. Therefore, they account for the fact that the meanings of

[4] As Dirven (2001:18) explains, pedagogical grammar refers to learning materials that contain "the best possible illustration, presentation and gradation of the learning problems in a given area of foreign language learning."

prepositions are derived from human embodied experience and conceptualization of the spatial/physical world.

Olson (2013) investigates the difference between the separable and non-separable transitive PV. Her study is based on the combination of Bolinger's (1971) and Gorlach's (2004) findings adopting Construction Grammar as the theoretical framework. She explains why compatibility with the word order alternation is absent in case of non-separable PV by taking into account specific syntactic and semantic circumstances. Her findings suggest that the lack of word order alternation occurs with the non-separable verb-particle constructions due to the fact that their particles act both as adverbial particles and prepositions.

It is Mahpeykar and Tyler (2014) who suggest taking into account both the verb and the particle in analysing the meaning of verb-particle constructions. In their analysis, they postulate a systematic, consistent account for the semantic behaviour of PV by combining the meaning of the verb with the meaning of the particle through polysemy. Relying on Tyler and Evans (2003) methodology, Mahpeykar and Tyler (2014) provide us with the criteria for identifying the senses in relation to the element parts as well as the whole composite unit.

Luo (2019) offers a deep investigation of PV, focusing on the conceptual content of PV schemas, the particle placement with transitive PV and the idiomaticity of PV. In the first case, much attention is devoted to the role of the particle component classifying particle constructions into directional, resultative and aspectual groups. It is argued that the particle placement of transitive particle verbs is the outcome of profiling two construals of one conceptual content. The idiomaticity of particle verbs is said to result from the semantic extension of the particle component, the verb component, both, the subject or object taken by the PV, particle-verb schemas, or the level of the full particle verb.

Luo (2019: 35) claims that Mahpeykar and Tyler's (2014) analysis is verb-centred in the sense that it is the verb that holds a central position in structuring an integrated conceptual scene and in this respect does not differ from Linder's (1981) or Morgan's (1997) studies. However, as it will be outlined in our analysis, Mahpeykar and Tyler's (2014) study might serve as a good basis for building a network of sense relations of a given PV which will evidence that both components are equally important. At this point, let us give a closer look at Mahpeykar and Tyler's (2014) methodology. As regards the coding scheme for distinct and central meanings of particles alone, they rely on Tyler and Evans (2003) typology. Then, they use this model to develop the typology of verbal meanings as well as the meanings of the whole verb particle constructions.

The coding scheme for determining the distinct senses of a particle, taken from Tyler and Evans (2003: 42–43), is built on the basis of the following criteria:

- the meaning of the extended sense must be non-spatial/non-physical or TR-LM configuration different than in the central sense;
- the extended sense cannot be inferred from another sense and the context in which that sense occurs.

For identifying the central sense, the following conditions need to be taken into consideration (Tyler and Evans 2003: 47):

- the earliest attested etymological meaning;

- the predominance of the sense in the polysemy network;
- the use in composite forms;
- the relations to other spatial particles;
- grammatical predictions.

When it comes to the coding scheme for the verbs as developed by Mahpeykar and Tyler (2014), it is greatly based on Tyler and Evans (2003) methodology for analysing prepositions. The criteria adopted by Mahpeykar and Tyler (2014: 9–10) include:

- the central sense is the earliest attested sense in etymological dictionary and needs to be strictly physical/spatial in meaning;
- the extended meanings can be traced back to the central sense using CL principles for meaning extension;
- the distinct sense must contain additional meaning not apparent in other proposed senses;
- the extended sense cannot be strictly physical/spatial in meaning;
- extended sense prompts for a different spatial scene.

Having analysed both elements of a composite structure separately, Mahpeykar and Tyler (2014: 11) study the whole construction. They use the coding scheme analogous to the one adopted for establishing the central and extended senses of the verbs. Then, they present the original sense of a composite structure and its distinct meanings, explaining which sense of the verb and which sense of the particle takes part in each PV combination.

The study by Mahpeykar and Tyler (2014) offers a very precise tool for PV analysis. It includes a thorough examination component parts of PV separately as well as the PV as a whole. Still, their presentation of the composite structure focuses on outlining the central and extended senses of PV without stressing internal sense relations within the semantic network. It can be deduced from their study that the extended senses of a given PV do not necessarily come from the core meaning of this PV,[5] as it is in the case of single verbs or particles. Therefore, it should be highlighted that the semantic network of a PV would be totally different from the pattern where the extended senses are inherited from the central one. Apart from that, it has been observed that the extended senses contain meanings that are not parts of the meanings selected for their combinations.[6] Hence, when analysing PV, we need to take into consideration not only central and extended senses of the whole composite structure but also the central and extended senses of its elements. For this reason, it is suggested to complete the methodology offered by Mahpeykar and Tyler (2014) and highlight direct and indirect relations between the senses in the network as well as the additional meaning not being inherited from the component elements straightforwardly.

---

[5] For example, the central sense of *get up* consists of the central particle and the extended (not central) verb while its extended sense 'become upright' consists of the extended verb and the extended particle. The semantic network, then, would not follow the pattern in which the core meaning directly gives rise to its extended senses.

[6] For instance, in *get out* which has three extended senses, the meaning 'not in situ' also contains the meaning 'change of the state' while 'become known' contains the meaning 'sb tries to hide it but unsuccessfully.'

2. Current research methodology

In our analysis, we shall focus on the relations between the senses, and the source of additional meaning not being part of the composite elements of PV. In order to achieve desired results, we suggest the establishment of the semantic networks for the selected constructions, presenting all the possible meanings of both composite elements. The units chosen for the current study include four PV previously analysed by Mahpeykar and Tyler (2014): *get up*, *take up*, *get out*, and *take out*. We use the coding scheme for the verbs and the particles as proposed by Mahpeykar and Tyler (2014). For the verb particle constructions, we use a more detailed process than the one offered by them, additionally taking into account the principle of compositionality as explained by Goldberg (1995) and the phenomenon of coercion as described by Langacker (1987) (see Subsection 1.1).

Our hypothesis, therefore, includes the following assumptions:

- each PV has an additional meaning not being inherited from its composite parts directly, but related to them;
- in each verb-particle construction there is a dominant element that influences the meaning.

The method adopted to prove the above hypothesis includes the following steps:

- to reconstruct the complete sense networks of PV *get* plus *up*, *take* plus *up*, *get* plus *out*, *take* plus *out*, including all the senses of the verb and the particle, also those not taking part in meaning construction of the PV in question;
- to reanalyse and reconstruct the meanings of the selected PV as offered by Mahpeykar and Tyler (2014), taking into account also the senses from *Cambridge English Dictionary* (CD) and *Macmillan Dictionary of Phrasal Verbs* (MDPV),[7] in order to trace the additional sense and the dominant element;
- to compare the additional meaning and the dominant element with all the extended meanings of verbs and particles in a network.

The subsequent Section outlines how the above methodology is applied to the analysis of the selected PV.

[7] The senses provided by Mahpeykar and Tyler (2014) are based on *Online Etymology Dictionary* combined with the *Corpus of Contemporary American English*, *WordNet* and *Cambridge Learner's Dictionary*. It has been decided to expand the analysis of the senses, referring to CD and MDPV due to the fact that the former is a set of corpus-informed dictionaries including the *Cambridge Advanced Learner's Dictionary*, the *Cambridge Academic Content Dictionary*, the *Cambridge Business English Dictionary* as well as *Essential American English Dictionary*, *Essential British English Dictionary*, and *Learner's Dictionary* while the latter is a contemporary dictionary solely devoted to phrasal verbs which contains special entries devoted to most common particles and their contribution to the meaning of PV.

3. Analysis

With regard to the meanings of the particles and the verbs alone, the present study relies on Mahpeykar and Tyler's (2014) analysis. As regards the particles, the central *up* 'TR at the top of the LM' has four extended senses: 'more,' 'completion,' 'improvement,' 'activity.' The central *out* 'TR exterior to the LM,' on the other hand, contains nine distinct meanings: 'completion,' 'no more,' 'not in situ,' 'visibility,' 'knowing,' 'exclusion,' 'lack of visibility,' 'distribution,' 'reflexibility.' When it comes to the verbs, the central *get* 'obtain' has three extended senses: 'move,' 'change of the state,' 'achieve sth with effort.' The central *take* 'get hold and remove' has six distinct meanings that include: 'occupy/extended use,' 'accept,' 'convey[8]/go and be responsible for,' 'need,' 'understand,' 'do sth to achieve results.' Instead of presenting central and extended meanings of the verbs and the particles in the linear form, it has been decided to draw networks of sense relations for *up*, *out*, *get*, and *take*.

The composite structure of PV requires the verb and the particle as its component elements. Hence, in our study, a network of *get* has been combined with a network of *up* (Subsection 3.1), then, a network of *get* with a network of *out* (Subsection 3.2), a network of *take* with a network of *up* (Subsection 3.3), and a network of *take* with a network of *out* (Subsection 3.4). On the basis of Mahpeykar and Tyler's (2014) analysis, additionally enriched by taking into consideration the meanings from CD and MDPV, one of the senses of the verb has been linked with one of the senses of the particle to form the central and the extended senses of a given PV.[9] In comparison with the single verb or particle networks, two basic differences, invisible in Mahpeykar and Tyler's (2014) study, should be mentioned. First, the central sense of each analysed PV consists of the central sense of the particle and either the central meaning of the verb or its extended sense. Second, the extended senses of each PV are not necessarily composed of the extended meanings of both the verb and the particle. Its composite senses might also include the combination of the central meaning of the verb and the extended meaning of the particle, or the extended meaning of the verb and the central meaning of the particle.

The networks of the selected PV below illustrate which sense of the verb and which sense of the particle combine to form the composite structure. The red colour of the font refers to the central sense of the verb and the particle. Their extended meanings are marked with single, black arrows. The double, bold arrows refer to the elements comprising PV. The double, bold, red arrow marks the central sense of the PV while the double, bold, blue arrow refers to the extended sense of PV. The single, blue arrow refers to the additional meaning not being inherited from the composite elements of the PV.

---

[8] The basic meaning of *convey* here is 'to take or carry somebody or something to a particular place' and in this respect is compatible with 'go and be responsible for.' Its extended version 'to express something so that it is understood by other people' (literally 'to carry some new idea to the minds of other people') will also be used in our analysis. Hence, when enumerating the meanings of *take*, we feel it necessary to insert 'convey' along with 'go and be responsible for.'

[9] Our judgments have been discussed with two external raters: an Assistant Professor from the Department of English Studies (a non-native speaker) and a teacher of English who is also a native speaker of this language.

3.1. Get up

The central sense of *get up* is composed of the extended verb *get* 'move' an the central particle *up* 'TR at the top pf the LM.' The meaning refers to 'an entity moving or being caused to move from a lower position to a higher position.' The meaning of the resultant PV is physical and this aspect has apparently been coerced by the physical particle.

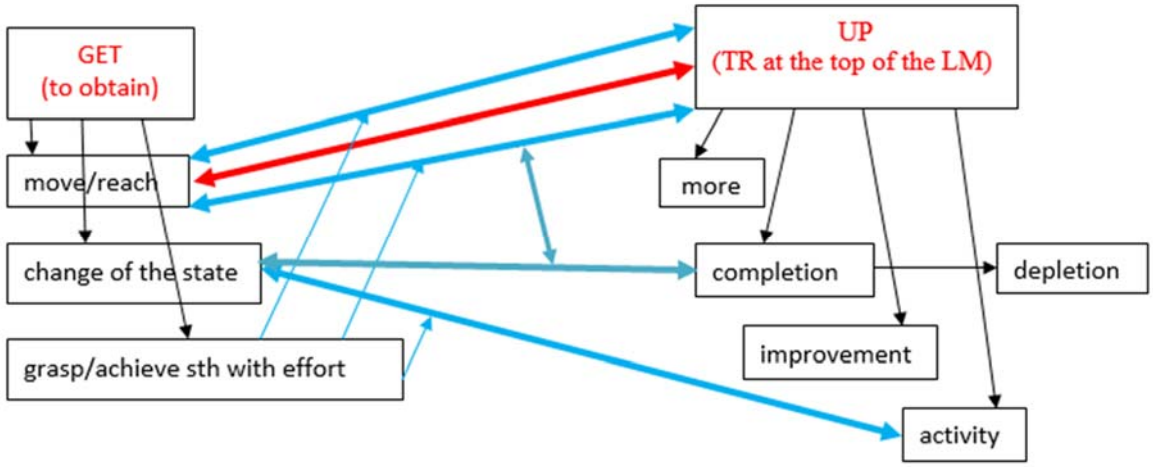

Figure 1**: Semantic network for **get up

The extended senses of *get up* include:

(1) **'become upright'** – composed of the extended *get* 'move' and the central *up* 'TR at the top of the LM.' The meaning is physical apparently due to the influence of the physical particle. Analysing this sense in different contexts, we could notice that in each case there is some additional meaning involving doing this action with some effort or challenge, e.g. *I tried to get up but he leaned over me*; *After the fall, he got up and dusted himself off* (CD) or *Dr Blake* […] *doesn't want you to get up yet* = 'you are too weak to stand up' (COCA). In all the cases, returning to the upright position requires some physical effort. This evidences that apart from being composed from the meanings of its composite parts, this PV also contains the extended meaning of *get* 'achieve sth with effort' and in this respect the verb plays the dominant role.

(2) **'awake and move out of bed'** – composed of the extended *get* 'move' and the central *up* 'TR at the top of LM.' At first glance, it is physical since it involves 'physical movement of moving upwards' influenced by the particle. Additional meaning including *get* 'achieve sth with effort' can frequently be visible here. For example, *It is so hard getting the kids up on schooldays* = 'persuading kids to get out of bed early requires a lot of determination;' *She listened to the radio for half an hour before getting up and going to work* = 'it was difficult for her to move out of bed and start working, she preferred relaxation' (CD) or *Will you get me up at six tomorrow?* = 'I need someone to help me because I am a heavy sleeper' (MDPV); or *I had to get up at five in the morning because there was so much to do* = 'I got up so early only because I had many duties, otherwise I would stay in bed' (COCA). However, when talking about awaking, the physical nature of meaning is not so straightforward. While moving out of bed to become in the upright position involves

physical movement, awakening does not necessarily entails leaving bed. We may awake and stay in bed. Here, it is rather change of the state from unconscious to conscious and the end of sleeping that matters. Therefore, we would say that in this context 'awake' part of the meaning is composed of extended *get* 'change of the state' and extended *up* 'completion.' Unlike 'moving out of bed to the upright position,' there is no additional physical effort in this part of meaning. Hence, the sense of the PV is composed of *get* 'change of the state' and *up* 'completion' plus *get* 'move' and *up* 'TR at the top of LM.' This results in the PV being non-physical to a certain degree. The particle is dominant as it coerces physical nature of the meaning. The physical sense 'moving to the upright position' is influenced by 'TR at the top of the LM' while the non-physical meaning 'awake' is forced by 'non-physical completion' and 'change of the state.' The dominant role of the verb can also be marked by its additional meanings 'achieve sth with effort' and 'change of the state' that take part in the composed PV.

(3) **'organise an event'** – composed of the extended *get* 'change of the state' and the extended *up* 'activity.' The additional meaning which is part of a different sense of *get* involves 'achieving sth with effort.'[10] In this perspective, the verb is dominant as it adds more meaning to the composed PV. For example, *We managed to get a team up to play them at football* = 'we put some effort and succeded in persuading the team to play;' or *Local people got up a petition against the factory closure* = 'they had to ask or persuade a large number of people to sign the document in order to bring back the factory to work' (MDPV); *Get up, get into it and get involved* = 'organising an activity requires an effort of becoming interested and involved in it' (COCA) or *He's getting up a small group to go carol-singing for charity* = 'organising a group of people requires a lot of arrangements and preparations' (CD). The meaning of PV is non-physical and in this respect it is by the non-physical verb and particle.

3.2. Get out

The central sense of *get out* is composed of the extended sense of *get* 'move' and the central sense of *out* 'TR exterior to the LM.' The meaning refers to 'an entity moving from the interior to the exterior region.' The physical particle influences the physical meaning of this PV. For instance, *I'll get out when you stop at the traffic lights* (CD) = 'I'll leave your car,' or *They got the injured people out as quickly as they could* (MDPV) = 'they removed the injured people from the place.'

Get out has three distinct senses:

(4) **'socialize'**[11] – composed of the extended *get* 'move' and the extended *out* 'not in situ.' The meaning involves 'leaving a typical place of habitation for a social activity.' The additional

[10] The particle sense of 'completion' could fit this case, as well. However, completion as endpoint is already coded by the meaning of 'achieve' here (*cf. achieve* in CD).

[11] Mahpeykar and Tyler (2014: 26) use the meaning 'not in situ', however, it is also the meaning of *out* and might cause some ambiguity here. We would say that it is 'socialising outside home' rather than simply 'leaving the place of usual habitation' that fits better in this context.

sense refers to 'the change of the state' being the part of a different extended sense of *get*. Here, the change is from routine or boredom to entertainment or meeting other people in public.[12] For instance, *We don't get out much these days* (MDPV); *People should not get out there and start dating until they have that in check* (COCA); or *We don't get out much since we have children* (CD). Since the verb adds more meaning to the composed PV, it might be said that it is dominant in this respect. In the aforementioned examples, the PV does not imply that these people do not leave their houses at all, but do not do it to socialize with others. The meaning of the PV is, therefore, non-physical and influenced by both the extended verb and the extended particle.

(5) **'become known'** – composed of the extended *get* 'change of the state' and the extended *out* 'knowing.'[13] The additional meaning involves 'some effort to hide the secret' and is part of the extended *get* in the sense 'achieve sth with effort.' Unlike *out* alone which refers to 'information made public' or 'information no longer kept secret,' e.g. *You can't hide your gambling – the secret is out* (CD), in *get out* the element of 'attempting to keep sth secret' is emphasised. The entry is explained as follows: "if news or information gets out, people hear about it although someone is trying to keep it secret," e.g. *I don't want to get it out that I'm leaving* (CD)[14] or *I lower my blood pressure after reading the news is to get out* (COCA). The meaning of the PV is of non-physical nature being influenced by the extended verb and particle. The dominant role of the verb is also marked by the additional meaning taking part in the composed PV.

(6) **'become available'** – composed of the extended meaning of *get* 'change of the state' and the extended meaning of *out* 'visibility/ accessibility.' Additional sense includes 'achieving sth with effort' which is the part of another extended meaning of *get*. In the examples *I finally got my invitations out*; *The company got the report out on time* (CD); *Put someone in jail, and they can't come up with the money to get out* (COCA) or *If you can get your book out in reasonable time, I can see it being a real winner* (MDPV), it is clearly visible that the sense involves 'some effort to achieve a desired result.' As regards the amount of meaning, it is the verb that dominates here. As regards its non-physical nature, it is influenced both by the verb and the particle.

---

[12] Mahpeykar and Tyler (2014: 13) indeed mention that the change of location entails the change of the environment and physical or emotional state, proving different examples, but they do not seem to highlight this meaning in the PV in question. Similarly, the contextualized version of *get up* referring to 'encouraging voters to leave their work or home in order to vote' apparently contains an additional element of 'expressing an opinion as a member of a group,' hence, involves change. Still, this extra sense is not mentioned by the authors.

[13] Although in cognitive terms the relation between seeing and knowing is recurrent, the present analysis distinguishes between knowing as a mental operation and seeing as something involuntary that is happening without any conscious effort; hence visibility is related to accessibility more than to knowing here.

[14] Nonetheless, MDPV does not highlight the fact that the secret is attempted to be hidden and is made public involuntary. The dictionary explains the entry as follows: "If something secret gets out, a lot of people find out about it."

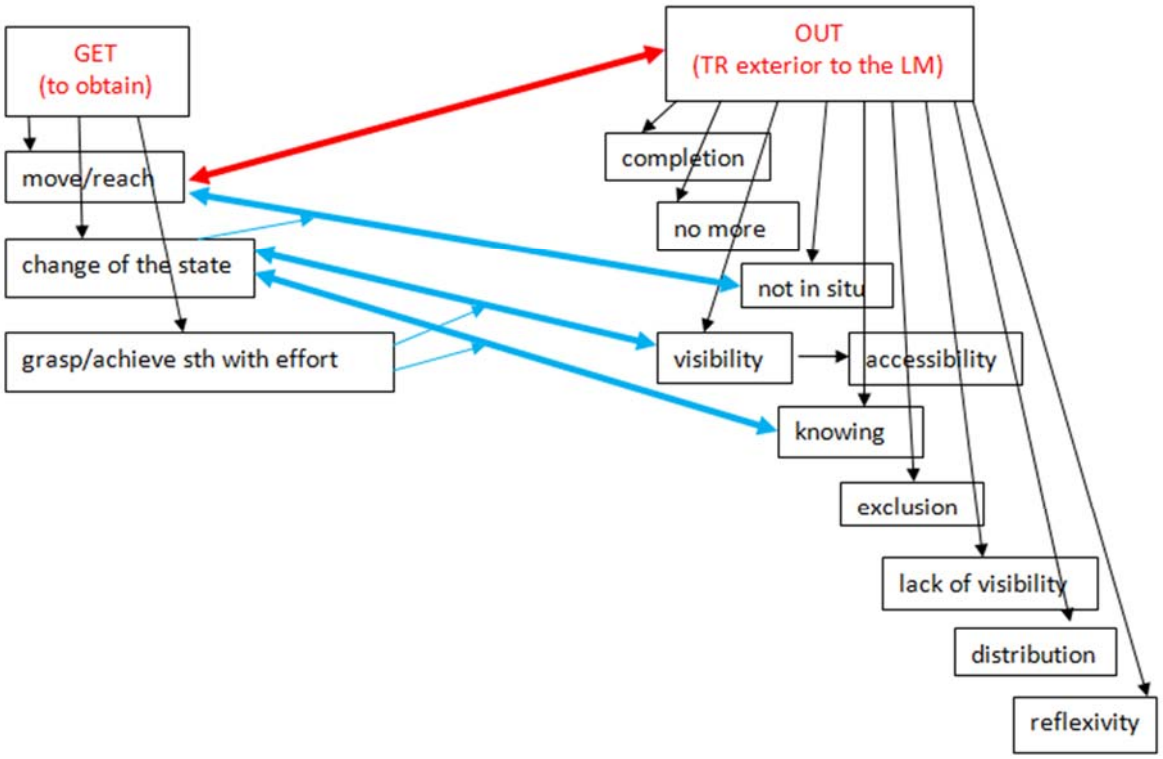

*Figure 2: Semantic network for **get out***

3.3. Take up

The central sense of *take up* includes the central *take* 'get hold and remove' and the central *up* 'TR at the top of the LM,' and refers to 'an entity in the hand which has been moved from a lower position to a higher one.' For instance, *Who will take up Cap's shield?* (COCA). The meaning is rarely used. The sense physical sense of PV is apparently influenced by the physical particle.

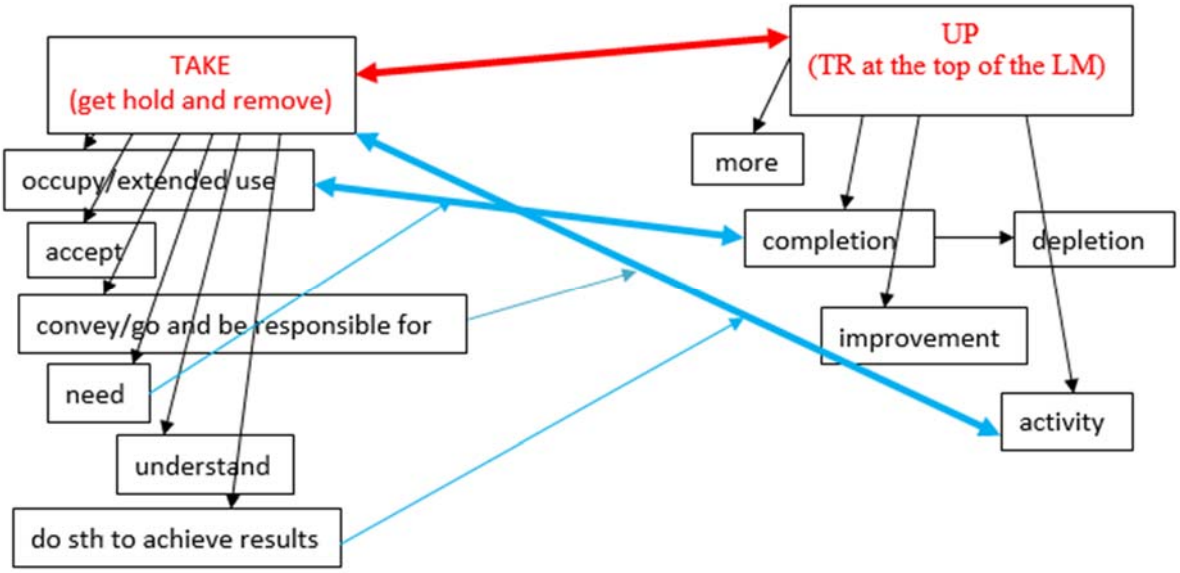

Figure 3**: Semantic network for **take up

The extended meanings of *take up* include:

(7) **'become engaged with an activity/ idea' –** composed of the central *take* 'get hold and remove' and the extended *up* 'activity.' Two additional meanings taken from the extended *take* 'do sth to achieve results/grasp'[15] and 'convey/go and be responsible for' can also be visible in this sense. For instance, *Chris has taken up jogging* = 'became responsible for and engaged in this activity to keep fit or lose weight;' *I took up smoking when I was eighteen* = 'on reaching the adulthood I became responsible for my actions and started smoking to feel relaxation;' *She fell silent, and her brother took up the story* = 'felt responsible to substitute for his sister and became engaged with finishing the story to make others hear the ending' (MDPH) *He will step down from the Congress to take up his new position* (COCA) or *He's taken up the position of a supervisor* = 'started a new job to climb the carrier ladder and became responsible for certain duties;' *A leading law firm took up his case* = 'became responsible for the case and dealt with it as to win it in the court' (CD). In the aforementioned contexts, the meaning 'convey' as explained in note 7 points to the idea of 'newness' that needs to be expressed so that it gets realised or understood (realising someone starting a new activity such as jogging or smoking, another person continuing the story, a new supervisor or a law firm). In all the cases, the speaker realises that something new has happened. The presence of the additional meanings make the verb dominant in composing the structure. Its non-physical nature is by contrast coerced by the particle.

(8) **'occupy space or time' –** composed of the extended *take* 'occupy/extended use' and the extended *up* 'more' together with *up* 'completion' which adds some emphasis. In this sense TR uses some parts of the LM more than is needed, e.g. *The rider was judged for taking up two seats*; *Too much of this report is taken up with out-of-date numbers* (CD). The 'more' sense highlights the fact that occupying exceeds the norm while the 'completion' sense highlights the fact that it is the endpoint that brings the negative results. In certain contexts of this sense, it can be noticed that the additional meaning connected with the extended *take* 'need' is apparently visible, e.g. *This one comes to us via the dreams and prophecies that take up large sections of the books* (COCA) = 'they occupy many pages of the book but are necessary to exhaust the topic;' or *These files take up a lot of disk space* = 'although it is not desirable, they need to occupy so much disk space;' *I'll try not to take up too much of your time* = 'although I realise you do not have time, I need to talk to you' (MDPV). The PV is non-physical and the meaning is negative, in general. The verb is dominant here as it adds some extra meaning to the composite structure. The non-physical nature of the PV is influenced by both the verb and the particle.

[15] Arguably, it can be said that anything people do implies some purpose and result and on the grounds of that exclude the sense from our analysis. However, the meaning is to emphasise the fact of achieving results in certain contexts rather than outlining that it exist only in some situations.

3.4. Take out

The central meaning of PV *take out* consists of the central *take* 'get hold and remove' and the central *out* 'TR exterior to the LM'. The sense refers to 'a human hand removing an entity from a container, LM is usually covert'. The instances include: *Henry took out his wallet* (MDPV) = 'he got the wallet from his pocket' or *I took out some money for the weekend* (CD) = 'I got money from the ATM.'[16]

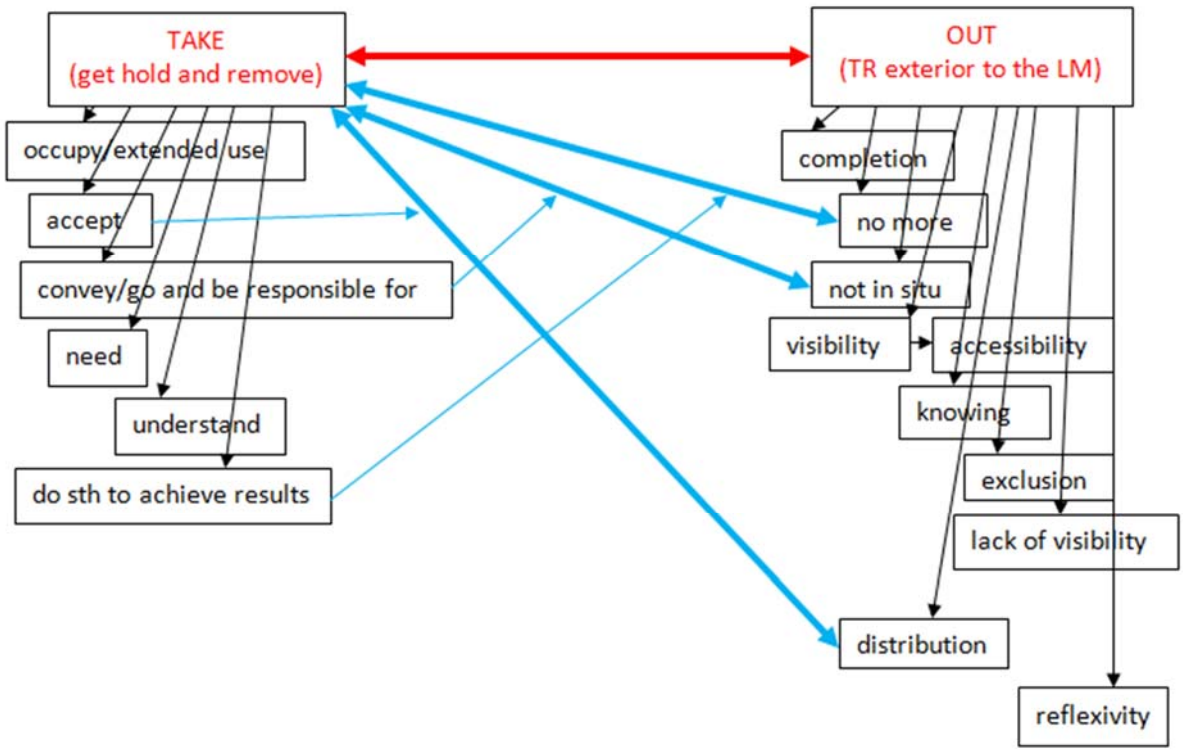

Figure 4**: Semantic network for **take out

The extended senses of *take out* include:

(9) **'obtain a legal arrangement from an institution'** – composed of the central *take* 'get hold and remove' and the extended *out* 'distribute.' Its non-physical meaning is influenced the particle. It involves 'agreeing on certain conditions in order to receive a bank loan with the aim of allotting sums of money to necessary things.' For example, *They took a loan out to pay for their wedding* (MDPV) or *He had to take out a loan to pay his taxes* (CD). In both cases, the money is removed from the bank in large amount and then divided into smaller amounts to pay for different aspects of the wedding or different taxes. Another meaning can be 'signing a contract.' For instance, *I'll take out extra insurance on Dahlia House* (COCA); or *When you take out an insurance policy, read the small print* (MDPV) = 'the contract involves paying amounts of money on a monthly basis in exchange for getting a financial help in case of some misadventure.' In all the aforementioned instances,

[16] However, 'getting money from a bank account' instead of an ATM is not physical in meaning as a bank account cannot be qualified as a literal container. Hence, this sense refers to the extended *take out* and can be defined as 'a monetary transaction being a legal arrangement.'

the additional meaning 'accept/agree' which belongs to *take* not being part of the composite elements forming this PV is clearly visible. In this respect, it is the verb that is dominant in composing the meaning of PV.

(10) **'destroy an entity'** – composed of the central *take* 'get hold and remove' and extended *out* 'no more.' Its additional meaning includes 'doing sth to achieve results' and is part of the extended *get* that is not included in the composite parts of this PV. For instance, *They call for a comprehensive strategy to take out Assad's air force* (COCA); *The soldiers said that they were trying to take out the snipers* (CD); *The night bombing raid took out the bridge* (MDPV) or *They hire someone to take him out* (MDFV) = 'the contract between two parties involves paying someone in exchange of killing another person.'[17] The nature of meaning here is non-physical as it is inherited for the extended particle. The verb is dominant in the sense that it adds some extra meaning to the composite structure.

(11) **'invite sb for a social meeting'**[18] consists of the central meaning of *take* 'get hold and remove' and the extended meaning of *out* 'not in situ.' The sense refers to 'socialising with another person or people by going with them to an establishment or an activity outside the home and pay for everything.' The additional meaning comprises the extended sense of *take* 'convey/go with and be responsible for.' For instance, *Can I take you out some time?* (MDPV) = 'Can I invite you somewhere where we can entertain/socialize and I'll pay for everything;' *I was just the kid sister, the one he used to take out for a hamburger and Coke* (COCA) = 'he used to take the responsibility over his sister and pay for her meal;' or *Our boss took us out for drinks* (CD) = 'our boss wished to socialize with us so s/he invited us to the pub and paid for our drinks.' This sense is non-physical and dominated by the particle in this respect. When it comes to the amount of the meaning, it is the verb that mostly contributes in composing the PV.

Having analysed the meanings of the selected PV in multiple contexts and in relation to their semantic networks, some interesting observations can be noticed. First, in the case of the extended senses of PV, there is some additional meaning being part of the verb's extended meaning that is not a composite element of the construction. In this perspective, the verb is the dominant element of the PV. Second, the central meaning of a PV does not contain additional sense. Here, there is no coercion on the part of the verb. However, in most cases, the physical nature of meaning is correlated with the particle. Hence, we might state that it is the particle that plays a dominant role in composing PV.

---

[17] It might seem that *take out* meaning 'to hire sb to kill' could be analysed in terms of 'signing a contract between the parties' with the additional meaning 'accept/agree' added. Still, in the latter, the sense 'contract' is apparently coded by 'hire' while 'kill sb' refers to 'the act of destroying sb.'

[18] The meaning provided by Mahpeykar and Tyler (2014) is described as 'having a date' and refers to 'accompanying someone to an establishment or activity outside the home.' However, the contextual analysis of the selected dictionaries shows that the meaning apparently refers to 'inviting someone to a restaurant, cinema, etc. for a social meeting/entertainment.' A date implies 'a social meeting planned before it happens, especially one between two people who have or might have a romantic relationship' (CD) while the analysed examples indicate that it is not necessarily a couple that can go together somewhere. What is also important in this meaning is the fact that a person who invites others usually pays for everything.

Third, when the central sense of the particle comprises the composite element, the resultant PV is always of physical nature. Fourth, for the composite unit to be of non-physical nature, the extended sense of the particle is necessary to participate in the meaning combination.

4. Conclusion

In this study, the compositional nature of PV has been examined. We have analysed four PV previously studied by Mahpeykar and Tyler (2014) with the aim to present further development of their methodology. The results of our research have evidenced that PV display some systematicity not only with regard to the semantic combination of their component verb and particle, but also due to the additional meaning going beyond those elements. It has been outlined that the additional meaning should be searched for among the other senses of the verb. In this respect, it is the verb that plays the dominant role in the PV formation. Additionally, the correlation of PV with the literal or figurative meaning of the particle has been detected, providing a relatively strong evidence for the dominant nature of the particle in this area. Generally, it can be concluded that a PV is a combination of one sense of the verb and one sense of the particle, wherein it is the verb that adds extra meaning to the unit and the particle that determines its metaphorical nature.

Naturally, the investigation of four examples of PV has not exhausted the topic. Further research requires the analysis of more examples. The method can also be applied to other composite structures, such as idioms or compound nouns. The study has also potential implications for designing learning materials in the area of pedagogical grammar.

References

Bolinger, D. 1971. *The phrasal verb in English*. Cambridge: Harvard University Press.

CD = *Cambridge English Dictionary* [online]. https://dictionary.cambridge.org/ [retrieved 1st April 2019].

Celce-Murcia, M., and D. Larsen-Freeman. 1983. *The grammar book: an ESL/EFL teacher's course*. USA: Heinle and Heinle Publishers.

COCA = Corpus of Contemporary American English. https://www.english-corpora.org/coca/ [retrieved 10th November 2019].

Dirven, R. 2001. English phrasal verbs: Theory and didactic application. In M. Putz, S. Niemeier, and R. Dirven (eds.), *Applied Cognitive Linguistics, vol. II: Language Pedagogy,* 3–28. Berlin/New York: Mouton de Gruyter.

Evans, V. 2007. *A glossary of Cognitive Linguistics.* Edinburgh: Edinburgh University Press.

Evans, V., and M. Green. 2006. *Cognitive Linguistics: An introduction*. Edinburgh: Edinburgh University Press.

Fraser, B. 1976. *The verb-particle combination in English*. New York: Academic Press.

Goldberg, A. 1995. *Constructions: A Construction Grammar approach to argument structure.* Chicago: University of Chicago Press.

Hampe, B. 2000. Facing up to the meaning of 'face up to': A cognitive semantico-pragmatic analysis of an English verb-particle construction. In A. Foolen, and F. van der Leek (eds.), *Constructions in Cognitive Linguistics: Selected papers from the Fifth International Cognitive Linguistics Conference, Amsterdam 1997*, 81–101. Amsterdam: John Benjamins.

Lakoff, G., and M. Johnson. 1980. *Metaphors we live by*. Chicago/ London: University of Chicago Press.

Langacker, R. W. 1987. *Foundations of Cognitive Grammar, vol. I: Theoretical prerequisites*. Stanford: Stanford University Press.

Linder, S. 1981. A Lexico-semantic Analysis of English Verb-particle Constructions with UP and OUT. Ph.D. diss., San Diego, University of California.

Luo, H. 2019. *Particle verbs in English: a cognitive linguistic perspective.* Singapore: Springer.

Mahpeykar, N., and A. Tyler. 2014. A principled cognitive linguistics account of English phrasal verbs with up and out. *Language and Cognition* 7(01): 1–35, (online version).

MDPV = *Macmillan Dictionary of Phrasal Verbs*. (2010). Oxford: Macmillan Publishers.

Morgan, P. S. 1997. Figuring out *figure out:* Metaphor and the semantics of the English verb-particle construction. *Cognitive Linguistics* 8: 327–357.

Olson, A. 2013. *Constructions and Result: English phrasal verbs as analysed in Construction Grammar.* Trinity Western University: unpublished MA thesis.

Rudzka-Ostyn, B. 2003. *Word power: Phrasal verbs and compounds (a cognitive approach).* Berlin / New York: Mouton de Gruyter.

Sweetser, E. 1999. Compositionality and blending: Semantic composition in a cognitive realistic framework. In T. Jansen, and G. Redeker (eds.), *Cognitive Linguistics: Foundations, scope, and methodology*, 129–162. Berlin: Mouton de Gruyter.

Taylor, J. R. 2002. *Cognitive Grammar*. Oxford: Oxford University Press.

Tyler, A., and V. Evans. 2003. *The semantics of English prepositions: spatial scenes, embodied meaning and cognition*. Cambridge: Cambridge University Press.

LingBaW

Linguistics Beyond And Within 5 (2019), 46-60

But let your 'Yes' be 'Yes,' and your 'No,' 'No.'* Meaning construction in medical encounters

Eszter Kárpáti and Judit Kleiber
University of Pécs, Hungary

Abstract
This paper investigates interpretation in medical context. Our question is how institutional context influences the utterance meaning: if it is really triple layered (literal, utterance-type or pragmatic, Levinson 2000), or rather a continuum (Wilson 2016). Even idiomatic language use (Kecskes 2017) can induce uncertainty and obscurity, which can be and has to be solved in the given dialogue or discourse context (Wilson and Kolaiti 2017). The paper analyzes various medical encounters in a formal pragmasemantic model called ℜeALIS (Alberti and Kleiber 2014). The benefit of applying this system is that it represents the interlocutors' mental states (beliefs, desires, and intentions) supplemented by the parameter of authority, by which the occurring mismatches can be captured formally. We have found that two main types of mismatch can be differentiated, and both of them can be originated from the fact that the context is not the same for the participants. Our findings support the view that meaning construction is rather flexible and context-sensitive: it can be considered as wandering along the meaning continuum without any clues.

Keywords: pragmasemantics, medical communication, ℜeALIS, meaning construction

1. Introduction

The paper investigates interpretation in medical context. Our question is how institutional context influences the utterance meaning.

Face to face communication in institutional situations is challenging, since the physical and cognitive contexts – by the very nature of the institution – are different for the participants. Therefore, it is difficult to understand formulaic language, and also pragmatic and semantic idioms. In case of irony, sarcasm or joke, it is almost impossible to find the proper interpretation. The addressee has to gather the relevant pieces of contextual information; estimate the social (and cultural), institutional, and even age distance; calculate the addresser's BDI-state (beliefs, intentions, and desires); and paste them together with the addressee's own mental states. Considering the pattern matching, it can be seen as a continuum, where the

* Matthew 5:37, *NKJV*.

addressee has to find the most fitting actual meaning. It seems that using medical terminology is the least expensive way to be clear: the patient either knows the correct meaning, or can notice an unknown or unclear meaning.

In order to address the issue of meaning construction, we analyze various medical encounters in a formal pragmasemantic model called ℜeALIS (Alberti and Kleiber 2014; see also Viszket et al. in this volume), which represents the interlocutors' mental states. Our aim is to find the problematic points of specific doctor–patient encounters, and formally capture the mismatches that occurred in these situations.

The paper is organized as follows. In Section 2, we describe the main characteristics of doctor–patient communication. It can be seen from different perspectives of pragmatics: if we take it as intercultural communication, then intercultural pragmatics is the theoretical framework; having inferences as the key features, presumptive meaning comes to the fore; or we can take the stand of lexical pragmatics describing how word meaning is modified in use. Medical encounter is a special institutional communication where language use and context can induce uncertainty and obscurity instead of clarity. In Section 3, we give a pragmasemantic analysis of doctor–patient (nurse–patient) encounters, where the misunderstandings outline two main types of mistakes: one originates from the participants' dissimilar referent identification, while the second type of mismatch derives from the inaccurate profile-element identification. These examples illustrate that in medical context, direct wording is rewarding. Finally, in Section 4, we summarize our findings.

2. Doctor–patient communication from different perspectives of pragmatics

Despite the common assumption that clarity is one of the most important source of relevance, we often look puzzled when we are mutually misunderstood. This phenomenon is especially frequent in institutional situations. In this section, we discuss doctor–patient communication from three aspects of pragmatics: intercultural communication, the types of presumptive meanings, and lexical pragmatics.

2.1. Intercultural communication

Doctor–patient communication is asymmetrical concerning, for example, the knowledge base and potentials: the special preparedness and being in possession of particular information gives the doctor a sort of higher social position. This position is defined by a set of social norms and cultural rules. However, these norms and rules also determine certain verbal and nonverbal behavior.

The most special characteristics of doctor–patient communication can be captured by its multilayered contextual determinacy: in medical encounters, the parties have different perspectives, means and goals. They are participating in the encounters according to the role they undertook. Nevertheless, it is not an equilibrium: they can move back and forth on the scale of their own conversational repertoire. However, being involved in institutional communication, they are – if we are optimistic – at least partly bound by some convention.

Language usage convention exists in the usage of the members of a speech community if there are language regularities which occur in *strictly delineated cases*, and the members of the community *expect* these regularities to occur in those cases, and the members of the community *prefer* the regularity to occur in those cases, because it solves a problem of communication or interaction (Eemeren and Grootendors 1984). As part of the conventional usage "Conventional routine expressions like situationally bound utterances encode information that is equally available for all members of the given speech community" (Kecskes 2017: 203). The problem is that doctor–patient communication is like intercultural communication. The participants lack common social-cultural background knowledge. Since this collectively shared knowledge can be acquired only by imitation, training and repetition, we could suppose, that the more patients are familiar with the medical context, the more they will be capable to understand the utterances in it. However, it is not the case. Context is important for appropriate language use: on one hand, the situational context, but on the other hand, the context that is defined by previous experiences. This points out that language use is just as doublefolded as language itself: it has a synchronous (selective) and a diachronic (constitutive) aspect.

2.2. Types of conversational implicatures

Looking from the side of inferences, meaning-construction in doctor–patient communication is also inextricable. Levinson in *Presumptive Meanings* (2000) differentiates three main principles: The Q(uantitative), the I(nformativeness) and the M(anner) principles. He states that there is (or has to be) a level of generalized conversational implicatures: there is a level of utterance-type meaning, which is distinct from, and intermediate between, sentence-type meaning and utterance-token meaning. It is more than encoded linguistic meaning, but generally less than the full interpretation of an utterance. Based on Q-HEURISTIC (what is not said to be the case is not the case), I-HEURISTIC (what is said in a simple (unmarked) way represents a stereotypical situation) and M-HEURISTIC (what is said in an abnormal (marked) way represents an abnormal situation) we usually have to be able to differentiate between the three types of meanings. Utterance-type meaning is a matter of preferred or default (or 'presumptive') interpretations, which are carried by the structure of utterances, given the structure of the language, and not by virtue of the particular contexts of utterances. These are default inferences, hence defeasible, and their results can be overridden: if the default output is inconsistent with the context, it is dropped.

In case of medical encounters, doctors and patients often evaluate the utterances differently considering quantitativeness (the interpretation of what was really said), informativeness (whether the utterance was said "normally" and meant stereotypically) and manner (whether the utterance was said "markedly" and meant "abnormally"). They can be lost both linguistically and metalinguistically. Furthermore, when they are confident, it can be more misleading, as they do not even realize the possibility of misunderstanding. It seems that the pragmatic clues can rarely be detected, the utterance-type and utterance-token meaning are easily missed.

2.3. Lexical pragmatics

We can take the perspective of lexical pragmatics, and put aside conventional meaning. A central goal of lexical pragmatics is to investigate the processes by which linguistically specified (encoded) word meanings are modified in use, in the processes of lexical narrowing, approximation and metaphorical extension. Narrowing is often treated as a case of I-implicature, involving a default inference to a stereotypical interpretation (Levinson 2000); approximation is often treated as a case of pragmatic vagueness involving different contextually-determined standards of precision; metaphor is widely seen as involving blatant violation of a pragmatic maxim of literal truthfulness in order to convey a related implicature (Levinson 1983). Thus, narrowing, approximation and metaphor tend to be seen as sui generis processes involving distinct pragmatic mechanisms or principles. Instead, they are highly flexible, creative and context-sensitive processes, which cannot be satisfactorily handled in terms of a notion of default inference: there is no sharp theoretical distinction between literal, loose and metaphorical uses, but a continuum of cases with no clear cut-off point between them (Wilson and Kolaiti 2017). This approach reflects the real nature of meaning construction in medical encounters. In doctor–patient communication, flexibility and context-sensitivity may result in misunderstanding. However, deliberate and sensitive choice of verbal (and nonverbal) behavior can help the participants find the actual meaning.

Based on the above-mentioned three approaches, we consider a medical encounter a special institutional communication where language use and context have the potential for inducing uncertainty and obscurity instead of clarity. This is why we think that there is no pure semantic meaning: it is at least pragmasemantic, i.e., individual. Personal background knowledge sums up with semantic meaning and contextual elements. This is the starting point for inferences, by which actual meaning can be calculated. In what follows, we model this process in order to be able to pinpoint the mismatches in the course of the participants' meaning constructions.

3. Analysis of medical encounters

For the pragmasemantic analysis, we applied the ℜeALIS framework (Alberti 2011; Alberti et al. 2019), which combines dynamic semantic means and cognitive notions to capture linguistic phenomena traditionally described by concepts such as illocutionary act (e.g. Searle 1969). We start this section by briefly introducing the system, then we move on to the analysis.[1]

3.1. Applied framework ℜeALIS

ℜeALIS 'Reciprocal And Lifelong Interpretation System' can be characterized as a discourse-representation-based (Kamp, Genabith, and Reyle 2011; Asher and Lascarides 2003) formal pragmasemantic theory. *Reciprocal* means that the interlocutors model each other: the speaker, for instance, when utters a sentence, takes the listener's assumed knowledge into consideration,

[1] For a more thorough introduction to the theory and formalism of ℜeALIS, the interested reader is referred to Alberti et al. (2019); see also Viszket et al. (this volume).

including the assumed knowledge on the speaker's knowledge. *Lifelong* means that the interpreter is building a huge DRS (discourse representation structure) from birth, consisting of momentary information states. Nothing is deleted, a piece of information can only "fade away", and may reoccur later in the mental structure (Kárpáti and Kleiber 2018). These DRSsare constructed via the mathematical technique of *simultaneous recursion* (Alberti 2000). By this operation, ℜeALIS can apply unboundedly huge, but finite structures (Szeteli et al. 2019), in contrast to common-ground based approaches (e.g. Stalnaker 2002), which operate on infinite basis.

The innovative feature of ℜeALIS is that representations are regarded as mental states (the interpreters represent discourses in their minds), and these mind-representations are taken to be part of the world model (Alberti and Kleiber 2014). In this way, a homogeneous structure is used for representing the discourse, the world, and the human mind. Evaluation is achieved by applying an extended version of the pattern-matching operation known from formal semantics. This mechanism makes it possible to evaluate intensional relations, such as the sincerity of a promise, the same way as extensional relations, e.g., the truth-value of a sentence.

A major goal of ℜeALIS is to explore what truth-values the declarative, interrogative and imperative conventions "expect" in the addresser's and the addressee's definite possible worlds. In this respect, it can be regarded as the representationalist counterpart of Lauer's (2013) antirepresentationalist dynamic pragmatics. In ℜeALIS, however, the term *possible world* refers to an actual mental state the interlocutors have, representing some kind of belief (B), desire (D), authority (A), intention (I), or experience (E). For instance, in the possible world of the addresser's beliefs, when uttering a declarative, the ideal truth-value of eventuality *e* (an event or a state) is +1, meaning that the addresser conventionally communicates the sure knowledge of *e*. This does not indicate, however, that the speaker *actually* believes *e*; the sentence can be a lie, a bluff, an ironic utterance, etc.

On this ground, ℜeALIS assigns so-called *intensional profiles* to the major sentence types (declarative, interrogative, imperative), and also to "fine-tuned" sentence types marked by discourse markers (e.g. biased questions); where an intensional profile is the collection of partial possible worlds – called *worldlets* – evoked by the (conventionalized) use of sentence types. A worldlet minimally encodes one meaning component, such as a desire for an eventuality, or a belief about the intentions of the addressee. It can be regarded as a labeled DRS-like structure about an eventuality *e* where the *label* encodes the four essential properties which belong to *e* in this particular case:

1. Host of the *worldlet*: 'I', the addresser (i);'you', the addressee (u); 'other', a relevant third party (o).
2. Set of modalities: Belief (B), Desire (D), Authority (A), Intention (I), Experience (E).
3. Time parameter: earlier (–), later (+), now (no marking)
4. Intensity: the [–1; 1] interval encoded in fifths. 'Absolutely true': +5 ("five fifths"); 'no idea': 0; 'absolutely false': –5; other degrees of certainty: –4, –3, … 3, 4.[2]

[2] In the case of the three major sentence types, the intensity values of the intensional profiles are calculated on the basis of an underspecified profile (*target-oriented mentalization*). In the case of sentences with discourse markers (particles, intonation, etc.), specialized profiles are defined, which are the modifications the major

For instance, when a declarative sentence *It is Friday*. is uttered sincerely, as a part of the declarative intensional profile, the addresser's mental state includes the worldlet [for *e*: iB = +5] 'I believe with maximal intensity that *e* is true', meaning that the addresser knows that it is Friday. A worldlet label can refer not only to eventualities but also to mental states. For instance, the more complex worldlet [for e: iIuI+ = '+5] 'I intend that you intend (at a later time) to execute e' is a part of the imperative profile, and it represents the central component of the profile, i.e., the intention behind sincerely uttering an imperative. Finally, three minor markings need to be explained. First, when there is no plus or minus sign before an intensity value, it can be either positive, or negative. Second, the prime (') or double prime (") symbol surrounding an intensity value denotes a narrower or a broader interval instead of a precise number.[3] And third, since each modality labels need to be assigned an intensity value, in the case of embedded mental states, multiple intensity values are given. However, it is often enough to display only one, relevant value. In these cases, the modality label with the displayed value is underlined.

3.2. Types of mismatches

Face to face communication in medical context is challenging, since the physical and cognitive contexts are different for the participants. We argue that this formal pragmasemantic approach, ℜeALIS is able to pinpoint these differences. The following analysis focuses on two main types of mismatch. The first type originates from referent identification, i.e., different interpretation of eventualities, predicates, or entities. The source of these misunderstandings is typically the participants' different contextual background: the context is familiar for the doctor, but unfamiliar for the patient. The second type of mismatch derives from the inaccurate profile-element identification: the interlocutors' misjudge each other's mental states, their authority, belief, or intention regarding the eventualities in question. This can also be explained by the patient's lack of contextual clues; which practically means that the intended meaning is often not apparent for the patient.

In what follows, first we introduce examples where the problem lies in the identification of different kinds of referents: eventuality, predicate, or entity. Then, we turn to the second type of mismatch, where the patient misinterprets the doctor's utterance due to a problem in identifying profile elements of different modalities: authority, belief, or intention. The presented examples are from Hungarian medical situations collected by the authors personally. The data is not aimed to be representative but rather focused on various types of misunderstandings. The analyses reflect our interpretations, the way we experienced the situations from the patients' point of view.

profiles on the basis of the pragmasemantic contributions of these extra elements. (For more details, see Alberti et al. 2019.)

[3] For instance, 'n' means a (bell-shaped) normal distribution over interval [n–2, n+2]. This notation is to capture the fact that the addresser's role often does not strictly define one particular value, but rather a typical, preferable value, which allows for a slight variation.

3.3. Mismatch in referent identification

The first dialogue we examined occurs when the doctor takes the patient's medical history (1). The context is familiar for the doctor, but – as it seems – quite unfamiliar for the patient.

(1) Doctor: *Magas vérnyomás?*
high blood_pressure
'(Do you have) high blood pressure?'
Patient: *Nem.*
'No.' (Since she takes her pills regularly.)

In this case, the patient involuntarily provides misleading information, since she interpreted the question compositionally, as it referred to her actual (under therapy) condition; while the doctor's use was in fact idiomatic: he meant if she had a diagnosed condition (hypertonia). Without the familiarity of the context (the knowledge of what is relevant here), the patient cannot realize the need for idiomatic interpretation.

The formal analysis can pinpoint the exact source of the misunderstanding (Table 1), namely the difference in identifying the eventuality referent (*e* and *e'*). The last row shows that the patient – correctly – interprets the utterance as a question: she assumes that the addresser's (doctor's) intention by this utterance was that the addressee (patient) let the addresser know if the given eventuality is true or false. In the formalism of ℜeALIS: iBuIiI+uB+ = 5 ('I believe (iB) that you intend (uI) that I intend later (iI+) that you know later (uB+) if the eventuality holds (5)'), which corresponds to the central component of the interrogative profile from the addressee's point of view, i.e., the AR's (supposed)intention behind the utterance. The mismatch results from that fact that this profile element refers to *e'* for the patient (her blood pressure being high), while it refers to *e* for the doctor (the patient having hypertonia).

Table 1: *Mismatch in eventuality referent identification. Formal analysis of dialogue (1)*

	for the doctor	**for the patient**
meaning	*idiomatic*: 'you do have hypertonia (as a medical condition)'	*compositional*: 'my blood pressure is high (at the moment/lately)'
referents[4]	**e**: p_{have} $r_{patient}$ $r_{hypertonia}$	**e'**: p_{high} $r_{blood\_pressure}$ $r_{patient}$
profile element (interrogative, central comp.)	for e: iIuI+<u>iB+</u> = 5 'I want you to let me know if *e* is true or false'	for e': iBuIiI+<u>uB+</u> = 5 'I believe you want me to let you know if *e'*is true or false'

The analysis reveals that the doctor did not take into consideration the patient's lack of contextual background, which resulted in the misunderstanding. The cognitively least expensive way to be clear, in situations like these, would be to use medical terminology (*Do you have hypertonia?*), when the patient can at least notice the unfamiliar meaning.

Similar dialogues are listed below (2, 3).

[4] In harmony with the notation system of ℜeALIS, different letters denote different types of referents: *e* represents an eventuality (event or state); *r* stands for entities (people, things, concepts); and *p* indicates a predicate referent. The assumption is that predicates do not necessarily have the exact same meaning for everyone, therefore they are not considered constants either (Alberti 2001).

(2) Doctor: *Egyedül él?*
alone live.3SG[5]
'Do you live alone?'
Patient: *Igen, a fiammal. A feleségem 7 éve meghalt.*
yes the son.POSS.1SG the wife.POSS.1SG 7 year die.PAST.3SG
'Yes, with my son. My wife died 7 years ago.'

(3) Doctor: *Hogy tetszik lenni?* (in Hungarian)
how like.3SG be.INF
'How are you?' (in a special polite form used with the elderly)
Patient: *Nehezen, tudja annyi minden történt…*
hard know.3SG so_much everything happen.PAST.3SG
'It's really hard, you know, with everything's going on...'

Example (2) illustrates that medical context does not determine markedness (which expression is idiomatic). In this case (contrary to (1)), the doctor's meaning is compositional, he wanted to know if there is anyone who can look after the patient; while the patient's interpretation is idiomatic, he meant his marital status.

In (3), the doctor asks the question in a familiar tone, which overrides the institutional context, and thus triggers the conventional meaning. The effect of the utterance is that the patient starts talking about her life. In this case, politeness/familiarity overrides the institutionally bound eventuality referents for the patient, resulting in a mismatch in referent identification.

Another example illustrates that in some contexts, the predicate referent (*p*) is identified inaccurately (4). The situation takes place in the office of a vascular surgeon.

(4) Doctor: *Vetkőzzön le!*
undress.IMP.3SG down
'Get undressed!'
Patient: takes off her coat (she believes rolling up her trouser leg would be enough)

For the doctor, the familiar context supports a narrowed, indexical interpretation. The meaning of the predicate *levetkőzni* 'undress' is contextually bound; it is semantic and institutional, depending on the type of doctor, type of examination. In this case, the intended meaning was taking off the trousers. For the patient, however, the context is unfamiliar; there is no contextual clue for what to take off. Therefore, the interpretation is not narrowed; she is left with the literal/conventional lexical meaning, which is semantic and individual depending on cultural and/or personal factors. In this case, she thought she understood the utterance perfectly, and took off her coat.

The formal analysis is presented in Table 2. The last row indicates that there is no problem in identifying the imperative intensional profile behind the utterance, so the patient correctly recognizes the doctor's intention, which is for her to get undressed. The source of the mismatch is the extension of the predicate referent, which is different for the doctor (*pundress*) and the patient (*pundress'*) due to their different contextual background.

[5] In Hungarian, formal polite form is expressed by 3rd-person verbs.

Table 2: *Mismatch in predicate referent identification. Formal analysis of situation (4).*

	for the doctor	**for the patient**
meaning	*narrowed*: 'take off your trousers' based on institutional situation	*not narrowed*: 'take off my coat' based on individual interpretation
referents	e: $\mathbf{p_{undress}}$ $r_{patient}$ where $p_{undress}$: take off trousers	e': $\mathbf{p_{undress}}$**'** $r_{patient}$ where $p_{undress}$': take off coat
profile element (imperative, central comp.)	for e: iI<u>uI+</u> = +5 'I want you to make *e* happen'	for e': iBuI<u>iI+</u> = +5 'I believe you want me to make *e'* happen'

Similar medical situations occur quite often, all of which demonstrate that without contextual information the exact extension of the predicate referent is not calculable for the addressee. The solution is that the doctor should make it explicit what to take off exactly, since the patient may lack the sufficient contextual facts to execute the task properly.

The next dialogue we analyzed (5) takes place during the admission process, when the patient appears at the hospital for surgery.

(5) Doctor: *Megbeszélte valakivel, hogy műtétre jelentkezik?*
discuss.PAST.3sg somebody.INS that surgery.SUBL sign_up.3SG
'Have you discussed the surgery with anyone?'
Patient: *Igen, az édesanyámmal.*
yes the mother.POSS.1SG
'Yes, with my mother.'

In this case, the problem is that the patient – due to the lack of sufficient contextual background – does not realize that by "anyone" the doctor, in fact, meant a surgeon to perform the surgery. Themeaning is narrowed (indexical) for the doctor, but not for the patient. The formal analysis reveals the different identification of the entity referent for *anyone* (Table 3): for the doctor, the possible entities to choose from are all surgeons, while for the patient, the complete set of referents (R) is available, for instance, a friend, a relative, or a general pediatrician. In this way, we can pinpoint the exact component that needs to be specified.

Table 3: *Mismatch in entity referent identification. Formal analysis of dialogue (5).*

	for the doctor	**for the patient**
meaning	*narrowed/indexical*: 'you talked to a surgeon about your surgery'	*not narrowed/not indexical*: 'I talked to someone about my surgery'
referents	e: p_{talk} $r_{patient}$ $\mathbf{r}r_{patient's\_surgery}$ where r∈ {$r_{surgeon1}$, $r_{surgeon2}$, …}	e': p_{talk} $r_{patient}$**r'** $r_{patient's\_surgery}$ where r'∈ R = {$r_{friend1}$, r_{mother}, r_{GP}, …}
profile element (interrogative, central comp.)	for e: iIuI+<u>iB+</u> = 5 'I want you to let me know if *e*'	for e': iBuIiI+<u>uB+</u> = 5 'I believe you want me to let you know if *e'* '

At this point, we have examined medical situations where the misunderstanding can be derived from the mismatch in referent identification: eventuality (idioms), predicate (narrowed meaning), or entity (indexicality). The source of the problem is the fact that the context is familiar for the addresser (doctor), but not for the addressee (patient). The solution could be

the use of clear, explicit, context-freewording. In what follows, the other type of mismatch is discussed where the problematic component is a profile element: authority, belief, or intention.

3.4. Mismatch in profile element identification

The second type of mismatch occurs when the addressee misjudges the addresser's mental states, the authorities, beliefs, and intentions. The basis of these profile-identification problems is that in medical context, interrogatives are to be interpreted as imperatives, which is not trivial; it has to be learned throughout various encounters.

A yes/no question, for instance, essentially conveys that the addresser's intention is that the addressee provide information. In the ℜeALIS framework, this element is represented as the central component of the basic interrogative intensional profile (iIuI+iB+ = 5). This is not always straightforward, though, given that the addressee should answer with maximal informativity (cf. Grice's maxim of quantity); meaning that in case the doctor asks a yes/no question and the answer can be elaborated on, then a simple *yes* or *no* will not be sufficient. Furthermore, if the question can be interpreted as a directive, then it was in fact meant to be a directive. So instead of the interrogative profile, the imperative profile should be identified with the central component iIuI+ = +5 ('I want that you intend to execute *e*').

The following examples are to demonstrate the fact that identifying the right illocutionary force could be most challenging when the doctor uses indirect speech acts, and the medical context is not familiar for the patient. In these dialogues, the source of the misunderstanding is some kind of disturbance in recognizing the addresser's authority (6), belief (7–9), or intention (10–12).

The context of (6) is a check-up where the doctor aims at suggesting the patient to consult a specialist from another medical field about his problem.

(6) Doctor: *Volna szíves elmenni urológushoz?*
be.COND.3SG willing go.INF urologist.ALL
'Would you mind seeing an urologist?'

In (6) the doctor utters a question that is conventionally interpreted as a polite request. The patient tries to match some kind of imperative – and not interrogative – profile to the utterance. However, the unusually/unnecessary polite form causes uncertainty and confusion ('Was it a real question after all? Can I say *no*?'). The formal analysis reveals that this confusion derives from the mismatch in the profile element representing the doctor's authority. Table 4 presents the elements of the basic imperative profile supplemented by the extra axioms coming from the polite form the doctor uses, in other words, the intensional profile of *request* (Kleiber 2018).

Table 4: *The elements of the imperative intensional profile from the addresser's (doctor) point of view: polite request. Problematic component in (6): authority.*

belief	iB = –5; iBuB = –5	'I know *e* does not hold; I assume you also do'
desire	iBrD = '+5	'Someone (I, you…) longs for *e*'
intention	iIuI+ = +5	'I intend that you intend to execute *e*'
authority	iAiIuI+ = 0" (polite request)	'I have no/weak authority to tell you to execute *e*'
	iBuA = +5	'You are able to execute *e*'

The addressee's expectations about the first three components are met, while the last component is problematic. The patient assumes that the doctor has full authority over the actions he tells her to do (iBuAuIiI+ = +5). She tries to resolve this mismatch: maybe the doctor actually believes that he has no/weak authority (iBuBuAuIiI+ = 0"), or he just acts like it for some reason (iBuIiBuAuIiI+ = 0"); maybe it was a real question after all, or maybe the doctor was being sarcastic.

Therefore, this example demonstrated that in medical context, a polite request could lead to confusion, alternative interpretations, since it indicates weaker authority. Again, the direct form is preferable from the doctor, which minimizes the chance of misunderstanding.

The next utterance took place in the NICU (Neonatal Intensive Care Unit). The nurse (apparently) attempts to motivate the mother who is not feeding the baby properly (7).

(7) Nurse: *Nem akarja hazavinni a gyereket?*
not want.3SG take_home.INF the child.ACC
'Do you not want to take your child home?'

Since (7) is in question form, the addressee (mother) tries to match the interrogative intensional profile. The interpretation of this utterance gets her confused and hurt. The formal analysis reveals a mismatch in the component representing the addresser's (nurse) beliefs. Table (5) presents the elements of the basic interrogative profile, which is conventionally assigned to questions.

Table 5: *The elements of the interrogative intensional profile from the addresser's (nurse) point of view. Problematic component in (7): belief.*

belief	iB = 0; iBuB = 5	'I do not know if *e*; I assume you do'
desire	iBrDiB+ = '+5	'Someone (I, you…) longs for this information'
intention	iIuI+iB+ = 5	'I intend to find out if *e*'
authority	iAiIuI+iB+ = iBuAiB+ = +5	'We both have authority over this inform.-transfer'

The addressee assumes that the nurse must know that she *does* want to take the child home (iBuB = –5), which contradicts the belief component of the interrogative profile (the '0' in the first row of Table 5). She tries to resolve this mismatch: maybe it is not a real question (since the addresser already knows the answer), and the opposite of *e* is true, so it maybe an *ironic question*. In this case, the addresser's intention is in fact to try to make the addressee do something, and thus the utterance is meant to be interpreted as a directive (for some *e'*: iBuIiI+ = +5). However, the addressee expects clear communication and literal meaning in this extremely sensitive context, she is not prepared for irony, sarcasm or joke. Therefore, it is not surprising that the effect of this utterance is that she becomes confused and hurt instead of motivated to do better.

Example (8) presents a similar situation, where the doctor puts his strong suggestion for a surgery in the form of an alternation (disjunction) with an ironic question. The purpose of the utterance is to force the addressee to choose the first option. However, in the unfamiliar context, the patient is not sure about the irony, and thus may consider the second option (and she is also hurt about the tone of the utterance, the indirectness of the doctor).

(8) Doctor: *Engedi, hogy megműtsem, vagy örök életére így akar élni?*
let.3SG that operate.SBJV.1SG or forever life.SUBL so want.3SG live.INF
'Will you let me operate on you, or you really want to live with this condition for the rest of your life?'

(9) Conversation between the doctor and the patient's daughter
Doctor: *Sokat fogyott. Jól van?*
lot.ACC lose_weight.PAST.3SG well be.3SG
'You lost a lot of weight. Do you feel well?'
Daughter: *Sokat dolgoztam érte. Igen, jól vagyok.*
lot.ACC work.PAST.1SG for_it yes well be.1SG
'I worked hard for it. Yes, I am OK.'
Doctor: *Az nem olyan biztos…*
that not so certain
'Well, that is not so certain…'

The last dialogue of this type (9) takes place in the oncology, where the patient's daughter accompanies her father to a check-up. In this case, the addressee (daughter) cannot be sure if the doctor was joking or being serious and actually advising her to get checked. Normally, she would consider the doctor's response a joke (iBuB = '0' 'I assume you do not believe *e*'), but in this particular context (oncology) she would not expect the doctor to joke about it (iBuB = '+5 'I assume you mean *e*').

The above examples (7–9) demonstrate that, in unfamiliar institutional contexts, literal meaning is expected, and so even clearly ironic utterances can lead to confusion. For the sake of clarity and in order to evoke the intended illocutionary effect (Searle 1969), irony, sarcasm and joke are ill-advised in medical situations.

The last type of mismatch we discuss occurs when the addressee cannot recognize the intended illocutionary force properly or at all. The source of this problem lies in the identification of the addresser's intention. Dialogue (10) takes place when the patient is ready to go to the operating room with a male-nurse accompanying her.

(10) Nurse: *Nincs valamilyen köpenye?*
not_be some robe.POSS.3SG
'Do you not have a robe?'
Patient: *Nem.*
'No.'(Although she does –just not with her, but in her bag.)

For the addressee (patient), the situation seems quite clear: she was asked a yes/no question, therefore she identifies the basic interrogative profile. She assumes that the addresser's intention behind the utterance was to find out if she had a robe or not. There seems to be no mismatch, she answers the question, and believes her reaction to be adequate. For the addresser, however, the context is much richer, as he holds additional information about the circumstances (e.g., they have to be waiting, it will be cold in there). Therefore, – as it turned out – the addresser's intention with the utterance was to give the patient advice (Table 6).

Table 6: *Mistake in identifying the illocutionary forcedue to insufficient contextual aid. Problem in (10): mismatch in the addresser's (actual vs. supposed) intention.*

	for the nurse	**for the patient**
meaning	'I advise you to bring a robe, because it is cold out there.'	'I am asked to say if I have a robe with me.'
profile	imperative (advice)	interrogative (yes/no question)
intention	iIuI+ = +5	iBuIiI+uB+ = 5

The misunderstanding would have been avoided if the nurse had realized the unfamiliarity of the context from the patient's point of view. As in the previous cases, being explicit ('I advise you…') would have led to more efficient communication.

Similar examples are listed below (11, 12). The situation in (11) happens after a surgery. The nurse has extra information, namely that the pain will increase considerably. Only later the patient realized that the utterance was supposed to be an advice. At the time of the dialogue, the illocutionary force remains unrecognized, because of insufficient contextual background.

(11) Nurse: *Kér* *fájdalomcsillapítót?*
ask_for.3SG pain_killer.ACC
'Do you want painkillers?'
Patient: *Nem.*
'No.'(The pain is manageable.)

(12) Doctor: *Bejön* *péntek* *reggel?*
come_in.3sg Friday morning
'Are you coming in Friday morning?'
Patient: ??? (*#Nem.* / *#Nem terveztem.* / *#Jöjjek?* / *Igen.*)
no / not plan.past.1sg / come.Imp.1sg / yes
'#No./#I wasn't planning to./#Shall I?/Yes, it's OK.'

Finally, in situation (12), the patient fails to identify the illocutionary force completely, since there is no contextual clue to help her. For the doctor, a whole discourse is incorporated in this question: 1. Assertion: *I can schedule your next examination for Friday morning.* 2. Question: *Is it acceptable?* 3. Directive: *Come in then (if you can)!* The patient, however, has no knowledge about these steps, no contextual aid, and thus she cannot construct the hidden discourse. The solution, once again, would be to spell out these steps, to use direct speech acts.

4. Conclusions

It is not a new discovery that in medical encounters context can induce uncertainty and obscurity instead of clarity. To unravel this puzzle we have conducted a formal pragmasemantic analysis in the ℜeALIS framework. We have collected several situations where some kind of misunderstanding occurs. As we examined these examples, we have found that two main types of mismatch can be differentiated, and both of them can be originated from the fact that the context is not the same for the participants.

Firstly, a mismatch can occur in referent identification where the anchoring of a particular referent is different for the addresser (doctor or nurse) and for the addressee (typically the

patient). In the paper, we have discussed three types of referents: eventuality,in the case of idioms; predicate, when the meaning is broadened/narrowed; and entity, the problem of indexicality. However, other types of referents can also be problematic, such as time or space.

Secondly, a mismatch can occur in the identification of a profile element. We have discussed situations where the problematic component is authority, e.g. when the addresser is unusually polite; belief, e.g. in the case of irony; and intention when the illocutionary force remains unrecognized, e.g. in the case of indirect speech acts. However, profile elements of other modalities can also be recognized inaccurately, such as desire or experience.

To address the initial question of the paper regarding how institutional context influences the utterance meaning in a medical encounter, our findings support the view that meaning construction is rather flexible and context-sensitive: it can be considered as wandering along the meaning continuum without any clues.

What can be done to resolve these difficulties? As all cases of communication, medical encounters are also two-sided, and the solution can come from both parties. The first possibility is that the patient gradually learns these practices, gains knowledge about medical contexts, develops health literacy skills, and becomes acculturated to medical context. The other – more compelling – option is that the medical staff communicate with more clarity, saying what they really mean using sentence-type meaning. The cognitively least expensive way to be understandable is to be on the least pragmatic end of the meaning continuum by using either common literal meaning – which is *obvious* –, or technical terms – which are *definite*. The practical benefit of this research is that the formal pragmasemantic analysis we conducted could pinpoint the problematic parts, i.e., what to clarify; and in this way, we can suggest more efficient ways in doctor–patient communication.

References

Alberti, G. 2000. Lifelong discourse representation structures. *Gothenburg Papers in Computational Linguistics* 5: 13–20.

Alberti, G. 2011. *ℜeALIS: Interpretálók a világban, világok az interpretálóban* [Interpreters in the world, worlds in the interpreter]. Budapest, Hungary: Akadémiai Kiadó.

Alberti, G., Dóla, M., Kárpáti, E., Kleiber, J., Szeteli, A., and A. Viszket. 2019. Towards a cognitively viable linguistic representation. *Argumentum* 15: 62–80. Retrieved from http://argumentum.unideb.hu/2019-anyagok/special_issue_I/albertig.pdf

Alberti, G., and J. Kleiber. 2014. ℜeALIS: Discourse representation with a radically new ontology. In L. Veselovská, and M. Janebová (eds.), *Complex visibles out there*. Olomouc Modern Language Series 4, 513–528. Olomouc, Czech Republic: Palacký University.

Alberti, G., Vadász, N., and J. Kleiber. 2014. Ideal and deviant interlocutors in a formal interpretation system. In A. Zuczkowski, R. Bongelli, I. Riccioni, and C. Canestrari (eds.), *Communicating certainty and uncertainty in medical, supportive and scientific contexts. Dialogue Studies* 25, 59–78. Amsterdam, The Netherlands: John Benjamins.

Asher, N., and A. Lascarides. 2003. *Logics of conversation*. Cambridge, UK: Cambridge University Press.

Eemeren, van F. H., and R. Grootendorst. 1984. *Speech acts in argumentative discussions. A theoretical model for the analysis of discussions directed towards solving conflicts of opinion*. Dordrecht: Foris Publications.

Kamp, H., van Genabith, J., and U. Reyle. 2011. Discourse representation theory. In D. Gabbay, and F. Guenthner (eds.), *Handbook of philosophical logic*, Volume 15, 125–394. Berlin, Germany: Springer.

Kárpáti, E., and J. Kleiber. 2018. *Can I say "bububu"?* Discourse context and meaning construction. *Roczniki Humanistyczne* 66: 79–98.

Kecskes, I. 2017. Implicitness in the use of situation bound utterances. In P. Cap, and M. Dynel (eds.), *Implicitness. From lexis to discourse*, 201–215. Amsterdam, The Netherlands: John Benjamins Publishing Company.

Kleiber, J. 2018. Similar intentions with different underlying wishes: Intensional profiles of imperatives in Hungarian. *Jezikoslovlje* 19(3): 365–391.

Lauer, S. 2013. *Towards a dynamic pragmatics*. Stanford University dissertation.

Levinson, S. C. 1983. *Pragmatics*. Cambridge, England: Cambridge University Press.

Levinson, S. C. 2000. *Presumptive meanings*. Cambridge, MA: MIT Press/Bradford Books.

Stalnaker, R. 2002. Common ground. *Linguistics and Philosophy* 25: 701–721.

Searle, J. R. 1969. *Speech acts*. Cambridge: Cambridge University Press.

Szeteli, A., Dóla, M., and G. Alberti. 2019. Pragmasemantic analysis of the Hungarian inferential – evidential expression szerint. *Studies in Polish Linguistics*, Special Volume 1: 207–225.

Viszket, A., Hoss, A., Kárpáti, E., and G. Alberti. (this volume). Recalculating: The atlas of pragmatic parameters of developmental disorders.

Wilson, D. 2016. Reassessing the conceptual–procedural distinction. *Lingua* 175/176: 5–19.

Wilson, D., and P. Kolaiti. 2017. Lexical pragmatics and implicit communication. In P. Cap, and M. Dynel (eds.), *Implicitness. From lexis to discourse*, 147–175. Amsterdam, The Netherlands: John Benjamins Publishing Company.

LingBaW

Linguistics Beyond And Within 5 (2019), 61-74

How does foreign accent affect template matching mechanisms? ERP evidence from Polish

Hanna Kędzierska
University of Wrocław, Poland

Abstract
Sentential context is believed to have particularly robust effects on the processing of foreign-accented speech (Lev-Ari 2015). However, recent neurolinguistic studies investigating the relation between non-native speech and semantic predictability suggest that anticipation mechanisms are, in fact, hampered during the processing of foreign accents (Romero-Rivas et al. 2016). The current study is an attempt to shed more light on this issue and establish whether the mechanisms responsible for categorical template matching remain active during the processing of non-native speech. The study investigated neural reactions towards high cloze probability template endings (i.e., the endings of fixed phrases selected in a pre-test) and their unexpected counterparts. 120 Polish sentences were recorded by a native Polish speaker and a non-native (L1 Ukrainian) speaker of Polish in order to investigate the reactions towards an easily recognizable foreign accent. The brain activity of 28 monolinguals (L1 Polish) was recorded during the EEG sessions. In native-accented speech, violations of high cloze probability items resulted in a broadly distributed negativity followed by a P600 effect. No comparable effects were observed in the case of foreign-accented speech. These results are compatible with previous findings (Hanulíková et al. 2012; Romero-Rivas et al. 2016) as they confirm that linguistic anticipatory and reanalysis processes are hampered in the case of non-native speech.

Keywords: ERPs, comprehension, prediction, bilingualism, accent

1. Introduction

With an increase in global migration and the sustaining status of English as a *lingua franca*, bi- and multilingual communication has become an inherent property of European societies. Crucially, bi- or multilingual speakers usually lack native competences in their non-native language in terms of grammar, lexis, and pronunciation (Flege 1995; Flege et al. 1995; Grosjean 2010). One of the most characteristic properties associated with non-native speakers is their foreign accent, which can influence non-native speech perception and comprehension. Due to diminished intelligibility, non-native speech is believed to be harder to process when compared with native speech, which is reflected in extra processing time (as indicated by many studies based on transcriptions, lexical decisions, or semantic judgements; e.g., Adank et al. 2009;

Bradlow and Bent 2008; Cristia et al. 2012; Floccia et al. 2006; Lindemann 2002). The adverse listening conditions are believed to enhance already existing prejudices and stereotypes (Lev-Ari and Keysar 2010; Oppenheimer 2008). For instance, it has been demonstrated that children show biases to befriend native-accented over foreign-accented individuals (Souza et al. 2013). The processing difficulties are also assumed to affect the way in which stimuli are consciously perceived and judged. Studies indicate that non-native speakers are perceived as less credible when compared with native speakers (Lev-Ari and Keysar 2010). Foreign-accented speakers are also commonly assessed as less intelligent, less responsible and less competent than native speakers (Radomski and Szpyra-Kozłowska 2014; Said 2006).

1.1. ERP investigations into foreign-accented speech

Only a few event-related brain potential (ERP) studies investigating the processing of foreign-accented speech have been carried out so far (Caffarra and Martin 2018; Goslin et al. 2012; Grey and van Hell 2017; Hanulíková et al. 2012; Romero-Rivas et al. 2015; Romero-Rivas et al. 2016). Due to its high temporal resolution and non-invasiveness, the ERP method provides a highly powerful tool to measure and average the brain activity by electrodes placed on the subject's scalp (for a more detailed review of the method see, e.g., Harley 2013; Kaan 2007; Otten and Rugg 2005; Woodman 2010). In psycho- and neurolinguistic studies, language processing is typically investigated in terms of the so-called ERP components, i.e., the waveforms elicited as a response towards a specific manipulation. The three crucial language-related ERP components associated with consecutive language processing stages are: (E)LAN, that is (early) left anterior negativity (associated with phrase structure or morphosyntactic violations), N400 (elicited as a response towards semantic anomalies), and P600 (associated with syntactic reanalysis and revision) (Federmeier and Kutas 1999; Friederici and Weissenborn 2007; Gouvea et al. 2009; Kutas and Hillyard 1980, among many others).

In terms of ERP components, two notable differences have been observed in the comprehension of native as opposed to non-native speech. First, no P600 response emerges during the processing of non-native speech, which suggests that the reanalysis mechanisms are absent, or at least hampered, while listening to foreign-accented speakers[1] (Hanulíková et al. 2012; Romero-Rivas et al. 2015). Also, non-native speech can be associated with shallower semantic processing, perhaps due to higher cognitive demands in terms of lexical access (Goslin et al. 2012; Hanulíková et al. 2012).

Quite crucially, the status of the listeners (and particularly their previous exposure towards a given type of accent) seems to affect the processing of a foreign accent. Grey and van Hell (2017) presented their subjects with sentences containing pronoun mismatches (*Thomas was planning to attend the meeting but <u>he/*she</u> missed the bus to school*; Grey and van Hell 2017: 96), uttered both by a native- and a non-native (L1 Chinese) speakers of English. They observed a discrepancy in the foreign-accented speech condition with respect to those subjects who have correctly identified the place of origin (i.e., Asia) of the non-native speaker, and those who were

[1] The P600 component might be observed in the case of less typical errors, though, which would suggest that the reanalysis mechanisms are *not* hampered in the case of more common errors (see Caffarra and Martin 2018).

not able to identify it. The subset of participants who recognized the foreign accent presented in the study showed a neural response towards grammatical anomalies in both native and non-native accent conditions, while subjects who did *not* identify the accent of the non-native speaker did not show any ERP effect (Grey and van Hell 2017: 106). Hence, it seems vital to carefully control for the type of accent which is examined but also for the kind of listeners who are researched (i.e., their possible exposure towards a given accent, and their own status as mono vs. multilingual speakers).

Foreign-accented speech can intuitively be associated with increased reliance on contextual cues. It can be viewed as the listener's strategy to process language in adverse listening conditions (Lev-Ari 2015). In terms of the ERP components, the mechanisms of anticipation are usually reflected in the amplitude of the N400 component which can be strongly influenced by predictive language processing. Federmeier and Kutas (1999) used the paradigm of expected (1a) as opposed to unexpected (1b-c) words embedded in short stories of the following kind:

(1) The tourist in Holland stared in awe at the rows and rows of colour. She wished she lived in a place where they grew ___
a. tulips
b. roses
c. pines.

Federmeier and Kutas (1999: 473)

The condition containing highly expected words (1a) elicited a smaller N400 amplitude when compared with the other two endings (1b-c). Quite interestingly, the words belonging to the same semantic category as the best completion (1b) elicited a smaller N400 amplitude when compared with the words belonging to a different semantic category (1c) (Federmeier and Kutas 1999: 484). This finding would suggest that semantic or perceptual features of the upcoming word are pre-activated already before the word is encountered.

Romero-Rivas et al. (2016) used the same cloze probability paradigm as Federmeier and Kutas (1999) in order to check whether similar effects will be obtained in the context of foreign-accented speech. In native speech, the elicited N400 effect remained gradual in nature (i.e., it was the strongest for the best completion, weaker for related words and the weakest for unrelated words). In the case of non-native speech, though, they observed the decreased N400 amplitude for best completions but no differences emerged between related and unrelated conditions. That would suggest that when exposed to foreign-accented speech, listeners do make predictions about the most probable completion of a sentence but the related words do not benefit from anticipatory processes. The increased reliance on sentential context would then direct the comprehender solely at the most probable completion, narrowing down the list of potential lexical candidates matching the context. The aim of the current study was to shed more light on this issue by determining whether the mechanisms responsible for categorical template matching remain active during the processing of a common and easily recognizable foreign accent.

1.2. Present study

The main objective of the experiment was to investigate neural responses towards templates, which could be defined as multiword strings stored in semantic memory. And more specifically, the study investigated brain reactions towards high cloze probability words embedded in a supportive sentential context (2a) and their unexpected counterparts (2b).

(2) a. Podczas kłótni Paweł był wściekły, więc zadał cios poniżej **pasa** i powiedział całą prawdę.
'During the argument Paul was furious so he hit below the **belt** and told the truth.'
b Podczas kłótni Paweł był wściekły, więc zadał cios poniżej **brzucha** i powiedział całą prawdę.
'During the argument Paul was furious so he hit below the **stomach** and told the truth.'

The processing of templates, also known as deterministic processing, involves the comprehension of highly probable, unique endings, such as the endings of fixed phrases of conventionalized figurative meaning (*cry over spilt **milk***; Vespignani et al. 2010) but also, for instance, antonym pairs (*The opposite of white is **black***; see Roehm et al. 2007). The cloze probability of the target word (which is usually the final word) is often close to 1. In order to determine this, the so-called cloze probability tasks have to be conducted, i.e., the kind of open cloze tasks in which the subjects are asked to complete a given sentence or phrase. This would mean that nearly 100% of the cloze task participants would have to complete the template with a given target word. In ERP studies, the detection of the unique, highly expected ending is usually associated with the reduced amplitude of the N400 component (Federmeier and Kutas 1999) but also with the so-called P3b component, which is often considered a marker of expectation verification mechanisms (Roehm et al. 2007; Vespignani et al. 2010). P3b is a sub-component of the P300 and could be defined as posterior positivity elicited around 300 milliseconds after the onset of the highly predictable word or phrase, matching the stored template (Polich 2012). If the list of potential candidates matching the sentential context is indeed narrowed during the comprehension of foreign-accented speech, the template matching mechanisms should also be active (or even more pronounced) in the case of foreign-accented speech. On the other hand, assuming that due to the increased reliance on contextual cues, one selects a larger set of candidates while listening to non-native speakers, the template matching mechanisms should also be hampered. This should be reflected in ERP components elicited as a response to sentences presented in (2a-b) in native as opposed to foreign-accented speech.

Importantly, the previously mentioned studies, and especially those which investigated semantic processing in foreign-accented speech, focused on the processing of accents which were either uncommon and difficult to recognize, such as Chinese accent in English (Grey and van Hell 2017), or used many different accents, such as Italian and French accents in Spanish (Romero-Rivas et al. 2016), or Italian and Polish accents in English (Goslin et al. 2012). Hence, one of the questions which the current study aimed to answer was whether the prediction verification mechanisms will be active during the processing of an easily recognizable and common type of accent. For this reason, we decided to investigate the eastern (and more specifically, Ukrainian) accent in the Polish language. Ukrainian people constitute one of the biggest minorities in Poland, with the number of Ukrainians residing in Poland estimated at around 1 million (Daniel 2019: 147).

2. Methodology

2.1. Participants

Twenty-eight monolingual native speakers of Polish volunteered to participate in the study. They all had normal or corrected-to-normal vision and reported no neurological disorders or hearing disabilities. Three participants were excluded from the analysis due to excessive artefacts in the raw EEG data (1) or technical problems during the recording sessions (2). Hence, data from 25 listeners (mean age: 21.96, age range: 19–29, 7 males) were included in the ERP analysis. All the participants were right-handed as assessed by the Edinburgh Handedness Inventory (Oldfield 1971). None of them reported daily interactions with foreign-accented speakers or living abroad for longer than a few weeks. The participants were all college students or college graduates. As previous studies showed that mono/bilingual status of the listeners might affect the neural responses towards non-native speech (Grey and van Hell 2017), there were no balanced bilinguals recruited to take part in the study.

2.2. Materials and pre-tests

The experimental stimuli consisted of 120 sentences, which contained templates. Each sentence appeared in two versions: a version containing an expected template ending (Condition 1) and a version containing an unexpected template ending (Condition 2). All the sentences were recorded by two speakers: a male native speaker of Polish (age = 26) and male non-native speaker of Polish (L1 Ukrainian, age = 39). Hence, the number of target items amounted to 480 sentences, which were later evenly distributed across four experimental lists with the aid of the Latin square design. In addition, 240 filler sentences containing various kinds of grammatical and semantic mistakes were recorded by each speaker and incorporated into the experimental material (see Table 1 for a more detailed presentation of the experimental stimuli). The Ukrainian speaker spoke Polish fluently but with a clear foreign accent as assessed by an independent group of 20 subjects in a pre-test. On average, the strength of the accent was assessed as 3.9 on a scale from 1 (no accent) to 5 (very strong accent). Crucially, all the subjects participating in the pre-test were able to identify the speaker's region of origin as Ukraine or Russia, which indicates that the accent was easy to recognize.

Table 1: *Selected sentences used in the study with English translations*

Sentences containing templates in Condition 1 (C1) and Condition 2 (C2)
Do niedawna Paweł był bardzo zakochany w narzeczonej, więc miał klapki na **(C1) oczach / (C2) nogach** i ignorował jej wady.
Until recently, Paul was so madly in love with his fiancée that he had blinkers on his ***(C1) eyes / (C2) feet*** *and ignored her faults.*
Po egzaminie Kasia była z siebie zadowolona, więc czuła się lekka jak **(C1) piórko / (C2) okruch** i odetchnęła z ulgą.

*After the exam, Kate was really satisfied with herself so she felt as light as a **(C1) feather / (C2) crumb** and breathed a sigh of relief.*

Przed momentem Tomek umierał z nudów, więc przeczytał baśń o kocie **w (C1) butach / (C2) mieście** i natychmiast się rozchmurzył.

*A moment ago, Tom nearly died of boredom, so he read a fairy tale about the Puss in **(C1) Boots / (C2) Town** and he cheered up.*

Fillers

Po podróży Anna była spragniona, więc napiła się **soku/*kabla** i usiadła wygodnie na sofie.

*After the journey Anne was thirsty so she drank some **juice/*cable** and sat comfortably on the sofa.*

Po długim biegu Piotrek musiał się czegoś napić, więc wziął szklankę$_F$ i nalał do **niej$_F$/*niego$_M$** wody mineralnej.

*After a long run Peter had to drink something so he took a glass$_F$ and filled **it$_F$ (her)/it$_M$ (him)** with water.*

The fixed phrases used in the study have been selected on the basis of the responses obtained in a cloze probability pre-test. 35 native speakers of Polish (none of whom participated in the main study) were asked to complete the preselected templates containing fixed phrases of various kinds, such as idioms, similes, antonym pairs, strong collocations and titles (see Table 1) with the first word which would come to their mind. Only 120 phrases for which the cloze probability exceeded the .9 threshold were selected to be used in the ERP study. Mean cloze probability for items in the expected ending condition (Condition 1) amounted to .92, while the cloze probability of items used in the unexpected ending condition (Condition 2) equalled 0 (i.e., no continuations used in this condition were ever provided by the respondents). The target items were also matched in terms of frequency, which was obtained from the Conversational Spoken Corpus of Polish (PELCRA; Pęzik 2012) (mean frequency in Condition 1: 277.1; mean frequency in Condition 2: 273.9; W = 7306, p = 0.8445). All target words were 2-syllable long. The word pairs used in the same sentence in Condition 1 and Condition 2 always started with a different phoneme. The mean duration of the critical words was 360 msec (SD = 163 msec) in the native speech and 459 msec (SD = 189 msec) in the non-native speech (t (1408.65) = −10.68, p < .0001). The mean duration of the whole sentence was 5844 msec (SD = 776 msec) in the native speech and 7486 msec (SD = 1136 msec) in the non-native speech (t (1438) = −32.02, p < .0001).[2] The loudness of all sentences was adjusted to the same level.

In order to make sure that the errors are easily detectable in both native and non-native speech, an error detection task was conducted. An independent group of 20 university students from the University of Wroclaw (17 females, mean age = 23.3, none of them participated in the EEG experiment) were exposed to a randomly selected sample (N = 60) of sentences, evenly distributed across the experimental conditions (i.e., 15 correct and 15 incorrect sentences

[2] The durations of the stimuli were significantly longer in foreign-accented as opposed to native speech. However, such duration differences are viewed as an inherent property of non-native speech (Grey and van Hell 2017; Hanulíková et al. 2012 and Romero-Rivas et al. 2015).

uttered by the native speaker, and 15 correct and 15 incorrect sentences uttered by the non-native speaker). The task of the subjects was to press a key as soon as they identify the mistake. Mean error detection accuracy in the case of native speech was 88.15%, while mean error detection accuracy in the case of non-native speech was 85.55%. No statistically significant difference was observed between the two conditions (t (30.78) = 0.88481, p-value = 0.3831), which confirms that the experimental stimuli were equally comprehensible, and that the errors were easy to detect in both native and in non-native speech.

2.3. Procedure

A single ERP session lasted approximately 2.5 h, including the placement of the EEG cap. The participants were tested individually in a sound-attenuated room. At the beginning of each session, the participants provided informed consent and filled in a short survey concerning hand dominance and language background. The main experiment was preceded by a training session (10 fully correct sentences uttered by a female native speaker of Polish) and was divided into 6 experimental blocks. After each block, the subjects had an opportunity to take a break. The sentences were presented binaurally at a constant sound level via loudspeakers. Each trial started with a fixation cross which remained on the screen until the offset of the sentence. 120 sentences (one third of the whole experimental stimuli) were followed by comprehension *yes-no* questions. The sentences were presented in a pseudorandomized order so that two critical sentences were always separated by at least one filler item.

2.4. EEG acquisition and analysis

The EEG activity was measured with the use of 26 Ag/AgCl-electrodes placed at the elastic cap at Fz, FCz, Cz, CPz, Pz, POz, F3, F7, F4, F8, FC1, FC2, FC5, FC6, C3, C4, CP5, CP6, T7, T8, P3, P4, P7, P8, O1, O2. The ground was positioned at AFz. In addition, two electrodes were placed above (VEOG1) and below (VEOG2) the left eye, two electrodes were placed at the outer canthus of each eye (HEOG1 and HEOG2), and two electrodes were placed at the right and left mastoid bone (A1 and A2). The signal was referenced online to the left mastoid electrode (A1). Offline, the recording reference was replaced by Common Average Reference formed by all EEG channels, and the data was filtered with a 0.016 Hz (12 dB)–40 Hz (24 dB) band-pass filter. Impedances were kept below 5 kΩ. The EEG data was processed with the aid of the Brain Vision Analyzer 2 software (Brain Products, Gilching). An ICA blink correction was performed, followed by a semi-automatic Raw Data Inspection (maximal allowed voltage step: 50 μV/ms, maximal allowed difference of values in intervals: 200 μV/ms, minimal allowed amplitude: 100 μV, minimal allowed amplitude: −100 μV). Only data free of ocular and muscle artefacts were included in the analysis. On average, 9.63% of trials were excluded. Mean rejection rates per condition were: 10% (SD = 9.77%) for Condition 1 and 9.73% (SD = 12.28%) for Condition 2 in native speech, and 10.4% (SD = 12.28%) for Condition 1 and 8.8% (SD = 9.94%) for Condition 2 in non-native speech. For each target word an epoch of 1200 ms was obtained:

from 200 ms before the onset of the target word to 1000 ms after the onset of the target word. A baseline correction was performed to a 200 ms pre-stimulus onset.

Statistical analyses were performed separately for native and non-native speech on two main time windows: 200–500 and 500–800, defined on the basis of visual data inspection and previous research (e.g., Grey and van Hell 2017; Romero-Rivas et al. 2016). Also, we defined three regions of interest: ANTERIOR (Fz, F3, F7, F4, F8, FCz, FC1, FC2, FC5, FC6), CENTRAL (Cz, C3, C4, CPz, CP5, CP6, T7, T8), and POSTERIOR (Pz, P3, P4, P7, P8, POz, O1 and O2) on the basis of previous studies (see Grey and van Hell 2017; Hanulíková et al. 2012; Romero-Rivas et al. 2015 for similar approaches).

We calculated a repeated measures ANOVA of the mean voltages per condition for the chosen time windows. The analyses included the factors TOPOGRAPHY (anterior, central, posterior) and CONDITION (expected ending, unexpected ending).

3. Results

3.1. Sentence comprehension

When it comes to the behavioural results of the study, the results were very high in terms of accuracy (M = 87.97%, SD = 4.72%), also when the sentences were divided into the ones uttered by the native-accented speaker (M = 88.00%, SD = 6.03%) and the foreign-accented speaker (M = 87.93%, SD = 5.21%). The comprehenders performed only slightly better during the comprehension of native as opposed to foreign-accented speech, with the difference being statistically not significant (t (31.84) = −0.12531, p-value = 0.4504).

3.2. ERP results

Visual data inspection suggested that unexpected template endings (Condition 2) elicited a globally distributed N400-like effect in the early (i.e., 200–500 ms) time window in the case of native-speech. The effect was less pronounced and visible only in anterior regions in the case of non-native speech (see Figure 2). In native speech, the negativity was followed by a positivity observed in the 500–800 ms time window. The scalp distribution of the effect was maximal in the posterior regions, which is compatible with the distribution of the P600 component (Gouvea et al. 2009). Voltage difference maps and examples of grand mean ERP waveforms are presented in Figure 1 and Figure 2 respectively. Grand average means were extracted at 200 ms before until 1000 ms after the onset of the critical word. For the purpose of visual presentation only, the averages were filtered with a 10 Hz low-pass filter.

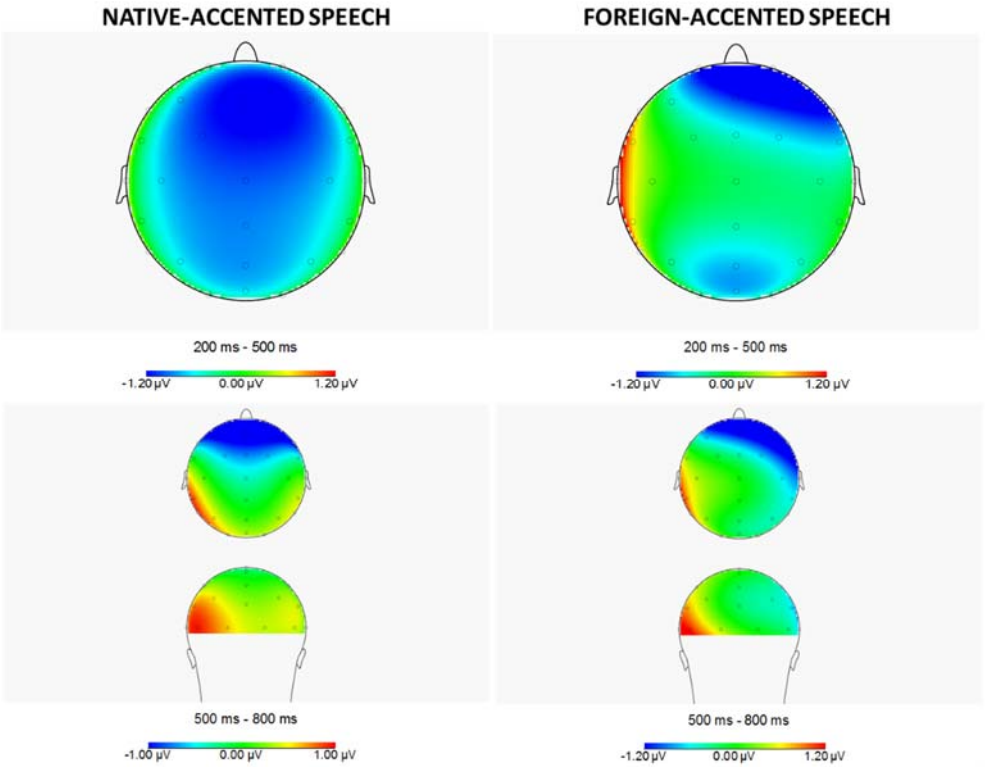

Figure 1: *Topographic distribution of voltage differences between conditions (UNEXPECTED ENDING minus EXPECTED ENDING) in native (left) and foreign-accented speech (right) in 200–500 and 500–800 ms time windows.*

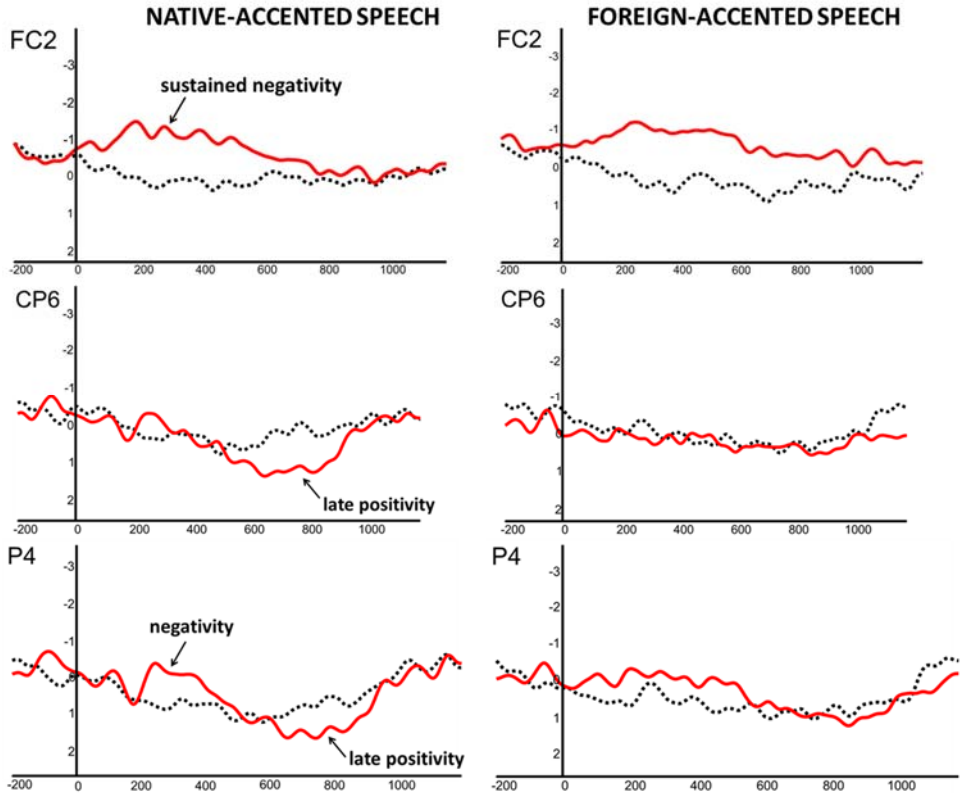

Figure 2: *Grand average ERPs from selected electrodes (FC2, CP6, P4) for the critical words of the expected (black line) versus unexpected (red line) template endings in native (left) as opposed to foreign-accented speech (right).*

In native-accented speech, the ANOVA revealed a statistically-significant main effect of CONDITION (F = 5.609, p = 0.026) in the 200–500 ms time window. No significant main effect of TOPOGRAPHY was observed (F = 1.896, p = 0.161), nor did we find a significant interaction effect for CONDITION x TOPOGRAPHY (F = 4.247, p = 0.656). In the 500–800 ms time window, the ANOVA also showed a statistically significant main effect of CONDITION (F = 8.202, p = 0.008) and no statistically significant main effect of TOPOGRAPHY (F = 0.87, p = 0.425), nor interaction effect for CONDITION x TOPOGRAPHY (F = 0.947, p = 0.394). In foreign-accented speech, the ANOVAs did not show any statistically significant main effects or interactions in any of the time windows. Table 2 shows the results from the overall TOPOGRAPHY (anterior, central, posterior) by CONDITION (expected completion, unexpected completion) ANOVAs, performed separately for native and foreign-accented speech.

Table 2: *F-statistics from the grand average ANOVAs on mean amplitudes in Condition 1 (expected endings) and Condition 2 (unexpected endings) conducted for native and foreign-accented speech*

		200–500 ms			**500–800 ms**		
	df	**F**	**P**	**p < 0.05**[3]	**F**	**p**	**p < 0.05**
Native accent							
Condition	24	5.608	0.026	*	8.202	0.008	***
Topography	48	1.896	0.161		0.870	0.425	
Condition x Topography	48	0.424	0.656		0.947	0.394	
Foreign accent							
Condition	24	1.262	0.272		0.831	0.37	
Topography	48	2.357	0.105		1.48	0.237	
Condition x Topography	48	0.812	0.497		3.132	0.052	†

4. Discussion

The aim of the present study was to determine whether the mechanisms responsible for categorical template matching are active during the processing of foreign-accented speech. With the aid of the ERP technique, we investigated neural reactions towards expected and unexpected template endings embedded in sentential contexts. The researchers who have previously examined the role of prediction in the processing of non-native speech tended to focus on accents which were either relatively uncommon for the listeners (Grey and van Hell 2017), or counterbalanced with respect to language common origin and accent familiarity (Goslin et al. 2012; Romero-Rivas et al. 2016). Thus, we decided to investigate the processing of an accent which would be easy to recognize in a given environment (i.e., Ukrainian accent in Polish). The obtained results demonstrate that the mechanisms of anticipation are hampered

[3] †p < 0.1, *p < 0.05, ***p < 0.01

during the processing of non-native speech, even in the case of a well-known accent. While in the case of native-accented speech, template violations elicited a neural response, no comparable effect was observed in the case of foreign-accented speech. When interpreting the exact nature of this response (i.e., a broadly distributed N400-like effect), one has to take into account that the experimental material used in the current study did not include semantic anomalies *per se* but rather low cloze probability items used in place of highly expected template endings. This might explain why the scalp distribution of the observed effect is not entirely consistent with the distribution of the N400 which, although in general described as broad, is typically centro-posterior (Bridger et al. 2012; Federmeier and Kutas 1999; Voss and Federmeier 2011). What we observed in the current study in the case of native-accented speech was a globally distributed negativity, sustained over a larger time period in the anterior regions. Such characteristics correspond more adequately to the component known as the FN400 (frontal N400), indicating the involvement of familiarity memory (see, for instance, Bridger 2012; Leynes et al. 2017; Voss and Federmeier 2011 for a discussion of the potential functional differences between the N400 and FN400).

The results of the current study extend our knowledge about the mechanisms of anticipation during the processing of foreign-accented speech. The predominant assumption concerning non-native speech processing is that it increases the reliance on contextual cues: as foreign accents are not normalised at the pre-lexical level (Goslin et al. 2012), the comprehenders are forced to rely more on top-down mechanisms, i.e., to make extensive use of context and background knowledge. It is not entirely clear, however, whether the list of potential lexical candidates matching the sentential context is *narrowed down* or, quite contrastingly, *extended* under the influence of foreign-accented speech. Assuming that the increased reliance on sentential context would direct the comprehender solely at the most probable completion, the list of lexical candidates would be narrowed under the influence of a foreign accent. This would also explain the results obtained in the study conducted by Romero-Rivas et al. (2016), in which no difference was observed between completions related to the most probable sentence ending and the completions unrelated to the target word (recall (1)). However, as Romero-Rivas et al. (2016) themselves point out, the results of their experiment may also be explained in terms of the listener's diminished ability to retrieve the semantic features of the upcoming words in the adverse listening conditions (i.e., in the case of non-native speech) (Romero-Rivas et al. 2016: 25). The outcomes of the current study are more compatible with the results of an ERP experiment carried out by Goslin et al. (2012) who presented their subjects with low cloze probability words embedded in context (e.g., *His wife managed to win a bag of goldfish*; Goslin et al. 2012: 95). A reduced N400 amplitude was observed as a response towards such sentences in non-native speech, as compared to the native one. This result would also suggest that anticipatory mechanisms are hampered in the case of non-native speech but the increased reliance on contextual cues allows the comprehender to select a *larger* set of possible lexical candidates matching the context (Goslin et al. 2012: 101). In the present experiment, unexpected template endings also elicited reduced neural reaction in foreign-accented when compared with native-accented speech.

In addition, the obtained results seem to be in accord with previous findings (e.g., Hanulíková et al. 2012; Romero-Rivas et al. 2015) regarding the lack of meaning reanalysis

during the processing of foreign-accented speech: no neural response was elicited towards template violations in the case of foreign-accented speech when compared with the native-accented speech (see Figure 2). As pointed out by Hanulíková et al. (2012), the P600 component is sometimes considered more sensitive towards event probability, rather than being a component that is unequivocally related to language (Hanulíková et al. 2012: 885). As second language learners typically commit grammatical errors of various kinds, the (native) comprehenders typically learn to 'ignore' the mistakes of that kind in non-native speech (Caffara and Martin 2018; Hanulíková et al. 2012). This regularity was also reflected in the outcomes of the current study. Since world knowledge suggests that non-native speakers are likely to substitute highly expected template endings with other words, template violation errors may be considered a highly probable error type which would abolish the need of reanalysis. This provides additional evidence that such indexical properties of the speaker as their foreign accent can influence neural responses associated with revision.

When it comes to the limitations of the current research, it focused specifically on the processing of common and easily recognizable type of accent. Consequently, the findings presented in this paper might be applied to the most frequent communication situations involving non-native speakers of a given language, but they cannot be related to the processing of less common types of accents, or to foreign-accented speech in general. In order to provide an extensive account concerning the mechanisms of prediction in non-native speech, more research would be needed, employing other accents, and perhaps also comprehenders of different status, i.e., not only monolinguals but also bi- or multilingual speakers, and second language learners.

To conclude, the outcomes of this research contribute to the ongoing debate on bilingualism and accentedness. Being specifically focused on the processing of well-familiar and easily recognizable accent, it complements previous studies investigating the issue of foreign-accented speech comprehension (Grey and van Hell 2017; Hanulíková et al. 2012; Romero-Rivas et al. 2016). Moreover, the study provided a preliminary evidence that the mechanisms of template matching are hampered during the comprehension of non-native speech, which is consistent with recent findings regarding the lack of meaning reanalysis and shallower semantic processing of foreign as opposed to native-accented speech.

References

Adank, P., B. Evans, J. Stuart-Smith, and S. Scotti. 2009. Comprehension of familiar and unfamiliar native accents under adverse listening conditions. *Journal of Experimental Psychology: Human Perception and Performance* 35(2): 520–529.

Bradlow, A. R., and T. Bent. 2008. Perceptual adaptation to non-native speech. *Cognition* 106: 707–729.

Bridger, E. K., R. Bader, O. Kriukova, K. Unger, and A. Mecklinger. 2012. The FN400 is functionally distinct from the N400. *NeuroImage* 63: 1334–1342.

Caffarra, S., and C. D. Martin. 2018. Not all errors are the same: ERP sensitivity to error typicality in foreign accented speech perception. *Cortex* 100: 1–13.

Cristia, A., A. Seidl, C. Vaughn, R. Schmale, A. Bradlow, and C. Floccia. 2012. Linguistic processing of accented speech across the lifespan. *Frontiers in Psychology* 3(479): 1–15.

Daniel O. 2019. On Human Trafficking, Schengen Visas and Drunken Workers: Czech Media Representations of Poland in Light of Three Migration Issues After 2013. In K. Marczuk (ed.), *Good Neighbourhood Treaties of Poland*, 145–159. Cham: Palgrave Macmillan.

Federmeier, K. D., and M. Kutas. 1999. A rose by any other name: Long-term memory structure and sentence processing. *Journal of Memory and Language* 41: 469–495.

Flege, J. E. 1995. Second language speech learning: Theory, findings, and problems. In W. Strange (ed.), *Speech Perception and Linguistic Experience*, 233–277. Baltimore: York Press.

Flege, J. E., M. J. Munro, and I. R. A. MacKay. 1995. Factors affecting strength of perceived foreign accent in a second language. *Journal of the Acoustical Society of America* 97(5): 3125–3134.

Floccia, C., J. Goslin, F. Girard, and G. Konopczynski. 2006. Does a regional accent perturb speech processing? *Journal of Experimental Psychology: Human Perception and Performance* 32: 1276–1293.

Friederici, A. D., and J. Weissenborn. 2007. Mapping sentence form onto meaning: The syntax-semantic interface. *Brain Research* 1146: 50–58.

Goslin, J., H. Duffy, and C. Floccia. 2012. An ERP investigation of regional and foreign accent processing. *Brain and Language* 122: 92–102.

Gouvea, A. C., C. Phillips, N. Kazanina, and D. Poeppel. 2009. The linguistic processes underlying the P600. *Language and Cognitive Processes* 25(2): 149–188.

Grey, S., and J. G. van Hell. 2017. Foreign-accented speaker identity affects neural correlates of language comprehension. *Journal of Neurolinguistics* 42: 93–108.

Grosjean, F. 2010. *Bilingual: Life and Reality.* Cambridge, MA: Harvard University Press.

Hanulíková, A., P. M. van Alphen, M. M. van Goch, and A. Weber. 2012. When one person's mistake is another's standard usage: the effect of foreign accent on syntactic processing. *Journal of Cognitive Neuroscience* 24: 878–887.

Harley, T. A. 2013. *The Psychology of Language.* Hove: Taylor and Francis.

Kaan, E. 2007. Event related potentials and language processing: A brief overview. *Language and Linguistic Compass* 1(6): 571–591.

Kutas, M., and S. A. Hillyard. 1980. Reading senseless sentences: Brain potentials react semantic incongruity. *Science* 207: 203–205.

Lev-Ari, S. 2015. Comprehending non-native speakers: Theory and evidence for adjustment in manner of processing. *Frontiers in Psychology* 5: 1–12.

Lev-Ari, S., and B. Keysar. 2010. Why don't we believe non-native speakers. The influence of accent on credibility. *Journal of Experimental Social Psychology* 46(6): 1093–1096.

Leynes, P. A., H. Bruett, J. Krizan, A. Veloso. 2017. What psychological process is reflected in the FN400 event-related potential component. *Brain and Cognition* 113: 142–154.

Lindemann, S. 2002. Listening with an attitude: A model of native-speaker comprehension of non-native speakers in the United States. *Language in Society* 31: 419–441.

Oldfield, R. C. 1971. The assessment and analysis of handedness: The Edinburgh inventory. *Neuropsychologia* 9: 97–113.

Oppenheimer, D. M. 2008. The secret life of fluency. *Trends in Cognitive Science* 12: 237–241.

Otten, L. J., and M. D. Rugg. 2004. Interpreting event-related brain potentials. In T. C. Handy (ed.), *Event-Related Potentials: A Methods Handbook*, 3–16. Cambridge: MIT Press.

Pęzik, Piotr. 2012. Wyszukiwarka PELCRA dla danych NKJP. In A. Przepiórkowski, M. Bańko, R. Górski, B. Lewandowska-Tomaszczyk (eds.), *Narodowy Korpus Języka Polskiego,* 253–279. Warszawa: Wydawnictwo Naukowe PWN.

Polich, J. 2012. Neuropsychology of P300. In S. Luck, and E. S. Kappenman (eds.), *The Oxford Handbook of Event-Related Potential Components*, 159–188. Oxford: Oxford University Press.

Radomski, M., and J. Szpyra-Kozłowska. 2014. A pilot study on Poles' attitudes to foreign-accented Polish and its users. *Studies in Polish Linguistics* 9(2): 67–87.

Roehm, D., I. Bornkessel-Schlesewsky, F. Rösler, M., and Schlesewsky. 2007. To predict or not to predict: Influences of task and strategy on the processing of semantic relations. *Journal of Cognitive Neuroscience* 19(8): 1259–1274.

Romero-Rivas, C., C. D. Martin, and A. Costa. 2015. Processing changes when listening to foreign-accented speech. *Frontiers in Human Neuroscience* 9: 45–59.

Romero-Rivas, C., C. D. Martin, and A. Costa. 2016. Foreign-accented speech modulated linguistic anticipatory processes. *Neuropsychologia* 85: 245–255.

Said, S. B. 2006. Attitudes towards Accented Speech: A Comparative Study of Native and Non-Native Speakers of American English. MA thesis, Southern Illinois, University Carbondale.

Souza, A. L., K. Byers-Heinlein, and D. Poulin-Dubois. 2013. Bilingual and monolingual children prefer native-accented speakers. *Frontiers in Psychology* 4: 953.

Vespignani, F., P. Canal, N. Molinaro, S. Fonda, and C. Cacciari. 2010. Predictive mechanisms in idiom comprehension. *Journal of Cognitive Neuroscience* 22(8): 1682–1700.

Voss, J. L., and K. D. Federmeier. 2011. FN400 potentials are functionally identical to N400 potentials and reflect semantic processing during recognition testing. *Psychophysiology* 48: 532–546.

Woodman, G. F. 2010. A Brief Introduction to the Use of Event-Related Potentials (ERPs) in Studies of Perception and Attention. *Attention, Perception and Psychophysics* 72(8): 1–29.

LingBaW *Linguistics Beyond And Within 5 (2019), 75-89*

Dephrasal adjectives in Polish – A case of syntax-inside-morphology

Joanna Kolbusz-Buda
Siedlce University of Natural Sciences and Humanities, Poland

Abstract
The present paper is part of a larger project which investigates the issue of "syntax-inside-morphology" in the domain of Polish word-formation. In what follows, we explore the thus far unstudied territory of dephrasal adjectives, such as *tużpopołudniowy* 'right-after-noon' and *ponadstustronicowy* 'over-one-hundred-page' built on phrasal bases subjected to suffixation.

It is generally acknowledged that the Polish word-formation system is not designed to comprise phrasal compounding – a word-formation type which has come to be considered a flagship representative of the morphology-syntax interface (see Szymanek 2017 and Pafel 2017). Nevertheless, one may come across a number of Polish word-formation patterns, such as the class of nouns derived from PPs (e.g. *nausznik* 'earmuff' [[*na*$_{P}$ *uszy*$_{N}$]$_{PP}$ *-nik*]$_{N}$) or synthetic compound words (e.g. *bydłobójnia* 'abattoir' [[*bydł*$_{N}$-*o*-*bój*$_{V}$]$_{VP}$ *-nia*]$_{N}$) which should clearly be considered legitimate members of the global "syntax-inside-morphology" community (see Kolbusz-Buda 2019a).

In what follows, we want to argue that Polish dephrasal adjectives should be recognised as a case of morphology-syntax interplay on a par with the already attested cross-linguistic material. The phrasal character of the Polish data to be discussed in this study is so strong that researching this *sui generis* type of derivation seems not only a valid linguistic undertaking but also one with important implications. The study may have far-reaching consequences for the descriptive adequacy of the Polish word-formation system and point to new directions in the discussion on the morphology-syntax interface. The morphological structure of the adjectives to be discussed will be juxtaposed with the class of Polish compounds proper, in particular, synthetic compounds – a word-formation type which can be considered the closest in its morphological make-up to the presented material. Offering such a comparative perspective seems necessary as the adjectives to which we choose to refer as products of dephrasal suffixation are casually classified as compounds. Moreover, although Polish does not note any cases of phrasal compounding, the morphological structure of the adjectives in question will be additionally examined to discover potential parallels between the two word-formation types. The reason behind this undertaking is two-fold. Firstly, as has already been mentioned, dephrasal adjectives are classified as compounds; secondly, they contain a phrasal unit.

In our analysis, we draw on a revised version of the Lexical Integrity Hypothesis, i.e. Lieber and Scalise's (2007) Firewall Theory, which belongs to the current of the so-called mixed models of word-formation advanced in the recent years by, for instance, Ackema and Neeleman 2004 and Pafel 2017, allowing for a limited intermodular interaction between morphological and syntactic domains.

Keywords: phrasal derivation, dephrasal adjectives, phrasal compounding, morphology-syntax interface

1. Introduction

The issue of phrasal word-formation *sensu lato*, examined mainly in the context of the Lexical Integrity Hypothesis (henceforth LIH), does not seem to be easily settled as it is dependent upon several interrelated parameters, often hard to reconcile. A matter of paramount importance is to position the phenomenon on the map of grammar. Therefore, a critical condition for optimising the accuracy of description of these word-formation types which constitute a bridge between morphology and syntax is the choice of the most pertinent theoretical framework for the job. If phrasal word-formation were to be researched within a strictly morphologically oriented model of grammar, i.e. as the output of the morphological domain, it is only natural that the problem of competition between morphological and syntactic components would not be easily resolved due to the controversy surrounding the principle of Lexical Integrity (which states that syntactic transformations cannot apply to subparts of words[1]) and the No-Phrase Constraint (which states that only words, not syntactic constructs, may undergo word-formation[2]), being two powerful constraints on the syntax-morphology cooperation in the domain of word-formation (see e.g. Bresnan 2001 and Spencer 2010; cf. Ackema and Neeleman 2004). If, however, the output of the morphology-syntax interface were to be assigned solely to the syntactic component, the problem of "syntax-inside-morphology" would no longer be a moot point. Naturally, the third alternative would be to meet halfway. Such balanced theories of merit, allowing for a certain degree of the reciprocal influence of both grammatical domains, have been advanced in recent years and are neither to be overlooked nor to be underrated.[3]

The present paper is part of a larger project which investigates the issue of "syntax-inside-morphology" in the domain of Polish word-formation. In what follows, we explore the thus far unstudied territory of dephrasal adjectives, such as *tużpopołudniowy* 'right-after-noon' and *ponadstustronicowy* 'over-one-hundred-page' built on phrasal bases subjected to suffixation.

It is generally acknowledged that the Polish word-formation system is not designed to comprise phrasal compounding – a word-formation type which has come to be considered a flagship representative of the morphology-syntax interface (see Szymanek 2017 and Pafel 2017). Nevertheless, one may come across a number of Polish word-formation patterns, such as the class of nouns derived from PPs (e.g. *nausznik* 'earmuff' [[*na*$_{P}$ *uszy*$_{N}$]$_{PP}$ *-nik*]$_{N}$) or synthetic compound words (e.g. *bydłobójnia* 'abattoir' [[*bydł*$_{N}$-*o*-*bój*$_{V}$]$_{VP}$ *-nia*]$_{N}$) which should clearly be considered legitimate members of the global "syntax-inside-morphology" community (see Kolbusz-Buda 2019a).

In what follows, we want to argue that Polish dephrasal adjectives should be recognised as a case of morphology-syntax interplay on a par with the already attested cross-linguistic material. The phrasal character of the Polish data to be discussed in this study is so strong that researching this *sui generis* type of derivation seems not only a valid linguistic undertaking but also one with important implications. The study may have far-reaching consequences for the

[1] "The syntax neither manipulates nor has access to the internal structure of words" (Anderson 1992: 84).

[2] "Lexical rules do not apply to syntactic phrases to form morphologically complex words" (Botha 1984: 137).

[3] See Ackema and Neeleman's (2004) theory of *Generalised Insertion*, Ralli's (2013) *Nominal Formations Continuum* and the de-syntacticisation theory, Pafel's (2017) theory of *Conversion*, Lieber and Scalise's (2007) *Limited Access Principle* put forward to account for cases of morphology-syntax interface in word-formation.

descriptive adequacy of the Polish word-formation system and point to new directions in the discussion on the morphology-syntax interface.

The morphological structure of the adjectives to be discussed will be juxtaposed with the class of Polish compounds proper, in particular synthetic compounds – a word-formation type which can be considered the closest in its morphological make-up to the presented material. Offering such a comparative perspective seems necessary as the adjectives to which we choose to refer as products of dephrasal suffixation are casually classified as compounds. Moreover, although Polish does not note any cases of phrasal compounding, the morphological structure of the adjectives in question will be additionally examined to discover potential parallels between the two word-formation types. The reason behind this undertaking is two-fold. Firstly, as has already been mentioned, dephrasal adjectives are classified as compounds; secondly, they contain a phrasal unit.

In our analysis, we draw on a revised version of the Lexical Integrity Hypothesis, i.e. Lieber and Scalise's (2007) Firewall Theory, which belongs to the current of the so-called mixed models of word-formation advanced in the recent years by, for instance, Ackema and Neeleman 2004 and Pafel 2017, allowing for a limited intermodular interaction between morphological and syntactic domains.

2. Handling the syntax-inside-morphology crisis

We shall now turn to the issue of how a syntactic phrase can constitute a base for a lexical unit, and how this problem has been accommodated in the theory of modern linguistics.

In the early days of phrasal derivation research, the non-canonical products of word-formation used to evoke strong scholarly emotions. It is a matter of debate whether this linguistic scepticism was genuinely well-founded. After all, in the abundant cross-linguistic reservoir of language material, one could always find syntactic structures collaborating with the domain of morphology. Due to an uncompromising approach of the Strong Lexicalist Hypothesis to the morphology-syntax interface, the theory, despite the existence of apparently irrefutable language facts, was often unable to account for the phenomena which revealed a degree of the reciprocal influence of both modules of grammar, such as the attachment of the Saxon genitive to noun phrases or the structure of phrasal compounds. Although language material *per se* often confirmed the validity of the complementary relationship holding between morphology and syntax, the strict separatist rules made linguists look away and search for roundabout theoretical solutions.

The fact that lexical units can be built on a phrase does not seem to call for validation in today's linguistic theoretical universe. The wealth of cross-linguistically data speaks volumes about the non-marginal character of the syntax-inside-morphology phenomenon. Bisetto and Scalise (1999), Lieber and Scalise (2007), Booij (2009), Trips (2012), Kolbusz-Buda (2015, 2019b) among others, show unequivocally that certain word-formation types may accept phrasal bases to build complex words.[4] In what follows, we wish to present selected examples of

[4] See Booij (2009) for a discussion of the Lexical Integrity Principle in the context of the syntax-inside-morphology phenomenon.

dephrasal word-formation from languages such as English, Dutch, Italian, Spanish, and Polish, collected or quoted by the authors mentioned above.

2.1. Cases of "syntax-inside-morphology"

A flagship example of the morphology-syntax cooperation in the field of word-formation is phrasal compounding in Germanic languages, in particular, the English language:

(1) [[*we know best*]$_S$ *philosophy*]$_N$
[[*shall we go to the pub?*]$_S$ *variety*]$_N$
[[*gentle rain from heaven*]$_{NP}$ *process*]$_N$
[[*slept all day*]$_{VP}$ *look*]$_N$
[[*out-of-the-way*]$_{PP}$ *pub*]$_N$
[[*ready for action*]$_{AP}$ *look*]$_N$

Trips (2012: 324–328), Lieber and Scalise (2007: 4)

The canonical phrasal compound, such as a *what-the-heck-is-wrong-with-you look* or an *over-the-fence gossip* can be defined as a two-constituent unit, whose left-hand modifier is a maximal projection or a clause.[5] This extremely productive word-formation type, considered controversial in the era of the Strong Lexicalism dominion, has gradually come to represent the phenomenon of the morphology-syntax interface.

Special attention needs to be paid to phrasal compounding with internal inflection in Dutch where the left-hand modifying noun phrase is inflected for number:

(2) [[kleine$_A$ kinderen$_{N.Pl.}$]$_{NP}$ gedrag]$_N$
[[little children] behaviour]
'little children's behaviour'

Booij (1997, qtd. in Bisetto and Scalise 1999: 32)

A significantly less productive word-formation type that runs parallel to phrasal compounding is phrasal derivation (which may also be encountered in the modifier position of phrasal compounds in English) where a syntactic construct, be it a clause or a phrase, constitutes a base subjected to suffixation:

(3) [[why-does-it-have-to-be-me]$_S$ -ish]$_A$ expression
[[*Don's long-awaited photo tutorial*]$_{NP}$ -ish]$_A$ *thing*

Spencer (2005: 83), Lieber and Scalise (2007: 9)

[[*I-don't-care*]$_S$ *-ism*]$_N$[6]

A similar mechanism can be seen in Italian, and to some extent in Polish. The suffixes that operate on phrasal bases in (4) are *-ismo* (also *-ista*) for Italian and *-izm* for Polish:

[5] See Trips' (2012) corpus-based study of phrasal compounds in English for a wide array of syntactic structures employed in the modifier position.

[6] The example is the result of author's cursory internet search carried out for the purpose of this paper.

(4) *menefreghismo* 'I don't care-ism'
[[*me ne frego*]$_S$ *-ismo*]$_N$
[[*I rub myself (with it)*]$_S$ *-Af*]$_N$[7] Bisetto and Scalise (1999: 32)

tumiwisizm 'I don't care-ism'
[[*tu mi wisi*]$_S$ *-izm*]$_N$
[[*here it hangs*] *-Af*] Kolbusz-Buda (2019a: 27)

dodupizm 'utter uselessness'
[[*do dupy*]$_{PP}$ *-izm*]$_N$
[[*to ass*] *-Af*] Doroszewski (1958–1962)

The noun *dodupizm* represents a highly productive word-formation type of phrasal suffixation in Polish. The syntactic input is predominantly a prepositional phrase appended a nominalisation suffix. The derivational morpheme can be realised either by an overtly expressed suffix or by a morphological zero – a marker of paradigmatic conversion.[8] One can easily draw a structural analogy between phrasal compounds in English (and other Germanic languages) and dephrasal nouns in Polish. "In both cases, the left side […] is heavier and involves input in the shape of a phrasal component" (Kolbusz-Buda 2015: 75):

(5) *przedpoście* 'time prior to Lent'
[[*przed postem*]$_{PP}$ *-Ø*]$_N$
[[*before Lent*] *-Af*]

odludek 'a recluse'
[[*od ludzi*]$_{PP}$ -ek]$_N$
[[*away from people*] -Af]

podkoszulek 'a T-shirt'
[[*pod koszulą*]$_{PP}$ *-ka*]$_N$
[[*under shirt*] *-Af*]

naskórek 'epidermis'
[[*na skórze*]$_{PP}$ *-ek*]$_N$
[[*on skin*] *-Af*]

bezdeń 'abyss'
[[*bez dna*]$_{PP}$ *-Ø*]$_N$
[[*without bottom*] *-Af*]

dorzecze 'a river basin'
[[*do rzeki*]$_{PP}$ *-Ø*]$_N$
[[*to river*] *-Af*]

nabrzeże 'a wharf'
[[*na brzegu*]$_{PP}$ *-Ø*]$_N$
[[*on bank*] *-Af*]

międzywojnie 'interwar'
[[*między wojną*]$_{PP}$ *-Ø*]$_N$
[[*between war*] *-Af*]

Kolbusz-Buda (2015: 75–76, 2019a: 40)

---

[7] Author's translation. Please note that *me ne frego* ought not to be confused with *me ne frega*. "Both "me ne frega" and "me ne frego" have finally the same connotation, but they are gramatically different. The analogy with "bother" should shed some light: "me ne frega" = "It bothers me" / "me ne frego" = "I bother myself with it" (reflexive). Obviously, the two forms are completely interchangeable except the following nuance: because "fregare" means "rubbing", and "rubbing oneselef" is derisive for not caring, the reflexive form is almost always used in a negative form and has a default negative meaning: "me ne frega" = it bothers me / "me ne frego" = it doesn't bother me (literally, "I rub myself (with it)")." The above explanation was provided by an anonymous author at https://forum.wordreference.com/threads/me-ne-frego.47787/post-9159706 (accessed 2 July 2019).

[8] In Polish linguistic literature, the term *paradigmatic conversion* is used to refer to a suffixless word-formation process in which the difference between the input and output forms boils down to the difference in their inflectional paradigms. Paradigmatic conversion may take the shape of an unmarked change of the word-class in which case the input and the output share the same stem: *piorun-o-**chron**-**Ø*** 'lightning conductor' < ***chroni**ć*$_V$ 'to protect' (***chron***$_N$ 'protection'), *kamieni-o-**łom**-**Ø*** 'quarry' < ***łam**ać*$_V$ 'to break' (***łam***$_N$ 'a break'). For a detailed account of paradigmatic conversion in Polish, see Kolbusz-Buda (2014, 2019a).

A unique type of phrasal suffixation is the Saxon genitive in English which may take a syntactic construction as its base, including an NP with an embedded relative clause:

(6) [[our teacher of biology]$_{NP}$'s]$_{NP}$ car
[[*the woman I live next door to*]$_{NP}$'s]$_{NP}$ *husband*
[[*the fellow that washes the windows*]$_{NP}$ ']$_{NP}$ *brother*
[[*an hour or two*]$_{NP}$'s]$_{NP}$ *time*
[[*Kenyon and Knott*]$_{NP}$ *'s*]$_{NP}$ *Pronouncing Dictionary*

Algeo and Butcher (2013: 177)

Although *'s* is phonologically attached to the right-hand non-head constituent of the phrase, it has scope over the entire NP. "The group-genitive construction […] is a development of the early Modern English period. [The] genitive 's is added, not to the noun to which it relates most closely, but rather to whatever word ends a phrase including such a noun" (Algeo and Butcher 2013: 176). The fact that the possessive construction may feed on phrases proves that a syntax-inside-morphology phenomenon is not exclusively derivation-oriented.

In English, both derivation and compounding may involve conjunction. In such cases, conjuncted expressions can be interpreted as phrases within words (Lieber and Scalise 2007: 5–6). Conjunctions may also be encountered in phrasal compounding. Trips (2012: 324) quotes examples such as *peace and goodwill to all men attitude* being a complex NP whose both nominal constituents are conjoined. Additionally, the head noun can be post-modified by a PP. Interestingly, not only words but also prefixes may undergo conjunction and subsequent suffixation:

(7) [[pre- and [even to some extent] post-war] economics]$_{N}$
[[*car and truck*] *driver*]$_{N}$
[[*peace and goodwill* [*to all men*]] *attitude*]$_{N}$

Trips (2012: 324), Lieber and Scalise (2007: 5–6)

A case of the morphology-syntax interface can be the scope of prefixation. "[A]lthough phonologically prefixation takes place on the N head of an NP, semantically the prefix affects the whole NP" (Lieber and Scalise 2007: 11). As an illustration, consider examples form Spanish and English:

(8) [ex- [futbolista del Barça]$_{NP}$]$_{N}$
the ex-footballer of Barça
'the former Barça footballer'

[[*post-* [*digestive disorder*]$_{NP}$] *complications*]$_{N}$
[*my ex-*[*car*]$_{N}$]$_{NP}$

Lieber and Scalise (2007: 11)

Although, phonologically, the prefix *ex-* in *ex-futbolista del Barça* is attached to the head noun *futbolista*, semantically it takes scope over the whole noun phrase. The same may be observed for *my ex-car* in English where the prefix *ex-* exhibits scopal properties. At first glance, *ex-* modifies the head of the noun phrase (both phonologically and semantically). However, scrutiny shows that the prefix is linked with the noun *car* merely phonologically. Semantically,

it takes scope over the possessive adjective *my* to mean "my ex" as *car* in *my ex-car* is no longer my property, though, in terms of substance, it remains the same entity.

Similarly, it can be argued that the prefix *post-* serves the function of the modifier of the entire noun phrase *digestive disorder* in which case the formation would be understood as *complications after a digestive disorder*. If, however, *post-* were to be interpreted as the pre-modifier of the adjective *digestive*, the unit would receive the following obscure reading: ?*complications of a disorder which is post-digestive*.

The examples of the morphology-syntax interface quoted above are merely a small fraction of the material accumulated by language researchers. According to the theoretical tenets of Strong Lexicalism, the cases of syntax-inside-morphology presented above should be impossible. Paradoxically, not only are they irrefutable language facts but they are often deeply rooted in the word-formation system of a given tongue.

2.2. A formal approach to morphology-syntax interface

In contrast to the Strong Lexicalist Hypothesis, the issue of the division of labour between morphology and syntax in the production of certain word-formation types is no longer uncompromisingly questioned by contemporary linguistic theories. According to Booij (2009), the Principle of Lexical Integrity – one of the key tenets of LIH – requires a redefinition in that codification improvements need to allow for different modules of grammar, such as syntax, semantics or phonology, to have access to the word-internal structure. As for the No-Phrase Constraint, such corrections have already been proposed in Lieber and Scalise (2007). One of the theories to account for syntax-inside-morphology cases is Lieber and Scalise's (2007) revised version of LIH – the Firewall Theory (after Sato 2010), which belongs to the current of the so-called mixed models of word-formation advanced in the recent years by, for instance, Ackema and Neeleman (2004) and Pafel (2017). The Firewall Theory allows for a limited intermodular interaction of morphological and syntactic domains. Such a balanced perspective is adopted in this paper. Accepting the fact that the syntactic module by its very nature cannot look into morphology (and *vice versa*), Lieber and Scalise (2007: 21) put forth that the so-called "Morphological Merge can select on a language-specific basis to merge with a phrasal/sentential unit." This phrasal unit is subsequently downgraded to the category of a word via the process of grammaticalisation. Morphological Merge is further defined as follows:

> Let there be items α, β, such that α is a base and β a base or affix. MM takes α, β (order irrelevant) and yields structures of the form < α, β>γ
> a. where γ is an x^0, categorically equivalent to α or β, and
> b. α or β can be null.

Booij (2009: 84) explains that in such constructs "[it] is the morphological module that defines which kind of phrases can appear within complex words. The syntactic module in its turn defines the well-formedness of those word-internal phrases." As a result, in the same way that syntax builds on morphology, morphology may build on syntactic constructions, though the interplay is highly constrained as "[s]yntax and morphology are firewalled from each other in the default case […]" (Sato 2010: 402).

3. Dephrasal adjectives in Polish

When investigating important language phenomena which add to the understanding of the morphology-syntax interface, one cannot ignore a unique cross-domain word-formation type in Polish which generates complex adjectives out of syntactic structures subjected to suffixation, such as [[VP] Af] *naprzemianległy* 'alternating' and [[PP] Af] *ponaddziewięciusetdziewięćdziesięciodziewięcioićwierćprocentowy* 'over-999-and-a-quarter-percent.'

To a certain extent, Polish dephrasal adjectives, despite belonging to a distinct word-formation type, bear a structural resemblance to the English phrasal compounds. Firstly, the base which is subjected to suffixation to derive an adjective is a syntactic construct in the same way that the left-hand modifying lexeme of a phrasal compound in English can be expressed by a syntactic phrase or a clause. Furthermore, both structures employ the head constituent in the right-hand position. Note, however, that in the case of phrasal compounds, the superordinate element is a lexeme while in the case of dephrasal adjectives the head is a derivational suffix (see section 3.1). Additionally, both word-formation types are spontaneous, on-the-spot creations, rarely listed in the Lexicon. They are a productive tool employed to satisfy the speaker's language needs in the here-and-now situations through enclosing maximum expressiveness of a syntactic construct in a single morphological unit.

In what follows, we wish to concentrate on building up a morphological profile of a dephrasal adjective in Polish. However, in doing so, it is necessary that our discussion encroach upon the territory of Polish compound words, in particular a productive subclass of synthetic compounds whose structure rests on an internal phrase subjected to derivation (suffixation): [[*łam*$_{V}$-*i*-*głów*$_{N}$]$_{VP}$ -*ka*]$_{N}$ 'a puzzle' < *łamać głowę* 'to break the head', [[*kart*$_{N}$-*o*-*graj*$_{V}$]$_{VP}$ -*stwo*]$_{N}$ 'playing cards' < *grać w karty* 'play cards', [[*bos*$_{A}$-*o*-*nóż*$_{N}$]$_{NP}$ -*ka*]$_{N}$ 'bare-foot dancer' < *bosa noga* 'bare foot.'[9] The necessity stems from the fact that the complex adjectives to be discussed, which we refer to as dephrasal adjectives and interpret as an instance of derivation, are casually classified as compound words and subsumed under the category of compound adjectives, such as [*jasn*$_{A}$-*o*-*niebieski*$_{A}$]$_{A}$ 'light blue' despite the fact that the former do not meet formal requirements for compoundhood.[10] We begin our discussion with the juxtaposition of dephrasal adjectives and two other word-formation types, namely phrasal compounds and Polish (synthetic) compound adjectives to establish if the examined language material can be subsumed under either of the two morphological labels or should be considered a distinct word-formation mechanism.

[9] Please note that under the left-branching interpretation of structure, synthetic compounds, in both Polish and English, take a syntactic unit as its input (see Kolbusz-Buda 2014, 2015, 2019a, 2019b).

[10] See the section in SJP dictionary of the Polish language devoted to compound adjectives where both constructs are discussed under a common label: https://sjp.pwn.pl/zasady/136-26-Pisownia-przymiotnikow-zlozonych-typu-jasnoniebieski;629465.html

3.1. Dephrasal adjectives, phrasal compounds or synthetic compounds?

At first glance, Polish dephrasal adjectives resemble phrasal compounds in that the right-hand adjective could be considered the head of the entire expression (i.e. the source of morphosyntactic feature percolation) whereas the left-hand constituent is reminiscent of a syntactic construct serving as input to a word-formation process, occupying the modifier position – a component indispensable for classifying a lexical unit as a phrasal compound: *bezwłasnowolny* 'deprived of his will' [[*bez*$_{P}$ *własn*-$_{A}$]$_{XP}$-o-[*wolny*]$_{A}$]$_{A}$ < [*bez*$_{P}$ *własna*$_{A}$]$_{XP}$ + [*wola*$_{N}$ + -*ny*$_{Af}$]$_{A}$, *ponoworoczny* 'taking place after New Year's Day' [[*po*$_{P}$ *now*-$_{A}$]$_{XP}$-o-[*roczny*]$_{A}$]$_{A}$ < [*po*$_{P}$ *nowy*$_{A}$]$_{XP}$ + [*rok*$_{N}$ + -*ny*$_{Af}$]$_{A}$. On the other hand, the structure of the word-formation type in question often contains a connecting morpheme – the interfix "*o*" – most typically employed to combine the two roots of both a root and synthetic compound word in Polish (e.g. *sokowyżymaczka* [[*sok*$_{N}$-*o*-*wyżymacz*$_{V}$] -*ka*]$_{N}$ 'juice extractor', *parostatek* [*par*$_{N}$-*o*-*statek*$_{N}$]$_{N}$ 'steam boat'). The component, if present, can be found to the left of the right-hand root. Naturally, such a property could also point to potential compoundhood of the quoted adjectives. This time, however, they would not be interpreted as phrasal compounds but rather as synthetic compounds proper.

We will demonstrate that assigning the complex adjectives under analysis to the class of phrasal compounds is not possible on formal grounds since the unit remaining after the right-hand adjective (i.e. the head) has been abstracted from the entire morphological string is a headless syntactic construct (see examples in (9)). Similarly, if the analysed adjectives were to be classified as synthetic compounds (whose structure rests on the internal root compound,[11] subjected to suffixation, where the formal exponent of composition – the derivational affix – serves the function of the superordinate element), it would become apparent that the unit located to the left of the derivational suffix does not meet the criteria for compoundhood in Polish. It is generally acknowledged that Polish compounds proper are composed of two roots bound by the interfix. This rule holds for both root and synthetic compounds in Polish: *bajkoterapia* [*bajk*$_{N}$-*o*-*terapia*$_{N}$]$_{N}$ 'fairytale therapy',[12] *gryzipiórek* [[*gryz*$_{V}$-*i*-*pióR*$_{N}$]$_{VP}$ -*ek*]$_{N}$ 'pen-pusher', *bosonóżka* [[*bos*$_{A}$-*o*-*nóż*$_{N}$]$_{NP}$ -*ka*]$_{N}$ 'bare-foot dancer.'

The problem with the morphological interpretation of the presented data lies in the status of the leftmost modifying component which in order to be classified as a full-value syntactic constituent (and consequently as a phrasal modifier) needs to be a maximal projection. None of the examples discussed in this paper would satisfy this condition under the right-branching interpretation of structure as their left-most modifier is invariably an incomplete syntactic unit. The missing constituent is predominantly the head of NP. NPs are either syntactic bases of dephrasal adjectives (see the examples in (11) and in Table 1) or complements of prepositional phrases (see the examples in (10) and (11). It is important to note that if the adjectives were to be categorised as phrasal compounds, the head of the noun phrase would become detached from the main structure, rendering it ill-formed. As a result, the noun, which rightly belongs to

[11] In the case of Polish synthetic compounds, the internal root compound can be turned into a syntactic unit via paraphrasing: *sokowyżymaczka* [[sok$_{N}$-o-wyżymacz$_{V}$] -ka]$_{N}$ 'juice extractor' – [wyżymać$_{V}$ sok$_{N}$]$_{VP}$ 'to extract juice.'

[12] A type of therapy which involves reading fairytales

the phrasal modifier, would merge with the derivational suffix (cf. the analyses in (9) and (10)). As for the synthetic compound interpretation, the right-branching structure is not indicative of synthetic compounding for the constituent to the left of the interfix is a disintegrated syntactic phrase rather than a root (see the examples in (9)). By the same token, under the left-branching interpretation of structure, (see the examples in (10) and (11)), the adjectives cannot be ascribed to the class of synthetic compounds, either for, in Polish, the entire unit to the left of the derivational suffix is invariably a root compound composed of two roots bound by the interfix. Here, however, it is a multiunit syntactic phrase comprising functional words in addition to major lexical categories. Note, however, that under the left-branching structure interpretation (which we are proclaiming), not only does the adjectiviser attach to a full-fledged syntactic constituent but it also fulfils the function of the morphosyntactic head. As a result, the left-branching structure is not only the necessary choice but also a clear indication that the complex adjectives under discussion are products of derivation, not compounding. Consider the two morphological analyses of *bezwłasnowolny*, *ponoworoczny* and *tużpowojenny*:[13]

(9) **the right-branching structure interpretation**

a. $[[bez_{P}\ [własn_{Adj}\ \_\_{}_{N}]^{*}{}_{NP}]^{*}{}_{PP}\ -o-\ [wol_{N}\ -ny_{Af}]_{A}]_{A}$ '*free without own'

b. $[[po_{P}\ [now_{Adj}\ \_\_{}_{N}]^{*}{}_{NP}]^{*}{}_{PP}\ -o-\ [rocz_{N}\ -ny_{Af}]_{A}]_{A}$ '*yearly after new'

c. $[[tuż_{Adv}\ po_{P}\ \_\_{}_{N}]^{*}{}_{NP}]^{*}{}_{PP}\ [wojen_{N}\ -ny_{Af}]_{A}]_{A}$ '*war right after'

(10) **the left-branching structure interpretation**

a. $[[bez_{P}\ [własn_{Adj}\ -o-\ wol_{N}]_{NP}]_{PP}\ -ny]_{A}$ 'being without own will'
[[without [own will]$_{NP}$]$_{PP}$ -Af]$_{A}$

b. $[[po_{P}\ [now_{Adj}\ -o-\ rocz_{N}]_{NP}]_{PP}\ -ny]_{A}$ 'happening after New Year'
[[after [New Year]$_{NP}$]$_{PP}$ -Af]$_{A}$

c. $[[tuż_{Adv}\ po_{P}\ [wojen_{N}]_{NP}]_{PP}\ -ny]_{A}$ 'happening right after the war'
[[right after [war]$_{NP}$]$_{PP}$ -Af]$_{A}$

It needs to be stressed that a (right-branching) compound interpretation of dephrasal adjectives would strongly disturb the semantic layer, changing meaningful units into nonsense words. Such effect would be brought about by the disintegration of the left-hand syntactic unit giving rise to an enforced adjectivisation of the noun and, consequently, an unpredictable reading of the thereby created right-hand adjective (e.g. *ponoworoczny* 'happening after New Year' ≠ ?roczny po nowo 'yearly after new'). Thus, under the right-branching structure interpretation, there would be no correlation between the morphological and the semantic structures. The paraphrases **wolny bez własnej*, **roczny po nowo*, **wojenny tuż po* would not only be incongruent with the semantics of the adjective but they would also be grammatically ill-formed in that the syntactic construct (i.e. the modifier of the right-hand adjective) would comprise a headless NP – a defective complement of the macro-PP (see the examples in (9)). In contrast, if the above examples were to be considered instances of dephrasal affixation (under the left-branching interpretation to which we adhere in this study), the morphological and semantic structures would fully overlap.

[13] Please note that Polish falls into the class of synthetic tongues. As a result, it is roots rather than fully-fledged words that constitute derivational bases in Polish, e.g. ***prac***$_{N}$*-o-****daw***$_{V}$*-ca*$_{Af}$ 'employer' < ***prac****a*$_{N}$ 'work' + ***daw****ać*$_{V}$ 'give' + *-ca*$_{Af}$. The lexical morphemes in the brackets are thus represented as roots.

It is worth noting that the presence of an interfix in the structure of a complex word in Polish should not constitute the sole basis for classifying such a unit as a compound. The natural habitat of an interfix is the position between two lexemes which is why the morpheme is so closely associated with compound words (see Grzegorczykowa 1963; Kurzowa 1976; Grzegorczykowa and Puzynina 1999). Nevertheless, when a lexeme merges with a combining form or a functional morpheme, the Polish language does not reach for a connecting affix (cf. *współ-działanie* 'co-operation', *pół-nuta* 'minim, lit. half note', *przed-wiośnie* 'early spring, lit. before spring' vs *sok-o-wyżymacz-ka* 'juice extractor, lit. juice extract + Af', *gór-o-łaz-Ø* 'speleologist, lit. mountains walk + Af', *baw-i-dam-ek* 'ladies' man, lit. entertain ladies + Af').[14] Interestingly, dephrasal adjectives may possess not one but two interfixes in the modifier position (see section 3.2). Therefore, the function of the interfix is primarily technical and not necessarily indicative of compounding.

In Polish linguistic literature, compound words (be it root or synthetic) are defined as combinations of *two* lexical morphemes taking the form of roots.[15] Thus, the lexical components need to belong to the four major lexical categories, namely nouns, verbs, adverbs and adjectives.[16] For this and the above-explained reasons, a sequence of more than two roots, accompanied by function words and subjected to suffixation cannot be subsumed under the category of a canonical compound word. Thus, *trzygodzinny* 'three-hour-long' should be regarded as a synthetic compound in contrast to its extended dephrasal adjective versions *ponadtrzygodzinny* 'over-three-hour-long', *trzyipółgodzinny* 'three-and-a-half-hour-long' and *ponadtrzyipółgodzinny* 'over-three-hour-long' whose underlying structures have lost their two-root status (see the examples in Table 1):

Table 1: *Morphological discrepancies between (synthetic) compounds and dephrasal adjectives*

Synthetic compound adjective	Dephrasal adjective
trzygodzinny 'three-hour-long' $[[\text{trzy}_{\text{Num}}\,\text{godzin}_{\text{N}}]_{\text{NP}}\,\text{-ny}]_{\text{A}}$ $[[\text{three}_{\text{Num}}\,\text{hour}_{\text{N}}]_{\text{NP}}\,\text{-Af}]_{\text{A}}$	*ponadtrzygodzinny* 'over-three-hour-long' $[[\text{ponad}_{\text{P}}\,[\text{trzy}_{\text{Num}}\,\text{godzin}_{\text{N}}]_{\text{NP}}]_{\text{PP}}\,\text{-ny}]_{\text{A}}$ $[[\text{over}_{\text{P}}\,[\text{three}_{\text{Num}}\,\text{hour}_{\text{N}}]_{\text{NP}}]_{\text{PP}}\,\text{-Af}]_{\text{A}}$ *trzyipółgodzinny* 'three-and-a-half-hour-long' $[[\text{trzy}_{\text{Num}}\,\text{i}_{\text{Conj}}\,\text{pół}_{\text{Det}}\,\text{godzin}_{\text{N}}]_{\text{NP}}\,\text{-ny}]_{\text{A}}$ $[[\text{three}_{\text{Num}}\,\text{and}_{\text{Conj}}\,\text{half}_{\text{Det}}\,\text{hour}_{\text{N}}]_{\text{NP}}\,\text{-Af}]_{\text{A}}$ *ponadtrzyipółgodzinny* 'over-three-and-a-half-hour-long' $[[\text{ponad}_{\text{P}}\,[\text{trzy}_{\text{Num}}\,\text{i}_{\text{Conj}}\,\text{pół}_{\text{Det}}\,\text{godzin}_{\text{N}}]_{\text{NP}}]_{\text{PP}}\,\text{-ny}]_{\text{A}}$ $[[\text{over}_{\text{P}}\,[\text{three}_{\text{Num}}\,\text{and}_{\text{Conj}}\,\text{half}_{\text{Det}}\,\text{hour}_{\text{N}}]_{\text{NP}}]_{\text{PP}}\,\text{-Af}]_{\text{A}}$

[14] For the reader's convenience, the provided examples are represented with hyphens separating individual morphemes.

[15] Except for coordinated compound adjectives, such as *białoczerwonoczarny* $[\textit{biał}_{\text{A}}\text{-}o\text{-}\textit{czerwon}_{\text{A}}\text{-}o\text{-}\textit{czarny}_{\text{A}}]_{\text{A}}$ 'white-and-red-and-black', "[Polish] nominal composition is characterized by [almost] a complete lack of recursion (with the exception of a few isolated cases of literary creativity, such as *zwierzoczłekopotwór* $[\textit{zwierz}_{\text{N}}\text{-}o\text{-}\textit{człek}_{\text{N}}\text{-}o\text{-}\textit{potwór}_{\text{N}}]_{\text{N}}$ 'animal$_{\text{N}}$-human$_{\text{N}}$-monster$_{\text{N}}$') (Kolbusz-Buda 2014: 42).

[16] "A contemporary approach [to Polish compounding] is fairly homogeneous […] and does not assign formations, such as *podbródek* 'chin', *bezdroże* 'unbeaten track' or *antywłamaniowy* 'anti-breaking' to the family of compounds proper on the assumption that a compound word is built on two or more roots, which prefixes and prepositions are not" (Kolbusz-Buda 2014: 23-24).

Even though synthetic compounds and dephrasal adjectives fall into two distinct word-formation types, they share a common structural denominator in that their right-most root, though phonologically combined with the word-external adjectiviser, is part of the left-hand syntactic construct. Thus, their morphological make-up can only be expressed through the left-branching structure.[17] Note that under the right-branching interpretation, the synthetic compound *trzygodzinny* 'three-hour-long' would lose its original meaning: [[*trzy*$_{\text{Num}}$ *godzin*$_{\text{N}}$]$_{\text{NP}}$ *-ny*]$_{\text{A}}$ 'three-hour-long' vs [*trzy*$_{\text{Num}}$ [[*godzin*$_{\text{N}}$] *-ny*]$_{\text{A}}$]$_{\text{A}}$ '*three hourly.'

From the above, it is concluded that the complex adjectives, such as *bezwłasnowolny* 'incapacitated; being without own will' or *ponadtrzyipółgodzinny* 'over-three-hour-long' are products of derivation, and due to syntactic, semantic and morphological reasons should not be subsumed under the category of compounds, neither phrasal nor synthetic.

3.2. A morphological profile of dephrasal adjectives in Polish

Morphologically, the structure of dephrasal adjectives rests on two constituents: the base and the suffix. The base is a syntactic unit which may take the shape of (a) a noun phrase, (b) a conjuncted noun phrase, (c) a prepositional phrase, (d) a prepositional phrase with a conjuncted NP complement, (e) a DP, or (f) a DP with a conjuncted noun phrase:[18]

(11) a. tysiącczterystupięćdziesięciotrzyletni '1453-year-old'
[[tysiąc$_{\text{Num}}$ czterysta$_{\text{Num}}$ -u- pięćdziesiąt$_{\text{Num}}$ -o- trzy$_{\text{Num}}$ lata$_{\text{N}}$]$_{\text{NP}}$ -ni]$_{\text{A}}$
[[thousand four-hundred fifty three years]$_{\text{NP}}$ -Af]$_{\text{A}}$

b. *ośmioipółhektarowy* '8-hectare'
[[osiem$_{\text{Num}}$ -o- i$_{\text{Conj}}$ pół$_{\text{Det}}$ hektara$_{\text{N}}$]$_{\text{NP}}$ -ny]$_{\text{A}}$
[[eight and half hectare]$_{\text{NP}}$ -Af]$_{\text{A}}$

c. *tużpowojenny* 'happening right after the war'[19]
[[tuż$_{\text{Adv}}$ po$_{\text{P}}$ [wojnie$_{\text{N}}$]$_{\text{NP}}$]$_{\text{PP}}$ -ny]$_{\text{A}}$
[[right after [war]$_{\text{NP}}$]$_{\text{PP}}$ -Af]$_{\text{A}}$

d. *ponoworoczny* 'happening after New Year'
[[po$_{\text{P}}$ [nowym$_{\text{Adj}}$ -o- roku$_{\text{N}}$]$_{\text{NP}}$]$_{\text{PP}}$ -ny]$_{\text{A}}$
[[after [New Year]$_{\text{NP}}$]$_{\text{PP}}$ -Af]$_{\text{A}}$

e. *bezwłasnowolny* 'being without/devoid of own will'
[[bez$_{\text{P}}$ [własnej$_{\text{Adj}}$ -o- woli$_{\text{N}}$]$_{\text{NP}}$]$_{\text{PP}}$ -ny]$_{\text{A}}$
[[without [own will]$_{\text{NP}}$]$_{\text{PP}}$ -Af]$_{\text{A}}$

---

[17] For a detailed account of the morphosemantic structure of synthetic adjectives in Polish and the relation between the compound-external head affix and the right-hand root, see Kolbusz-Buda (2019b).

[18] The examples shown in the brackets are represented as fully-fledged words to bring out the phrasal character of the bases.

[19] Consider also *tużprzedwojenny* 'happening right before the war' and *tużprzedśmiertny* 'happening right before sb's death': [[*tuż*$_{\text{Adv}}$ *przed*$_{\text{P}}$ [*wojną*$_{\text{N}}$]$_{\text{NP}}$]$_{\text{PP}}$ *-ny*]$_{\text{A}}$ ([[right before [war]$_{\text{NP}}$]$_{\text{PP}}$ -Af]$_{\text{A}}$), [[*tuż*$_{\text{Adv}}$ *przed*$_{\text{P}}$ [*śmiercią*$_{\text{N}}$]$_{\text{NP}}$]$_{\text{PP}}$ *-ny*]$_{\text{A}}$ ([[right before [death]$_{\text{NP}}$]$_{\text{PP}}$ -Af]$_{\text{A}}$).

f. *ponaddwudziestoparoliterowy* 'over-twenty-something-letter'[20]
[[ponad$_{P}$ [[dwadzieścia$_{Num}$ -o- parę$_{Num}$]$_{NumP}$ -o- liter$_{N}$]$_{NP}$]$_{PP}$ -owy]$_{A}$
[[over [[twenty something]$_{NumP}$ letter]$_{NP}$]$_{PP}$ -Af]$_{A}$

g. *ponadczterdziestopięcioipółstronicowy* 'over-fourty-five-and-a-half-page'
[[ponad$_{P}$ [[czterdzieści$_{Num}$ -o- pięć$_{Num}$ -o- i$_{Conj}$ pół$_{Det}$]$_{NumP}$ stronicy$_{N}$]$_{NP}$]$_{PP}$ -owy]$_{A}$
[[over [[twenty something]$_{NumP}$ letter]$_{NP}$]$_{PP}$ -Af]$_{A}$

h. *cotrzydziestoczterogodzinny* 'which happens every thirty four hours'
[[co$_{D}$ [[trzydzieści$_{Num}$ -o- cztery$_{Num}$]$_{NumP}$ -o- godziny$_{N}$]$_{NP}$]$_{DP}$ -ny]$_{A}$
[[every [[thirty four]$_{NumP}$ hour]$_{NP}$]$_{DP}$ -Af]$_{A}$

i. *cotrzydziestoczteroićwierćgodzinny* 'which happens every thirty-four and a quarter hours'
[[co$_{D}$ [[trzydzieści$_{Num}$ -o- cztery$_{Num}$ -o- i$_{Conj}$ ćwierć$_{Num}$]$_{NumP}$ godziny$_{N}$]$_{NP}$]$_{DP}$ -ny]$_{A}$
[[every [[thirty-four and quarter]$_{NumP}$ hour]$_{NP}$]$_{DP}$ -Af]$_{A}$

From the examples presented above, it becomes clear that when the structure of the left-hand phrasal modifier is a cluster of lexical morphemes, the roots must be separated by one or even two interfixes. The connective morpheme is employed even when the post-interfix root is preceded by an embedded conjuncted phrase: *pięć*$_{Num}$ *-o-* ***i***$_{Conj}$ ***pół***$_{Det}$ *stronicy*$_{N}$ 'five and a half page', *cztery*$_{Num}$ *-o-* ***i***$_{Conj}$ ***ćwierć***$_{Num}$ *godziny*$_{N}$ 'four and a quarter hour.' However, the interfix will not be employed if either of the two free morphemes is grammatical: *ponad*$_{P}$*dwudziest*$_{Num}$… 'over twenty…', *bez*$_{P}$*własn*$_{Adj}$… 'without own…'

In Polish, the most productively created dephrasal adjectives are based on numeral groups. The phrasal modifier may additionally contain a conjuncted NP. Such lexical units are on-the-spot creations, tailored to specific language contexts. Hence, they will not be listed in the lexicon.

The morphosyntactic head of a dephrasal adjective is the word-external adjectiviser. The affix is the source of the morphosyntactic feature percolation. In Polish, dephrasal adjectives are inflected for case, number, and gender. These properties are contained in the inflectional ending of the derivational suffix.

4. Conclusions

In the present paper, we have argued for the left-branching interpretation of structure of such complex adjectives as *bezwłasnowolny* 'incapacitated' or *ponaddwudziestoparoliterowy* 'over-twenty-something-letter' being combinations of a syntactic phrase and an adjectiviser. We have shown that postulating the right-branching structure interpretation of the presented material brings about the violation of one of the basic syntactic principles, namely that every phrase must be headed. Under the right-branching interpretation of structure, the head of the modifying syntactic constituent located to the left of the derivational suffix (alternatively, the head of the NP serving as the complement of the preposition in the subordinate PP) gets detached from the whole rendering the phrase headless. Also, positing the right-branching morphological structure is not possible on semantic grounds as the meaning of the adjective emerging from the right-branching structure would clearly be incongruent with the attested reading of the

[20] As in, for instance, *ponaddwudziestoparoliterowe nazwisko* 'over-twenty-something-letter surname.'

entire lexical unit. For these two reasons the presented material cannot be subsumed under the label "phrasal compound."

As for a synthetic compound interpretation, the right-branching structure would be excluded for the same semantic reasons explained above, i.e. the lack of congruence between the morphological and semantic structures: [[*trzy*$_{\text{Num}}$ *godzin*$_{\text{N}}$]$_{\text{NP}}$ *-ny*]$_{\text{A}}$ 'three-hour-long' vs [*trzy*$_{\text{Num}}$ [[*godzin*$_{\text{N}}$] *-ny*]$_{\text{A}}$]$_{\text{A}}$ '*three hourly.' It is worthy of note that under the left-branching interpretation of structure the discussed complex adjectives would not meet the formal criteria for compoundhood, either. It is because, in Polish, a canonical compound word is a combination of two roots bound by the interfix (root compounds), optionally subjected to suffixation (synthetic compounds). As regards the data collected for the purpose of this study, the morphological structure of the presented complex adjectives not only rests on a regular syntactic phrase but also comprises function words, such as, for instance, prepositions, determiners and conjunctions: *cotrzydziestoczteroićwierćgodzinny* [[*co*$_{\text{D}}$ [[*trzydzieści*$_{\text{Num}}$ *-o-cztery*$_{\text{Num}}$ *-o- i*$_{\text{Conj}}$ *ćwierć*$_{\text{Num}}$]$_{\text{NumP}}$ *godziny*$_{\text{N}}$]$_{\text{NP}}$]$_{\text{DP}}$ *-ny*]$_{\text{A}}$ 'which happens every thirty-four and a quarter hours.' In effect, properties, such as the syntactic nature of the base (acquiring the shape of an NP, DP and PP), its multi-word character (being a string of more than two words) as well as the functional status of some of these words stand in clear opposition to the formal requirements which need to be satisfied in order to classify a given morphological construct as either a root or synthetic compound in Polish.

As already mentioned, the dephrasal formations examined in this paper are casually classified as compounds, most likely, due to the presence of the interfix in their morphological structure. It needs to be stressed that the occurrence of the morpheme, though frequent, is not obligatory. The fact that, in Polish, the connecting morpheme is strongly associated with compounding flows from its distribution for it is almost exclusively confined to root and synthetic compounds. However, it is worth noting that the presence of the interfix in the structure of a complex word in Polish should not constitute the sole basis for classifying such a unit as a compound word. As illustrated in section 3.2, its function is merely technical and not necessarily indicative of compounding. The interfix is employed to phonologically combine the neighbouring roots of a morphological construct. However, when a lexeme merges with a combining form or a functional morpheme, the Polish language does not reach for the connecting affix. Paradoxically, the aspect which should have no bearing on the proper classification of the material presented in this paper, i.e. the presence of the interfix, has so far been considered the deciding factor in determining the morphological status of the adjectives in question.

We are of the opinion that it is only the morphological analysis which takes into account both syntactic and semantic variables that may help to identify the key aspects of the morphological structure critical for the proper classification of what we refer to as dephrasal adjectives. Hence, basing on the presented syntactic and semantic criteria, we subsume the complex adjectives under the broad category of dephrasal suffixation, arguing against their compoundhood. We hope that the study will help to enhance the descriptive adequacy of the Polish word-formation system and point to new directions in the discussion on the morphology-syntax interface.

References

Ackema, P., and A. Neeleman. 2004. *Beyond Morphology: Interface Conditions on Word Formation*. Oxford: Oxford University Press.

Algeo, J., and C. Butcher. 2013. *The Origins and Development of the English Language*. Wadsworth: Cengage Learning.

Anderson, S. 1992. *A-morphous Morphology*. Cambridge: Cambridge University Press.

Bisetto, A., and S. Scalise. 1999. Compounding. Morphology and/or Syntax? In L. Mereu (ed.), *Boundaries of Morphology and Syntax*, 31–48. Amsterdam/Philadelphia: John Benjamins.

Booij, G. 1997. Allomorphy and the Autonomy of Morphology. *Folia Linguistica* 31: 25–56.

Booij, G. 2009. Lexical Integrity as a Formal Universal: A Constructionist View. In S. Scalise, E. Magni, and A. Bisetto (eds.), *Universals of Language Today*, 83–100. The Netherlands: Springer. DOI: 10.1007/978-1-4020-8825-4_5.

Botha, R. 1984. *Morphological Mechanisms: Lexicalist Analyses of Synthetic Compounding*, Language and Communication Library, vol. 6. Oxford: Pergamon Press.

Bresnan, J. 2001. *Lexical Functional Syntax*. Oxford: Blackwell Publishers.

Doroszewski, W. (ed.). 1958–1962. *Słownik języka polskiego*, vol. 1–4. Warszawa: Państwowe Wydawnictwo „Wiedza Powszechna."

Grzegorczykowa, R. 1963. Charakterystyka słowotwórcza polskich rzeczowników złożonych. *Poradnik Językowy* (1963): 255–264.

Grzegorczykowa, R., and J. Puzynina. 1999. Rzeczownik. In R. Grzegorczykowa, R. Laskowski, and H. Wróbel (eds.), *Gramatyka współczesnego języka* polskiego. *Morfologia*, 389–464. Warszawa: PWN.

Kolbusz-Buda, J. 2014. *Compounding in Polish and English. A Morpho-Semantic Analysis of Synthetic Deverbal Compound Nouns in Polish in the Light of Parallel Constructions in English*. Lublin: Wydawnictwo KUL.

Kolbusz-Buda, J. 2015. Towards a Left-Branching Structure of Synthetic Compound Nouns in Polish and English. In M. Bloch-Trojnar, A. Malicka-Kleparska, and K. Drabikowska (eds.), *Concepts and Structures: Studies in Semantics and Morphology*, 63–82. Lublin: Wydawnictwo KUL.

Kolbusz-Buda, J. 2019a. *Złożenia syntetyczne w języku polskim. Analiza formalna*. Siedlce. Wydawnictwo Uniwersytetu Przyrodniczo-Humanistycznego.

Kolbusz-Buda, J. 2019b. Synthetic Compound Adjectives in Polish – A Case of the Morphology-Syntax Interface. In A. Malicka-Kleparska, and M. Bloch-Trojnar (eds.), *Valency in Verbs and Verb-Related Structures*, 141–154. Berlin: Peter Lang.

Kurzowa, Z. 1976. *Złożenia imienne we współczesnym języku polskim*. Warszawa: PWN.

Lieber, R., and S. Scalise. 2007. The Lexical Integrity Hypothesis in a New Theoretical Universe. In G. Booij, B. Fradin, A. Ralli, and S. Scalise (eds.), *On-line Proceedings of the Fifth Mediterranean Morphology Meeting*, 1–24. https://geertbooij.files.wordpress.com/2014/02/mmm5-proceedings.pdf

Pafel, J. 2017. Phrasal Compounds and the Morphology-Syntax Relation. In C. Trips, and J. Kornfilt (eds.), *Further Investigations into the Nature of Phrasal Compounding*, 233–259. Berlin: Language Science Press.

Ralli, A. 2013. *Compounding in Modern Greek. Studies in Morphology*. Springer: Dordrecht.

Sato, Y. 2010. Complex Phrase Structures within Morphological Words: Evidence form English and Indonesian. Lingua 120: 379–407.

Spencer, A. 2005. Word-Formation and Syntax. In R. Lieber, and P. Štekauer (eds.), *Handbook of Word-Formation*, *Studies in Natural Language and Linguistic Theory*, 73–97 Dordrecht: Springer.

Spencer, A. 2010. Lexical Relatedness and the Lexical Entry – a Formal Unification. In S. Müller (ed.), *Proceedings of the 17th International Conference on Head-Driven Phrase Structure Grammar*, 322–340. Stanford: CSLI.

Szymanek, B. 2017. Compounding in Polish and the Absence of Phrasal Compounding. In C. Trips, and J. Kornfilt (eds.), *Further Investigations into the Nature of Phrasal Compounding*, 49–79. Berlin: Language Science Press.

Trips, C. 2012. Empirical and Theoretical Aspects of Phrasal Compounds: against the 'Syntax Explains it all' Attitude. In A. Ralli, G. Booij, S. Scalise, and A. Karasimos (eds.), *On-line Proceedings of the Eighth Mediterranean Morphology Meeting*, 322–346.
http://lmgd.philology.upatras.gr/files/MMM8_Proceedings.pdf

LingBaW *Linguistics Beyond And Within 5 (2019), 90-102*

Semantic transfers in the domain of FOODSTUFFS

Aleksandra Zofia Kowalczyk
John Paul II Catholic University of Lublin, Poland

Abstract
In recent literature scholars have worked out a number of new categories of meaning development such as zoosemy, plantosemy and foodsemy. This paper focuses on the mechanism of foodsemy, a new category of metaphorical extension proposed by Kleparski (2008), and in particular on the cases of metaphorical extension that are targeted at human beings and their various qualities. Most frequently, the process discussed here involves the projection of attributive features and values, sometimes positive, yet most frequently negative ones, associated with members of the macrocategory **FOODSTUFFS** onto the macrocategory **HUMAN BEING**. The purpose here is to outline a limited number of metaphorical transfers involved in the conceptual macrocategory **FOODSTUFFS** targeted at such subcategories of the microcatergory **FEMALE HUMAN BEING** as **ATTRACTIVE FEMALE HUMAN BEING, IMMORAL FEMALE HUMAN BEING** and **FEMALE BREASTS**. For some language users it may sound somewhat unnatural, and hence unacceptable, to name a female person *mutton* with the intended metaphorical sense 'a prostitute', *tomato* applied in the transferred sense 'attractive, but not a very wise female' or *peach*, which denotes an 'attractive female, especially in American English'. However, cases of foodsemy are nothing else, but instances of metaphorical conceptualizations, which are considered to be pervasive, unconscious and automatic. They are also universal, though different lexical items in different languages may acquire different metaphorical senses.

Keywords: food metaphor, foodsemy, anthropomorphization, female names

1. Introduction: Language as a rule-governed system

Traditionally, language has frequently been compared to an organism consisting of various subsystems each of which functions by its own rules and regulations. In order to function, every organism must be regulated by well-defined and self-repeating rules which make it go on and perform various functions and in the case of language the main function to fulfil is communication. As in the case of every system, the functioning of the language system may be either undisturbed or go out of balance, or worse still, come to a halt altogether. This may be brought about by either external or internal factors, and these may be accounted for either synchronically or diachronically.

First, when we consider the latter we may give the example of the importance of borrowing in the history of English and many other currently used languages. In the history of English the process of borrowing may be said to have had a great impact on the structure of the language at

an early stage (Kleparski 2012). On the contrary, English is making a great impact on the structure of Polish now, with more than ten thousand lexical items being currently present in the vocabulary of Polish (Mańczak-Wohlfeld 1992). In short, as a result of borrowing many irregular, and – from the point of view of the Polish language system – anomalous structures appear, and this number includes both simple lexical items and the previously unknown senses but also complex idiomatic expressions. For example, let us consider the novel application of the Polish verb *dedykować* which until recently was used in the sense 'to dedicate a book/poem/song (to someone)', and which under the influence of the semantics of English *dedicate* has recently acquired the sense 'to mean, to intend for'. Obviously, in this case, one may talk about semantic borrowing rather than lexical borrowing. One may hypothesize that the anomalous character of this innovation will most likely disappear into thin air, and in time will become perfectly acceptable.

To pursue the issue further, in the sphere of phraseology there are countless examples of fixed expressions that seem to be completely unmotivated and hence either rationally or culturally anomalous. Take, for example, the English expression to *kick the bucket*, which is a euphemism for *to die*, and – etymologically speaking – it derives from either the suicide's kicking away the bucket on which he/she is standing, in order to hang him/herself, or from the *bucket beam* on which pigs were hung after being slaughtered. The odd *post mortem* spasms would lead to the 'bucket' being kicked (see *Cassell's Dictionary of Word and Phrase Origins*).

In the remaining part of this paper, we shall focus our attention on the figurative transfers resulting from foodsemy. The transfers in question have been present at various stages of the development of English and the mechanism has affected various sectors of the English vocabulary. The body of cases of foodsemy mostly related to the concept **FEMALE HUMAN BEING** have been extracted from such lexicographic sources as *Oxford English Dictionary*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *Green's Dictionary of Slang* and *The Slang of Sin*. Some examples are quoted after Kleparski (2008, 2012). Online sources, such as *The Probert Encyclopedia of Slang*, *Online Slang Dictionary* and *Urban Dictionary*, and web searches also played a crucial part as they offer numerous up-to-date examples of foodsemy.

2. Food-based metaphorical transfers

Recent studies of metaphor have shed new light on the nature of the metaphorization processes. In particular, the last decades of the 20th century and the beginning of the 21st century have been marked by a much intensified rise in interest in the study of metaphor, which is one of the main targets of present day semantic research in both Poland and abroad. Let us mention here such works as Lakoff (1987, 1993), Lakoff and Johnson (1980), Lakoff and Turner (1989), Langacker (1987, 2000), Kövecses (2000), Geeraerts (2010), and in the Polish tradition Kleparski (1990, 1997), Krzeszowski (1991, 2003), Szwedek (2000, 2004), Kiełtyka (2009), Cymbalista and Kleparski (2013). The pioneering work by Lakoff and Johnson (1980) is of great importance to cognitive semantics as it voices and substantiates the view that metaphors are not poetic devices restricted to literary and highly sophisticated language. On the other hand, the scholars claim

that metaphor is a matter of ordinary language and everyday life and activities as metaphors "govern our everyday functioning, down to the most mundane details. Our concepts structure what we perceive, how we get round in the world, and how we relate to other people. Our conceptual system thus plays a central role in defining our everyday realities" (Lakoff and Johnson 1980: 3). Consequently, our conceptual system is metaphorical and, additionally, subconscious in nature.

The fundamental works, such as Lakoff (1987, 1993), Lakoff and Johnson (1980), Lakoff and Turner (1989) have laid foundations for a number of case-specific studies in various natural languages. At the same time new categories of metaphorical transfers, though known and evidenced for a long time, have been named and renamed. Here, one must mention such long-recognized types of metaphorical change as **zoosemy**, but also new well-defined and richly documented types of semantic metaphorical transfers as **plantosemy**, and – in particular – the type of metaphorical change that with time became generally acknowledged as **foodsemy.**

The term *foodsemy* was first used a decade ago in Kleparski (2008), who discussed metaphorical transfers where the source domain is formed by lexical items from the source domain **FOODSTUFFS** and the target domain is the macrocategory **HUMAN BEING**. The mechanism proves to be highly productive in various languages. In English it affects a variety of grammatical categories including fixed phrases, idiomatic expressions or individual nouns, adjectives and verbs. On the largest scale, foodsemic transfers affect nouns, (e.g. English *meat* > 'person viewed as sexual object', *cheesecake* > 'attractive girl'), but it is possible to trace foodsemic adjectives (e.g. English *porky* > 'fat, obese', *cheesy* > 'of poor quality'), verbs (*to cream off* > 'to take the best part of something', *to salt away* > 'to save money').[1]

As far as the category of nouns is concerned, many foodsemic metaphors are targeted at the category **HUMAN BEING**, and a great number of such metaphorical uses are channelled through the sphere of taste. For example, one may quote the following cases of foodsemic metaphor: Slovak *cukrik* 'candy' > 'young, attractive girl', Italian *zucchero* 'sugar' > 'kind, pleasant or handsome person', *fico* 'fig' > 'beautiful, handsome person'. Further examples can be found in English *cheesecake*, *cupcake*, *cream-puff*, *sweet meat*, *bun*, *biscuit*, *honey-bunny*, *sugar pie*, *peach*, American English *sugar baby*, *sugar pie*, *arm candy* and *shoulder candy* > 'young, attractive lady', *apple pie* > 'dear, beloved person'. While analysing the body of data, one distinguishes positively loaded attributive values, such as <PLEASANT>, <DEAR>, <HANDSOME> or <BEAUTIFUL> (the English examples taken from Kowalczyk 2015a).

At the same time, Kleparski (2008) provides us with numerous examples of foodsemic transfers having their basis in visual resemblance of some foodstuffs which underlie metaphorical shifts. Here, one may quote the cases of English *pear* > 'pear-shaped person, especially woman', Polish *grucha* 'pear' > 'penis' or 'ill-shaped female'. Hence, the concept of

[1] This applies to various natural languages and in Polish the process may be illustrated by metaphorical meanings of such denominal verbs as *kiełbasić* (*kiełbasa* 'sausage') > 'to fail to do something', *chrzanić* (*chrzan* 'horseradish') > 'to talk rubbish', *cukrować* (*cukier* 'sugar') > 'to pander', as well as idiomatic expressions and proverbs (e.g. English *a piece of cake* > 'something easy to do' or *to be as cool as a cucumber* >'to stay calm in stressful situations'). The same process affects idiomatic expressions, such as *Don't put all your eggs in one basket* standing for 'don't depend on a single plan or action or person for success', *to be in a soup/to be in jam* meaning 'to be in trouble'.

mental blockishness and stupidity is realized by the presence of such attributive features as SIZE: <LARGE> and SHAPE: <ROUND>. Italian *anchovy* 'a small, marine, herring-like fish' > 'a very thin girl'. Spanish *albondiga* 'meatball' stands for a person who is 'extremely fat, obese'. Meaning transfers given above can be explained because in many cases of foodsemic metaphorization processes one may find conceptual values that bridge the primarily, historically original sense on the one hand and the figurative sense on the other. Take, for example, the metaphorical sense of Polish *grucha* 'pear-shaped or downwards unshapely woman'.

In what follows we shall focus our attention on metaphorical foodsemic transfers that are targeted at two categories, that is macrocategory **FEMALE HUMAN BEING** and microcategory **FEMALE BODY PARTS**. Kleparski's idea has been tested against an extensive body of data drawn from numerous dictionaries. We bring to light new examples of the phenomenon in question.

3. Foodsemic transfers targeted at the macrocategory FEMALE HUMAN BEING

According to Cutierrez-Rivas (2011: 7) "metaphors derive in some cases from analogies, since it is relatively easy and spontaneous for humans to create such by watching the ordinary things common to them and the world that surrounds them". Metaphors can become so ingrained in a culture that nobody questions the meaning behind them. In consequence, they are a perfect tool for introducing various topics and notions, such as gender differences, for example. Both woman and the female body are frequently pictured and viewed from a metaphorical perspective as food that can be eaten. In these metaphors of consumption women are usually eaten (or devoured), rather than consume food themselves. Cutierrez-Rivas (2011: 9) claims that "women are mere products to be consumed, enjoyed and discarded."

Let us now focus on those English foodsemic transfers in which food and food-related lexical items come to be employed to conceptualize and encode those senses that are related to various positions within the macrocategory **FEMALE HUMAN BEING**. Kleparski (1997) carries out an in-depth study of historical synonyms of *girl/young woman*, yet strangely enough there are almost no cases of foodsemy. The study published by Grygiel (2008) shows that in the history of English there have been very few foodsemic developments related variously to the conceptual category **MALE HUMAN BEING**. Because of the abundance of examples of cases of foodsemic uses in present day English one is tempted to conclude that the mechanism of food metaphor has become productive very recently. Let us start with tabulating the language data that have been collected for the purpose of this analysis. The results of our dictionary and web searches are presented below. Section 3.1. contains the set of lexical items where the names of foodstuffs are used with reference to attractive females. Section 3.2. presents the negative picture of a woman viewed foodsemically as immoral. Section 3.3. focuses on lexical items used in the sense 'female breasts'. Due to space limitations, each table contains only one example of use of a given lexical item in context. There is also information about the source or sources of metaphorical meanings. The example comes from the dictionary which comes first on the list.

3.1. ATTRACTIVE FEMALE HUMAN BEING viewed foodsemically

Let us now focus on those English transfers in which food and food-related lexical items come to be employed to encode senses related to the conceptual microcategory **ATTRACTIVE FEMALE HUMAN BEING.**

Table 1: *FOODSTUFFS for ATTRACTIVE FEMALE HUMAN BEING*

	Lexical item	Sense	Example of use or the source
1.	*bun*	'attractive girl with a nice body'	She's a little bun, isn't she? […] A little bun. A honey bun. Little raisin eyes. Sweet icing lips. *Green's Dictionary of Slang, Urban Dictionary*, *Concise New Partridge Dictionary of Slang and Unconventional English*
2.	*biscuit*	'good looking woman'	*Urban Dictionary*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Green's Dictionary of Slang*
3.	*cheesecake*	'attractive female'	*OED, Urban Dictionary*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Green's Dictionary of Slang*
4.	*cookie*	'woman, esp. attractive, seductive girl'	*OED*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
5.	*creampuff*	'attractive, delicate female'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*
6.	*cupcake*	'cute, adorable girl'	*The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
7.	*sweet meat*	'young, attractive female'	*Urban Dictionary*, *Green's Dictionary of Slang*
8.	*arm candy*	'remarkably attractive female, often female companion escorting a more celebrated or influential person at a social event'	*The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
9.	*honey-bunny*	'young, pretty girl'	*Urban Dictionary*; the entry based on *Pulp Fiction*
10.	*shoulder candy*	'young, pretty girl'	*Urban Dictionary*
11.	*sugar baby*	'young, pretty girl'	*Urban Dictionary*, *Green's Dictionary of Slang*
12.	*sugar pie*	'young, pretty girl, a term of endearment'	*Urban Dictionary*
13.	*toast*	'skinny girl with large breasts'	*Urban Dictionary*
14.	*peach*	'attractive, young female, especially particularly desirable one'	*OED*, *Urban Dictionary*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Green's Dictionary of Slang*
15.	*tomato*	'attractive, but not very wise young girl'	*OED*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*

16.	*milk*	'gorgeous white female'	*Urban Dictionary*
17.	*ham*	'beautiful, cute, sexy and good-looking girl'	*The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*
18.	*salt*	'extremely attractive female'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*
19.	*pepper*	'extremely attractive young female'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
20.	*sauce*	'attractive female'	*Urban Dictionary*
21.	*dish*	'attractive woman'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary, Green's Dictionary of Slang*
22.	*snack*	'attractive female'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*

From the point of view of their morphological build-up the set of lexical items contained in the above table features words of various morphological status. Simple lexical items (*dish*, *tomato*, *salt*, *pepper*, *milk*, *cookie*, *bun*, *biscuit*, *toast*, *sauce*, *ham*, *snack*, *peach*) slightly outnumber complex ones (*cheesecake*, *cupcake*, *arm candy*, *cream puff*, *sweet meat*, *honey-bunny*, *sugar pie*, *shoulder candy*, *sugar baby*).

The data collected here provides evidence that the values presupposed for the DOMAIN OF TASTE […] are most frequently responsible for the foodsemic transfers between the source domain **FOODSTUFFS** and the macrocategory **FEMALE HUMAN BEING**. This is most frequently realized through the metaphorical transfer of lexical items that in their primary sense refer to substances that are sweet *per se* (*biscuit*, *cookie*, *sweet meat*, *cream puff*, *cheesecake*, *cupcake*), but also types of fruit that are definitely on the sweet side (*peach*), and most abundantly by those foodstuffs that are on the sweet side, such as sugar or honey (*sugar baby*, *sugar pie*, *honey-bunny*, *shoulder candy*, *arm candy*). Likewise, various elements of meal/type of meal which may be said to be neutral with respect to the specification of taste may be found here (*dish*, *sauce*, *snack*). Additionally, and – in many cases somewhat surprisingly – seasoning substances (*salt*, *pepper*), that are also conceptually linked to the DOMAIN OF TASTE […] are also present here. Last but not least, dairy products also serve as the source domain for foodsemic transfers in English (*milk*, *cheesecake*). However, the material in Table 1 above escapes any major generalization because there are some cases of foodsemic transfer that involve those lexical items whose semantics in no way contains elements of sweetness but rather sense sensations that are contrary to the concept of sweetness (*ham*, *tomato*). Nevertheless, in the majority of foodsemic developments related to the conceptual microcategory **ATTRACTIVE FEMALE HUMAN BEING** the possible general metaphorical path that may be formulated is <SWEETNESS IS PERCEIVED AS POSITIVE>. The overall and pervasive schema visible in the material discussed here has been so far formulated as <FEMALE HUMAN BEING IS FOOD/A FOOD ITEM>. This category may be branched further and in effect we arrive at the following set of more specific ones, namely: <ATTRACTIVE FEMALE HUMAN BEING IS PERCEIVED AS A FOOD

ITEM>, <ATTRACTIVE FEMALE HUMAN BEING IS PERCEIVED AS A SWEET FOOD ITEM>, <ATTRACTIVE FEMALE HUMAN BEING IS PERCEIVED AS A TASTY FOOD ITEM>, <ATTRACTIVE FEMALE HUMAN BEING IS PERCEIVED AS FRUIT>.

3.2. IMMORAL FEMALE HUMAN BEING viewed foodsemically

Table 2 given below presents figurative extensions of food-related lexical items that are secondarily related to the conceptual microcategory **IMMORAL FEMALE HUMAN BEING** which may be viewed as being conceptually embedded within the limits of the macrocategory **FEMALE HUMAN BEING.**

Table 2: *FOODSTUFFS for IMMORAL FEMALE HUMAN BEING*

	Lexical item	**Sense**	**Example of use or the source**
1.	*buttered bun*	'sexually available woman', 'prostitute'	Two pretty lads, old Priam's sons, / Both very fond of butter'd buns. *Green's Dictionary of Slang*, *Concise New Partridge Dictionary of Slang and Unconventional English*
2.	*crumpet*	'desirable woman'	*OED*, *Urban Dictionary*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
3.	*tart*	'female of immoral character'	*OED*, *Urban Dictionary*, *Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary, Green's Dictionary of Slang*, *Green's Dictionary of Slang*
4.	*tartlet*	'young woman of immoral character'	*OED*, *Urban Dictionary*
5.	*marmalade-madam*	'strumpet'	*OED*
6.	*strawberry*	'a female who in exchange for drugs will have sex with anybody that can provide drugs for her'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
7.	*meat*	'prostitute'	*OED*, *Urban Dictionary*, *Green's Dictionary of Slang*
8.	*mutton*	'prostitute'	*OED*, *Urban Dictionary*, *Green's Dictionary of Slang*
9.	*laced mutton*	'prostitute'	*OED*, *British National Corpus*
10.	*veal*	'young female, referring to a girl younger than the interested male'	*Urban Dictionary*, *Green's Dictionary of Slang*
11.	*sandwich*	'prostitute'	*Urban Dictionary*

As the data given in Table 2 shows, the majority of foodsemic transfers have affected those vocabulary items that are primarily related to meat and meat products. While analysing the data, we observe the presence of a variety of connotations associated with variously understood sexuality, or what are considered to be distortions of sexuality. The number of cases that have been tabulated confirms the fact that meat-based foodsemy is a highly productive mechanism

(*meat*, *a bit of meat*, *hot meat*, *veal*, *mutton*, *laced mutton*, *hot mutton*, *hot beef*). Let us point to the fact that also in Polish we have a number of diminutive forms for meat-related lexical items that are used in reference to female sexual partners, e.g. *mięsko* 'meat. dim', *cielęcinka* 'veal. dim', *wołowinka* 'beef. dim', especially 'attractive and sexually available woman'. It is evident from the cases discussed above that one may speak here of a sexuality-oriented conceptualization of meat products, not only in English, but also in other languages. Metaphorical transfers of these meat-related words evidently follow the path of development <SEXUAL USE OF A PERSON IS CONSUMPTION>, which may in fact be viewed as a case of mechanism of joint operation of metaphor and metonymy in the sense of Ruiz de Mendoza (1997).[2]

Apart from the most numerous cases of metaphorical developments involving names of meat products, we observe examples of meaning transfers of bakery terms (*tart*, *tartlet*, *crumpet*, *buttered bun*), dish type (*sandwich*), fruit (*strawberry*) and several of those involve a sweet substance, such as jam or marmalade (*marmalade-madam*, *a bit of jam*). The attributive value <SWEET> may be responsible for the application of the foodsemic metaphor, frequently yielding positively loaded semantic novelties. Generally speaking, the main paths of development operating in the category **IMMORAL FEMALE HUMAN BEING** are: <IMMORAL FEMALE HUMAN BEING IS PERCEIVED AS A SWEET FOOD ITEM> and <IMMORAL FEMALE HUMAN BEING IS PERCEIVED AS MEAT/A KIND OF MEAT>.

As for the morphological status of the lexical items that have undergone foodsemic transfers, there are altogether eleven examples of metaphorical transfers tabulated above where food products came to be applied in the sense 'immoral female human being'. We observe that compounds are less numerous than simple nouns. The body of morphologically complex items is represented by such complex nominal formations as *laced mutton*, *marmalade madam*, *buttered bun*. The remaining lexical items employed foodsemically are simplex words, such as *tart*, *tartlet*, *mutton*, *sandwich*, *strawberry*, *crumpet*, *meat*, *veal*.

At a glance, the semantic development of foodsemic items belonging to the category **IMMORAL FEMALE HUMAN BEING** enumerated in this section, have acquired various evaluatively loaded elements. These attributive values are (IMMORAL), (PROMISCUOUS), (UNACCEPTABLE), (DESPISED), (CONTEMPTIBLE), and they are linked to the locations within the attributive paths such as the DOMAIN OF CHARACTER AND BEHAVIOUR […], the DOMAIN OF MORALITY […], the DOMAIN OF SEXUAL ACTIVITY […], the DOMAIN OF ABUSE […] and the DOMAIN OF PROFESSION […]. Significantly, in such

[2] However, while talking about **FOODSTUFFS** in the context of sexuality it is worth mentioning that meat-based metaphorical extensions are by no means restricted to the female kind. The English data has recently been discussed *in extenso* by Kleparski (2012: 43–49) who observes that the meaning of *meat*, which in English slang is used in the sense 'a sexual partner', provides the basis for the rise of novel metaphorical formations. And so, for example, the human-specific sense of *meat* is echoed in the semantics of such compounds as *meat markets* or *meat racks*, which are used in reference to bars for singles where one can find – so to speak – someone for sexual consumption. What is more, we have traced the of-phrase *a bit of meat* standing for sexual intercourse or a prostitute. Finally, such compounds as *fresh meat*, *hot meat* and *raw meat* may be used in reference to 'prostitute' or to 'vagina'.

cases as, for example, *tart* and *cake* the element (YOUNG) specifiable for the DOMAIN OF AGE normally comes into play.

3.3. Foodsemic transfers targeted at the microcategory FEMALE BREASTS[3]

We have taken a further step by analyzing those foodsemic transfers that are targeted not only at the macrocategory **FEMALE HUMAN BEING**, but also those in which the microcategory **FEMALE BODY PARTS** is the target. To be more specific, we shall focus on the body of figurative senses that are linked secondarily to the microcategory **FEMALE BREASTS**.

Table 3: *FOODSTUFFS for FEMALE BREASTS*

	Lexical item	Sense	Examples of usage contexts or source
1.	*brownies*	'female breasts'	Wow, look at her *brownies.* They look so delicious. *Urban Dictionary, Concise New Partridge Dictionary of Slang and Unconventional English*
2.	*cakes*	'female breasts'	*Urban Dictionary*
3.	*cupcakes*	'female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary, Urban Dictionary*
4.	*muffins*	'small female breasts'	*Green's Dictionary of Slang*
5.	*apples*	'female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
6.	*coconuts*	'female breasts'	*Urban Dictionary*, *Green's Dictionary of Slang*
7.	*grapes*	'female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
8.	*grapefruits*	'largefemalebreasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
9.	*lemons*	'female breasts'	*Urban Dictionary*, *Green's Dictionary of Slang*
10.	*mangoes*	'female breasts'	*Urban Dictionary*, *Green's Dictionary of Slang*
11.	*melons*	'large female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
12.	*pumpkins*	'large female breasts'	*Urban Dictionary*, *Green's Dictionary of Slang*
13.	*watermelons*	'large female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English, Urban Dictionary, Urban Dictionary*, *Green's Dictionary of Slang*
14.	*chestnuts*	'small female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English, Urban Dictionary*, *Green's Dictionary of Slang*
15.	*baconbits*	'female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*

[3] Obviously, the foodsemic view of female parts of the body is in no way restricted to female breasts. As shown by Kowalczyk (2015b) the foodsemic metaphor has pervaded the conceptual category **FEMALE PRIVY PARTS**. The following lexical items convey the meaning: 'female privy parts': *bun*, *cookie*, *cake hole*, *candy*, *beaver pie*, *bread*, *golden doughnut*, *jelly roll*, *muffin*, *pie*, *sugar dish*, *honey box*, *honey pot*, *apple*, *apricot*, *cherry*, *peach*, *bean*, *cabbage*, *cauliflower*, *bacon rashers*, *beef*, *beef curtains*,(*vertical*) *bacon sandwich*, *meat*, *meat curtains*, *meat seat*, *mutton*, *cup of tea*, *jelly box*, *juice box*, *lunch-box*, *jelly*, *fish*, *oyster*.

17.	*friedeggs*	'small female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *Urban Dictionary*, *Green's Dictionary of Slang*
18.	*heavy cream*	'large female breasts'	*Concise New Partridge Dictionary of Slang and Unconventional English*, *The Routledge Dictionary of Modern American Slang and Unconventional English*, *Urban Dictionary*

As far as the morphological status of lexical items linked to the conceptual microcategory **FEMALE BREASTS** is concerned, it is notable that the majority of them are simple words (cf. *apples*, *brownies*, *cakes*, *coconuts*, *chestnuts*, *cupcakes*, *grapefruits*, *grapes*, *lemons*, *mangoes*, *melons*, *pumpkins*, *watermelons*). Three of them, however, are complex nouns (*bacon bits*, *heavy cream*, *fried eggs*).

When analyzing the cases of foodsemic transfers targeted at the category **FEMALE BREASTS**, it is striking that the majority of examples are chiefly fruit names (*apples*, *grapefruits*, *grapes*, *lemons*, *mangoes*, *melons*, *watermelons*). Still, there are a few words for sweet food items (*brownies*, *cakes*, *cupcakes*), and there is merely one instance of a meat-related word (*bacon bits*). Earlier, it was stated that terms for meat products play a special role in the mechanism of metaphorical transfers and that they constitute a relatively numerous group of cases of foodsemic developments.

The conclusion is that the majority of cases of foodsemic transfer related to the category **FEMALE BREASTS** are connected with the attributive value <SWEET>. Consequently, the transfers listed in Table 3 above may be said to have been conditioned by the presence of the attributive value <SWEET> which is presupposed by the conceptual dimension of (TASTE). Extra-linguistically, fruits are generally sweet and they evoke pleasing connotations. Hence, we may conceive of the schema <SWEETNESS PERCEIVED AS POSITIVE>. However, one can justifiably argue that in a number of cases the DOMAIN OF SHAPE […] may play a vital role in the rise of foodsemic transfers, such as *grapefruits*, *mangoes*, *melons*, *watermelons* used in a sense 'female breasts'. We observe that transfers in this category are conditioned by conceptual dimensions, such as the DOMAIN OF SHAPE […] and the DOMAIN OF SIZE […], due to the evident visual resemblances. Such resemblances are evident in metaphorical transfers of food-related nouns such as *apples*, *coconuts*, *chestnuts*, *grapefruits*, *grapes*, *mangoes*, *melons*, *pumpkins*, *watermelons* where the attributive value <ROUNDISH> is projected onto the qualities of female breasts. Similarly, various attributive values presupposed by the DOMAIN OF SIZE […], such as <LARGE>, <AVERAGE>, <BIG> or <SMALL>, are transferred onto the size of female breasts, and thus terms like *grapefruits*, *melons*, *watermelons* and *pumpkins* stand for 'large breasts', those for average size fruits, like *apples*, *coconuts*, *grapes*, *lemons* and *mangoes* stand metaphorically for average-size breasts, and those like *chestnuts* serve to encode the sense 'small breasts', whereas *fried eggs*, for example, stand for small breasts and a flat female chest. Possible paths of development operating here involve, starting with the most general one <FEMALE BREASTS ARE FOOD ITEMS>, <FEMALE BREASTS ARE FRUITS> and <FEMALE BREASTS ARE SWEET BAKERY PRODUCTS>.

In every community, there are issues and topics that people are not very eager to talk about in a direct and straightforward manner, and the impact of those subjects and topics that come to be affected by political correctness is growing very fast. For instance, we avoid topics such as

death, disability and sexual intercourse, which are treated either as taboo subjects or are discussed in *you know what* terms. To put it simply, there is a ban placed on certain objects and words that one does not dare to pronounce because their very mention may be treated as embarrassing or inviting trouble. Current research shows that there are a number of tools that serve to avoid taboo. We put to use euphemisms to get rid of banned words, to express the embarrassing topics with milder, more delicate vocabulary items. There is a close relationship between euphemisms and metaphors. Since a metaphor is a highly productive mechanism used unconsciously to talk about issues that are difficult to put into words, people resolve to use them eagerly. It is a fact that it is sometimes easier to implement metaphors as they emerge from the social or cultural experiences people share, and they are loaded with meanings that are rooted deeply in our perception of the outer world.

4. Conclusions

In this paper, an attempt has been made to show a panorama of foodsemic transfers, which are part and parcel of natural languages. One may formulate, if not rules, then at least certain generalizations based on the nature of the data given above. First of all, one may say that the figurative extensions of words connected with food and food consumption in the majority of cases relate metaphorically to the conceptual category **HUMAN BEING**, with its various conceptual spheres, such as [APPEARANCE], [MENTAL CAPACITIES] and [SEXUAL ORIENTATION].

The evidence adduced indicates that numerous foodsemy-based metaphorical transfers are closely connected with extra-linguistic conditions; the productivity of a given foodsemic type of metaphorical transfer is frequently triggered by extra-linguistic knowledge, and – in particular – familiarity with a certain type of food. Additionally, the material scrutinized shows a substantial number of euphemistic developments that serve to encode taboo terms connected with sexuality. Those words that are connected with moral issues or sexuality are frequently substituted by euphemistic equivalents that are more acceptable and this is evidenced by the use of *tart*, *tartlet*, *mutton*, *sandwich*, *crumpet*, *meat*, all of which serve to convey the sense 'immoral woman'. A substantial number of transfers is restricted to informal contexts, and – in particular – to highly colloquial and slang usage. As regards psychological considerations and social attitudes, language users feel a certain urge to use euphemistic expressions.

The majority of foodsemic developments are based on attributive features and sensory experiences related to the DOMAIN OF TASTE […], namely *cheesecake*, *cupcake*, *arm candy*, *cookie*, *cream puff*, *sweet meat*, *biscuit*, *honey-bunny*, *sugar pie*, *sugar baby*, *shoulder candy*, *peach*, all of which have positive connotations and stand for 'young, attractive female'. Therefore, it can be generalized that sweet foodstuffs often equal to and come to represent conceptually female attractiveness. However, not all lexical items referring to sweet bakery products underwent this path of metaphorical development, but rather they have become terms of endearment. The two lexical items *tart* and *tartlet* underwent a different meaning shift. In these two cases female sweetness seems to be perceived from a purely male point of view as a sexual object as the two words are used in reference to 'prostitute'.

Another observation pertains to the register value of vocabulary items that are products of foodsemic transfer: a substantial number of foodsemically transferred senses are restricted to informal contexts, and – in particular – to very colloquial language and slang usage. All in all, the conceptual picture of a woman that emerges from the corpus of data is in no way homogenous, as there are a number of derogatory terms (e.g. *tart*, *tartlet*, *meat*, *veal* or *mutton*), but – at the same time – there are numerous terms of endearment (e.g. *cupcake*, *sugar pie*, *sugar baby*, *shoulder candy* or *biscuit*), so one is somewhat justified in speaking of the lexical love-hate proportion. At the same time, many foodsemic figurative extensions are based on attributive features and sensory experiences related to the DOMAIN OF TASTE […], as evidenced in *bun*, *cake*, *cupcake*, *cookie*, *brownie*, *pie*, *golden doughnut*, *muffin*, *candy*, *apple* and *apricot* which reveal that sweet foodstuffs are often equated with **FEMALE HUMAN BEING** and **FEMALE BODY PARTS**. Furthermore, it is indicated that the schema <SWEETNESS PERCEIVED AS POSITIVE> is the basis for numerous transfers of vocabulary items referring to **FEMALE BREASTS.**

References

Cutierrez-Rivas C. 2011. Women as food in Hispanic cultural metaphors. *An Online Feminist Journal* 3: 6–20, www.academist.org/wp-content/uploads/2010/06/030302Gutierrez-Rivas_WomenasFood.pdf

Cymbalista, P. 2009. Do you know what you eat? The phenomenon of foodsemy. In G. A. Kleparski, R. Kiełtyka, P. Cymbalista, and K. Pytel (eds.), *In Medias Res. Studia Resoviensia in Lingua et Litteris*, 9–29. Rzeszów: Wydawnictwo Promar.

Cymbalista, P., and G. A. Kleparski. 2013. *From Michael Breal to Dirk Geeraerts. Towards the main issues in diachronic lexical semantics.* Jarosław: Wydawnictwo Państwowej Wyższej Szkoły Techniczno-Ekonomicznej im. Ks. Bronisława Markiewicza w Jarosławiu.

Geeraerts, D. 2010. *Theories of lexical semantics*. Oxford: Oxford University Press.

Grygiel, M. 2008. *From semantic change to conceptual blending*: English *historical near-synonyms of MAN/MALE HUMAN BEING*. Rzeszów: Wydawnictwo UR.

Kiełtyka, R. 2009. Zoosemy as a ubiquitous cognitive mechanism. In G. A. Kleparski, R. Kiełtyka, P. Cymbalista, K. Pytel (eds.), *In Medias Res. Studia Resoviensia in Lingua et Litteris*, 41–56. Rzeszów: Wydawnictwo Promar.

Kiełtyka R., and G. A. Kleparski. 2013. *The rudiments of the history of English*. Rzeszów: Wydawnictwo Uniwersytetu Rzeszowskiego.

Kleparski G. A.1990. *Semantic change in English. A study of evaluative developments in the domain of humans.* Lublin: Redakcja Wydawnictw KUL.

Kleparski G. A. 1997. *Theory and practice of historical semantics: the case of Middle English and Early Modern English synonyms of GIRL/YOUNG WOMAN*. Lublin: Redakcja Wydawnictw KUL.

Kleparski, G. A. 2008. *Dolce torta, dolce Angelina*: Romance foodsemy with Italian accent. In G. A. Kleparski, and A. Uberman (eds.), *Galicia Studies in Language, Literature and Culture. With Special Reference to English and Diachronic Semantics*, 33–39. Chełm: Wydawnictwo TAWA.

Kleparski, G. A. 2012. The dark side of foodsemy: On extralinguistically conditioned *wammel syndrome.* In B. Kopecka, M. Pikor-Niedziałek, and A. Uberman (eds.), *Galicia Studies in Language. Historical Semantics Brought to the Fore*, 43–62. Chełm: Wydawnictwo TAWA.

Kowalczyk, A. Z. 2015a. The scope of foodsemic developments affecting conceptual category HUMAN BEING: the case of ATTRACTIVE/IMMORAL FEMALE HUMAN BEING. In G. A. Kleparski, J. Wesół, and A. Włodarczyk-Stachurska (eds.), *Galicia Studies in Language. With Historical Semantics Foregrounded*, 66–75. Chełm: Wydawnictwo TAWA.

Kowalczyk, A. Z. 2015b. On the projection of FOODSTUFFS on the macrocategory BODY PARTS. *TOKEN. A Journal of English Linguistics* 4: 129–143.

Kövecses, Z. 2000. *Metaphor and emotion*: *language, culture, and body in human feeling*. Cambridge: Cambridge University Press.

Krzeszowski, T. 1991. Metaphor-metaphorization-cognition. *Biuletyn Polskiego Towarzystwa Językoznawczego* XLIII-XLV: 83–95.

Krzeszowski, T. 2003. Jeszcze słów kilka o wartościach, schematach i metaforach. In J. Bartmiński (ed.), *Język w kręgu wartości*, 35–41. Lublin: UMCS.

Lakoff, G. 1987. *Women, fire and dangerous things*. Chicago and London: University of Chicago Press.

Lakoff, G. 1993. A contemporary theory of metaphor. In A. Ortony (ed.), *Metaphor and thought*, 151–202. Cambridge: Cambridge University Press.

Lakoff G., and M. Johnson. 1980. *Metaphors we live by*. Chicago: University of Chicago Press.

Lakoff, G., and M. Turner. 1989. *More than cool reason*: *a field guide to poetic metaphor*. Chicago: University of Chicago Press.

Lagacker, R. 1987. *Foundations of cognitive grammar*. Stanford: Stanford University Press.

Langacker, R. 2000. *Grammar and conceptualization*. Berlin, New York: Mouton de Gruyter.

Mańczak-Wohlfeld, E. 1992. *Analiza zapożyczeń angielskich w języku polskim*. Kraków: Wydawnictwo UJ.

Ruiz de Mendoza, F. J. 1997. Metaphor, metonymy and conceptual interaction. https://www.researchgate.net/publication/28049874_Metaphor_metonymy_and_conceptual_interaction

Szwedek, A. 2000. The ontology of metaphors: the sense of touch in language formation. *Scripta Periodica* 4: 193–199.

Szwedek, A. 2004. Objectification in metaphorical processes – Some philosophical issues. *Lingua Posnanensis* 46: 121–129.

Dictionaries and encyclopaedias

Dalzell, T., and T. Victor (eds.). 2007. *Concise New Partridge Dictionary of Slang and Unconventional English.* New York: Routledge. Taylor and Francis Group.

Dalzell, T. (ed.). 2008. *The Routledge Dictionary of Modern American Slang and Unconventional English*. New York: Routledge. Taylor and Francis Group.

Dalzell, T. 1998. *The Slang of Sin*. Springfield: Merrian-Webster, Incorporated.

Glazier, S. 1997. *Word Menu.* New York: Ballantine Books.

Green, J. 2017. *Green's Dictionary of Slang*. https://greendictofslang.com/

Oxford English Dictionary. 1976. Oxford: Oxford University Press.

The Probert Encyclopedia of Slang. 2004. www.probert-encyclopaedia.co.uk/slang.htm

Rees, N. 2002. *Cassell's Dictionary of Word and Phrase Origins*. London: Cassell.

Netography

www.urbandictionary.com
www.dictionary.reference.com
www.onlineslangdictionary.com

LingBaW Linguistics Beyond And Within 5 (2019), 103-119

Steady as she goes? A bibliometric analysis of L2 vocabulary research in 1987

Paul Meara
Swansea University, the United Kingdom

Abstract
This paper uses a co-citation analysis to examine the research on L2 vocabulary acquisition that was published in 1987. This year is surprisingly volatile compared with the previous year, 1986, with a very large number of new sources appearing in the maps, and many sources identified in previous years losing their influence in the research papers that make up the 1987 data set. The paper also reports a larger analysis of all the work that appeared in a five year window from 1983–1987. This larger data set is not quite as volatile as the smaller 1987 data set, but it suggests that some sources who dominated the co-citation maps in earlier years are losing their influence.

Keywords: L2 vocabulary acquisition, vocabulary research, bibliometric analysis

1. Introduction

This paper is the seventh in a series of studies that attempt to plot the way research in L2 vocabulary acquisition has progressed over the last fifty years. Earlier papers in this series have analysed the research outputs in 1982, 1983, 1984, 1985, 1986 and 2006 (Meara 2012, 2014, 2015, 2016, 2017 and 2018). This paper is a sequel to my earlier *LingBaW* papers, in that it covers the research output of 1987. The paper also includes an analysis of research published in the five-year window of 1983–87.

Accordingly, this paper falls into two parts. Part I reviews the new research that appeared in 1987 in its own terms. Part 2 provides a wider context for this research, by summarising the main trends that appear in a five-year window covering 1983–1987. Both sections use the co-citation methodology which readers of *LingBaW* will now be familiar with. For new readers, the methodology is summarised in Appendix 1. The larger five-year window has a number of advantages compared with data from a single year. The most important advantage is that it smooths out low-level fluctuations in the data. For example, some sources do not always appear consistently in the annual accounts because their publication record is spasmodic and irregular. Sometimes this makes them appear as new sources, which, strictly speaking, they are not. Similarly, some sources garner a lot of co-citations as a result of a thematic issue of a journal, or

an edited volume consisting of a collection of linked papers, but this may not really reflect their true importance in the larger scale of things. Using a longer time-frame for a bibliometric analysis avoids both of these problems. However, it does introduce some problems of its own. The most important of these problems is that when the data is collected in a larger window of time, it becomes more difficult for a new source to be recognised. In this way, larger windows tend to emphasise the stable, conservative features of the field, rather than the innovations which are taking place. The point here is that a five-year window is not exactly comparable with a series of five single year windows, and readers need to take this into account when interpreting the maps that I will be presenting.

2. Part 1. The new research published in 1987

My analysis of the 1986 data (Meara 2018) suggested there were some marked differences between the 1986 research map and what we would expect to find in a bibliometric map covering a more recent period – any year since 2000, for example. The 1987 map (discussed below) exhibits broadly similar characteristics to the 1986 map, though a number of trends which are features of the post 2000 research are beginning to emerge. The 1987 data set shows a substantial increase in the number of publications dealing with L2 vocabulary acquisition, and this suggests that some sort of shift is taking place. The bibliometric maps should help us to understand what these shifts consist of.

2.1. The data sources

First, however, we should note the raw statistics of the 1987 data set. The VARGA database[1] (Meara n.d. accessed November 2019) identifies a total of 119 relevant sources – an increase of

[1] A number of readers have asked for more information about the **Vocabulary Acquisition Research Group Archive** database (**VARGA**). The data base is an open access resource which attempts to provide a comprehensive record of all the research on second language vocabulary acquisition. It currently contains about 10,000 entries.

The database was originally compiled from a series of annotated bibliographies that I published in 1982, 1987 and 1992. The development of the World Wide Web made it possible for all this data to be placed on-line and made searchable. From these small beginnings, the site has grown into a major resource, which currently logs about 1000 new entries each year.

The criteria for inclusion are not specific. I log any paper crossing my desk that appears to deal with how second language speakers learn/acquire/use/forget vocabulary, as long as it makes a theoretical claim about these processes. So for example, a paper suggesting that gap-filling exercises are a good way to practice new vocabulary, would probably not be included, but a paper that showed gap-filling exercises were a more effective way of learning vocabulary than a mnemonic method would be included. VARGA attempts to be comprehensive: I run a number of alerts on Google Scholar, and add to these as new terms become important. I systematically add new sources which are cited in the literature that crosses my desk. Each year, I scour the main research journals for work on L2 vocabulary, and supplement this with searches focussed on individual authors. Nonetheless, a number of features make this process less objective than I would like it to be. Not all the relevant papers are clearly marked as vocabulary research, and this makes them harder, though not impossible to locate. Early researchers, for example, tended to give their papers whimsical titles, whose meaning is not immediately apparent. Other vocabulary research is hidden inside papers which look at a number of related

some 20% over the total output in 1986. Particularly noteworthy in the 1987 output are four monographs (Carter, Koster, Ringbom and Wojtak & Herrmann), Meara's bibliography, and four collections of papers (Cowie, Carter & McCarthy, Diller et al. and a thematic issue of *Studies in Second Language Acquisition.*

A total of 110 eligible papers were identified for this analysis. (Monographs, theses and unpublished reports are conventionally excluded from bibliometric analyses, as their use of citations is rather different from what we find in normal research papers.) Eleven unobtainable items were omitted from the data set. These eleven items are listed in Appendix 2. The remaining 99 papers are referred to here as **the 1987 data set**. They are not listed here in full, but interested readers will be able to locate them in the VARGA database (http://www.lognostics.co.uk). Entering **1987 ##** into the search box will return a complete list.

These 99 papers involve a total of 111 authors. (Where a paper has more than one author, all the authors are counted as contributors.) As we have noted in previous reports, the list of authors is largely made up of authors who contribute to just a single paper (cf. Table 1). For 1987, there are 99 authors in this category – an increase of about 22% on 1986. Only 12 authors contribute to more than one paper in the data set. This figure is slightly lower than the equivalent figure for 1986. (We will refer to this group as the *1987 Prolific Authors,* though "prolific" is perhaps stretching a point here, and the term should be taken as a convenient shorthand label, rather than a literal description.) Meara and Zimmerman contribute to four papers each. Scholfield contributes to three papers. Nine authors contributed to two papers (Beauvillain, Beheydt, Carter, Gass, Grainger, Hausmann, Levenston, Palmberg and Singleton). It is worth noting that some of these authors also produced book length treatments in 1987, which perhaps suggests that their real contribution is being underestimated by the raw paper count. It is also worth noting that the list contains a number of new names – in fact, only Meara and Zimmerman appear in both the 1986 and 1987 prolific author lists: all the other prolific authors are new.

As in previous years, the data shows that there are fewer prolific authors than we might expect. Table 1 shows the pattern of contributions that we can expect when the number of authors of singleton papers is 99.

---

variables, of which vocabulary is just one. Sometimes, I have had to make a judgement call about whether a particular strand of research should be included. Should papers that deal with the writing of dictionaries for L2 learners be included? Yes, I think so. Should vocabulary acquisition in young bilingual children be included? Definitely. Should research on ESP word lists be included? Sometimes, but not automatically. The main strategic decision of this type that affects the content of the database is that I do not routinely include papers which deal with multi-word sequences or formulaic sequences. As far as research in the 1980s goes, I think this oversight can be excused, as very little work of this type was being undertaken. However, as more work on formulaic sequences is published in recent years, this constraint is becoming more of an issue.

A really serious problem concerns publications which appear in journals whose language of publication is not English. VARGA attempts to capture as much of this material as possible, and it has good coverage of vocabulary research published in Dutch, German and Spanish. Its coverage of Polish, French and Japanese research is much less satisfactory. I have correspondents who keep me informed of relevant research in these languages. Since 2015, there has been a huge surge in output from China, Korea and Iran that is not published in English. We are currently logging as much of this material as we can. Anyone who thinks they can contribute to this effort is welcome to get in touch with me.

Table 1: *The number of authors contributing N papers to the data set*

Number of papers (N)	**5**	**4**	**3**	**2**	**1**
Actual data		2	1	9	99
Lotka's model N = 99	4	6	11	25	99

The data for 1987 is highly divergent from the predictions made by Lotka's Law (Lotka 1926). Lotka's Law states that the number of prolific authors we would expect to find in a data set can be estimated from the number of authors contributing to a single paper. This expectation is normally expressed as:

$E_N = T / N^2$

where T is the number of authors contributing to one paper,
N indicates 2,3,4,5… outputs,
and E_N is the expected number of authors contributing to N outputs.

Thus, with 99 authors of just one paper, we would expect to find $99/2^2 = 25$ authors who contribute to 2 papers. The actual data falls well short of this prediction. (The data suggests that the distribution of the authors in the 1987 data set is better described as:

authors of a single paper / $N^{4.38}$

This figure is consistent with the data from earlier years, but its implications remain unclear.)

2.2. The analysis

The citation data from each of the papers in the 1987 data set were extracted in the usual way (see Appendix 1). This analysis identified 1587 unique sources – again a substantial rise on the 1986 figure, indicating that the range of sources is becoming more diverse as the field expands. The number of times each of these sources is cited in the data set is summarised in Table 2.

Table 2: *The number of times sources are cited in the 1987 data set.*

frequency	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
cases	1		1		2	1	2	6	5	6	5	28	42	86	240	1163

The most cited sources in this data set are Meara (16), Faerch (14), Kasper and Kellerman (12), Levenston (11), Hartmann and Nation (10) and six sources who are cited nine times each (Blum-Kulka, Carroll, Cowie, Haastrup, Lockhart and JC Richards). Compared with the 1986 data, the number of times these influential sources are being cited has increased. In 1986, for example, half of the top ten sources were cited only four times. In this data set, a source would need to be cited at least 9 times for them to be included in the top ten sources. Clearly, for a source to be counted as "significant" takes more in 1987 than it did in 1986.

Despite this "grade inflation", the resulting distribution is relatively easy to work with. In the 1987 data set, 99 sources were cited at least four times, and this figure is very close to the conventional number of 100 often used in bibliometric studies of this kind. However, this inclusion threshold is slightly stricter than the threshold of three citations that we used in our

earlier studies. The fact that both the number of papers in the data set and the inclusion threshold have increased relative to 1986 means that sources going forward to the analysis have to be cited in about 4% of the publications in the data set. This is the same proportion that we used in the 1986 report. Despite the differences, then, the 1986 and 1987 data sets remain essentially comparable.

The citation data for the 99 sources were analysed using the Gephi software package (Bastian, Heymann and Jacomy 2009), and the results of this analysis are shown in Figure 1.

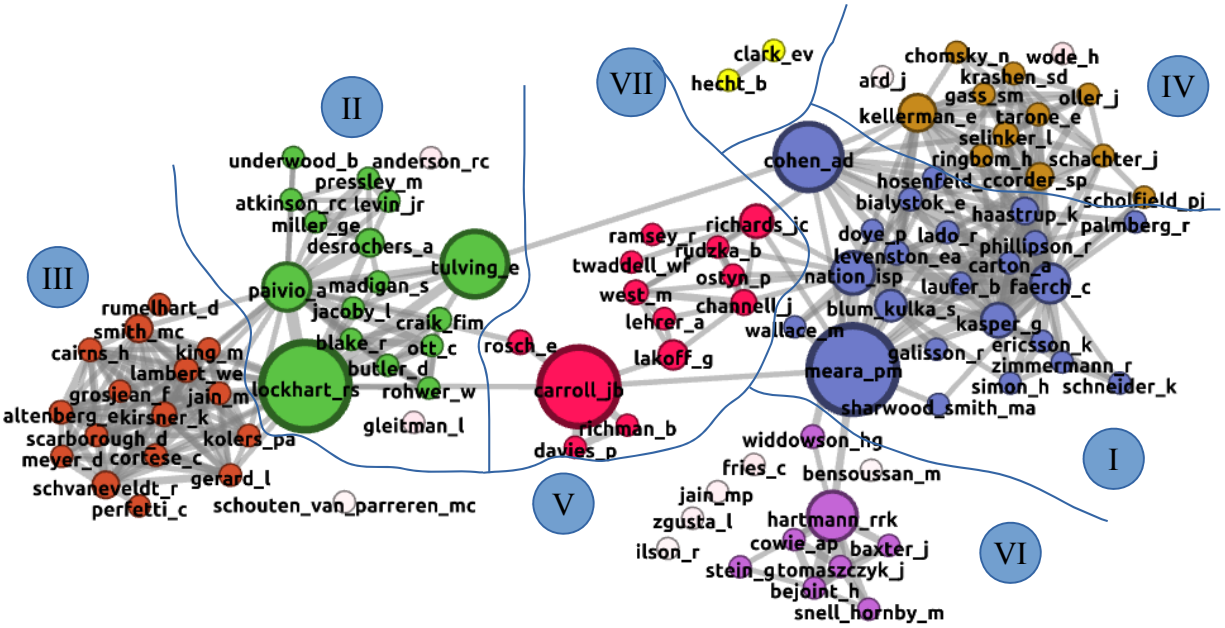

Figure 1: *Co-citation analysis of the 1987 data. Each source is cited at least four times in the data set. Weaker edges that appear less than three times are eliminated in the interest of simplicity. Nodes are sized according to their betweenness centrality.*

Gephi identifies six main clusters in this map.

The largest cluster, **Cluster I**, and **Cluster IV** on the Eastern edge of the map, seem to be the main-stream of L2 vocabulary research at this time. Cluster I is largely made up of European sources, with strong sub-clusters of Danish research (Faerch, Kasper, Haastrup), and Israeli research (Laufer, Levenston, Blum-Kulka, and Cohen). French language research is represented by Galisson, and German language research by Wode, Zimmerman and Schneider. In contrast, Cluster IV contains a high proportion of North American sources. Thematically, this cluster seems to be strongly oriented towards transfer research (Ringbom, Kellerman) and error analysis (Corder, Selinker and Scholfield). Co-citation links within these two clusters are strong, but there are few connections between these two clusters and other clusters in the map. The main structural feature that distinguishes the two clusters is that sources in cluster I are strongly co-cited with Meara and Nation, whereas the sources in Cluster 1V generally are not co-cited in this way.

Cluster II and **Cluster III**, at the Western edge of the map, are mostly made up of psychologists rather than linguists – a feature that we have noted in our earlier maps. The sources in cluster II mostly work in the area of imagery and mnemonics. The sources in cluster III are mainly psychologists with an interest in bilingualism.

Cluster V, in the centre of the map, is a semantics and meaning group.

Cluster VI, at the bottom centre of the map, is a dictionaries and dictionary usage group.

Gephi identifies one very small cluster (Cluster VII) containing only two sources – Clark and Hecht co-authored a review paper that summarises recent work on children's first language development.

Gephi also identifies nine detached singletons. These sources are frequently cited in the 1987 data set, but their co-citation links do not reach the threshold for inclusion in the map. Five of these singletons are associated with Cluster VI, suggesting that this cluster may actually be more important than it appears to be in figure 1.

The strongest links in this data set are to be found in Cluster I – the group consisting of Faerch, Kasper, Phillipson and Haastrup contains the strongest links in the entire data set.

Cluster VI has a few links with cluster 1, but no links with any other cluster.

Cluster III is strongly linked with cluster II, but has no links with other clusters.

Cluster II has loose connections with cluster V and cluster I, but members of this cluster are not co-cited with members of cluster IV or cluster VI.

The key sources in the map are Lockhart (linking cluster II and cluster III), Carroll (linking cluster II, cluster V and cluster I), Meara (linking cluster I and cluster VI), and Tulving and Cohen (providing a strong link between cluster I and cluster II).

The map exhibits some interesting, and perhaps unexpected features. It is tempting to see the map as a fairly straightforward development of the 1986 map, but the simple picture which emerges in 1987 hides a surprising amount of complexity. It is not immediately obvious that there has been a huge turn-over of sources between 1986 and 1987. However, all the sources with high betweenness centrality scores in the 1986 map (the larger nodes in the 1986 map) no longer hold this privileged position. Kucera and Francis, whose frequency counts provided an important link between the linguists and the psychologists have disappeared completely. Leech, whose work on corpus linguistics provided a similar bridge, has also disappeared. Krashen, the key figure in 1986, appears in 1987 as a relatively minor player in cluster II. Several new sources have emerged as pivotal sources who provide the co-citation links between the clusters: Meara, Kellerman, Tulving, Cohen, Lockhart and Carroll seem to play this role in the 1987 map. In addition, more than half of the significant sources who figured in the 1986 map fail to re-appear in the 1987 map, and some of these missing sources represent important losses. The psycholinguistic influences (clusters II and III) still make up a significant share of the sources being cited in 1987, but the structure of these clusters has undergone a major change. The single very dense psycholinguistics cluster that we identified in 1986 has dissolved into two separate clusters, with imagery and mnemonics sources slightly outnumbered by the remaining psycholinguists. More importantly, the majority of the psycholinguistics sources that appeared in the 1986 map are no longer found here. The European Science Foundation project, which we had flagged as a major development in 1986, is completely missing from the 1987 map. Also missing is any reference to the *Français Fondamental* project, which had been enjoying a revival in 1986. Suggestopedia is no longer a topic of interest. Sources who work on neurolinguistics and bilingualism seem to have disappeared. Two key sources in reading research (Goodman and F Smith) have also failed to make it into the list of significant influences. Fortunately, these losses are balanced by the emergence of some new centres of interest.

We can begin to judge the extent of this turnover by examining Figure 2 and Figure 3 which show the sources that appear in both the 1986 and the 1987 map (the survivors, for short) and the new entries to the 1987 map respectively. Overall, the survivors' map reflects two main features which we have consistently found in these studies: we have a group of psychologists whose work focusses rather narrowly on questions that can be addressed by laboratory studies, and a group of applied linguists whose work is methodologically more diverse. There are few strong links between these groupings, but very strong links within them. The survivors' map also allows us to identify sources whose influence is perhaps less important than it has been in previous years.

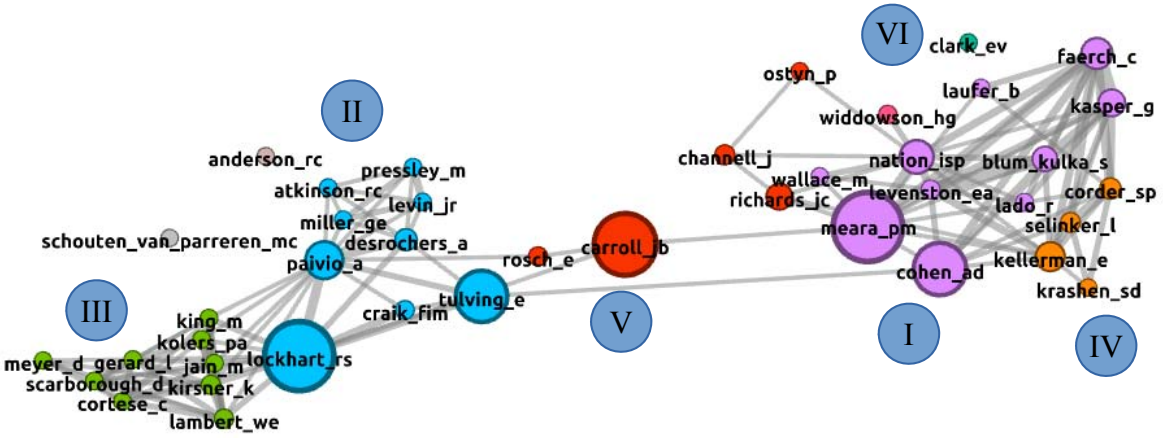

Figure 2: *The 1987 Survivors: Significant Influences in 1986 who are also Significant Influences in 1987.*

The number of survivors into 1987 is surprisingly small: only forty sources appear in both lists – about two thirds of the sources appearing in the 1986 map have been eliminated, and the survivors make up less than half of the tally of sources in the 1987 map. It is easy to identify some themes that appear in the survivor map. **Imagery and mnemonics** forms a coherent cluster of survivors (Paivio, Pressley, Miller, Levin, Desrochers), and as we have already noted, the cluster is strongly linked with the **performance of bilinguals** cluster. The key figures in this second cluster are Lambert and Kolers, who have appeared consistently in our maps from 1982 onwards though they now seem less influential than they were. Also important here are Kirsner and his colleagues, Jain and Lockhart, who form a cluster of influences whose work concerns **The Bilingual Lexicon** and how it is structured. The general feature that distinguishes this group of survivors is a methodological focus on experimental methods.

It is rather more difficult to identify coherent themes in the other three clusters in Figure 2. Taken together, these three clusters embody more of a pedagogical focus than we found in the clusters on the Western edge. **Transfer** (Kellerman) and **Error Analysis** (Corder, Selinker) appear to be strong themes here. Eve Clark reflects a continuing theme in L1 acquisition. There is a very strong, but rather eclectic set of Israeli sources (Cohen, Blum-Kulka, Levenston, Laufer), a Danish group (Faerch and Kasper) with a methodological interest in introspection. Ostyn and Channell represent an ongoing and growing interest in **semantics** and **meaning**. We also find a number of sources who are cited for their overview work (Nation, Richards, Wallace, Meara and Levenston).

Figure 3 shows the extent of new entries in the 1987 data – these sources make up more than half of the total entries in the 1987 map, and so it is not surprising that the main themes that we identified in Figure 1 also appear strongly here. Surprisingly, the new sources map appears to be relatively compartmentalised, and to a large extent they complement the clusters that we identified in the 1986 map. The new entries tend to have co-citation links within their own cluster, but not beyond it.

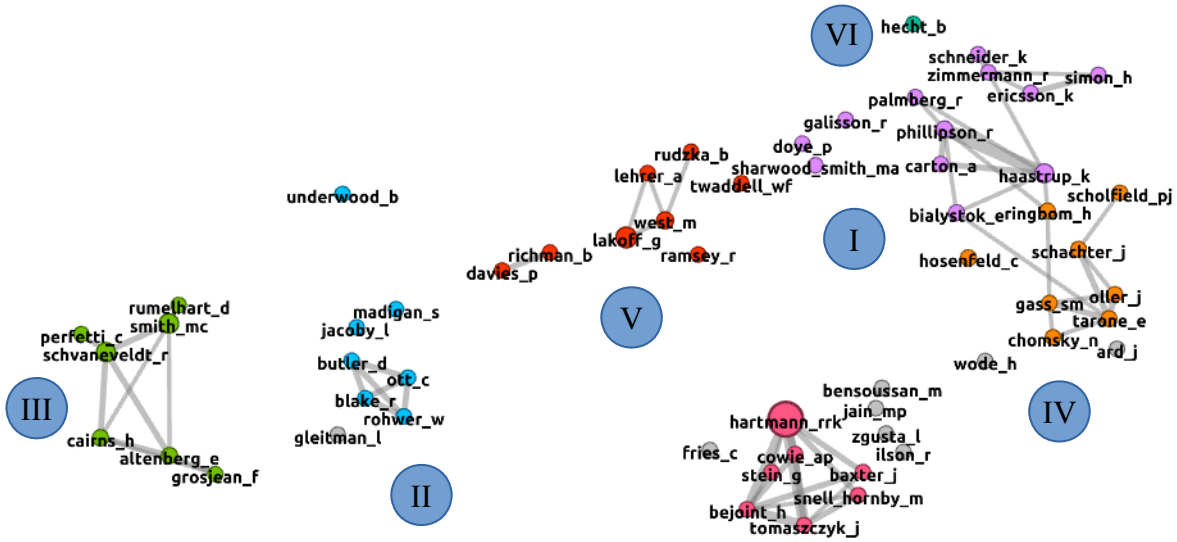

Figure 3: *New sources in the 1987 data.*

The two clusters at the western edge of the map clearly represent a consolidation of familiar themes. Ott, Butler and Blake are a new take on imagery and L2 vocabulary learning (cluster II). In the psycholinguistics cluster, (cluster III), Perfetti represents a set of influences who are concerned with L2 writing systems, particularly Chinese, while Altenberg and Cairns are a new focus on phonotactic constraints in two languages. The other sources here are mostly collaborators with Kirsner in his work on bilingual lexical models. The other clusters in Figure 3 all point to some significant shifts in the applied linguistics research.

The most striking feature here is the emergence of a new theme covering lexicography and dictionaries – the cluster focussed on Hartmann. This cluster contains a large and very well-connected set of new sources who are lexicographers, as well as some sources who are interested in how L2 learners use dictionaries. This set of sources seems to represent a new and significant research theme that has not had much of a presence in our earlier maps. It also illustrates the power of thematic collections of papers to radically change the overall structure of a small co-citation map. All the new sources in this sub-cluster published work in Cowie's edited collection, and cite each other extensively.

The loose central cluster shows some consolidation of the semantics theme that we noted in Figure 2. (Rudzka, Lehrer and Lakoff).

The largest cluster of new sources appears at the Eastern edge of the map, but the new sources here are less focussed than we noted for the central cluster. There is some evidence of consolidation for the Scandinavian vocabulary research that we have noted previously (Ringbom, Palmberg, Haastrup and Phillipson). Ericsson and Simon are a methodological source: they work on protocol analysis and are mainly cited by the Scandinavian vocabulary

researchers. We also have the appearance of group of North American sources (Tarone, Schachter, Oller, Ard, Gass – and even Chomsky!) who are not specifically vocabulary researchers, but do provide a theoretical framework in which vocabulary research develops. Significantly, perhaps, we can also note the emergence of a coherent group of German language researchers (Zimmermann, Schneider, Wode, Hecht and Doyé) that has not been evident in our earlier maps. Bialystok represents a new interest in bilingual children's vocabulary acquisition. Scholfield looks to have the potential to forge links between the dictionaries/semantics cluster and error analysis, as his own work spans both these areas. For the moment, however, this potential remains unrealised.

To summarise, then, L2 vocabulary research published in 1987 continues to grow, and there is some evidence for new research themes becoming important in this data set, while other long established themes are in retreat. The psycholinguistic sources appear to be particularly volatile. National and regional groupings play an important role in the cluster structures.

3. Part 2. A wider perspective: 1983–1987

In this section, I will try to place the 1987 data into a larger picture by analysing data from a five-year window that covers 1983–1987. We begin by summarising in Table 3 the 1982–86 data set, which was reviewed in Meara (2018).

Table 3: *The main characteristics of the 1982–86 data set*

Number of papers in the data set:	317
Number of authors contributing to the data set:	309
Number of sources cited in the data set:	3480
Inclusion threshold for this data set	9 citations
Number of cited sources meeting the inclusion threshold	94
Number of clusters identified by Gephi	5+1
I: semantics, meaning, transfer, lexical errors	
II: brain functions and language, performance of bilingual speakers	
III: frequency counts and corpus linguistics	
IV: L2 reading skills	
V: applications of structural semantics to teaching materials	
VI: one disconnected singleton (Wilkins)	

The raw statistics for the 1983–87 data set are broadly similar to the earlier data set. This is not surprising, since the 1983–86 data is common to both data sets. However, the new 1987 data set is considerably larger than the 1982 data set that it replaces, and this changes the structural relationships between the sources, bringing new sources to prominence. The broad characteristics of the 1983–87 data set are summarised in Table 4.

Table 4: *The main characteristics of the 1983–87 data set*

Number of papers in the data set:	355
Number of authors contributing to the data set:	326
Number of sources cited in the data set:	3816
Inclusion threshold for this data set	10 citations
Number of cited sources meeting the inclusion threshold	92

Number of clusters identified by Gephi	5+2
I: overviews, lexical inferencing, transfer, lexical errors	
II: word recognition in an L2, performance of bilingual speakers	
III: word counts and dictionary use	
IV: semantics and meaning	
V: European vocabulary research (Netherlands and France)	
VI: two disconnected singletons (RC Anderson and Galisson)	

Clearly, it would be wrong to assume that removing the 1982 data and adding the 1987 data is just a cosmetic change that leaves the underlying structures largely intact.

The 1983–87 data set consists of 355 papers, making this data set about 12% larger than the earlier one. The individual papers are not listed here for reasons of space, but interested readers can access the list via the VARGA database (http://www.lognostics.co.uk). Set the search start date to 1983 and set the finish date to 1987. Enter ## as the search term, and the program will return a complete list of all the papers included in this data set.

326 unique authors contribute to at least one paper in the data set, a small increase on the 1982–86 figures. Table 5 shows the number of authors who make N contributions to the data set. The field as a whole contributes to be dominated by authors who make only a single contribution, although the proportion of these cases has fallen slightly to 71%. Table 5 also shows that the field as a whole has a smaller number of prolific authors than we might expect. The data here shows a significant shortfall compared with the numbers we would expect based on predictions made using Lotka's Law.

***Table 5**: The number of authors making N contributions to the data set, and the number of authors expected to make N contributions, given 253 authors who make a single contribution.*

# contributions	10	9	8	7	6	5	4	3	2	1
1983–87 authors	1				5	5	2	15	45	253
Lotka's model	3	3	4	5	9	10	16	28	63	253

The most prolific authors in the 1983–87 window are Meara (10 papers), Broeder, Cohen, Palmberg, Laufer and Zimmerman (6 papers each), Beheydt, Extra, Nation, Ringbom, van Hout (5 papers each). These figures represent a very small improvement on the 1982–86 figures, but the shortfall in Big Hitters remains a striking feature of the data.

A preliminary analysis of the co-citation data from the 1983–87 data set showed that 3816 sources were cited in the data set – a small increase on the 1982–86 data set. However, the distribution of these citations remains very similar to the distribution of the earlier set. (See Table 6).

***Table 6:** The number of authors cited in N papers in the combined 1983–87 data set.*

N cites	**45**	**44**	**43**	**42**	**41**	**40**	**39**	**38**	**37**	**36**	**35**	**34**	**33**	**32**	**31**
sources					1								1	2	1
N cites	**30**	**29**	**28**	**27**	**26**	**25**	**24**	**23**	**22**	**21**	**20**	**19**	**18**	**17**	**16**
sources		1	1	1	1	2	2			1	2	3	4	7	6
N cites	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
sources	2	7	6	14	11	17	24	27	47	55	72	133	234	576	1584

The most cited sources here are Meara (41), Levenston(33), Krashen and Lambert (32), Corder (31), Richards (29) Faerch(28), Kellerman (27), Nation (26), Cohen and West (25), Eve Clark and Kolers (24) and Schouten van Parreren (21). Most of these sources were also in the most-cited list for 1982–86, but Lambert has slipped from top place, while Albert, Obler, H Clark and Macnamara have dropped out of the list. Four new entries – Faerch, Kellerman, Nation and West – are in place. 93 of these sources were cited at least ten times. The pattern of co-citations among the 93 sources was analysed using the Gephi software package. Figure 4 shows the basic map for 1983–87.

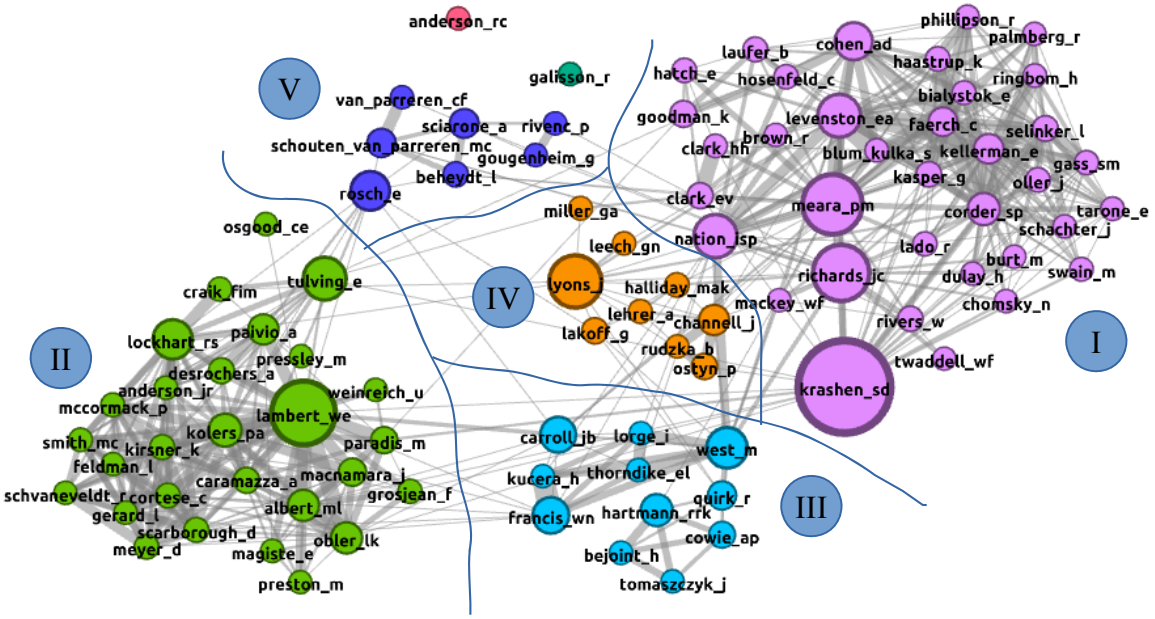

Figure 4: *Patterns of co-citation among the 93 most cited sources in the 1983–1987 data set. Threshold for inclusion is 10 citations in the data set, with a minimum co-citation strength of four. Nodes are sized according to their betweenness centrality.*

The general features of this map are not very different from the 1982–86 map (see Meara: 2018). We have a broad split between the sources who would identify themselves as psychologists (the cluster on the west of the map), and those who would identify as linguists, and we have very strong clustering within these groups, but rather weaker links between the clusters. The details of the map have changed however.

Gephi identifies five main clusters and two disconnected singletons in the data.

Cluster I, the large cluster at the Eastern edge of the map is the core of the applied linguistics sources. Surprisingly, this cluster is still dominated by Krashen, who appears to act as the main linking node between this cluster and the psychologists in Cluster II. Levenston, Meara, and Richards continue to play a central role in this cluster, but significantly, they are joined by Nation who was previously identified with a different group of sources. This cluster accounts for about 40% of the sources that make up the map.

Cluster II, the larger cluster at the West end of the map, is the now familiar group of psychologists whose work influences L2 vocabulary research. This cluster is about the same size as the equivalent cluster in the 1982–86 map – it comprises about 30% of the sources – but its membership has changed quite substantially.

Cluster III, accounting for 11% of the sources, is the small blue cluster in the centre of the map. This cluster appears to be made up of two sub-groups. The first is the familiar list of frequency counts that we noted in the earlier map. The second is a group of lexicographers who are interested in the role dictionaries might play in L2 learning. The links between these two groups are tenuous, as are the links from this cluster to the rest of the network.

Cluster IV, the second small cluster in the centre of the map, is readily identified as a semantics and meaning cluster. The key source here is Lyons.

Cluster V, the last small cluster, at the top central portion of the map, is a small group of European vocabulary researchers, which again can be seen as a combination of two sub-groups. Gougenheim and Rivenc represent the remnants of the *Français Fondamental* project, while the remaining members of this cluster are a geographical group based in Belgium and the Netherlands. The key source here is Schouten-van Parreren.

Of the **two singletons**, RC Anderson is a reading psychologist, while Galisson is an important French researcher, who was heavily engaged in revitalising French vocabulary research. Both are extensively cited in the data set, but they have many weak co-citation links, rather than a few strong ones, and this leaves them disconnected from the main network.

The addition of the 1987 data and the loss of the 1982 data has brought some changes of emphasis to the 1983–87 map. The simplest way to compare this network with the earlier one is to look at the new sources which appear in the map as a result of the addition of the 1987 data. Somewhat surprisingly, given the very large turnover that we identified in the 1987 data set, only 16 new sources appear in this new five-year map.

The majority of these new sources appear in Cluster 1: **Haastrup, Kasper** and **Phillipson** are indicative of the surge in Scandinavian research that we have noted earlier in this paper; **Schachter, Twadell** and **Tarone** reflect an increased number of North American influences in the data set. Cluster II has four new entries (**Scarborough, Cortese, Gerard** and **Smith**). All four underline the increasing importance of experimental studies of bilingual word recognition. Cluster V has two new entries: **Rivenc** and **Beheydt**, represent a strengthened French language strand in the map. Cluster III has two new entries **Tomaszczyk** and **Hartmann**, both underlining the growing importance of dictionary research as a distinct strand in the L2 vocabulary research of the mid 1980s. **Rudzka** and **Lakoff** strengthen the semantics centre in cluster IV.

There are some fairly obvious changes here. The most important ones are listed below:

a. a separate semantics and meaning cluster seems to have broken away from the main L2 vocabulary research cluster;
b. the word lists and frequency count cluster has been extended by the addition of a dictionary use theme.
c. the separate L2 reading cluster has been absorbed into the main L2 vocabulary cluster, along with most of the new entrants to the data set.

Alongside these obvious changes, it is also worth noting some more subtle changes in the structure of the map. These mainly concern the role of individual sources as links between the clusters. In the 1983–86 map, we identified Krashen and Lambert as the key sources in terms of their betweenness centrality. (This is a measure which identifies sources that provide links

between the different components of the map.) Krashen and Lambert both continue to play this role in the 1983–87 map, but their importance seems to have diminished. This might be an indication that we could expect them to play a much smaller role in future maps. H Clark was the third most important influence in 1983–86 map, but he plays only a minor role in this one. In contrast, Nation, Meara, Levenston and Richards all seem to have grown in terms of the betweenness centrality measure. These sources make up a very strong group that is clearly the core of the Applied Linguistics cluster, and we can expect their roles to become enhanced in future research. The surprise winner in this data set is Lyons, who has moved from a relatively insignificant position in the 1982–86 data set to a much more central role in the 1983–87 data set. I think this reflects a general increase in the amount of L2 vocabulary research that is focussed on semantics and meaning during this period. However, Lyons does not appear as a significant source in the single year 1987 map, and my impression is that this strand of research is relatively short-lived. We might expect some significant changes to this part of the map in the years to come.

4. Discussion

Four important themes seem to emerge from this analysis.

The first theme is that both the one year 1987 data set and the five year 1983–87 data set show that the field is far from settling down into a steady state. New research themes seem to be coming on line with some speed, and new names are replacing older ones in our list of Significant Influences. Sources who were previously key figures in our network appear to be fading in favour of newer ones with a specific interest in L2 vocabulary acquisition, rather than a general interest in language teaching or psycholinguistics. 1987 seems to be the year when L2 vocabulary researchers make up the largest cluster – a significant change from some of our earlier maps when only a handful of cases who fit this description could be identified. The two largest clusters in our map seem to be particularly volatile. Surprisingly, although the size of the psycholinguistics cluster remains fairly constant, its membership changes dramatically in 1987, suggesting that specific psycholinguistic research has a relatively short-lived impact on L2 vocabulary research – a sort of band-wagon effect, perhaps. The only long-term survivors in this group are Lambert, Macnamara and the Montreal group, but their influence is clearly diminishing by 1987, and it is not clear whether their role will be taken up by different strands of psycholinguistic research, or whether, in the longer term, it will just disappear. The Applied Linguistics Cluster, on the other hand, seems to be volatile in a different way. Most of the growth in 1987 accrues to this cluster, most of the new sources are attached to it, and a number of sources who belonged to other, smaller clusters in our earlier maps have now become part of this core cluster. The two obvious cases here are Nation and Laufer, who will go on to become central figures in the L2 vocabulary research enterprise. There is also some volatility in the small clusters III, IV and V in Figure 4. All these clusters have grown, but they still remain relatively detached from the main clusters I and II, and it is not all clear whether they will go on to be permanent features of the vocabulary landscape.

A second feature worth commenting on is the role of national research groupings in the maps. Not surprisingly, most of the significant sources in the 1983–87 map are English writers

– some working in the UK, many working in North America – and this clearly reflects the dominance of UK and North American publishers. Not all research groups have these advantages. German language research, for example, is beginning to form a large part of L2 vocabulary research by 1987, but its impact on the five year map is minimal. Hardly any of this very interesting research is cited in the English language literature. The same problem is to be found with the Dutch, French and Belgian sources that make up Cluster V in Figure 4. This work, like the German work mentioned earlier, is also rarely cited in the English language research literature. It does figure often enough for it to form a separate cluster of sources, but this cluster is not well integrated with the clusters in the map. Schouten-van Parreren is a major figure in Dutch language research, but is mostly cited by other Dutch researchers. Her work deserves to be much better known than it is. To some extent, the insularity of small national groupings is a problem will be solved by two important developments that took place in the late 1980s. One, surprisingly, is the advent of cheap air-travel, the concomitant growth of international conferences and seminars and the possibility of actually meeting people whose work one has long admired from afar. The other, of course, is the development of the Internet, and the way it breaks the monopoly held by academic publishers, and changes the way researchers interact with each other. It remains to be seen how these changes will alter the appearance of our maps in future years. In the meantime, what goes on in L2 vocabulary research is strongly influenced by other research that goes on in the local environment. A good example of this is the new dictionary use sub-group, for example, which is almost entirely made up of researchers with strong UK connections. This may reflect not just a long tradition of dictionary work among British Applied Linguists (e.g. Palmer and West), but also the appearance of two major learners' dictionaries (the *Oxford Advanced Learners' Dictionary* and the *Longman Dictionary of Contemporary English*), and the growing importance of corpus linguistics in the UK at this time. Clearly L2 vocabulary research does not operate in a vacuum.

A third point that deserves comment is the way that the larger 1983–87 map masks changes which are taking place within a single year. Two illustrations will explain why I think this is important.

Our prolific authors list for 1987 contains two authors whose contribution to the 1987 data set are outstanding. Zimmermann contributed four papers in 1987, and had already contributed three papers in 1986, making him a very significant contributor by 1987. Hardly any authors have larger contributions than this during the 1983–87 period. However, this work is not cited often enough for Zimmermann to appear as a major figure in the co-citation map. He does have a small role in the 1987 map, but not one which draws attention to his status as perhaps the major figure in German vocabulary research. There is clearly a disjunction between being a prolific author and being a highly cited source, and it would be worth looking at disjunctions of this sort in more detail. The second author, who highlights a similar issue, is Scholfield, who appears in the 1987 prolific authors list with three publications. Three publications in a single year was a significant achievement in 1987 – only three authors produced this amount of material. Scholfield duly appears as a new entry in the 1987 map, though like Zimmermann, he is not cited often enough to play a role in the larger five-year map. At the very least, these anomalies suggest that there is a time-lag between authors appearing in the prolific authors list and their appearance as frequently cited sources in the co-citation maps. More interestingly,

perhaps, they suggest that an early appearance in the prolific authors list might be turn out to be a useful characteristic of sources who are going to become very strong influences in future years.

Finally, it is worth noting that the changes we have identified in this paper were also being anticipated by writers at the time. In a particularly insightful paper, Laufer (1986) noted that the development of communicative approaches to language teaching would require a rethink of the role of vocabulary in language teaching. She identifies a number of research areas which are beginning to impact on L2 vocabulary practice. These include the development of structural semantics, an increased focus on the performance of learners, especially advanced learners rather than beginners, the importance of fluency over accuracy, and the development of functional and notional approaches to the language syllabus. It is relatively easy to identify all these strands in the maps I have presented here. And it is particularly pleasing to note that the post hoc co-citation method is able to pick up the concerns that were being articulated by key researchers at the time.

5. Conclusion

The next paper in this series will examine the research published in 1988 in the context of a five-year window covering 1983–98. In the meanwhile, readers who find these studies illuminating might be interested in another paper which covers the whole of the vocabulary output published in a single journal (*System*) between 1973 and 2017 (Meara in press). This paper explores the idea of a ***first paradigm*** in vocabulary acquisition research (Kuhn 1962).

References

Arik, B. T., and E. Arik. 2017. Second language writing publications in Web of Science: A Bibliometric Analysis. *Publications* 5(4): npn.

Bastian, M., Heymann, S., and M. Jacomy. 2009. Gephi: an open source software for exploring and manipulating networks. International AAAI Conference on Weblogs and Social Media.

Carter, R. 1987. *Vocabulary: applied linguistic perspectives.* London: Allen and Unwin. 1987.

de Schryver, G-M. 2009. Bibliometrics in Lexicography. *International Journal of Lexicography* 22(4): 423–465.

Koster, C. 1987. *Word recognition in foreign and native language*. Dordrecht: Foris. 1987.

Kuhn, T. 1962/1971. *The structure of scientific revolutions.* Chicago, Il.: University of Chicago Press.

Laufer, B. 1986. Possible changes in attitude towards vocabulary acquisition research. *International Review of Applied Linguistics* 24(1): 69–75

Lei, L., and D. L. Liu. 2019. The research trends and contributions of *System's* publications over the past four decades (1973–2017): A bibliometric analysis. *System* 80: 1–13.

Lei, L., and D. L. Liu. 2019. Research trends in *Applied Linguistics* from 2005 to 2016: A bibliometric analysis and its implications. *Applied Linguistics* 40(3): 540–561.

Lotka, A. J. 1926. The frequency distribution of scientific productivity. *Journal of the Washington Academy of Sciences* 16(12): 317–324.

Meara, P. M. 1987. *Vocabulary in a second language. Volume 2*. London: CILT. 1987

Meara, P. M. 2012. The bibliometrics of vocabulary acquisition: An exploratory study. R*ELC Journal* 43(1): 7–22.

Meara, P. M. 2014. Life before Nation: Bibliometrics and L2 vocabulary studies in 1982. In M. Gómez González, F. J. Ruiz de Mendoza Ibañez, F Gonzálvez García, and A. Downing (eds.), *The Functional Perspective on Language and Discourse: Applications and implications*, 111–129. Amsterdam: John Benjamins.

Meara, P. M. 2015. Vocabulary research in 1983: A bibliometric analysis. *Linguistics Beyond and Within* 1: 187–198.

Meara, P. M. 2016. Two steps backwards: A bibliometric analysis of L2 vocabulary research in 1984. *Linguistics Beyond and Within* 2: 139–152.

Meara, P. M. 2017. A new beginning? A bibliometric analysis of L2 vocabulary research in 1985. *Linguistics Beyond And Within* 3: 136–154.

Meara, P. M. 2018. Laying the foundations: A bibliometric analysis of L2 vocabulary research in 1982–1986. *Linguistics beyond and Within* 4: 108–128.

Meara, P. M. *in press.* The emergence of a first paradigm in Vocabulary Research: The bibliometrics of *System*. *Vocabulary Learning and Instruction.*

Meara, P. M. VARGA: the Vocabulary Acquisition Research Group Archive. Available at: http://www.lognostics.co.uk/varga/ (accessed November 2019).

Price, D. 1965. Networks of scientific papers. *Science* 149(3683): 510–515.

Ringbom, H. 1987. *The role of the first language in foreign language learning*. Clevedon: Multilingual Matters. 1987.

Small, H. 1973. Co-citation in the scientific literature: A new measure of the relationship between two documents. J*ournal of the American Society for Information Science* 24: 265–269.

White, H. D., and B. C. Griffith. 1981. Author cocitation: A literature measure of intellectual structure. *Journal of the American Society for Information Science* 32: 163–171.

Wotjak, G., and U. Herrmann. 1987. *Kleines Wörterbuch der "falschen Freunde" Deutsch-Spanisch*. Leipzig.

Appendix 1: Co-citation analysis: The methodology

The co-citation method was developed by Small in a number of papers published in the 1970s (e.g. Small 1973). This approach, which was actually built on earlier bibliometric work by Price (1965), has been extensively used to analyse research in the natural sciences (e.g. White & Griffith 1981), but does not yet seem to have been adopted as a standard tool by researchers in the Humanities. Some recent work on the bibliometrics of linguistics *does* exist. An early example is de Schryver (2009), which deals with Lexicography. More recent examples include Lei & Liu (2019a and 2019b) which analyse the entire output of *System* and *Applied Linguistics,* respectively. Arik & Arik (2017) is a more focussed piece that looks at second language writing.

The raw data for a co-citation analysis consists of a list of all the authors cited in the set of papers to be analysed. For each paper in the data set, we make a list of every author that the paper cites; for each paper, each cited author counts only once, regardless of how many times they are cited in the paper; and for a cited paper with multiple authors, each of the contributors is added to the author list.

This raw data is then used to construct a large matrix showing which authors are cited together in each of the papers in the data set. The matrix can then be analysed using a program such as **Gephi** (Bastian, Heymann, & Jacomy 2009). Gephi performs a cluster analysis on the data, groups together authors who tend to be cited alongside each other in a number of papers, and outputs a map which shows the composition of the clusters and the relationship between them. The clusters are generally taken to represent "invisible colleges" in the data – i.e. groups of researchers who share similar reference points and a common research focus.

Appendix 2

Theses

Duriau, N *Reading techniques and vocabulary retention*. Thesis: Louvain la Neuve. 1987.

Nyikos, M *The effect of color and imagery as mnemonic strategies on learning and retention of lexical items in German.* PhD, Purdue University. 1987.

Unobtainable papers

Alfes, L Etymologie – philologische Nostalgie? *Neusprachliche Mitteilungen* 1(1987), 9–17.

Corrales, O and ME Call At a loss for words: the use of communication strategies to convey lexical meaning. *Foreign Language Annals*20(1989), 227–240.

French, MP and N Cook The introduction of social studies vocabulary by semantic feature analysis: using a microcomputer data base program – a description. *The Language Teacher* 22(1987), 16–19.

Holtwisch, H Vokabelarbeit im ersten Lernjahr Englisch. *Praxis des neusprachlichen Unterrichts* 34(1987), 390–395.

Kaźmierczak, E Die "falschen Freunde" als Fehlerquelle in der polnisch-deutschen Übersetzungspraxis. *Kwartalnik Neofilologiczny* 34,3(1987), 319–329.

Schouten-van Parreren, **MC** Woorden leren en lezen. [Learning words and reading.] *Engels*13,1(1987), 2–7.

Silva, HHG Os cognatos como factor de legibilidad de texto en lingua estrangeira. [Cognates as a factor in the legibility of texts in a foreign language.] *ESPecialist*16(1987), 35–58.

Vigner, G Competence textuelle et competence lexicale. [Textual competence and lexical competence.] *Le français dans le monde*210(1987), 47–53.

Voionmaa, K En studie av lexikal överföring hos vuxna språklinärare. [Lexical development in adult language learners.] In: **E Warde et al**. (eds.) *Aspects of Bilingualism*. Uppsala. 1987.

Wu Qiku How to master English and Russian words effectively? *Higher Education Studies: Nanjing Chemical Engineering College* 3(1987), 43–51.

Monographs and bibliographies

Carter, R Vocabulary: Applied linguistic perspectives. London: Allen and Unwin. 1987.

Koster, C *Word recognition in foreign and native language*. Dordrecht: Foris. 1987.

Meara, PM *Vocabulary in a second language. Volume 2*. London: CILT. 1987.

Ringbom, H *The role of the first language in foreign language learning*. Clevedon: Multilingual Matters. 1987.

Wotjak, G and U Herrmann *Kleines Wörterbuch der "falschen Freunde" Deutsch-Spanisch.* Leipzig 1987.

Edited collections (the papers that make up these collections are included in the 1987 data set)

Carter, R and M McCarthy (eds.) *Vocabulary and language teaching* London: Longman. 1987.

Cowie, AP (ed.) *The Dictionary and the Language Learner*. Tubingen: Niemeyer. 1987

Diller, H-J, et al. (eds.) *Wortschatzarbeit*. Heidelberg: Winter. 1987.

Gass, SM (ed.) The use and acquisition of the second language lexicon. *Studies in Second Language Acquisition* 9,2(1987) (whole volume).

LingBaW *Linguistics Beyond And Within 5 (2019), 120-134*

Spatio-temporal systems in Chaucer's language: A discourse-pragmatic analysis*

Minako Nakayasu
Hamamatsu University School of Medicine, Japan

Abstract
The purpose of this paper is to conduct a discourse-pragmatic analysis of the spatio-temporal systems in Chaucer's language along the lines of historical pragmatics and discourse analysis. The text used for analysis is "The knight's tale" adopted from the Riverside edition of *The Canterbury tales*. Language has built-in spatio-temporal systems by which speakers judge how distant the situations they wish to express are from their domain, i.e. proximal or distal. Spatio-temporal elements can be connected to each other to take either a proximal or a distal perspective in discourse. Based on this approach, the present paper performs a detailed examination of the spatio-temporal elements, and addresses the following questions: 1) How does the perspective change as the discourse progresses? and 2) What factors are relevant to this change in discourse? To provide answers to these questions, this paper will investigate: 1) elements which structure discourse, 2) elements which promote a proximal or a distal perspective, 3) elements which trigger alternations of these perspectives, and 4) factors which facilitate the alternation of elements in either the spatial, the temporal, or the integrated spatio-temporal domain.

Keywords: spatio-temporal system, Chaucer, historical pragmatics and discourse analysis, proximal and distal perspectives

1. Introduction

When a speaker has some situations in mind to put into language, he[1] judges how distant these situations are from his own domain, and then chooses language that expresses the relationship of space and time using deictic elements. In the following context taken from Chaucer's *Canterbury tales*, Duke Theseus reflects on what has happened to him, his sister Emelye and the knights Palamoun and Arcite:

* I would like to thank the audience at LingBaW 2018 and the anonymous reviewers who offered me insightful comments. This research is supported by a Grant-in-Aid for Scientific Research from the Japan Society for the Promotion of Science (JSPS KAKENHI Grant Number JP18K00642), which I gratefully acknowledge.

[1] In discussion, the present paper employs the term 'speaker' unless otherwise specified, and refers to the speaker in general as 'he' because of the significance of the role of Chaucer.

(1) "The contrarie of al this is wilfulnesse.
Why grucchen we, why have we hevynesse,
That goode Arcite, of chivalrie flour,
Departed is with duetee and honour
Out of this foule prisoun of this lyf?
Why grucchen heere his cosyn and his wyf
Of his welfare, that loved hem so weel? (A.KN 3057–3063)[2]

He successively employs elements such as pronouns, demonstratives, tense forms and adverbs, both proximal (close) and distal (distant), which are in fact part of the spatio-temporal systems. These elements are interconnected with each other to evoke either a proximal or a distal perspective in the integrated spatio-temporal domain. The speaker then continues to take the same perspective, or alternate different perspectives, in discourse.

The idea of integrating both space and time in historical data is not new, however. Traugott (1974, 1978) is the first scholar to employ the term 'spatio-temporal'. Among the works which are relevant to both spatial and temporal domains, we can find, for example, Fries (1994) on text deixis in Early Modern English, Taavitsainen (1999) on personality and style of affect, and Nagucka (2000) on spatial and temporal meanings of *before*. In more recent papers, Nakayasu (2015, 2017a, 2017b, 2018), using Chaucer's works and Paston letters as corpora, has addressed the questions of what elements belong to the spatio-temporal systems and how they are interrelated to evoke a proximal or distal perspective, and conducted preliminary analyses of discourse-pragmatic factors of spatio-temporal systems. Still, some important questions remain: How does the perspective change as discourse progresses? And what factors are relevant to this change in discourse?

The purpose of this paper is to carry out a discourse-pragmatic analysis of the spatio-temporal systems in Chaucer's language (Middle English) along the lines of historical pragmatics and discourse analysis (Taavitsainen and Jucker 2010, 2015). The corpus for this study is "The knight's tale", taken from the Riverside edition of *The Canterbury tales* (Benson 1987)[3] consisting of 17,261 words. I identified spatio-temporal elements in the corpus manually, and built a database using the software, FileMaker Pro. Limiting the scope of corpus makes it possible to conduct a detailed qualitative and quantitative analysis of the systems, where a variety of elements interact. After establishing the definition of spatio-temporal systems in Section 2, the third section will show which perspective, proximal or distal, is likely to be taken, based on a frequency analysis of each spatio-temporal element. Section 4 then conducts a discourse-pragmatic analysis of the elements and factors which affect the spatio-temporal systems in discourse, i.e. elements which structure discourse, elements which promote either perspective, elements which trigger alternations of these perspectives, and factors which facilitate the alternation of elements in either the spatial, the temporal, or the integrated spatio-temporal domain. Section 5 is my conclusion.

---

[2] All the examples are taken from the Riverside edition (Benson 1987). The abbreviation 'A.KN' stands for "The knight's tale," followed by the lines in the text.

[3] The Riverside edition of "The knight's tale" is also available online through the Geoffrey Chaucer Website (https://sites.fas.harvard.edu/~chaucer/teachslf/kt-par0.htm).

2. Spatio-temporal systems

Before starting the analysis of the spatio-temporal systems in Chaucer, this section will establish the definition of spatio-temporal systems following Nakayasu (2018).

First of all, spatio-temporal systems are deictic in nature (e.g. Bühler 1934; Fillmore 1975/1997). From numerous situations occurring in our world, the speaker selects some to put into language, and judges how distant these situations are from his own domain. Those close to the speaker's domain are referred to 'proximal', while those distant to it are called 'distal' (e.g. Diessel 1999). In addition to prototypical distance (i.e. spatial and temporal distance), distal elements can express metaphorical and hypothetical distances (Oakesthott-Taylor 1984; Nakayasu 2009).

Second, a variety of elements are encompassed in spatio-temporal systems referring to space and time, as in Table 1:[4]

Table 1: *Elements of space and time*

Category	Proximal	Distal
Pronouns	1st person (*I*, *we*) Medial: 2nd person (*thou*, *ye*)	3rd person (*he*, *she*, *it*, *they*)
Demonstratives	*this*, *these*	*that*, *those*
Adverb (spatial)	*here*	*there*
Tense form	present/non-past	past
Modal	*shall*, *will*, *can*, *may*, *must* (proximal)	*should*, *would*, *could*, *might*, *must* (distal)
Adverb (temporal)	*now*	*then*

Elements which typically express spatial relations are pronouns, demonstratives and spatial adverbs. Whereas the latter two show a dichotomy of proximal and distal, the former exhibits a trichotomy of proximal (speaker), medial (hearer) and distal (other). Temporal relations are expressed by tense forms, modals and temporal adverbs. The category 'present/non-past' involves the simple present, including the historical present, while the category 'past' includes the simple past and the past perfect. Although scholars such as Bühler (1934) and Fillmore (1975/1997) do not regard modals as part of deixis, I consider that they belong to the spatio-temporal systems. When the speaker employs a modal, he locates the situation on a time axis, judging how distant it is from his speaker's domain in a similar way to selecting tense (Halliday and Matthiessen 2014: 144; Brisard 2002[5]).

Third, one might consider spatio-temporal systems as a mere accumulation of spatial and temporal systems; rather, the systems are interrelated so that they constitute an integrated system. If the speaker takes a proximal perspective, proximal elements of both space and time may systematically appear in a piece of discourse. Likewise, if he takes a distal perspective, distal spatial elements may coexist with temporal elements. He may also alternate these proximal and distal perspectives with each other. By this definition of spatio-temporal systems, the old

[4] Elements which are not distinctively either proximal or distal (for example, *thilke* and the present perfect) are excluded from the table.

[5] See, in particular, the chapter by Langacker, "Remarks on the English grounding systems" in Brisard (2002).

outstanding issues with deixis are now given a new framework within the systems of space and time.

3. Proximal and distal perspectives

Now that the definition of spatio-temporal systems has been established, our next step is to conduct a frequency analysis of the spatio-temporal elements to examine which perspective, proximal or distal, is likely to be taken regarding spatio-temporal elements. Figures 1–4 present the results of frequency analysis of the elements shown in Table 1, with a contrast between the categories 'proximal' and 'distal.'

Figure 1 shows the relative percentage share of the pronouns employed in the corpus:

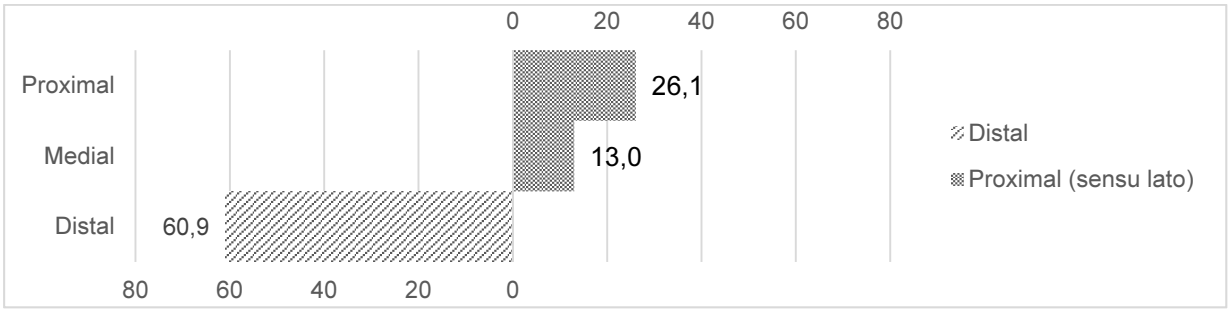

Figure 1: *Pronouns*

As seen in Section 2, pronouns exhibit a trichotomy of proximal, medial and distal. In Figure 1, the medial pronouns are given a place along with the proximal ones to distinguish the roles of the speaker and the hearer from other roles because of their close relationship to the speech situation.[6] The distal pronouns hold the highest percentage share (60.9%), and it is higher than the share of the proximal pronouns *sensu lato* (39.1%; proximal and medial pronouns altogether). This is because *The Canterbury tales* contains stories from the past, and the speakers refer to the participants in their tales using these distal pronouns, as in:

(2) Whan that Arcite to Thebes comen was,
Ful ofte a day he swelte and seyde "Allas!"
For seen his lady shal he never mo. (A.KN 1355–1357)

The speakers occasionally quote the dialogues between the participants as direct speech, where the proximal pronouns *sensu stricto* and medial pronouns are typically employed. In the corpus, proximal pronouns (26.1%) are used more often than medial pronouns (13.0%), because, in addition to use in direct speech, the speakers state their own opinions using proximal pronouns.

The ratios of demonstratives and spatial adverbs show a contrastive pattern in Figure 2:

[6] This is in agreement with Halliday and Hasan (1976: 45), who argue that the person system derives its significance from the person's (or object's) relevance to the speech situation.

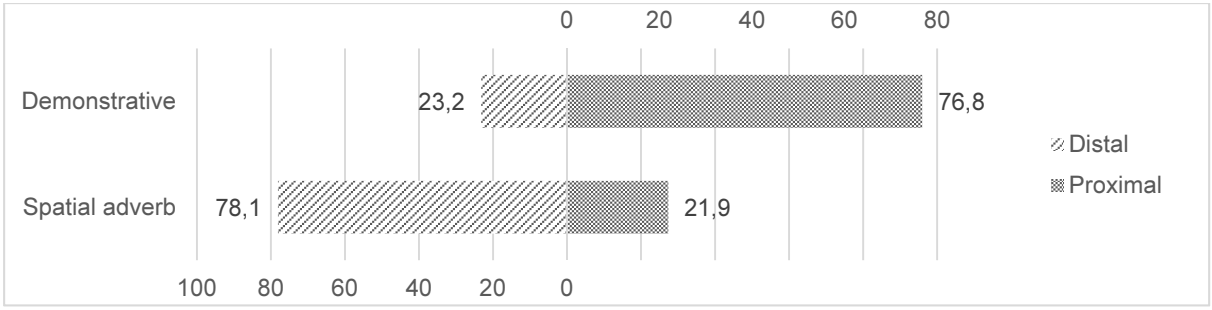

Figure 2: *Demonstratives and spatial adverbs*

The proximal demonstratives *this*/*these* (76.8%) are used more frequently than the distal demonstratives *that*/*those* (23.2%). In (3), the speaker indicates a place with the proximal demonstrative *this*:

(3) (…) Venus, if it be thy wil
Yow in this gardyn thus to transfigure
Bifore me, sorweful, wrecched creature,
Out of this prisoun help that we may scapen. (A.KN 1104–1107)

The high occurrence of proximal demonstratives is due not only to these prototypical uses, but also to other uses such as anaphoric use to refer back to the entity in the previous context. I will return to this issue in the discussion of discourse in Subsection 4.1. This ratio reverses when it comes to spatial adverbs: the distal adverb *there* (78.1%) is used more frequently than *here* (21.9%), as the nature of past story-telling necessitates the use of distal spatial adverbs.

Figure 3 represents the results of frequency analysis of the temporal systems, i.e. tense forms, modals and temporal adverbs:

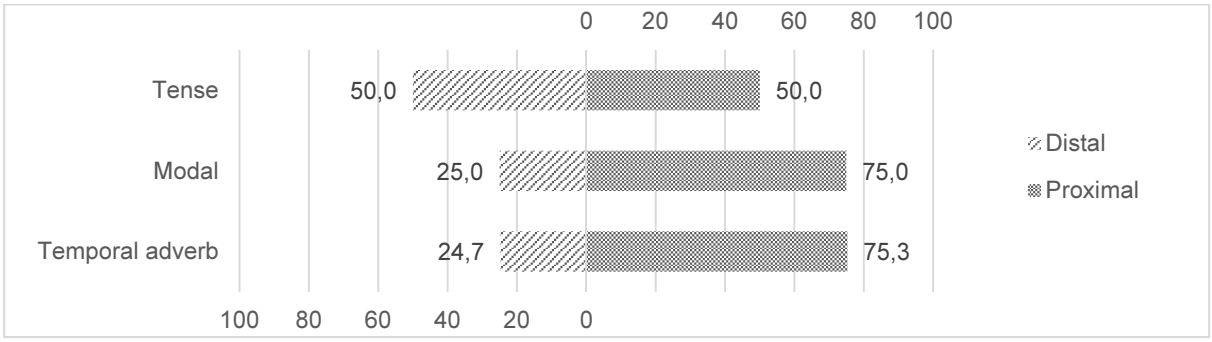

Figure 3: *Tense forms, modals and temporal adverbs*

Temporal relations are represented mainly by tense forms, particularly by the simple present and the simple past. Although the corpus "The knight's tale" tells a past story, the ratio of the proximal and distal tense forms is fifty-fifty. This is because the speakers not only describe situations in the past with distal tense forms, but they also refer to the direct speech of the participants of the tales and employ the historical present in their narrations in order to give the hearers a you-are-there experience.[7] In the following (4), *ryngen* is the historical present, while *lefte* is the distal (i.e. past) tense:

[7] Both Benson (1961) and Nakayasu (2013) present an analysis of the historical present.

(4) The heraudes lefte hir prikyng up and doun;
Now ryngen trompes loude and clarioun. (A.KN 2599–2600)[8]

The tendency for proximal elements is stronger in modals (75.0%) and temporal adverbs (75.3%). The proximal modals have meanings derived from its direct connection to the speaker's domain. With these proximal meanings, the speakers directly bring the hearers closer to their domain without mitigating their statements, as opposed to distal modals.[9] In (5), Saturn addresses Venus with the proximal modal *shalt*:

(5) Saturnus seyde, "Doghter, hoold thy pees!
Mars hath his wille, his knyght hath al his boone,
And, by myn heed, thou shalt been esed soone." (A.KN 2668–2670)

In addition to their prototypical meanings and uses, the temporal adverbs *now* and *then* have further functions in discourse (see 4.1.).

Figure 4 summarises the results of the total of all the major spatio-temporal elements employed in the corpus, showing which perspective, proximal or distal, is likely to be taken:

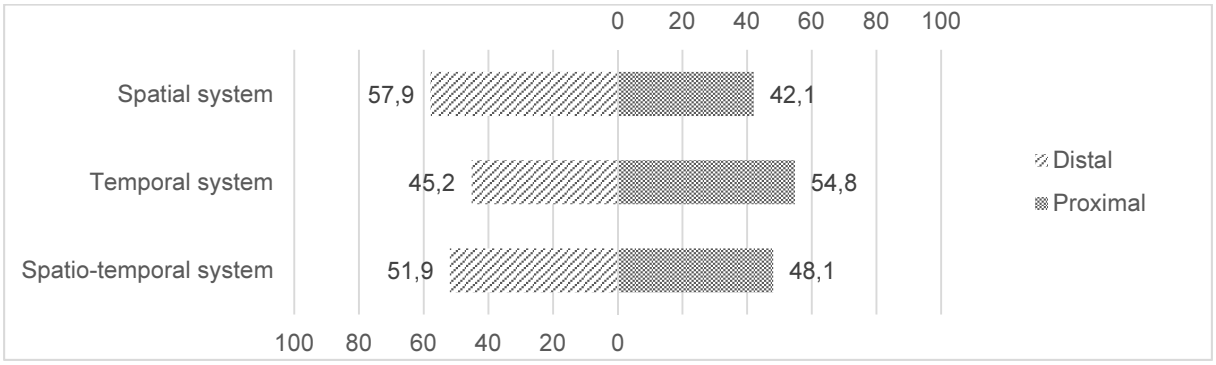

Figure 4: *Spatio-temporal systems*

Because the corpus "The knight's tale" tells a story from the past, one might expect that distal elements would take a much higher percentage share in all of the spatial, the temporal and the spatio-temporal systems. In fact, these proximal-distal percentage shares do not differ significantly with each other. In the spatial systems, the distal elements have a slightly higher percentage share than proximal elements due to the high rates of distal pronouns and spatial adverbs. In the temporal systems, by contrast, the high percentage share of proximal modals and temporal adverbs (also a high percentage share (50.0%) of the proximal tense for a past story-telling) contribute to this slightly higher share of the proximal elements. In total, the distal elements take up a slightly higher share in the spatio-temporal systems. The speakers seem to exploit a variety of strategies to attract the hearers' attention to their words, alternating between proximal and distal perspectives.

[8] I will come back to this example in 4.3.

[9] The present paper does not go into the details of the modals, but pays attention to the proximal and distal distinction to capture spatio-temporal phenomena from a wider perspective. To explore their complex meanings and functions is far beyond the scope of this short paper.

4. Spatio-temporal systems in discourse

Having carried out a quantitative analysis of which perspective, proximal or distal, is likely to be taken, this section will examine how spatio-temporal systems progress in discourse. In discourse, proximal or distal elements can be coordinated to evoke either a proximal or a distal perspective (Nakayasu 2015, 2017a, 2017b, 2018). The speaker can partly coordinate the elements, or completely coordinate all the elements, in their discourse. This coordination can be realised in the spatial or the temporal domain only, or in the integrated spatio-temporal domain. Then he may continue to take the same perspective, or alternate different perspectives. This section will examine what factors are relevant to these types of coordination and alternation in discourse.

4.1. Discourse structuring

The examination starts with elements which can structure discourse in spatio-temporal systems: text deictic elements and metadiscoursal elements. Text deictic elements[10] are likely to be derived from the prototypical meaning and use of spatio-temporal elements. Typical examples of such deictic elements are demonstratives *this* and *that*, which have prototypical meanings of pointing to an entity close to or distant from the speaker in the spatialand temporal domains. These prototypical meanings are used most frequently as Figure 5 demonstrates:

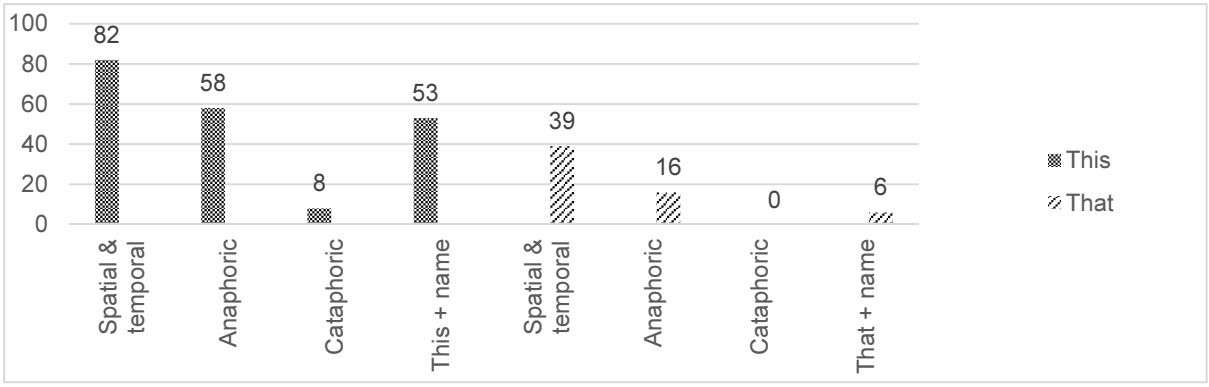

Figure 5:This *and* that

These demonstratives also have extended meanings and uses as text deictic elements. The anaphoric use refers back to the previously mentioned element, and the anaphoric *this* is used more frequently than the anaphoric *that*. In the following example (6), the anaphoric *this* is used once and the pattern '*this* + name' is utilised twice:

(6) And with a sigh he[11] seyde pitously,
"The fresshe beautee sleeth me sodeynly
Of hire that rometh in the yonder place; (…)"
This Palamon, whan he tho wordes herde,
Dispitously he looked and answerde,

[10] See Fries (1994) and Taavitsainen and Hiltunen (2012) for a detailed analysis of text deictic elements.

[11] The distal pronoun *he* refers to Arcite here.

"Wheither seistow this in ernest or in pley?"
"Nay," quod Arcite, "in ernest, by my fey!
God helpe me so, me list ful yvele pleye."
This Palamon gan knytte his browes tweye. (A.KN 1117–1128)

The anaphoric *this* refers back to what Arcite had just said. The pattern '*this* + name (Palamon)' is relatively frequently employed by Chaucer (Novelli 1957: 246), and can be considered anaphoric as it refers back to the person who has been mentioned in the previous context. Note that before the use of *this Palamon*, Arcite's turn always precedes. This helps to remind the hearer of the previously mentioned person, i.e. Palamon, and brings that person to the fore. By contrast, the cataphoric *this* anticipates what will be mentioned in later context:

(7) My wyl is this, for plat conclusioun,
Withouten any repplicacioun–
If that you liketh, take it for the beste:
That everich of you shal goon where hymleste
Frely, withouten raunson or daunger,
And this day fifty wykes, fer ne ner,
Everich of you shalbrynge an hundred knyghtes
Armed for lystes up at allerightes,
Al redy to darreyne hire by bataille. (A.KN 1845–1853)

In this example, the speaker Theseus explains his suggestions in what follows (*That everich of you* (…) *by bataille*). The cataphoric *that*, however, is not recorded in the corpus.

Next, temporal adverbs *now* and *thanne* 'then' are also used as text deictic elements. The prototypical temporal meanings and the meanings and functions which are extended from these meanings are shown in Figure 6:

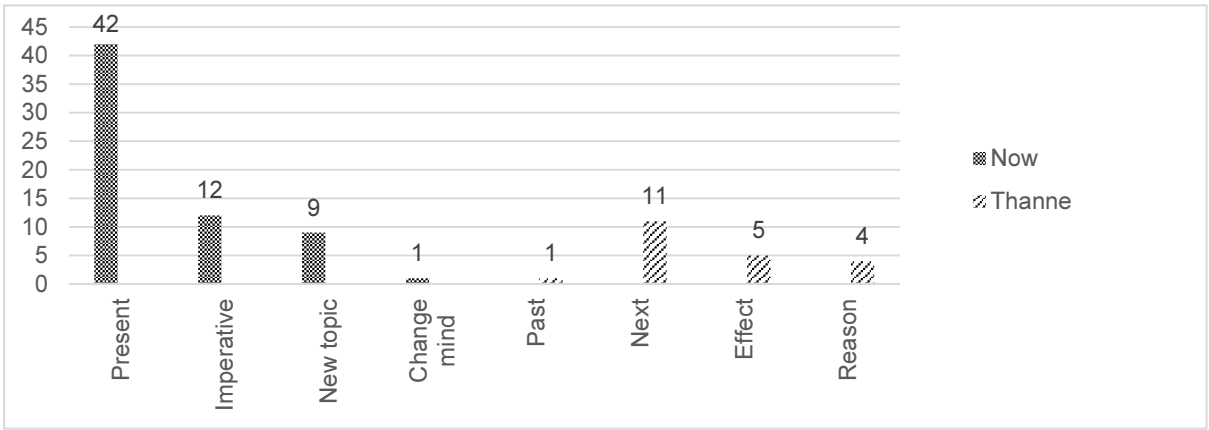

Figure 6: Now *and thanne*

As regards the prototypical temporal meanings, *now* signifies the present quite frequently, while *thanne* expresses the past only once in the corpus. *Now* also has extended meanings and functions such as prompting the hearer to do something with an imperative and introducing a new topic in context. In example (8), *now* introduces a metacomment to the context (Taavitsainen and Hiltunen 2012: 181–184):

(8) Arcite is coold, ther Mars his soule gye!
Now wol I speken forth of Emelye.
Shrighte Emelye, and howleth Palamon,
And Theseus his suster took anon
Swownynge, and baar hire fro the corps away. (A.KN 2815–2819)

The knight signals that he will change his topic from Arcite to Emelye with the aid of *now*, the proximal pronoun and the proximal modal *wol*. In contrast, *Thanne* has extended meanings and functions such as 'next', 'effect' and 'reason.' In (9), it signifies what happened next:

(9) He is a kynges brother sone, pardee;(…)
It moste been considered, leeveth me,
For gentil mercy oghte to passen right."
Thanne seyde he thus to Palamon the knight:
"I trowe ther nedeth litel sermonyng
To make yow assente to this thyng.
Com neer, and taak youre lady by the hond." (A.KN 3084–3093)

Another element responsible for structuring discourse is metadiscoursal expressions. Metadiscourse is defined as "comprising all those elements in a text which do not add new material to the text proposition, but which are used to refer to already existing text-propositional elements" (Boggel 2009: 2). In (10), the speaker paraphrases what he has just said with the metadiscourse *this is to seyn*:

(10) Heigh labour and ful greet apparaillynge
Was at the service and the fyr-makynge,
That with his grene top the hevene raughte;
And twenty fadme of brede the armes straughte –
This is to seyn, the bowes weren so brode. (A.KN 2913–2917)

Note that this metadiscoursal expression itself contains the proximal spatio-temporal elements *this* and *is*, although other elements are distal. Since metadiscourse is closely connected to the speaker's domain, he can select elements independently from already existing propositions. Not only is the proximal (present) tense used in metadiscoursal phrases, but also the proximal form can signify that the future and the distal (past) tense are possible as in *as ye shal after here* (A.KN 2764) and *as I seide* (A.KN 1383).

4.2. Promoting a proximal/distal perspective

As reiterated in this paper, spatio-temporal elements, from the same or different domains, coordinate with each other to evoke a proximal or a distal perspective. This subsection will examine specific elements which promote either of these perspectives.

First, a variety of elements immediately relevant to the speech situation can promote a proximal perspective, alone or together. The imperative is used to address the hearer, for example, to make a command, a request, and so on, and is recorded 55 times in the corpus. In (11), the speaker Saturn employs the imperative *Weep now namoore* to cheer up Venus, who has had a quarrel with Mars:

(11) Though Mars shal helpe his knyght, yet nathelees
Bitwixe yow ther moot be som tyme pees,
Al be ye noght of o compleccioun,
That causeth al day swich divisioun.
I am thyn aiel, redy at thy wille;
Weep now namoore; I wol thy lust fulfille." (A.KN 2473–2478)

It should be noted that he addresses her making use of other proximal elements *sensu lato* such as the adverb *now*, proximal and medial pronouns and the modal *wol*, which altogether evoke a proximal perspective.

The cohesion of such proximal perspectives is reinforced by address terms in speech situations. In the corpus, address terms are recorded 48 times. In (12), Arcite prays to Mars with the address term *lord* that he wants a victory in the duel to win Emelye's love:

(12) And eek to this avow I wol me bynde:
My beerd, myn heer, that hongeth long adoun,
That nevere yet ne felte offensioun
Of rasour nor of shere, I wol thee yive,
And ben thy trewe servant whil I lyve.
Now, lord, have routhe upon my sorwes soore;
Yif me [victorie]; I aske thee namoore." (A.KN 2414–2420)

Likewise in (11), the speaker also utilises proximal elements such as proximal and medial pronouns, proximal tense forms, the proximal adverb *now* and the modal *wol*, in addition to the imperatives.

Additionally, interjections, which can be considered to be spatio-temporal elements, also promote a proximal perspective. They do not make a distinction between the spatial or temporal, but rather belong to the integrated spatio-temporal domain. They are, however, strictly proximal, being directly connected to the speaker's domain. Such interjections are recorded 38 times in the corpus; a fine example is shown in (13), where Arcite curses at Palamon:

(13) For I defye the seurete and the bond
Which that thou seist that I have maad to thee.
What! Verray fool, thynk wel that love is free,
And I wol love hire maugree al thy myght! (A.KN 1604–1607)

In addition to the interjection *What!*, the speaker employs the form of address *Verray fool* and the imperative to promote the use of proximal elements *sensu lato* such as proximal and medial pronouns, proximal tense forms and the proximal modal *wol*.

Finally, questions occur 17 times in the corpus and also encourage a proximal perspective. In (14), the two knights Palamon and Arcite fall in love with the same lady Emelye and argue about who has the right to love her. Arcite asks Palamon the question *What wiltow seynen?* to insist that it was him who loved her first:

(14) This Arciteful proudly spak ageyn:
"Thow shalt," quod he, "be rather fals than I;
And thou art fals, I telle thee outrely,

For paramour I loved hire first er thow.
What wiltow seyen? Thou woost nat yet now
Wheither she be a womman or goddesse! (A.KN 1152–1157)

These lively dialogues actively promote the use of proximal (and medial) elements.

By contrast, elements which overtly promote distal perspectives are more difficult to find.[12] Adverbials which refer to a point or a period in the past seem to be a principal way to promote distal perspectives as far as this corpus is concerned. In (15), once the adverbial clause with *Whan* sets up a time in the past, the past time is kept in the following context:

(15) Whan the orison was doon of Palamon,
His sacrifice he dide, and that anon,
Ful pitously, with alle circumstaunces,
Al telle I noght as now his observaunces;
But atte laste the statue of Venus shook,
And made a signe, wherby that he took
That his preyere accepted was that day. (A.KN 2261–2267)

This promotes the use of distal spatio-temporal elements. In addition to distal tense forms, distal pronouns and the distal demonstrative *that* are employed, which keeps the perspective distal. Note that the phrase *Al telle I noght as now his observaunces* is a metadiscourse, where the speaker can employ proximal elements.

4.3. Triggering an alternation

Having seen the elements promoting either perspective, what are the elements, then, which can trigger alternations between proximal and distal perspectives? There are several strategies found in the corpus.

Recall the discussion on text structuring elements in 4.1. and the example in (8), where the temporal adverb *now* is employed as the speaker changes his topic from Arcite to Emelye. Here *now* can also be considered to function as a discourse marker,[13] in the sense that this small element does not affect the propositional content but has important pragmatic functions (Schiffrin 1987: 230–246). In (8), the speaker talks about Arcite, who is dead now, employing proximal tense forms, and after using*now*, he describes how other people such as Emelye got confused and grieved over his death with distal tense forms and some proximal (i.e. historical present) tense forms. Shifting the viewpoint from Arcite to Emelye and others, the speaker alternates perspectives in the temporal domain. A similar sort of alternation occurs in (16) below:

[12] The reason why a limited number of elements can promote distal perspectives might be the following: since the speaker tries to involve the hearer into his speech situation more frequently with the aid of his vivid depiction of proximal perspectives, distal perspectives are less required; or, since this corpus is inherently a past story-telling, which describes the world of the past, there is little need for elements advancing distal perspectives. An analysis of bigger corpora, however, will be necessary to find a definitive answer.

[13] Brinton (2017) employs the term 'pragmatic marker.'

(16) What haukes sitten on the perche above,
What houndes liggen on the floor adoun –
Of al this make I now no mencioun,
But al th' effect; that thynketh me the beste.
Now comes the point, and herkneth if yow leste.
The Sonday nyght, er day bigan to sprynge,
Whan Palamon the larke herde synge (…) (A.KN 2204–2210)

With proximal tense forms,the speaker describes how Theseus entertained the kings and the knights, and after employing *now*, he alternates the perspective to distal to depict what Palamon did.

A perspective alternation commonly happens when the speaker switches from direct speech to narration. In (17) below, Mercurie talks to Arcite in direct speech, where the perspective is basically proximal. Next, the knight (i.e. the narrator of this tale) changes Mercurie's direct speech to his own narration about Arcite, switching the perspective to distal:

(17) And seydehym thus: "To Atthenes shaltou wende,
Ther is thee shapen of thy wo an ende."
And with that word Arcite wook and sterte.
"Now trewely, hou soore that me smerte,"
Quod he, "to Atthenes right now wol I fare,
Ne for the drede of deeth shal I nat spare
To se my lady, that I love and serve. (A.KN 1391–1397)

What he does here is to skillfully change the perspective to distal with the phrase *with that word*, which includes the distal demonstrative *that*. He then switches back to the proximal perspective with the direct speech by Arcite.

The shift from narration to comment may also change the perspective. First, the knight takes a distal perspective in his narration, employing distal tense forms except for *taketh*, which is the historical present. He then gives comments on Arcite's situation (Benson 1961: 71–72), switching the perspective to proximal:

(18) Ther nas noon oother remedie ne reed;
But taketh his leve, and homward he him spedde.
Lat hym be war! His nekkelith to wedde.
How greet a sorwe suffreth now Arcite!
The deeth he feeleth thurgh his herte smyte;
He wepeth, wayleth, crieth pitously;
To sleen hymself he waiteth prively. (A.KN 1216–1222)

In addition to proximal tense forms, he employs *now* and the exclamation to make his comments sound lively.

4.4. Facilitating an alternation

The previous subsection 4.3. has given attention to some elements triggering alternations between perspectives. This final subsection will further examine factors which facilitate

alternations of elements in either the spatial, the temporal, or the integrated spatio-temporal domain.

In all the examples below, a distinct contrast between two different worlds can be observed. First, an alternation occurs in the spatial domain only in (19), where Palamon is captive in a prison and falls in love with Emelye, who is walking in the garden outside:

(19) This Palamon answerde and seyde agayn,
"Cosyn, for sothe, of this opinioun
Thow hast a veyn ymaginacioun.
This prison caused me nat for to crye,
But I was hurt right now thurghout myn ye
Into myn herte, that wol my bane be.
The fairnesse of that lady that I see
Yond in the gardyn romen to and fro
Is cause of al my criyng and my wo. (A.KN 1092–1100)

Palamon makes a contrast between the prison where he is caught and the garden where Emelye is walking. For the former, he uses the proximal demonstrative *this* (i.e. *This prison*), while he employs the distal demonstrative *that* (*that lady*) and the adverb *yond* (*Yond in the gardyn*) for the latter. He selects temporal elements according to the timeline, irrespective of which perspective he takes in the spatial domain. On the other hand, the alternation takes place in the temporal domain in (20). Palamon and Arcite fought with each other in a jousting contest, leading one hundred knights each, in order to win Emelye's love:

(20) The heraudes lefte hir prikyng up and doun;
Now ryngen trompes loude and clarioun.
Ther is namoore to seyn, but west and est
In goon the speresful sadly in arrest;
In gooth the sharpe spore into the syde. (…)
Som tyme an ende ther is of every dede.
For er the sonne unto the reste wente,
The stronge kyng Emetreus gan hente
This Palamon, as he faught with Arcite,
And made his swerd depe in his flessh to byte, (…) (A.KN 2599–2640)

During the jousting, the tense is the historical present (e.g. *ryngen*), i.e. proximal, as in a sports commentary. By contrast, at the beginning (*lefte*) and the end of the jousting (e.g. *wente*), the tense is distal.

My last example demonstrates the alternation of perspectives in the integrated spatio-temporal domain; here the contrast between two distinct worlds are depicted more systematically and explicitly. In (21), Duke Theseus calls on Palamon and Emelye to his side and reflects on what has happened to them, that is, Arcite has departed this world for heaven. In his talk, a clear contrast between the worlds of the dead and the living can be observed:

(21) (=(1))
"The contrarie of al this is wilfulnesse.
Why grucchen we, why have we hevynesse,
That goode Arcite, of chivalrie flour,

Departed is with duetee and honour
Out of this foule prisoun of this lyf?
Why grucchen heere his cosyn and his wyf
Of his welfare, that loved hem so weel? (A.KN 3057–3063)

He distances Arcite's world of the dead by employing elements such as the distal demonstrative *that*, distal pronouns and distal tense forms, while describing the world of the living with elements like the proximal demonstratives *this*, proximal pronouns and proximal tense forms. Making best use of this alternation, he is trying to lead not just Palamon and Emelye, but also other people including himself, in a direction that is best for them.

5. Concluding remarks

This paper has conducted a discourse-pragmatic analysis of the spatio-temporal systems in Chaucer's language along the lines of historical pragmatics and discourse analysis. Using the corpus of "The knight's tale" in *The Canterbury tales*, I first showed the results of the frequency analysis of proximal and distal elements. Although the corpus is a past story-telling, its proximal-distal percentage shares do not differ significantly as shown in Figure 4, which suggests that the speakers employ a variety of strategies to involve the hearers into the tale.

A qualitative analysis was then carried out to examine how the perspectives change in discourse and what elements and factors are relevant to the spatio-temporal systems in discourse. First, elements such as text deictic elements and metadiscourse have functions to structure discourse. Second, the imperatives, address terms, questions, interjections and adverbials are closely related to spatio-temporal systems and promote either proximal or distal perspective. Third, alternations between perspectives typically occur when a discourse marker signals the start of a new topic, when switching between direct speech and narration occurs, or when alternating between narration and comments takes place. Finally, the contrast between two distinct worlds may also stimulate the alternation of perspectives in the spatial, the temporal, and the integrated spatio-temporal domain.

The approach taken by this paper advances the boundaries of the theory of historical pragmatics and discourse analysis, and expands our understanding of communication within the past into the new dimension of space, time, history and beyond.

References

Benson, L. D. 1961. Chaucer's historical present: Its meaning and uses. *English Studies 42*: 65–77. doi: 10.1080/00138386108597094

Benson, L. D. 1987. *The Riverside Chaucer* (3rd ed.). Boston: Houton Mifflin.

Boggel, S. 2009. *Metadiscourse in Middle English and Early Modern English religious texts: A corpus-based study*. Frankfurt am Main: Peter Lang.

Brinton, L. J. 2017. *The evolution of pragmatic markers in English: Pathways of change*. Cambridge: Cambridge University Press.

Brisard, F. (ed.) 2002. *Grounding: The epistemic footing and deixis and reference*. Berlin, New York: Mouton de Gruyter.

Bühler, K. 1934. *Sprachtheorie: Die Darstellungsfunktion der Sprache*. Jena: G. Fischer.

Diessel, H. 1999. *Demonstratives: Form, function, and grammaticalization*. Amsterdam, Philadelphia: John Benjamins.

Fillmore, C. J. 1997. *Lectures on deixis*. Stanford: CSLI Publications. (Reprinted from *Santa Cruz lectures on deixis*, 1975, Indiana: Indiana University Linguistics Club).

Fries, U. 1994. Text deixis in Early Modern English. In D. Kastovsky (ed.), *Studies in Early Modern English*, 111–128. Berlin, New York: Mouton de Gruyter.

Halliday, M. A. K., and R. Hasan. 1976. *Cohesion in English*. Harlow: Longman.

Halliday, M. A. K., and C. M. I. M. Matthiessen. 2014. *Halliday's introduction to functional grammar* (4th ed.). Milton Park: Routledge.

Nagucka, R. 2000. The spatial and temporal meanings of *before* in Middle English. In I. Taavitsainen, T. Nevalainen, P. Pahta, and M. Rissanen (eds.), *Placing Middle English in context*, 329–337. Berlin, New York: Mouton de Guryter.

Nakayasu, M. 2009. *The pragmatics of modals in Shakespeare*. Frankfurt am Main: Peter Lang.

Nakayasu, M. 2013. Chaucer's historical present: A discourse-pragmatic perspective. In L. Sikorska, and M. Krygier (eds.), *Evurhappie and glorious, ffor I have at will grete riches,* 41–60. Frankfurt am Main: Peter Lang.

Nakayasu, M. 2015. Spatio-temporal systems in *A treatise on the astrolabe*. In J. C. Conde-Silvestre, and J. Calle-Martín (eds.), *Approaches to Middle English: Variation, contact and change*, 243–259. Frankfurt am Main: Peter Lang.

Nakayasu, M. 2017a. Spatio-temporal systems in Margaret Paston's letters. In J. Fisiak, M. Bator, and M. Sylwanowicz (eds.), *Essays and studies in Middle English*, 121–140. Frankfurt am Main: Peter Lang.

Nakayasu, M. 2017b. Spatio-temporal systems in Paston letters. *Studia Neophilologica* 89(1), 75–89. doi: 10.1080/00393274.2017.1317020

Nakayasu, M. 2018. Spatio-temporal systems in Chaucer. In P. Petré, H. Cuyckens, and F. D'Hoedt (eds.), *Sociocultural dimensions in lexis and text in the history of English*, 125–150. Amsterdam, Philadelphia: John Benjamins.

Novelli, C. 1957. The demonstrative adjective *this*: Chaucer's use of a colloquial narrative device. *Medieval Studies* 19(1): 246–249. doi: 10.1484/J.MS.2.306775

Oakeshott-Taylor, J. 1984. Factuality, tense, intonation and perspective: Some thoughts on the semantics of 'think'. *Lingua* 62: 289–317. doi: 10.1016/0024-3841(84)90056-1

Schiffrin, D. 1987. *Discourse markers*. Cambridge: Cambridge University Press.

Taavitsainen, I. 1999. Personality and styles of affect in the *Canterbury tales*. In G. Lester (ed.), *Chaucer in perspective: Middle English essays in honour of Norman Blake*, 218–234. Sheffield: Sheffield Academic Press.

Taavitsainen, I., and T. Hiltunen. 2012. *Now* as a text deictic feature in Late Medieval and Early Modern English medical writing. In U. Busse, and A. Hübler (eds.), *Investigations into the meta-communicative lexicon of English: A contribution to historical pragmatics*, 179–205. Amsterdam, Philadelphia: John Benjamins.

Taavitsainen, I., and A. H. Jucker. 2010. Trends and developments in historical pragmatics. In A. H. Jucker, and I. Taavitsainen (eds.), *Historical Pragmatics*, 3–30. Berlin, New York: De Gruyter Mouton.

Taavitsainen, I., and A. H. Jucker. 2015. Twenty years of historical pragmatics: Origins, developments and changing thought styles. *Journal of Historical Pragmatics* 16(1): 1–24. doi: 10.1075/jhp.16.1.01taa.

Traugott, E. C. 1974. Explorations in linguistic elaboration: Language change, language acquisition and the genesis of spatio-temporal terms. In J. M. Anderson, and C. Jones (eds.), *Historical linguistics*, *Vol. 1. Syntax, morphology, internal and comparative reconstruction: Proceedings of the First International Conference on Historical Linguistics, Edinburgh, 2-7 September 1973*, 263–314. Amsterdam: North-Holland.

Traugott, E. C. 1978. On the expression of spatio-temporal relations in language. In J. H. Greenberg (ed.), *Universals of human language*, *Vol.3. Word structure*, 369–400. Stanford: Stanford University Press.

LingBaW *Linguistics Beyond And Within 5 (2019), 135-147*

The art of non-verbal communication in perlocutionary giftedness

Adam Świątek
State University of Applied Sciences in Konin, Poland

Abstract
Language aptitude and perlocutionary acts and effects have been subjects of extensive research since their true beginnings in the 1950's and 1960's, respectively. On the one hand, Carroll and Sapon (1959), Pimsleur (1966), or Biedroń (2012) aimed at revealing the factors responsible for a learner's sixth sense for languages. On the other hand, almost simultaneously, Austin (1962) introduced the tripartite division of a speech act, with locutions, illocutions, and perlocutions as the integral components, later developed by Searle (1969), who shed new light on the Speech Act Theory (SAT). At that time, however, the role of the perlocutionary component was significantly diminished, since the primary goal of pragmatics was to investigate the speaker's intentions. Gradually, the role of perlocutionary acts and effects changed and more attention was drawn to the perlocutionary aspect. In 1979, Cohen, Davis and Gaines highlighted the fact that perlocutionary acts have perlocutionary goals, which might be observed by the subsequent effects utterance have on the listener. In 2013, Post offered a new insight into the SAT and suggested that the role of perlocution ought not to be diminished, but enhanced and intensified. In 2015, Świątek suggested a contrasting approach to both concepts and combined them to investigate the role of individual differences responsible for one's verbal perlocutionary giftedness. The research revealed that the aspects like verbal aptitude, anxiety, willingness to communicate, or personality type had considerable impact on perlocutionary skills and the desired perlocutionary effects. Świątek's approach shed new light on the research on pragmatic aspects of glottodidactics and opened a new chapter in that field of science. The aim of the presentation is to concentrate on yet another fundamental factor of perlocutionary giftedness, i.e. non-verbal aspects in its manifestation. The research, based on experiential and comparative methods as well as individual case analysis, aimed at revealing a strong link between verbal perlocutionary giftedness and the accompanying non-verbal aspects of communication, such as kinesics, proxemics, vocalics, or posture, which affect the listener's decisions, who then complies with the speaker's will.

Keywords: aptitude, communication, individual differences, perlocution

1. Introduction

In 1962, Austin introduced the Speech Act Theory (SAT), which contained the tripartite division of a speech act consisting of locutionary, illocutionary and perlocutionary components, each of them comprising an integral and indispensable part of an individual utterance. Essential as it was, SAT allowed to understand how utterances functioned from the pragmatic point of

view. However, the early version of the SAT did not aim at investigating the perlocutionary component and therefore effects utterances have on the recipient. It focused on the speaker's intentions and gave the illocutionary component primary importance in an act of communication. In 1979, Gaines, Cohen and Davis highlighted the fact that the perlocutionary component ought to be given more attention, since studying the effects utterances have on the addressee might contribute to a tremendous breakthrough in terms of understanding how the speaker's words impact other language users and therefore their verbal and non-verbal reactions. The above-mentioned stance on the position of perlocutionary acts and effects in the SAT and pragmatics itself facilitated the revival of interest in the phenomenon of perlocution and led to a new wave of research regarding this component of the entire theory. Over the years, the position of perlocutionary speech acts has been even intensified by numerous empirical studies conducted by Osika (2008), Plisiecka-Witczak (2013), Post (2013), or Huang (2014). In 2016, Świątek decided to develop the research on the perlocutionary component of the SAT even further and introduced the phenomenon of perlocutionary aptitude (also referred to as giftedness) defined as a complex set of individual features which might contribute to one's increased communicative effectiveness and therefore success over particular language users in an act of verbal communication. Furthermore, when considering the most recent perspective regarding the phenomenon of perlocution, it ought to be taken into consideration not only when discussing the linguistic viewpoint but also changing trends and requirements in contemporary language education and instruction, which, according to the latest curriculum, pays more attention to effective and therefore successful speaking and communication. Complex as it seems to be, perlocution is a significant and indispensable part of this process. In consequence, with more attention given to verbal communication and effective language use, teachers and instructors can notice that there are language users who seem to be more flexible when changing their roles from the speaker's to the listener's. There also seem to be speakers who easily intimidate other language users and make them accept their viewpoints without any significant negotiation of meaning or conditions by making use of multiple non-verbal means of communication and therefore increasing their communicative efficiency.

The present article concentrates on an array of non-verbal aspects of communication that strengthen the effectiveness of individual manifestation of verbal perlocutionary giftedness. Therefore, Świątek's main goal is to pinpoint the most essential and, at the same time, relevant components of non-verbal communication that appear when exchanging information between language users, with their impact on the speaker's final, communicative success or failure, or even the listener's abandonment and compliant tendencies in conversational contexts. Thus, the article consists of two interrelated parts; the initial section of the paper focuses on the theoretical support for the phenomenon of perlocutionary aptitude, by means of the historical background of perlocution, its rejection, revival, and the latest, innovative research on the phenomenon with the verbal perlocutionary aptitude as the turning point in the study of this contemporary approach towards the presented concept. The second part of the article is entirely devoted to the practical research conducted by Świątek, aimed at determining the extent to which perlocutionarily gifted language users adopt non-verbal aspects of communication, such as proxemics, kinesics, oculesics, or chronemics, in order to force the speaker's target issue, i.e.

manipulate, confuse and make the listener feel uncomfortable so that one decides to abandon the target act of communication.

2. Perlocutionary Speech Act Theory vs. language aptitude

Language aptitude and the Perlocutionary Speech Act Theory (PSAT) had long been treated as separate concepts. Different as they seem to be, there are common points between both concepts, especially in how they correlate and affect language users; in other words, bothof them bear a considerable degree of resemblance.

To start with, language aptitude has been modelled as an inborn, 'sixth sense' for language learning, which usually boosts one's language comprehension. Furthermore, pioneering the concept, Carroll (1962) stressed the fact that aptitude ought to be treated as independent of intelligence and enhanced by communicative opportunities. In 1997, Ellis described aptitude as a process that enables language users to proceed and absorb language data more efficiently. Brown (2000) described it as a particular piece of 'equipment' one uses to absorb language knowledge, whereas Biedroń (2011) maintains that aptitude is one's readiness for language absorption with a guaranteed rate of achievement. Finally, a thought-provoking description came from Safar and Kormos (2008) who highlighted the fact that aptitude resembles language progress independent of the wishes of a language user. Therefore, whether one works with the language more or less efficiently, progress and development are unavoidable. However, in order to find similarities between the PSAT and language aptitude, a deeper insight into the concept is necessary.

Dornyei and Skehan (2003) implied that aptitude is the distinctive concept that allows to distinguish particular language users from among the other language community members and determines individual differences between them. Snow (as cited in DeKeyser 2007) maintains that aptitude is the notion that enables multitasking and dealing with particular challenges in numerous ways, usually applying different approaches. What is more, aptitude determines individual differences between language users.

When it comes to individual differences among speakers, the phenomenon of perlocution seems to be another factor that brings and determines diversity in the verbal effectiveness and individual viewpoint manifestation. It is also related to language aptitude and verbal skills since skilful language users can, even subconsciously, make use of their individual language resources to apply perlocutionary skills for their own purposes.

The role of perlocutionary skills had long been diminished and reduced to an absolute minimum. In 1962 Austin defined perlocutionary acts as a unique instrument that allows a language user to influence and evoke certain changes in the feelings or behaviour of the listener. Furthermore, the effects do not have to be single consequences; it is possible to evoke complex stretches of them, sometimes unwanted, or even unintentional. Austin's view was supported by numerous researchers, such as Cohen (1979), Davis (1979), or Gaines (1979), who even suggested a taxonomy of perlocutionary effects (voluntary and involuntary; epistemic and motivational; practical) as well as two genera gathering all the categories of perlocutionary effects, subdivided into *perfected* and *incipient*. Osika (2001, 2008) and Cap (2010) added that

the effects one intends to produce may be conscious and intentional, which implied that the effects might depend on the wishes of the speaker. What is even more, perlocutionary effects are simply the manifestation of understanding of particular utterances. Searle and Vanderveken's (1985) description maintains that perlocutionary effects are the essence of perlocutionary acts. Zdunkiewicz (1993) added that perlocutionary effects are simply the 'side-effects' of perlocutionary acts. Finally, the most recent description came from Huang (2014) who pinpointed that perlocutionary acts and effects are the essence of speaking a language and executing procedures. Huang (2014) also claimed that they can be used to manipulate or direct other language users what to do in particular situations, or even produce some chain effects. However, some of the effects cannot be controlled. Huang also stressed the fact that speaking a language seems to be a matter of following some conventions and general rules, while producing perlocutionary effects is beyond one's expectations and wishes since they cannot be predicted.

Speaking and perlocutionary acts and effects are inseparable elements of communication and language use. Speaking cannot exist without perlocutionary acts and effects, as both notions seem to be highly correlated and interdependent. However, the notion of perlocutionary acts and effects has not always been given a priority.

3. Rejection to investigate perlocution

Austin's (1962) theory suggested a trichotomy of speech acts, with locutionary, illocutionary, and perlocutionary acts as their core components. However, researching perlocutionary acts and effects was immediately rejected since locutionary acts and perlocutionary acts were situated on different logical levels. Moreover, pragmatics did not aim at investigating the effects of communication, but the intentions of the speaker. In other words, the role of the hearer was significantly diminished (Post 2001). The same approach towards perlocutionary acts and effects was adopted by Searle (1962, 1968, 1969), who systematised Austin's theory and still maintained the primary function of illocutionary acts. Searle (1975, 1976) also rejected studying locutionary acts since the relation between locution and illocution was, according to him, too complicated and unclear, and offered a comprehensive classification of illocutionary acts, later supported by, for instance, Kalisz (1993) and Vanderveken (2002). However, Plisiecka-Witczak (2013) pinpoints that Searle did not really reject locutionary acts, but redistributed their role.

Growing concerns over the fact that deep structures of the main clauses contained performative verbs and exerted a certain degree of impact on the hearer, led to an assumption that the perlocutionary aspect might be an important aspect of communication (Ross 1970; Sadock 1974). Unfortunately, even that kind of assumption still maintained the illocutionary-oriented approach towards the SAT and placed illocutionary acts in the centre of attention. In consequence, Campbell (1973) treated perlocution critically and negated its importance for the study of speech acts. Levinson (1980) claimed that perlocution constituted a marginal component of communication, which ought not to be taken into consideration and therefore analysed. Leech (1983) stressed the fact that perlocution was too wide a phenomenon, and it would be difficult to investigate it as no frames for the study of perlocution had ever been suggested or developed. Even in recent years, Marcu (2000) referred to the view presented by Campbell in 1973. However, already in the late 70's, the view on speech acts and, especially,

perlocutionary acts and effects began to change and some researchers suggested that the perlocutionary component ought to be given more attention, regardless of what the other researchers claimed or highlighted on a simultaneous basis.

4. The importance of perlocution

In 1979, Gaines, Davis, and Cohen appealed for the recognition of perlocutionary acts and effects and suggested a perlocutionary-oriented approach towards the study of speech acts and their subsequent effects. They reminded the academic community of the importance of the effects utterances have on the hearers as well as the impact of communicative situations on language users. They also claimed that illocution was an inseparable element of perlocution, and both were instrumentally related. Furthermore, uttering words always brings a perlocutionary goal, or simply intentions, and illocution seems to be the tool for executing particular perlocutionary goals. Davis (1979) also mentioned that illocutions have perlocutionary goals related on a conventional basis, i.e. generic perlocutionary purposes. Cohen (1979) introduced the notion of associated perlocutions, which meant particular effects assigned to specific illocutions. Finally, he added that every illocutionary act may generate numerous effects simultaneously, thus revealing the unconventional nature of perlocution. As a result, in the late 1970's the interest in perlocutionary acts and effects was revived.

A real breakthrough, however, came in the late 1990's when Post (1999a, 1999b, 1999c, 2001, 2013) offered a radical proposal for the study of the phenomenon of Perlocutionary Speech Act Theory. Post situated speech acts on the same level with perlocutionary acts and declared that they ought to be equated. Post (2013) abandoned the traditional relation of speech acts, *antecedent-consequent,* and introduced the idea of the *whole-part* relation. Furthermore, Post (2013) pinpointed that perlocutionary acts could be investigated in an empirical way by analysing the addressee's verbal and non-verbal reactions to the speaker's utterances. In other words, both perspectives, i.e. the hearer's and the listener's ought to be considered in order to get a clear picture of what the phenomenon means. Post (2011) also supported Krzeszowski's (1997) earlier view on the fact that perlocutionary acts could be axiologically measured and seem to be bearers of axiological charge. Furthermore, Post (1999b) introduced a taxonomy of perlocutionary expressions and attributed perlocutionary effects to the so-called perlocutionary forces. Finally, in 2001, Post suggested the concepts of intended and unintended perlocutionary acts as well as provided researchers with another, third type of perlocutionary acts, i.e. default perlocutionary acts.

The 1970's revival of interest in as well as Post's enormous contribution to the development of perlocutionary acts and effects led to particular conclusions and therefore advancements that seem to have brought a contemporary wave of interest and innovative research on the concept.

5. The emergence of verbal perlocutionary aptitude

In 2015, perlocutionary acts and effects began to be researched from a totally innovative point of view, on the verge of pragmatics and glottodidactics. The research concentrated on one's

individual skills necessary to manipulate and verbalise one's resources effectively in order to make the listener accept the presented, speaker's viewpoint, or simply give up a conversation and adopt the speaker's will. In other words, the research aimed at determining the role of individual differences, such as language anxiety, willingness to communicate, verbal aptitude, personality type, cognitive style, etc., to perform perlocutionary acts and elicit the target effects. Additionally, the research aimed at determining the profile of a verbally gifted language user in terms of eliciting perlocutionary effects.

As a result, the conducted set of experiments allowed to establish that perlocutionarily gifted language users do not feel anxious about speaking in any communicative situation, seem to be willing to communicate in every situation and tend to be grammatically and lexically sensitive. Furthermore, they properly adjust their language resources to manipulate and force listeners to accept their viewpoints, possess a high level of verbal aptitude and seem to be language-motivated and oriented.[1] The research brought numerous possibilities in the field of perlocutionary acts and effects as well as resulted in the introduction of the concept of *perlocutionary aptitude* in 2016 by Świątek.

The empirical investigation regarding the newly-introduced concept was then continued in order to develop its major assumptions, since numerous notions seemed to exert various degrees of influence on the investigated phenomenon, concentrating on the roles of non-verbal aspects of communication, axiology, and multiple intelligences in verbal perlocutionary giftedness. However, priority was given to the initial one, i.e. non-verbal means of communication.

6. The research

6.1. Aims

The study outlined in the presented paper aimed at defining the scope of non-verbal aspects of communication used by perlocutionarily gifted language users in order to support and increase the effectiveness and efficiency of their verbal communication. In other words, the research aimed at revealing the extent to which perlocutionarily gifted language users apply such elements as proxemics, oculesics, kinesics, posture, chronemics, vocalics, and sound symbols in order to dominate the target conversation and make the other participant feel uncomfortable and accept the speaker's viewpoint.

6.2. Methodology

In order to achieve the established goal, the research was entirely based on the qualitative approach. Therefore, for the purpose of the study, the following methods were made use of:

[1] A full description of a perlocutionarily gifted language user is available in Świątek, A. 2016. The role of individual differences in the verbal aptitude of advanced learners of English to perform perlocutionary acts. Wrocław: Wydawnictwo Wyższej Szkoły Filologicznej we Wrocławiu.

- the experiential method,
- the comparative method,
- the individual case analysis method.

The choice of methods was mainly dictated by the specific nature of the presented research. According to Pieter (1967), the experiential method allows to deal with individual participants of the target research and observe language users in a specific environment, for instance, when dealing with a whole-body experience, like investigating non-verbal aspects of communication. In other words, it is the method that allows to investigate perlocutionary skills when playing with a language in a live, face-to-face act of communication. When it comes to the comparative method, Williams (2007) claims that this approach allows to contrast individually and collectively-approached members of the target research. It also enables the researcher to identify the aspects responsible for one's success or failure in the proper experiment. This method is closely related to the individual case analysis method which, according to Hajduk (2001) and Williams (2007), is an essential part of every scientific experiment since it enables researchers to compare individual participants of the study in order to find the extent of individualism made use of in the research. It also allows to find the distinctive features of the participants of the study and come to innovative conclusions.

6.3. Participants

As far as the participants are concerned, 38 subjects took part in the study All of them were advanced learners of English representing the 3rd year of the Faculty of English Philology. The choice of the participants stems mainly from the fact that investigating verbal perlocutionary giftedness requires language users to implement multiple solutions and approaches when dealing with the target task and aiming at the final success. It is also worth mentioning that the study was almost entirely balanced between males and females, as there were 20 female and 18 male participants. Therefore, the rate of participants, based on a percentage share, was 53:47 for the female testees.

6.4. Procedure

For the purpose of this study, the author conducted a quantitative and qualitative analysis of the collected data. As a result, the study was divided into three separate stages, each of them having distinct goals and points to be put into practice. The initial stage focused on the investigation of individual differences of the participants in order to select perlocutionarily gifted language users, possessing more-than-average language skills and tendencies in terms of such elements as individual verbal aptitude, lexical and grammatical sensitivity, personality and cognitive style agreement, motivation to succeed, willingness to communicate, language orientation, risk-taking, anxiety, and, finally, the most important of all, perlocutionary skills from both the hearer's and the speaker's perspectives, together with the manipulation of felicity conditions. The participants were also asked to deal with a task on the selection of proper illocutions to realise particular perlocutionary acts. This stage was entirely based on an array of

professional questionnaires analysed in terms of the detailed scores (accurate numbers of points) achieved by the subjects. However, as far as the illocutionary questionnaire is concerned, the author analysed the subjects' answers in terms of the ability to select proper illocutions and therefore realise every single perlocution designed for the purpose of this study. Since each of the provided illocutions in particular questions contained different lexical and grammatical components as well as implied a completely different purpose, the subjects were not only required to reveal a particular level of lexical and grammatical knowledge but also pragmatic awareness necessary to maintain the illocutionary-perlocutionary agreement. Finally, when it comes to the perlocutionary questionnaires, the author analysed the subjects' answers in terms of the lexis, grammar, coherence, cohesion, or expressive devices that they had applied in order to break felicity conditions, elicit the intended perlocutionary effects and succeed in an act of communication. Therefore, the initial stage revealed that some of the participants, despite being advanced language learners, did not present the skills that would allow them to deal with the task designed for the final stage. This was mainly connected with the fact that some of the subjects did not provide answers regarding the target illocutions and left them incomplete. In other words, they found it too challenging to complete the task, while their knowledge of language components and linguistic concepts turned out to be insufficient. As a result, the second stage allowed the author of the research to reject 14 subjects (first-stage scores rated as low or average), who were therefore not promoted to the last, third stage. As far as the final stage is concerned, the remaining 24 subjects were asked to deal with a communicative situation aimed at reaching a particular set of goals. The subjects were asked to deal with a real-life situation and negotiate an array of points. The main goal of the participants was to behave naturally and try to do as much as possible to convince and make the listener adopt their viewpoints and solutions. Concomitantly, the researcher recorded videos[2] in order to analyse the situations presented by the participants. The videos aimed at reaching the main goal of the entire experiment, i.e. determine the scope to which perlocutionarily gifted language users apply non-verbal aspects of communication, such as proxemics, haptics, oculesics, etc., in order to support their acts of communication, look more convincing, overwhelm the listener, and make one adopt their viewpoints, even though the listeners did not intend to do so. However, in order to ensure reliability of the study, the final stage was also divided into two parts. In the initial one, the testees were asked to work in pairs and speak on a given topic to elicit the desired effects, whereas in the final one, they were asked to take part in a group discussion and talk about, nowadays regarded as sensitive topics, religion and politics. The choice of topics was also dictated by the fact that the sensitive approach easily provokes emotions and emotional instability. Therefore, students show much more willingness to defend their viewpoints and beliefs, which, in turn, elicits different behavioural aspects and tendencies. In consequence, the author conducted a thorough analysis of the recorded videos in order to reach numerous conclusions related to the non-verbal aspects that were most frequently applied by the participants of this study. In other words, when analysing non-verbal means of communication, video recordings allow researchers to observe how particular participants react and behave in

[2] The video materials were recorded in accordance with the existing legal regulations and the consent given by the participants of the study.

certain situations as well as what means of communication they make use of most frequently when attempting to defend their viewpoints in the case of a sudden influx of information from another language user. This also allows to observe what situations make them feel uncomfortable and how they tend to cope with communicative obstacles. Therefore, it is the qualitative analysis of video recordings that brings the most reliable conclusions when approaching this kind of research topic.

Altogether, the author managed to analyse the extent to which perlocutionarily gifted language users consciously apply various non-verbal means of communication in order to succeed in verbal interaction and therefore make the listener accept their viewpoint.

7. Results and discussion

Complex as the research was, investigating non-verbal communication brought numerous, valuable conclusions for the further study of perlocutionarily gifted language users. The research, as already mentioned in the paper, concentrated on the following aspects of non-verbal communication:

- proxemics (affecting the listener's personal space in terms of the distance between the speakers);
- oculesics (maintaining constant eye-contact with the listener and signalling unsatisfactory answers, disapproval, etc.);
- kinesics (using a variety of body language movements, such as shrugging shoulders, drumming fingers, scratching neck or head, using gestures and facial expressions, etc.);
- posture (maintaining the straight position of the body, i.e. no slouching, bending or applying nervous movements);
- chronemics (providing immediate answers and sustaining fluent exchange of information – no waiting or pausing);
- vocalics (applying varied intonation, pace and timbre when signalling emotions and various forms of behaviour);
- sound symbols (using no gap-fillers in order to sustain interaction, such as grunting, mumbling, etc.).

The results show that non-verbal aspects of communication seem to be an extensive part of human interaction and exert a great degree of influence on the other members of communicative acts if properly used. Moreover, they were especially applied by those testees who achieved higher scores in particular tests and questionnaires, i.e. on the first stage. That is why, for the purpose of this study, the author analysed the recorded videos carefully and collected data regarding various forms of behaviour applied by the subjects in particular moments of their conversations. This also allowed the researcher to enumerate the dominant features and, in the case of oculesics, calculate how much time a certain feature had been applied for.

As far as proxemics is concerned, the research showed that affecting the individual, personal space of non-dominating students allowed the dominating ones to be clearly in a superior position and force the listeners/receivers to accept even unwanted or undesired

viewpoints and solutions. Furthermore, the experiments revealed that the dominating students were more likely to make other people feel uncomfortable, usually by getting closer to them, but rather on a subconscious basis. However, when affecting one's personal space, no haptics was made use of in order to support or strengthen their impact on the receivers. Proxemics seemed to be an invaluable part of the communication of dominating students, and it seemed to be extensively used by them in a variety of ways, such as to distract or disorientate other members of the research and place themselves in the leading positions. It is also worth mentioning that limiting the listener's personal space allowed the conversational partner to control the course of action when exchanging information. This was possible to observe due to the fact that the other speaker began to reveal such nervous movements as tossing and turning as well as moving back and forth. However, the increased level of proxemics contributed not only to the use of the above-mentioned forms of behaviour but also influenced the recipient's vocalic aspects, signalled by the so-called falling intonation and much slower pace of speaking and therefore delivering further information. In other words, when making use of proxemics, the speaker violated the recipient's comfort zone and thus made them accept the unwanted viewpoint or agreement.

When it comes to oculesics, another factor investigated in the target research, maintaining eye-contact was the component closely related to proxemics since it usually concentrated on the same goal, i.e. making the other participant feel uncomfortable. In consequence, 21 subjects (out of 24 participating in the final stage of this research) found this feature much more significant and useful, which was concluded on the basis of the amount of time they maintained this feature in the target conversation. Due to the fact that the intended exchange of information (aimed at reaching a proper consensus) was supposed to take no more than 5 minutes, the author calculated that, on average, each subject maintained eye-contact for 3 minutes 11 seconds. However, there were eleven subjects who maintained eye-contact for almost the whole conversation, i.e. 4 minutes 27 seconds on average (their conversations lasted 4 minutes 48 seconds on average), which means that they found this feature enormously valuable in order to dominate their acts of communication and therefore reach the expected agreement. Constant eye-contact signals self-confidence and listeners are much more willing to accept someone else's viewpoint, even if it is contradictory to their individual views and beliefs. What is more, oculesics allowed the dominant participants to signal various attitudes through the use of eyebrow movement. Therefore, listeners felt often confused and surprised by their partners' reactions and were not keen on continuing the target information exchange. Significant as oculesics was, it was closely related to proxemics, which usually assisted that component.

Kinesics, which is based on various body language movements, was another widely applied aspect of non-verbal communication. The subjects made use of an abundance of various signals in order to inform the reader about their feelings or impressions, or simply to show disapproval or a lack of acceptance. Therefore, shrugging shoulders or drumming fingers were frequently used to disorientate or distract the listener; what is even more, the above-mentioned movements were also used to mislead the other participants. However, it must be stressed that that body language movements were rather naturalised and, thus, movements like scratching neck or head were used to signal numerous intentions, like misunderstanding, uncertainty, confusion, or even boredom. That is why the listener could easily get lost since one needed to

read the intended meaning skilfully in order to stay in a conversation and avoid getting lost. The speakers also applied head movements to show disapproval or even ignorance. Apart from that, facial expressions were extensively sued to express an array of emotions, such as seriousness, happiness, disagreement, etc.

When it comes to such elements as posture and chronemics, the former one refers to the way the dominant students maintain their body positions, whereas the latter one suggests whether students use breaks or pauses in order to gain time to think about possible responses or reactions, or even think about taking a different course of action to possibly succeed in a conversation. However, the dominant participants maintained the straight position of their bodies, with no slouching, bending or other nervous movements, mainly to show self-confidence and certainty of what they were doing. As far as chronemics is concerned, no waiting or pausing was made use of. Conversations were based on immediate answers, disallowing the other participants to think about their strategies. In other words, dominance aims at fluent exchange of information and accurate answers, with no time for hesitation.

Finally, vocalics and sound symbols ought to be considered. The research revealed that the majority of the subjects use varied intonation, either raised or lowered, in order to signal emotional states and the ways they feel at particular moments. Furthermore, varied pace and timbre are implemented, which means that the dominant participants use thinner or thicker voice in order to seem more natural. As regards sound symbols, grunting or mumbling, i.e. gap-fillers, were barely used in order to maintain communication by the leading members of communicative acts.

8. Conclusions

The presented research reveals that non-verbal communication is among the vital aspects of verbal perlocutionary giftedness and seems to be crucial when aiming at dominating a conversation and achieving the target goal, thus forcing the listener to accept even an undesired viewpoint or, simply due to a lack of resources to respond or defend individual suggestions and arguments. This argument leads to the fact that perlocutionarily gifted language users make extensive use of the non-verbal aspects of communication described in the previous section of this paper. As a result, extensive non-verbalism seems to be an indispensable and undisputable aspect of perlocutionary giftedness. The more effective a particular student reveals to be, the more skilfully one uses various aspects of non-verbal communication in order to overwhelm and disorientate the listener. Apart from that, perlocutionarily gifted language users know how to manipulate their resources, when and how to use them, or even modify to distract and confuse the listener in order to succeed and dominate a conversation.

The conducted experiments also suggest that perlocutionary giftedness aims at overwhelming listeners, who seem to get lost and confused when deciphering the speaker's intentions and reading multiple non-verbal aspects of communication. Furthermore, it takes too much time for them to decode numerous signals sent concomitantly, and they easily abandon their own objectives. This suggests that simple communicative acts are highly complex processes and require numerous skills and aspects combined together in order to succeed and dominate communication. However, only careful observers can notice the complexity and

scope of this phenomenon, which is highly relevant when considering verbal communication and why some members of various acts of communication are better at achieving their goals and forcing other language users to simply give up and accept someone else's point of view or opinion. Therefore, the fact that the non-verbal language generates as much as 55 per cent of the whole impact of communication seems to be greatly supported by tangible evidence.

9. Summary

The presented article constitutes an important piece of contribution to the development of the concept of verbal perlocutionary giftedness and its future evolution. The research shows that perlocutionary aptitude goes much beyond its underlying features, such as grammatical and lexical sensitivity, increased willingness to communicate, or skilful manipulation of language resources. Therefore, the concept seems to be enriched by such elements as complex non-verbalism of language communication, mainly through the use of such aspects as kinesics, oculesics, or proxemics. This confirms the fact that communication is endlessly complex and numerous factors have to be considered when approaching the topic of speaking skills and perlocutionary acts and effects, which are indispensable of that particular notion. However, the topic is still to be researched and developed, so further factors influencing verbal perlocutionary giftedness, such as the roles of axiology and multiple intelligences, are going to be described soon. Nevertheless, as each language teacher and researcher approaches and faces the presented topic on a daily basis, often unconsciously, the presented concept seems to be of primary importance for all members of language communities.

References

Austin, J. L. 1962. *How to do things with words*. Oxford: Clarendon Press.

Biedroń, A. 2011. Personality factors as predictors of foreign language aptitude. *Studies in Second Language Learning and Teaching* 1(4): 467–489. Słupsk: Wydawnictwo Naukowe Akademii Pomorskiej w Słupsku.

Brown, D. H. 2000. *Teaching by Principles: An Interactive Approach to Language Pedagogy*. New York: Pearson Education.

Campbell, P. N. 1973. A rhetorical view of locutionary, illocutionary, and perlocutionary acts. *Quarterly Journal of Speech* 59: 284–296.

Cap, P. 2010. Text, discourse, function: further ways into pragmatics. In B. Lewandowska-Tomaszczyk (ed.), *New Ways to Language*, 187–218. Łódź: Łódź University Press.

Carroll, J. B. 1962. *The prediction of success in intensive foreign language training*. Pittsburgh: University of Pittsburgh Press.

Cohen, T. 1979. Illocutions and perlocutions. *Foundations of Language* 9: 492–503.

Davis, S. 1979. Perlocutions. *Linguistics and Philosophy* 3: 225–243.

DeKeyser, R. M. 2007. *Practice in a Second Language. Perspectives from Applied Linguistics and Cognitive Psychology*. Cambridge: Cambridge University Press.

Dornyei, Z., and P. Skehan. 2003. Individual Differences in Second Language Learning. In C. J. Doughty, and M. H. Long (eds.), *The handbook of second language acquisition*, 589–630. Oxford: Blackwell.

Ellis, R. 1997. *Second Language Acquisition*. Oxford: Oxford University Press.

Gaines, R. 1979. Doing by saying: Toward a theory of perlocution. *The Quarterly Journal of Speech* 65: 207–217.

Hajduk, Z. 2001. *Ogólna metodologia nauk*. Lublin: Wydawnictwo Katolickiego Uniwersytetu Lubelskiego.

Huang, Y. 2014. *Pragmatics*. Oxford: Oxford University Press.

Kalisz, R. 1993. *Pragmatyka językowa*. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

Krzeszowski, T. P. 1997. *Angels and Devils in Hell. Elements of Axiology in Linguistics*. Warszawa: Wydawnictwo Energeia.

Leech, G. N. 1983. *Principles of Pragmatics*. London: Longman.

Levinson, S. C. 1980. Speech act theory: The state of the art. Language Teaching and linguistics: Abstracts, 5–24.

Marcu, D. 2000. Perlocutions: the Achilles' heel of speech act theory. *Journal of Pragmatics* 32: 1719–1741.

Osika, G. 2001. Teorie aktów mowy. *Zeszyty Naukowe Politechniki Śląskiej: Seria Organizacja i Zarządzanie* 6(1520): 1–22.

Osika, G. 2008. The communicative acts as action. Lingua ac Communitas. *Journal of philosophy, language and communication* 18: 35–44.

Pieter, J. 1967. *Ogólna metodologia pracy naukowej*. Zakład Narodowy im. Ossolińskich, Warszawa: Wydawnictwo Polskiej Akademii Nauk.

Plisiecka-Witczak, I. 2013. *From Speech Acts to Speech Actions*. Łódź: Łódź University Press.

Post, M. 1999a. Analysing the unanalyzable: perlocutionary acts and perlocutionary effects. In A. Ciuk (ed.), *Prof. Dr Gerhard Nickel's 70th Birthday. A Festschrift*, 27–38. Opole: Instytut Filologii Angielskiej, Uniwersytet Opolski.

Post, M. 1999b. Perlocutionary expressions. Their nature and acquisition. In M. Wysocka (ed.), *On Language Theory and Practice vol. II. Tom jubileuszowy dedykowany Profesorowi Januszowi Arabskiemu*, 101–109. Katowice: Wydawnictwo Uniwersytetu Śląskiego.

Post, M. 1999c. Towards a Framework for the Study of Perlocutionary Acts. *Linguistica Silesiana* 20: 19–30.

Post, M. 2001. Efekty i akty perlokucyjne. In W. Kubiński, and D. Stanulewicz (eds.), *Językoznawstwo kognitywne II*, 135–147. Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.

Post, M. 2011. Od aksjologii lingwistycznej do lingwistyki aksjologicznej [From linguistic axiology to axiological linguistics]. In Z. Wąsik, and M. Post (eds.). 2012. *Papers and Studies in Axiological Linguistics* 7: 35–46. Wrocław: Wydawnictwo Wyższej Szkoły Filologicznej we Wrocławiu.

Post, M. 2013. *Speech Acts and Speech Genres. An Axiological Linguistics Perspective*. Wrocław: Wydawnictwo Wyższej Szkoły Filologicznej we Wrocławiu.

Ross J. R. 1970. On declarative sentences. In R. A. Jacobs, and P. S. Rosenbaum (eds.), *1970: Readings in English Transformational Grammar*, 222–272. Waltham MA: Ginn and Company.

Sadock, J. M. 1974. *Toward a Linguistic Theory of Speech Acts*. New York: Academic Press.

Safar, A., and Kormos, J. 2008. Revisiting problems with foreign language aptitude. *International Review of Applied Linguistics in Language Teaching* 46(2): 113–136.

Searle, J. 1962. Meaning and Speech Acts. *Philosophical Review* 71(4): 423–432.

Searle, J. 1968. Austin on Locutionary and Illocutionary Acts. *Philosophical Review* 77(4): 405–424

Searle, J. 1969. *Speech Acts*. Cambridge: Cambridge University Press.

Searle, J. 1975. A Taxonomy of Illocutionary Acts. In K. Gunderson (ed.), *Language, Mind and Knowledge. Minnesota Studies in the Philosophy of Science VII*, 344–369. Minneapolis: University of Minnesota Press.

Searle, J. 1976. A classification of illocutionary acts. *Language in Society* 5(1): 1–23.

Searle, J. R., and D. Vanderveken. 1985. *Foundations of Illocutionary Logic*. Cambridge: Cambridge University Press.

Świątek, A. 2016. *The role of individual differences in the verbal aptitude of advanced learners of English to perform perlocutionary acts*. Wrocław: Wydawnictwo Wyższej Szkoły Filologicznej we Wrocławiu.

Vanderveken, D. 2002. Searle on meaning and action. In G. Grewendorf, and G. Meggle (eds.), *Speech acts, Mind and Social Reality Discussions with Searle, Studies in Linguistics and Philosophy*, 141–161. Dordrecht: Kluwer.

Williams, C. 2007. Research methods. *Journal of Business and Economic Research*, Colorado: Grand Canyon University Press 5(3): 65–72.

Zdunkiewicz, D. 1993. Akty mowy. In J. Bartmiński (ed.), E*ncyklopedia kultury polskiej XX wieku. Tom 2: Współczesny język polski*, 259–270. Wrocław: Wiedza o kulturze.

LingBaW *Linguistics Beyond And Within 5 (2019), 148-160*

Recalculating: The atlas of pragmatic parameters of developmental disorders

Anita Viszket, Alexandra Hoss, Eszter Kárpáti, Gábor Alberti
University of Pécs, Hungary

Abstract
The paper demonstrates how pragmatic features of certain developmental disorders, including Autism Spectrum Disorder, can be described in a formal pragmasemantic framework. We apply ℜeALIS, the pragmasemantic system (Alberti, Kleiber, Schnell, & Szabó 2016) which offers a formal representation for linguistically encoded speech acts and for the beliefs, desires and intentions that are present in the minds of potential interlocutors. It defines *worldlets* which include the BDI states of the speaker, as well as BDI states that the speaker assumes the hearer has, in an unlimited recursive pattern. The model is built upon the idea that the worldlets are organized in a system of multi-level tree-structures and are easily processable and accessible in communication for the intact human mind. In this formally defined system, the intensity of the different BDIs (e.g. strong/weak belief) belonging to the worldlets must be signaled by the interlocutors, using pragmatic tools. We found that pragmatic inaccuracy is detectable in ℜeALIS when it is related to inappropriate presentation of BDIs (e.g. inability to identify the illocutionary goals), poor reciprocity (e.g. ToM1 and ToM2 problems), impairment of coding/decoding (e.g. incorrect semantical and syntactical coding of the information structure) and insensitivity to intensity (e.g. the misuse of discourse markers). These symptoms can be present in any of the aforementioned disorders. Our "atlas" can illustrate that the so-called "pragmatic deficit" has a formally definable structure.

Keywords: BDI, pragmatics, developmental disorders, HFA, ToM

1. Aims

The paper discusses pragmasemantic phenomena associated with neurodevelopmental disorders. We aim at analyzing the many and diversified examples discussed in the relevant literature as communication problems, in a certain formal pragmasemantic framework – namely, ℜeALIS, – also providing their systematic description. This serves the purpose of illustrating that there is a formally definable structure behind communication disorders and pragmatic deficits. With a gradual sophistication of the system, our longer-term purpose is to help the diagnosis of the persons concerned and the intervention design for them.

Section 2 discusses the relationship between neurodevelopmental disorders and pragmatics. Section 3 is devoted to a brief presentation of the system of ℜeALIS. We do not aim

at providing entirely formal(ized) analyses; rather we sketch the logics of the system. Specific analyses are presented in Section 4. The analyses rest upon examples and cases discussed in the literature; what we do is including them in a new framework.

The first steps of a research project are summarized in the paper. We collected all the mentioned examples from three classical works (Howlin et al. 1998; Attwood 2007 and Peeters 1997) then we classified them into types according to the pragmatical problems. These types were then analyzed and illustrated. The re-analyses of the examples and cases we have selected have led us to the following conclusions. The usual practice of claiming that "there are problems concerning communication and/or mentalization behind these cases" is insufficient in itself. This practice could benefit from re-analyzing the given examples within a strictly formally defined system in order to reach such new questions as (i) and (ii). (i) Which are the sentence types the handling problems of whose intensional profiles are in the background of the particular cases? (ii) Exactly which controlling principle of everyday discourse is the person concerned not able to operate?

We are thus convinced that communication aspects of neurodevelopmental disorders should be recalculated according to stricter methodological principles and analyzed on the basis of formal definitions.

2. Neurodevelopmental disorders and pragmatics

2.1. Pragmatic involvement

We consider the following international systems used by experts in the definition and classification of neurodevelopmental disorders: Diagnostical Statistical Manual, DSM-5 (APA 2013), and The International Statistical Classification of Diseases and Related Health Problems, ICD (WHO 1992; WHO 2018). The neurodevelopmental disorders associated with pragmatic involvement which we are investigating are as follows:

- Intellectual Disabilities (Disorders of intellectual development),
- Communication Disorders (Developmental speech or language disorders, and within the latter, the currently introduced Social (Pragmatic) Communication Disorder),
- Autism Spectrum Disorder (ASD),
- Attention Deficit and/or Hyperactivity Disorder.

In this paper we have primarily chosen examples for analysis which come from highly functioning autistic persons. ASD can be characterized by a special neurodevelopmental pattern with respect to the complex system of social cognition and sociocommunicative abilities. It is a lifelong, dynamically changing neurocognitive developmental disorder currently diagnosed on the basis of behavioral symptoms, which is highly heterogeneous as regards both individuals and populations.

In the developmental disorders, some form of pragmatic involvement can be observed, in close connection with involvement of social behavior. In spite of the highly different behavioral phenotype and neuropsychological background – for instance, social isolation, typical of ASD,

or excessive sociability, typical of Williams syndrome – these problems are similar. Typical pragmatic problems in developmental disorders are (Cummings 2014):

- conversational/contextual irrelevance,
- conversational impairments,
- impairments of social use of language,
- mindblindness,
- impairment of understanding intended meaning,
- difficulties with integration, decoding and encoding of suprasegmental features, metacommunicative signals, and non-verbal communication
- poorer narrative competence,
- difficulties with presuppositions and inferences,
- excessive number of stereotyped phrases,
- difficulties with context (overdependence and/or insensitivity to contextual features),
- difficulties with the use of deictic expressions.

In developmental disorders, involvement of pragmatic competence may be of different degrees, the areas involved, as well as the difficulties that can be observed may also be diverse, but there is a high degree of overlapping. As for qualitative and quantitative differences, not only particular disorders may be dissimilar in both respects, but there is also immense variability within particular disorders.

Structural and connectional properties of the nervous system, due to biological and environmental factors, show extraordinary variation, which is also observable in development. The functioning of the nervous system in developmental disorders cannot simply be regarded as a halting of progress in infancy but it should rather be construed as a simultaneously qualitative and quantitative deviation from the characteristics of typical development.

2.2. Pragmatic approach

In pragmatic research, work on classical topics such as speech act theory, implicature, or communicative intentions is being extended with new research topics such as neuropragmatics. Under the umbrella of neuropragmatics, acquired disorders as well as developmental ones are inspected from a pragmatic point of view. Our research can be related to this type of approach, at least to a certain extent. We provide analyses of pragmatic difficulties observed in different developmental disorders in the framework of ℜeALIS but we do not intend to formulate reasons and explanations concerning the structure and physiology of the nervous system. In the course of modelling pragmatic competence, we are working on the creation of an atlas in the system that ℜeALIS offers, in which the pragmatic involvement of different developmental disorders is captured by means of a formal apparatus and localized in the formal system.

The pragmatic approach of our ℜeALIS framework is simultaneously pragmalinguistic and sociopragmatic (Leech 1983). On the one hand, the description of pragmatic competence rests upon interlocutors' minds, mental states, conventionalized language knowledge and abilities they have. On the other, however, the consideration of social context and reciprocity also plays a distinguished role in both the description and the success of communication.

3. ℜeALIS

3.1. Novelty

The acronym stands for *Reciprocal and Lifelong Interpretation System*. The approach primarily aims at formally capturing the pragmatic module of language without separating it from other modules. Partly due to language technological motivation, formal, computer-encodable analytical models have now been constructed for most language modules, namely, phonology, morphology, syntax and semantics (see Alberti & Kleiber 2010; Alberti & Nőthig 2015). Pragmatics, until just recently, was held to be an area where it is beyond hope to provide formal(ized) results, given the immense role that world knowledge and stylistic specialties play. Endeavors towards modelling pragmatic knowledge in a computer-encodable manner have recently been presented in the ℜeALIS framework (Szeteli, Alberti, Kleiber, & Dóla 2018); and in general it has belonged to the distinguished aims of the ℜeALIS approach to offer language-technologically functioning pragmasemantic models since Alberti and Kleiber (2010).

ℜeALIS defines a permanent and lifelong building information-structure by the mathematical definition technique of simultaneous recursion with a distinguished point of "birth". At this point there is no information, only some built-in knowledge about how information should be collected and how an information system can be built. The information is assumed to derive permanently, from the point of its "birth", from experiences we have in the world surrounding us – a crucial part of which is experiencing the utterances around us. That is why ℜeALIS models information acquisition in a lifelong manner.

As for reciprocity, referred to by the first two characters in ℜeALIS, our point of departure is that only one part of the information acquired pertains to states and events of the outer world. Most information pertains to other conceptualizers of the world, that is, other communicating agents. Besides including in a system their own BDI attitudes – *beliefs, desires, intentions*, known form mind theory (Baron-Cohen 1995) – agents in communication acquire and store information on each other's BDIs. Moreover, they align the content and the form of their utterances with what they assume that their listeners hypothesize, aspire, intend and assume them, the speakers, to hypothesize, aspire and intend. Reciprocal reflection of information is hypothesized in ℜeALIS, in a theoretically unbounded recursive manner. Compared to earlier systems, the innovation of this formal approach is that the global world model also contains mental states as recursively developing units: environment mirroring "prisms". This way ℜeALIS (see Alberti et al. 2016) makes possible the formal semantic capturing of what is intensively discussed in mind theory as *mentalization*. Those who use the ℜeALIS framework should be aware of the fact that this is not only a possibility but also an obligation: formulating hypotheses on the mind that operates communication should be associated with regarding as, and accounting for, the resulting system as a model of the human mind.

The last two characters in the acronym refer to the concept of an *interpretation system*. How ℜeALIS extends the traditional concept of formal, model-based interpretation is as follows. Not only the truth value of a sentence should be calculated, but a decision should also be made concerning the worlds – "worldlets" – against which the sentence to be interpreted

should be evaluated. In the on-going discourse, we open, define and alternate several worldlets, which are parallel to or built on each other. In these alternative worldlets, different events may be taking place, since one worldlet consists of "my" beliefs, another one of "your", the listener's, beliefs, whilst a third worldlet contains information on actions taking place in a novel which we are just discussing. In the course of communication, the truth of a given proposition will always be evaluated in the worldlets in which the grammatical and other linguistic cues used in the given sentence place the proposition.

We conclude the subsection by pinpointing what sets the ℜeALIS approach apart from others that also strive for the description of interlocutors' intentions, relative credence levels, and source-for-commitments roles: that is, purely cognitive approaches (e.g. Fauconnier 1994) and common-ground based (Stalnaker 2002) formal approaches (e.g. Farkas and Roelofsen 2017). As discourse situations are modeled in ℜeALIS in a way that interlocutors are represented as each-other-building lifelong discourse representation structures by the mathematical technique of *simultaneous recursion* (Alberti 2000), Maier's (2016:476) words on the scientific status of "cognitive DRT" precisely hold true for ℜeALIS: "What is often glossed over in such linguistic applications – even in many analyses of attitude ascriptions … – is Kamp's (1981) original motivation of reconciling Fregean formal semantics with a traditional, Lockean cognitive theory of communication in terms of speakers' and hearers' mental states. To this end, Kamp in his original presentations actually describes DRSs as representations of the mental state of the hearer, rather than of the more abstract notion of a Stalnakerian (e.g. Stalnaker 2002) common ground. What sets this cognitive conception of DRT apart from purely cognitive theories like Fauconnier's (1994) Mental Spaces, is that the DRS language has a precise syntax and model-theoretic interpretation. Hence, in addition to its cognitive interpretation, a DRS also represents the actual truth conditions of a sentence or discourse. Linguists have since stripped DRT of its cognitive interpretation. But Kamp and a few others have kept it alive, even extending DRT to a full-blown representational theory of attitudes…"

3.2. Pragmatic errors

In successful dialogues or discourses, interlocutors are assumed to perfectly apply all components of the formal system sketched above. Pragmatic errors or disorders can be regarded as stemming from the imperfect functioning of the components. By inspecting these components step by step, it can be taken into consideration what potential error types can be accounted for with the aid of the ℜeALIS structure.

A potential error type is when the speaker or the listener does not raise hypotheses as to beliefs, desires and/or intentions, or raises unsound ones. This type of error or deficiency may pertain to someone's own BDI system (e.g., the given person does not recognize or realize their own real beliefs) or to their partner's BDI. In this latter case, reciprocity is violated, which is a typical instance of problems with mentalization. It is also a logical possibility that the interlocutor is not able to build parallel worldlets, or they are not able to choose among them.

There may emerge less fundamental types of pragmatic error, either in everyday communication, or in the course of language acquisition. It is a logical possibility that the given

BDI-profiles are mutually recognized appropriately but their linguistic encoding does not succeed according to the relevant pragmatic rules. ℜeALIS defines the major sentences types (declarative, imperative, interrogative) by providing intensional profiles for the definitions. They decide how given sentence types can conventionally be associated with the speaker's and the listener's beliefs, desires and intentions, and "permissions"/authority concerning the information in question (who is able, authorized and/or in a position to obtain, or to distribute, certain pieces of information, or to carry out the action referred to in the given sentence).

Words such as *persze* 'sure', that is, morphological discourse markers, and special intonation patterns make possible an even more sophisticated fine-tuning. By these means certain elements of the basic BDI-profiles can be made more intensive/dominant or less intensive, or can even be completely overridden. ℜeALIS does not only encode the type of attitude but also the degree to which the listener is sure that the given attitude is there, or, say, to what extent, the listener is assumed to long for something or "be in the possession of" a piece of information. ℜeALIS as a formal system uses a scale for these degrees. Certain discourse markers can definitely be characterized by the pragmasemantic contribution that they are responsible for setting certain scale degrees. Due to space limitations, however, we are now not in a position to discuss in detail this "fine-tuning" pragmatic toolbox and to scrutinize the following straightforward conjecture: those who suffer from communication disorders cannot, or can only partially, have recourse to this useful apparatus.

The concerned group also experiences difficulties in doubling BDI-profiles (Oishi 2016), upon which our very fundamental human manifestations rest, such as telling huge lies, white lies, bluffing, behaving politely, or pretending being polite. Doubling BDI-profiles is required since in the course of the above-listed speech actions the interlocutor should keep a count of an alternative addresser-role profile parallel to their factual mental/information state. As a listener, one should also be prepared for situations in which what can be decoded as an addressee-role profile does not necessarily provide a true and fair view of the speaker's mental/information state. The straightforward "null hypothesis" in this area is that those suffering from communication disorders experience difficulties as listeners, too.

In the ℜeALIS approach, the chief aim is to formally account for the typical – "grammatical" as well as pragmatically well-formed – use of human language. However, parallel to this primary aim, it can also serve as an important test for the adequateness of the system, in its attempts to account for not yet fully fledged stages of the human mind, as well as mind structures that are not neurotypical.

The ℜeALIS theory will obviously benefit from these analyses. On the other hand, we are also convinced that the elegant formal-pragmasemantic descriptions potentially resulting from these investigations will also be useful to experts of first language acquisition and individual language development as well as those dealing with atypical patterns of pragmatic capacity.

4. Analyses of atypical utterances

The potential pragmatic errors taken into account in 3.2 are exemplified in this section in both typical and atypical individual language development. It is sketched how they can be analyzed

in the system of ℜeALIS. Due to space limitations, here we cannot provide entire formalized analyses. A certain amount of formalism and marking conventions, however, should inevitably be introduced in order to make sense why it is worth creating the atlas of pragmatic disorders in the ℜeALIS framework.

As sketched in Section 3, identification labels assigned to the attitudes included in the communicating interlocutors' mental states play a fundamental role in the ℜeALIS system. These label types encode, first of all, what the speaker/addresser, at least to a certain extent, knows or believes (iB), desires (iD), and is able to do / has authority over (iA). They also encode what the speaker assumes of the listener/addressee in the same respects (iBuB, iBuD, iBuA), that is, how they mentalize the other one. A scale $\langle -5, -4, -3, -2, -1, 0, +1, +2, +3, +4, +5\rangle$ is used to express what can be construed as some kind of relative truth value of the given eventuality (event or state). +5 refers to certain truth in the given worldlet (sure knowledge or maximal intensity of desire, intention or authority), −5 to certain falsity, 0 to entire uncertainty, whilst the further values express in-between probabilities *mutatis mutandis*.

Table 1: *Attitude wordlets constituting mental states in ℜeALIS*

Wordlet	**Declarative**	**Imperative**	**Yes/No question**
iB: iBuB	iB = +5; iB<u>uB</u> ∉ {−5,+5}	iB = −5 = iB<u>uB</u>	iB ∉ {−5,+5}; iB<u>uB</u> ∈ {−5,+5}
iD: iBuD	$\Sigma(\delta_i \cdot \underline{iD}uB+, \delta_u \cdot iB\underline{uD}uB+) > \ldots$	$\Sigma(\delta_i \cdot \underline{iD}, \delta_u \cdot iB\underline{uD}) > \ldots$	$\Sigma(\delta_i \cdot \underline{iD}iB+, \delta_u \cdot iB\underline{uD}iB+) > \ldots$
iA: iBuA	iA… ∈ {+1, …, +5}; iB<u>uA</u>… ∈ {+1,…, +5}; preferable relevant factor: rE = +5		
iIuI+	iIuI+<u>uB+</u> = +5	iI<u>uI+</u> = +5	iIuI+<u>iB+</u> = ∈ {−5, +5}

Legends: i (*I*): speaker; u (*you*): listener; B: belief; D: desire; I: intention; A: authority; E: experience; … rX+: (component of) outptut worldlet; <u>underlining</u>: numerically evaluated component

The table provides a reasonably simplified description of the intensional profiles of the three major sentence types in the "worldlet-label language" sketched above. We are presenting the essence informally, placing ourselves in the aspect of the speaker's ego. "As for the input knowledge in the case of uttering an eventuality e, the imperative profile can be opted for if I think (iB) so that it is (still) not true that e is taking place, which is a piece of knowledge I assume the listener, too, in the possession of (iBuB)." The declarative and interrogative profiles can be opted for if "I assume that the levels of knowledge the two of us have (iB, iBuB) are just the opposite. That is, I know the truth while you do not know, or *vice versa*." As for the D-dimension of desires, in the case of the imperative profile, the desire pertains to e itself ("I wish it took place"), whilst in the case of a declaration or a question, the desire pertains to output (post-utterance) epistemic stage of one of the interlocutors: "you should come to know e" (uB+) and "I should come to know whether e or not e" (iB+), respectively. The formulas with summation symbols express that "I assume the realization of e / the given information transfer to be in our interest, at least on the whole" (where individual interests in the sum can even be considered with weights). As the series of dots in the table show, this paper presents underspecified authority labels. These labels are responsible for the measuring of the individual interlocutors' authority over their corresponding subtasks in the realization of e / the given information transfer. In the two profiles concerning information transfer, the relevant factor of authority is whether the participant who is assumed to provide the relevant piece of information (r = i/u, depending on if a declaration or a question is considered) is in its position to so high

an extent that can only be ensured by sensory experience (rE). In the interrogative profile, the listener is minimally required to be in the possession of the truth value of e: iBuB∈ {−5,+5}.

Thus belief, desire and authority characteristics serve as input criteria for using the three major sentence types. Intention characteristics (iI), however, pertain to output, that is, post-utterance mental states: "I have had recourse to the given speech act in order to make you want (iIuI+…) to carry out e [in the imperative case] / to take part in the given information transfer [in the declarative and the interrogative cases]."

4.1. Difficulties with recognition and concealment of one's own beliefs, desires, intentions (iB, iD, iA, iI)

The first step of communication is for the speaker to align the propositional content e and the formal execution (e.g. sentence type) with their own beliefs (iB), desires (iD), intentions (iI). If the speaker is not able to recognize their own belief, desire or intention, they obviously cannot communicate them appropriately. This phenomenon can be observed in everyday life in certain developmental periods of infants: when, for instance, the infant cannot recognize the tension caused by hunger, thirst or tiredness as the corresponding desire but, instead of expressing it, their reaction is a tantrum. It is a similar phenomenon in ASD when the person is unable to identify the source of tension and behaves in a way that is difficult for outsiders to understand. It is also typical that authority is assessed erroneously: for instance, the person concerned transfers a piece of information the distribution of which has not been permitted.

We could not identify any disorder concerning the recognition of own intention (iI) in either typical development of infants or atypical development (NB: difficulties with the *communication*, and not the recognition, of intentions can often be observed, see 4.4). This has led us to the hypothetical conclusion that, of the BDAI quadruple, intention has an attitude with a distinguished role. A plausible explanation for this is that intention is the *central* component of intensional profiles defining the pragmasemantic content of speech acts: the intentional attitude serves as the *action* component itself in the speech action, with the other attitudes types serving only as preconditions. It is the intentional component that pertains to the modification of the listener's mental state (…uI+…) with the purpose of creating a definite post-utterance "output" mental state.

4.2. Misunderstanding communication partners' BDAI characteristics

The present subsection deals with first-order mentalization. First-order mentalization is the recognition of a communication partner's mental state, which plays a crucial role in cooperative reciprocal communication. By continuously monitoring the partner, their background knowledge (uB, see example [1]) should be revealed, their desires (uD, see [2]) should be inferred, and their authority (i.e. their relevant capacities, uA, see [3])) should be assessed, in order to find the adequate language behavior in the course of the permanent dynamic context-dependent process of meaning construction. The first question is whether the speaker is aware of the fact that this task of mentalization forms an integral part of communication. In other

words, it is to be inspected whether they are interested in the partner's knowledge, beliefs, desires, entitlements at all, or whether they know that the partner is likely to have a different BDA-profile.

In the case of typically developing children, the functioning of this capacity for mentalization is essentially automatic and without effort in the ages of 4-5, but quite often even three-year-olds can be good at first-order mentalization. The classic test situations are the different first-order mind-theoretical tasks, which most children at these ages manage to solve. It is also noteworthy, however, that tasks concerning different mental states can be difficult to different extents, so there can be observed age-dependent differences in the acquisition of attributing desires, beliefs and knowledge to the communication partner (Wellman & Liu 2004). It is true that in ℜeALIS beliefs and knowledge belong to the same B-dimension (iBuB); nevertheless, they are differentiated based on the intensity scale, referred to in Table 1. Children are thus hypothesized to gradually acquire the attribution of both attitudes and the associated intensity degrees.

The explanations of the behavioral symptom patterns which are characteristic of autism spectrum disorders are still essentially based on cognitive psychological, cognitive causal models. One of the main explanatory factors in these models is "naïve Theory of Mind deficit" hypothesis (Baron-Cohen, S. et al. 1985). There are, however, several research results suggesting that the "Theory of Mind deficit" is not exclusive and there are even counter-examples (Pellicano 2011). As pointed out in Alberti et al. (2016), due to mathematical concepts such as iso- and homomorphism, ℜeALIS can capture the fact that, relative to the fully fledged worldlet structure in the neurotypical mind, in atypical mind types there are alternative structures reduced to numerous different extents.

In examples [1-3] below, first-order mentalization errors are considered, based on the relevant literature.

Example [1]: *disorder in dimension iBuB, when the speaker erroneously assesses the listener's background knowledge* (Howlin, Baron-Cohen, & Hadwin 1998). A young man with good intellectual capacity, living with autism was reported to be unable to understand that the experiences he gained as an eyewitness to an event were not necessarily in the possession of others as their own experiences. He could not comprehend that his experiences were different from others'. Therefore, he would often refer to events without sharing relevant background information with his colleagues, who, as a result, could not calculate and assess the foundations of his argumentation.

Example [2]: *disorder in dimension iBuD, when the speaker erroneously assesses the listener's desire* (Howlin et al. 1998). A schoolboy was reported to annoy his mates and teachers with long and boring monologues about the technical details of his favorite car or bridge. He was only ready to speak to anyone about these topics. He could not realize that others did not share his enthusiasm about these matters.

Example [3]: *disorder in dimension iBuA, when the speaker erroneously assesses the listener's authority* (Peeters 1997). A child who had noticed a crack in a wall was reported to ask such complicated questions about the phenomenon that even an engineer would have found difficult to answer.

The corresponding literature makes no mention of any misunderstanding of the communication partner provided that they have made their intentions appropriately clear, using the corresponding intensional profile by opting for the adequate sentence type.

Example [4]: *a potential disorder in dimension iBuI, when one does not seem to realize their partner's intention* (Attwood 2007, p. 216). *"Can you count to ten?"* – this question serves as the point of departure for the description of the case to be discussed. The concerned child was reported to give the abrupt answer "Yes" to the question. The answer in the dialogue is held to exemplify a difficulty with communication typical in ASD. Based on Table 1, however, our stance is that the child who gave the answer in question had no difficulty recognizing the speaker's intention. Now the relevant eventuality is: e = [you are able to count to ten], and the worldlet against which this e should be interpreted is as follows: iIuI+iB+. Informally: "I want you to want me to learn whether e is true (where e happens to concern your counting skills)." A "yes" as an answer to the question *does* reveal the answerer's recognition of the partner's aforementioned intention. 4.4 is devoted to the discussion of the aspect in which the child's reaction may qualify as insufficient even in the ℜeALIS atlas.

4.3. Alternating between worldlets

As mentioned above, in the ℜeALIS terminology, the attitudes constituting mental states are represented as finite substructures of Montague-style possible worlds, referred to as *worldlets* in the ℜeALIS terminology. When desires or beliefs are interchanged with reality-based knowledge, it is to be regarded as difficulty in the handling of worldlets. This is typical of small children, even those that can be characterized by neurotypical development, and also of people who are unable to follow the changes in narrative structures.

4.4. Major sentence types

In contrast to the cases discussed in 4.1, in cases where the speaker has no difficulty being aware of their own BDAI-profile, as in case [4], it might still cause them a problem to encode the message appropriately, or to conceal it (by having recourse to telling lies or bluffing). With this, let us now return to [4] in order to account for the case as an encoding problem.

Let us start with a parallel example. During a job interview, one may be asked if they are familiar with spreadsheet programs. Obviously, the adequate answer does not entail opening a computer to prove one's proficiency. The interviewer, however, would also sense that there is something missing if the answer were a laconic "yes". It is expected in these cases that the interviewee should verify the truth of their answer, that is, their proficiency. It might be an adequate answer to say "I have a certificate of my proficiency in this area," which can be completed as follows: "Do you perhaps need a copy?" This way the answerer would meet the essentially Gricean principle of "provide the maximum amount of information."

The child in [4] failed to meet this principle of information maximization so in this sense he encoded his message inadequately. ℜeALIS accounts for this observation as follows. In Table 1, the underspecified label evaluation [rE = +5] within the Authority-dimension should be

specified so that a piece of information counts as the most credible, and hence most valuable, if it rests upon sensorial experiences (E). By the child factually counting to ten, the communication partner will experience (uE+ = +5) that the child is able to count to ten so they will reach the state that can be characterized by the equation [uI+ = +5]. A laconic "yes" leads to a tension between what the partner can decode as an *addressee*, which is [uI+ = +5], and what they can consider to be certain as a careful *listener* (Oishi 2016). Overall, the laconic answer does not indicate a mentalization disorder concerning intention but should qualify as difficulty in optimally conforming to the given intensional profile.

Let us now consider a case discussed in Howlin et al. (1998): a ten-year-old who lives with autism is reported to have serious difficulties making friends. According to the description, the child was clearly aware of both his own intention and the partner's desire to not make friends with him. What he was not able to do is linguistically encode, according to the conventionalized conversational rules, his intention and his frustration over being refused. Making friends is a culturally determined ritual, the acquisition of which belongs to a child's socialization. In our culture, friend making is not immediately taught but in the course of social interaction, children can acquire it. At first, these are ungainly and unsuccessful attempts. It is in the course of these attempts that children gradually turn to practiced friend makers. The acquisition of friend making obviously requires the thorough observation of the partners' interactions, including the monitoring of even the tiniest details of permanently changing intensional profiles, as well as the Oishian differentiation between the addresser role and the speaker's factual mental state. It is also presumable that the lack of the ability of emphasizing the essence also creates difficulties with (the acquisition of) friend making. As a consequence, the concerned persons will not succeed in the acquisition of the relevant communication panels, which can be qualified as a failure in encoding the intensional profiles to be applied in communication situations.

Our last comment concerns a variant of [4], again, in which the conditional mood would be used in the given question: "Could you count to ten?" In this formulation, the question has turned to similar to classic ones such as "Could you pass me the salt?" and "Could you tell me the time?" These are (polite) instructions, and answering "yes" is indeed not acceptable but an instance of not comprehending what the partner's intention is. In this case, the adequate reaction to the first utterance is counting to ten. The (seemingly slight) difference between this case and the original version of [4] can be accounted for in the ℜeALIS framework as follows. The "Could you…?" version does not provide a compositionally calculable realistic interpretation. Who intends to associate a realistic meaning with the utterance, should have recourse, again, to the Oishian differentiation between the addresser role and the speaker's factual mental state. Without going into details, we claim that some kind of rebuilding of the meaning components will give us the imperative intensional profile as belonging to the speaker's factual mental state (see Table 1). We also hypothesize that countenance and intonation also help with arriving at the imperative reading. We argue that in language, the role of different forms associated with essentially the same intensional profile is to furnish speakers with alternatives that are (im)polite to different degrees.

5. Conclusions

On the one hand, the investigation of the pragmatic aspect of atypical neurodevelopment has proved to help the developers of the dynamic interpretation system ℜeALIS in checking, verifying and improving its formal-linguistic toolbox. The introduction of the E-dimension in the ℜeALIS "attitude-language" ("experiences" / sensory authentication), for instance, has been supported by the neurodevelopmental analyses discussed in the paper. On the other hand, our linguistic approach has helped in differentiating Intention (as a central attitude in speech acts) from other attitudes: in the examples concerning self- and first-order mentalization discussed in the literature of atypical neurodevelopment, the aspects that are reported not to function well are related to beliefs, desires, authority, but not intention. We could also point out that certain pragmatic errors attributed to a mentalization problem should rather be attributed to a difficulties in linguistic encoding. We have intended to convince the reader that ℜeALIS makes possible a better understanding of the complex conglomerate of pragmatic/communication/ mentalization features which may "go wrong" in atypical neurodevelopment. Table 2, a simplified version of Table 1, summarizes these features, and classifies them according to the error types revealed in the paper.

Table 2: *Towards an atlas of pragmatic errors in ℜeALIS*

Wordlet		**Declarative**		**Interrogative**		**Yes/No question**	
iB	iBuB	iB = +5	iBuB ∉ {−5, +5}	iB = −5	iBuB = −5	iB ∉ {−5,+5}	iBuB ∈ {−5,+5}
iD	iBuD	$\Sigma(\delta_i \cdot$iDuB+, $\delta_u \cdot$iBuDuB+$) > \ldots$		$\Sigma(\delta_i \cdot$iD, $\delta_u \cdot$iBuD$) > \ldots$		$\Sigma(\delta_i \cdot$iDiB+, $\delta_u \cdot$iBuDiB+$) > \ldots$	
iA	iBuA	iA…∈ {+1,…,+5}; iBuA… ∈ {+1,…, +5}; preferable relevant factor: rE = +5					
iIuI+		iIuI+uB+ = +5		iIuI+ = +5		iIuI+iB+ = ∈ {−5, +5}	

The phenomena analyzed in Section 4 cannot be accounted for by referring to difficulties being aware of one's own beliefs, desires or intentions (see the uncolored cells). Being aware of the limits of authority, however, is a problematic area in atypical neurodevelopment (pink cells). Narrative changes between one's own beliefs and desires may also cause difficulties (yellow). Blue color refers to pragmatic errors pertaining to first-order mentalization. No cells are blue in the I-dimension, because the re-analyses of certain classic cases from the literature have led us to the conclusion that intension is so central a factor in intensional profiles that even neuro-atypical persons are able to recognize both their own and their partners' intentions – at least if the given intention is literally expressed. It belongs to our future plans to research into the effect of non-literal linguistic expressions and the "fine-tuning" toolbox of discourse markers.

Overall, the paper has presented a "pilot study", with the purpose of convincing the reader that the linguistic aspects of both typical and atypical neurodevelopment of infants and children are worth examining more meticulously from the point of pragmatic disorders than it has been assumed so far. We have argued for the application of a representationalist formal dynamic interpretation system (offering an immediate representation of the mind) called ℜeALIS in the process of differentiating between factors of first-order mentalization and metacognition, linguistic encoding and decoding, and different communication skills. A particular area of research that lends itself to use in the ℜeALIS context is conducting comparative research into

pragmatic difficulties in neuro-atypical development, focusing on the major *versus* the minor sentence types – given that the intensional profiles of the minor sentence types *ab ovo* do not contain mentalization factors.

References

American Psychiatric Association. 1994. *Diagnostic and statistical manual of mental disorders: DSM-IV* (4th ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. 2013. *Diagnostic and statistical manual of mental disorders: DSM-5* (5th ed.). Washington, DC: American Psychiatric Association.

Alberti, G. 2000. Lifelong discourse representation structures. *Gothenburg Papers in Computational Linguistics* 5: 13–20.

Alberti, G., and J. Kleiber. 2010. The Grammar of ℜeALIS and the Implementation of its Dynamic Interpretation. *Informatica (Slovenia)* 34(2): 103–110.

Alberti, G., Kleiber, J., Schnell, Zs., and V. Szabó. 2016. Intensional profiles and different kinds of human minds: "Case studies" about Hungarian imperative-like sentence types. *LingBAW* 2: 6–26.

Alberti, G., and L. Nőthig. 2015. ℜeALIS2.1: The Implementation of Generalized Intensional Truth Evaluation and Expositive Speech Acts in On-Going Discourse. *International Journal on Advances in Intelligent Systems* 8(1&2): 85–106.

Attwood, T. 2007. *The Complete Guide to Asperger's Syndrome*. London: Jessica Kingsley Publisher.

Baron-Cohen, S., Leslie, A., and U. Frith. 1985. Does the autistic child have a "theory of mind"? *Cognition* 21: 37–46.

Baron-Cohen, S. 1995. *Mindblindness*: *An Essay on Autism and Theory of Mind*. Cambridge, MA: MIT Press.

Cummings, L. 2014. *Pragmatic Disorders*. Perspectives in Pragmatics, Philosophy & Psychology 3. London: Springer.

Farkas, D., and F. Roelofsen. 2017. Division of labor in the interpretation of declaratives and interrogatives. *Journal of Semantics* 34(2): 237–289.

Fauconnier, G. 1994. *Mental Spaces: Aspects of Meaning Construction in Natural Language.* Cambridge: CUP.

Howlin, P., Baron-Cohen, S., and J. Hadwin. 1998. *Teaching children with autism to mind-read. A practical guide for teachers and parents*. Chichester: Wiley.

Kamp, H. 1981. A theory of truth and semantic representation. In J. Groenendijk, Th. Janssen, and M. Stokhof (eds.), *Formal Methods in the Study of Language*, 277–322. Amsterdam: Mathematical Centre Tracts.

Leech, G. N. 1983. *Principles of Pragmatics*. London: Longman.

Maier, E. 2016. Attitudes and mental files in DRT. *Rev. of Phil. Psychology* 7: 473–490.

Oishi, E. 2016. Austin's Speech Acts and Mey's Pragmemes. In K. Allan, A. Capone and I. Kecskes (eds.), *Pragmemes and Theories of Language Use. Perspectives in Pragmatics, Philosophy & Psychology* 9, 335–350. Switzerland: Springer.

Peeters, T. 1997. *Autism. From Theoretical Understanding to Educational Intervention*. London: Singular.

Pellicano, E. 2011. Psychological models of autism: an overview. In I. Roth and P. Rezaie (eds.), *Researching the Autism Spectrum,* 219–265. Cambridge: CUP.

Stalnaker, R. 2002. Common ground. *Linguistics and Philosophy* 25: 701–721.

Szeteli, A., Alberti, G., Kleiber, J., and M. Dóla. 2018. The World is Built with our Words to Each Other. In V. Vincze (ed.), *MSzNy-XIV,* 78–88. Szeged: SzTE.

Wellman, H. M., and D. Liu. 2004. Scaling of Theory-of-Mind Tasks. *Child Development* 75: 523–541.

World Health Organization. 1993. *The ISD-10 Classification of Mental and Behavioural Disorders: Diagnostic Criteria for Research* (10th Revision). Genova: World Health Organization.

World Health Organization. 2018. *International Statistical Classification of Diseases* (11th Revision). Retrieved from https://icd.who.int.

LingBaW *Linguistics Beyond And Within 5 (2019), 161-192*

Review of *Various Dimensions of Contrastive Studies* by Bożena Cetnarowska, Marcin Kuczok and Marcin Zabawa (eds.), Katowice: Wydawnictwo Uniwersytetu Śląskiego, 2016

Ewelina Mokrosz and Sławomir Zdziebko
John Paul II Catholic University of Lublin, Poland

Abstract
The paper constitutes a review of a collection of articles entitled 'Various Dimensions of Contrastive Studies' published by Wydawnictwo Uniwersytetu Śląskiego in 2016 under the editorship of Bożena Cetnarowska, Marcin Kuczok and Marcin Zabawa. Each section of the review contains a critical evaluation of one paper found in the volume. We conclude that although the volume could benefit from more direct discussion pertaining to the methodology of contrastive studies, each of the articles constitutes a significant contribution to its particular domain and is worth-recommending to the reader who desires to keep track of the developments within different areas of the study of language.

Keywords: contrastive studies, language variation, parameters, vocabulary, discourse studies

1. Introduction

As much as one might agree with Knight's (2016: 14) contention accompanying his discussion of the Chomskyian views on the origin of language that 'what other people call "language" – the constellation of shared understandings known as, say, "French" or "Swahili" – does not exist…', most linguists, now and in the past, would also agree that if a given theory of language is to be complete, it must be informed by data from as many systems as possible. Hence, philological studies were decidedly comparative at their very heart for the better part of the 19th and much of the 20th century. That comparative linguistic studies have not lost their raison d'être and their appeal in the first decades of the 21st century has been emphasised by the authors of the volume entitled 'Various Dimensions of Contrastive Studies' published by Wydawnictwo Uniwersytetu Śląskiego in 2016. The common denominator for most of the papers compiled under the editorship of Bożena Cetnarowska, Marcin Kuczok and Marcin Zabawa is that the conclusions about the validity of the tested hypotheses they reach are based on a comparison of

data from more than one linguistic system. The aim of this review is to evaluate each article in the volume from the point of view of its contribution to the respective area of philological studies it pertains to, but also from the point of view of its contribution to philology as an essentially comparative discipline.

Similarly to the editors of the volume, we have decided to arrange the body of the review into three major sections. In Section 2 we take a closer look at the papers found in the part of the volume entitled 'Contrastive Studies of Language Structures'. Section 3 focuses on part 2 of the volume: 'Contrastive Studies of Words and their Meanings'. Section 4 evaluates the contributions found in part 3: 'Contrastive Linguistics beyond Language Forms'. Section 5 offers a general evaluation and concluding remarks.

2. Contrastive studies of language structures

The first part of the book is concerned with strictly formal aspects of linguistic research and concentrates on the cross-linguistic differences that may be captured and modelled by formal generative frameworks. The contributions by Anna Bloch-Rozmej and Artur Kijak focus on the differences attested in the phonological systems of different Germanic languages. The chapters by Maria Bloch-Trojnar, Bożena Cetnarowska and Anna Malicka-Kleparska revolve around various aspects of the morpho-syntax of languages such as Irish, English, Polish Russian and Old Church Slavonic. The contribution by Bożena Rozwadowska and Ángel Jiménez-Fernández discusses the Information Structure of Dative Experiencer constructions in Spanish, English and Polish. Finally, the contribution by Konrad Szcześniak is a comparison of the analytical possibilities of two formal frameworks: the derivational generative framework and the mono-stratal declarative Construction Grammar.

2.1. Domain structure conditions in Vilamovian and English

Anna Bloch-Rozmej's contribution employs the framework of Principles and Parameters to compare the phonotactics of two West Germanic languages: English and Vilamovian. The latter is a geographically isolated dialect of Germanic related to Frisian and spoken in the city of Wilamowice in Southern Poland (close to the city of Bielsko Biała). The version of the Principles and Parameters assumed by the author, Government Phonology (Kaye, Lowenstamm and Vergnaud 1990; Harris 1994; Bloch-Rozmej 2008), is a framework designed to account for the distribution of linguistically relevant information within the speech signal, or, more precisely, within phonological domains (typically corresponding to words). There are three types of constituents that form such domains: onsets, rhymes and nuclei. Each such constituent may be, at most, binary branching.

As a version of Principles and Parameters, Government Phonology is naturally designed to account for the cross-linguistic differences in phonotactics. The complexity of constituents boils down to a limited set of binary choices: a language may or may not allow its onsets, nuclei and rhymes to branch.

If a language allows its onsets to branch, it contains clusters of rising sonority such as /tr/, /pr/, /kl/, etc. The positive setting on the branching nuclei parameter allows a language to contrast short vowels (non-branching nuclei) with long vowels (branching nuclei). A language that allows branching rhymes possesses coda-onset clusters of falling sonority such as /rt/, /lp/, /nd/, etc. In addition, a language may or may not allow its final nuclei to remain unpronounced[1] and may or may not allow the unpronounced or empty nuclei to license consonantal clusters.

In her comparative description the author concludes that English and Vilamovian differ only in that the latter, but not the former, allows its final unpronounced nuclei to license complex onsets and as a result possesses domains terminating in clusters of rising sonority, e.g. the word *engl* /engl/ 'angel'.

Since it is one of the first accounts of the phonotactics of Vilamovian, the chapter contains a unique contribution to West-Germanic dialectology. It also illustrates how the theory that assumes the existence of universal principles and parameters and language-specific parametric settings can be applied to systematically account for the similarities and differences between linguistic systems.

At the same time, as a contribution to a volume whose subject matter is the dimensions of contrastive studies, the chapter could contain more of a discussion about the nature of parameters and parametric settings. How are parametric settings decided at language acquisition? Are there inborn default parametric settings or are speakers born with the parameter settings unspecified? Are phonological parameters completely independent of each other or are they arranged in hierarchies of dependencies? The contribution of this chapter to the methodology of contrastive linguistic studies would be clearer if such issues had been addressed.

2.2. Sonorant expansion in English and German

There are two dimensions of contrast addressed in Artur Kijak's contribution. The first of them is a comparison of data from two different languages: English and German. The second one is a comparison of the properties of three different processes found in these languages: the formation of syllabic consonants, vowel syncope in English and vowel-zero alternations found in German.

The author focuses on the similarities between the three processes. All of them require the presence of sonorant consonants and the shwa vowel and all of them involve prosodically weak contexts.

The framework assumed by the author is the Strict CV version of Government Phonology (see Scheer 2004; Scheer and Zikova 2010). Unlike Standard Government Phonology, it assumes that constituents do not branch and that phonological domains are composed of sequences of onsets or C-positions and nuclei or V-positions. The choice of framework allows the author to provide a natural geometric account of the syllabicity of sonorants: in words such as English *sudden* /sʌd̩n/ or German *wetten* /vɛt̩n/ 'bet' the final sonorant occupies the final C-

[1] Each domain is assumed to terminate in a nucleus and each domain-final consonant is assumed to be syllabified in the onset.

position, spreads onto the preceding V-position and is allowed to function as a syllable nucleus. More importantly, such a spreading is possible only if the preceding vowel is a schwa. According to the author, this is due to the weakness of the schwa vowel. Whenever the sonorant annexes the preceding V-position, the schwa is not realized.

In addition, it is often the case that the word-final nasal spreads further to the left onto the preceding obstruent and acquires its place of articulation. This situation is very frequent in German, where citation forms such as *Wagen* /vɑːgən/ 'car' are typically pronounced as /vɑːgŋ/ etc. The property of sonorants to spread to the neighbouring positions is due to the influence of a prosodically weak positions (coda) where the sonorant has problems maintaining its own place of articulation. The situation is, however, different when vowel initial affixes are concatenated with the stem and the nasal is syllabified in the onset. In such a case neither syllabic consonant nor place assimilation are attested and *Wagner* 'carriage' is pronounced /vɑːknə/, with the vowel dropped and with Final Obstruent Devoicing. According to the author, the dropping of the schwa in forms such as *Wagner* /vɑːknə/ 'carriage' quite clearly resembles vowel syncope attested in English in words such as *chocolate* /tʃɒk(ə)lət/ or *separate* /sɛp(ə)rət/, in that the condition for vowel syncope in both cases is the presence of a sonorant followed by a pronounced vowel to the right of the alternation site.

This chapter focuses on the similarities between the application of the three processes in the two languages and hardly addresses the differences between them. Such differences clearly exist. For example, only English allows for the formation of syllabic consonants at the beginning of words. The words *until* may be realised as /ʌntɪl/, /əntɪl/ or /n̩tɪl/. On the other hand, the place assimilation between the nasal and preceding obstruent observed in forms such as *Wagen* /vɑːgŋ/ is much more frequent in German and definitely not attested in many speakers of standard English. Unfortunately, the reader does not learn from the chapter how such cross linguistic differences are modelled by the Strict CV framework. We may infer that formally, one would simply have to do with the absence of the spreading of sonorants in certain contexts. However, the question as to whether such an absence is merely an accidental 'absence of a rule', some specific parametric setting or whether it stems from some principled condition on the licensing of syllabic consonants remains unaddressed.

2.3. The semantics of aspect and nominalization in English and Irish

In her contribution Maria Bloch-Trojnar contrasts the Aktionsart properties of two cross-linguistically common varieties of nominals derived from verbs: verbal nouns, e.g. *running, describing*, and deverbal nouns, e.g. *a run*, *a description*, in English and Irish.

Both languages possess verbal and deverbal nouns. In terms of event structure and lexico-semantic verbal classification, verbal nominals are based on processual aspect-variable verbs (verbs that may be classified as either [+Perfective] or [–Perfective]). Deverbal nouns, on the other hand, are based on verbs that lack the process subevent and are aspectually [+Perfective]. In some cases, in Irish deverbal nouns may also be based on [–Perfective] verbs.

Another property that the verbal and deverbal nouns in the two languages share is that they preserve the Aktionsart (and event structure) properties of the base verbs. English verbal nouns

are non-count and usually express the unfolding, processual nature of the nominalised event. Alternatively, one could say that English verbal nouns present the event from the inside without recognising its boundaries. Deverbal nouns in English take an external perspective on the nominalised event with the inception, culmination and result of the event exposed. This is expected if the stems the deverbal nouns are based on are classified as [+Perfective]. As may be expected, deverbal nouns are normally count.

Irish verbal nouns reflect the durative character of the nominalised event by taking the unbounded perspective on the situation. This is not surprising once we know that they are typically based on imperfective verbs and that imperfective aspect in Irish is strictly connected to the unboundedness of an event. Deverbal nouns, on the other hand, usually denote bounded events, which are normally instantiated by punctual verbs in Irish. Deverbal nouns based on imperfective verbs typically denote bounded portions of homogenous or atelic eventualities.

This chapter, couched within the framework of Lexeme Morpheme Base Morphology (LMBM, Beard 1995; Beard and Volpe 2005; Bloch-Trojnar 2013), provides a very solid ground for the theoretical discussion which the author does not take full advantage of. In fact, LMBM predicts that the output of transposition preserves the Aktionsart properties of the verbal base. The theory assumes that the inner aspectual properties are defined by inherent lexico-semantic features such as [+/−Dynamic], [+/−Durative] and [+/−Consequent State], which, crucially, cannot be affected by the operation of transposition. Thus, a situation in which a verbal/deverbal noun would not preserve the properties of the verbal base would be surprising and problematic for the framework.

The second important theoretical point is the parallel drawn in the two languages between the outputs of certain verbal inflectional operations and the output of transposition. To be more precise, in English only processual verbs, but not those verbs which lack the process subevent, give rise to present participles.[2] Note that verbal nouns are also only derived from processual verbs. In Irish, the presence of the processual subevent is also a necessary condition for the formation of present participles and verbal nouns. The parallel between inflectional and derivational processes is all but surprising from the point of view of LMBM. The theory assumes a Unitary Grammatical Function Hypothesis (see Beard and Volpe 2005: 191) which says that the lexical derivational component of the grammar, as well as the syntactic inflectional component in a given language, operate on the same grammatical functions. The existence of the same constraints on certain derivational and inflectional operations is, therefore, to be expected.

In sum, the aspects of transposition in the two languages analysed in the chapter may be viewed as strong arguments in favour of the Morpheme-Lexeme Base Morphology architecture. A fact which could be more strongly highlighted and taken advantage of.

[2] Present participles are considered to be an inflectional category by the proponents of the LMBM approach.

2.4. Contrasting different morphosyntactic choices in English and Polish noun phrases

Bożena Cetnarowska's chapter discusses the patterns of modification of eventive nominals in Polish and English. To be more precise, this contribution compares the means by which the two languages introduce arguments of transitive and intransitive eventive nominals.

English introduces arguments of the relevant nouns by means of pre- and post-nominal genitive constructions, *by*-phases, relational adjectives, *N+N* compounds and locative prepositional adjuncts. Polish uses post-nominal genitives, relational adjectives and the Polish equivalent of *by*-phrases, i.e. *przez*-phrases. All these possibilities are summarized and exemplified in (1).

(1)		**English**	**Polish**
a.	Pre-nominal genitive	women's fight	n/a
b.	Post-nominal genitive	the fight of women	*sprzedaż* *samochod-u* sale.NOM.SG car-GEN.SG[3] 'the sale of the car'
c.	Relational adjectives	governmental attempts	*papiesk-a* *wizyt-a* papal-NOM.SG visit-NOM.SG 'papal visit'
d.	*by/przez*-phrases	the building of the great pyramids by the ancient Egyptians	*sprzedaż* *samochod-u* sale.NOM.SG car-GEN.SG *przez* *Jan-a* by John-GEN.SG 'the sale of the car by John'
e.	*N+N* compounds	student talking	n/a
f.	Locative prepositional phrases	the pope's visit to Cuba	n/a

Although Polish seems to allow fewer options, one should keep in mind that Polish relational adjectives may serve as either pre-modifiers or post-modifiers in noun phrases. Thus the phrase *wizyt-a papiesk-a* visit-NOM.SG papal-NOM.SG 'papal visit' is as acceptable as *papiesk-a wizyt-a* papal-NOM.SG visit-NOM.SG 'papal visit'. This is not the case in English where **attempts governmental* is not a well-formed NP.

In her chapter Cetnarowska undertakes a corpus study to determine which means of introducing arguments presented in (1) are preferred with the English nouns *arrival* and *visit*, as well as their rough Polish equivalents *przyjazd* and *wizyta*. She quotes data from the Corpus of Contemporary American English (COCA) as well as the National Corpus of Polish (NKJP) and Google.

When it comes to the nominal *arrival* based on the intransitive (unaccustaive) verb *arrive*, in COCA its sole argument is typically realised as the pre-head genitive in which case it refers to a specific animate entity (*the president's arrival*). The post-nominal *of*-genitive is much less frequent and typically dictated by the prosodic and informational weight of the argument (*the*

[3] The paper uses the following set of abbreviations in the glosses: A – adjective, ACC. – accusative, ADV. – adverb, DAT. – dative, DIM. – diminutive, GEN. – genitive, INF. – infinitive, INST. – instrumental, LOC. – Locative, N – noun, NOM. – nominative, PL. – plural, PTCP. – participle, SG. – singular, TH – thematic vowel.

arrival of the President Yeltsin of Russia). The realisation of the argument as an *N+N* compound is unattested, while the use of the relational adjective *presidential arrival* is confined to headlines and Tweeter feeds, where economy of expression is the general principle.

The nominal *visit* related to the transitive verb is expected to license two arguments. Cetnarowska's COCA study revealed that the internal argument of the noun *visit* is not introduced by a pre- or post-nominal genitive construction, but rather as an adjunct prepositional phrases (*the papal visit in Santiago*). The genitive constructions are reserved for the subject or external argument (*the pope's visit*, *the scheduled visit of the Pope John Paul II*). The latter is, again, less popular and restricted to 'heavy' NPs. Even less frequent is the use of *by*-phrases (*visit by Pope John Paul II*). The use of the relational adjective *papal* is common in more formal registers and written discourse.

The sole argument of the Polish nominal *przyjazd* 'arrival' is typically realised as the post-nominal genitive (*przyjazd prezydent-a* arrival.NOM.SG president-GEN.SG 'the arrival of the president'). Occasionally, one finds the subject realised by means of the relational adjective (*papiesk-i przyjazd* papal-NOM.SG arrival.NOM.SG 'papal arrival').

As noted by Cetnarowska (p. 81) the noun *wizyta* 'visit' is not a deverbal noun in Polish. The verb *wizytować* means rather 'to inspect' or 'to pay a formal visit' and *wizyta* is not in any sense a noun based on the transitive verb *wizytować*. Hence, its ability to license arguments might be called into question. In any case, the noun *wizyta* appears more to be an unergative nominal as it may be accompanied only by the nominal corresponding to the 'visiting entity'. The 'visited entity' is optionally realized as a PP headed by the locational preposition *w* 'in' (*wizyt-a papież-a w Polsc-e* visit-NOM.SG pope-GEN.SG in Poland-LOC.SG 'the Pope's visit in Poland'). It is, however, doubtful whether the nominal complement of the preposition *w* 'in' is the argument of the noun *wizyta*. More generally, the ability of prepositional phrases to introduce arguments of nominals in Polish can be called into question. In fact deverbal nominals whose arguments denote locations, such as *odwiedziny* 'visit', *wizytacja* 'inspection', *zwiedzanie* 'sightseeing', etc. do not introduce the said location arguments by means of prepositional phrases.

Although some studies (e.g. Rutkowski and Progovac 2015) point to the post-nominal position as the typical position for relational adjectives in Polish, Cetnarowska (p. 82) notes that the A+N order of the phrase *papiesk-a wizyt-a* papal-NOM.SG visit-NOM.SG 'papal visit' is much more common than the N+A order, i.e. *wizyt-a papiesk-a* visit-NOM.SG papal-NOM.SG 'papal visit' (84 vs. 47 hits in NKJP). Cetnarowska points to the animacy and topic-worthiness of the nominal base *papież* 'pope' as the factors contributing to the preference for the pre-nominal placement of the argumental adjective.

The general conclusion of Cetnarowska's chapter is that relational adjectives are a relatively popular option among other means of realising arguments of deverbal nominal. At the same time, they are visibly less preferred than genitive constructions. Interestingly, thematic relational adjectives are much more common with nominals based on transitive, rather than intransitive, verbs. They also seem confined to relatively formal contexts and written registers. Further research should focus on whether these generalisations reveal some more general grammatical or pragmatic principles or whether they are mere idiosyncratic properties of the nominals *arrival* and *visit* and their Polish equivalents.

2.5. Derivationally unrelated causatives and anticausatives in Slavic: A diachronic perspective from Old Church Slavonic to present day Russian and Polish

One of the main claims of Anna Malicka-Kleparska's chapter is that the widely held belief that causative and synthetic anticausative verbs are related derivationally (see Dowty 1979; Levin and Rapaport Hovav 1995; Koontz-Garboden 2009 among many others) does not find confirmation in the data from three Slavic languages: Old Church Slavonic (OCS), Russian and Polish. In fact, very many causative verbs in the three languages do not have corresponding synthetic anticausatives.[4] This clearly suggests that the two constructions are not related by a rule. At the same time, the status of some examples found in the chapter as causative verbs might be called into question. The definition of causative provided by the author on p. 88 is presented below:

> 'Causatives are such verbs which describe the situation in which the internal argument of the predication undergoes a change, the change being caused by the external argument of the predication'

In the light of this definition, it is hard to see how Polish verbs such as *wydębić* 'persuade somebody to give something' or *zaślubić* 'wed' are causatives. Note that the predicate *wydębić* takes the entity that is passed onto the agent as the internal argument (marked with the accusative), as in sentence (2) taken from the National Corpus of Polish. At the same time, the entity from which the direct object is obtained is introduced by a PP, typically headed by *od* 'from'.

(2) *Tylko jak wy-dęb-i-ć od nich t-e pieniąż-k-i?*
only how out-oak-TH-INF from them-GEN.PL this-ACC.PL.NVIR money-DIM-ACC.PL
'Only how can we persuade them to give (us) the money?'

It is hard to say that the money in sentence (2) undergoes any change, unless we mean the change of the possessor but in that case verbs such as *give*, *take*, *pass*, etc. and their Polish/Russian counterparts all should be treated as causatives.

In addition, it is important to note that Polish verbs such as *wydębić* 'persuade somebody to give something' or *zaślubić* 'wed' do not have corresponding synthetic or analytic anticausatives. This is only natural if they are not causatives at all. This being said, the vast majority of verbs enumerated in the chapter are indeed causatives which, as argued by the author, do not possess synthetic anticausative counterparts.

The author adopts a syntactic constructivist approach which does not require every causative verb to have a synthetic anticausative correspondent but, at the same time, accounts for the similarities in the lexical semantics of attested causative – anticausative verb pairs which share a single root.

Perhaps the most interesting claim made in the chapter concerns the realisation of the Active Voice head and the Non-active or Middle Voice head assumed to be found in anticausatives. The author makes a rather unorthodox proposal whereby the Active Voice, as well as the processual v-heads in OCS causative verbs, are spelled-out by means of the prefix.

[4] The existing gaps are filled by analytic reflexively-marked anticausatives which abound in the three languages.

Unlike in Polish and Russian, verbal prefixes were obligatory in OCS causative verbs. On the other hand, according to the author (pp. 92–93), prefixation was not obligatory and less frequent in OCS synthetic anticausatives. Due to this fact, the author postulates that in anticausatives prefixes realise only the processual v-heads. Under such an analysis the entries for any given prefix could be formulated as follows:

(3) a. $\{Voice_{[active]},v\} \leftrightarrow$ pref
b. $\{v\} \leftrightarrow$ pref

According to entry (3a) the Active Voice head and the v-head are realised as the prefix. According to (3b), only the v-head is realised by the prefix. The first entry realises causatives, whereas the latter realises anticausatives.

OCS, like all its Slavic descendants spoken nowadays, possessed a large number of prefixes whose distribution with particular verbs was largely unpredictable. Unfortunately, one does not learn from the chapter how the system decided which prefix was actually selected to realise the {Voice,v} set (or v in anticausatives) in particular verbs.

At first sight, the only possible option would be to enrich the entries in (3) to be able to refer to particular roots as their context. (4a) presents the relevant linearisation facts, while (4b) and (4c) contain suggested vocabulary items. '$\sqrt{ROOT_{1/2}}$' would actually stand for partially overlapping sets of roots. According to Malicka-Kleparska (pp. 92–93), the V-head is realised as the thematic elements in OCS.

(4) a. Voice + v + $\sqrt{ROOT}$ + V
b. $\{Voice_{[active]},v\} \leftrightarrow$ pref / __ $\sqrt{ROOT_1}$
c. $\{v\} \leftrightarrow$ pref / __ $\sqrt{ROOT_2}$

The analysis suggested above is not meant to be exhaustive and raises many questions, e.g. 'Why would the Voice + v complex be linearised to the left of the root?'. The most serious problem which renders the reference-to-the-root analysis insufficient (if not plain wrong) is the fact that, in Slavic, a single verbal stem, i.e. a complex of the root and thematic element, may be found with many different prefixes giving rise to different causative verbs, c.f. Polish *za-kończ-y-ć* behind-finish-TH-INF 'finish', *do-kończ-y-ć* to-finish-TH-INF 'finish off', *wy-kończ-y-ć* out-finish-TH-INF 'exhaust, kill'; *wz-dłuż-y-ć* with-long-TH-INF 'lengthen (a sound)', *prze-dłuż-y-ć* through-long-TH-INF 'prolong', *wy-dłuż-y-ć* out-long-TH-INF 'lengthen', etc. Clearly, in the numerous cases of such sets the reference to the root or the stem would not be sufficient to decide which prefix should be inserted.

2.6. A room with a view: the monostratal view with some room for derivations

Whereas Anna Malicka-Kleparska's chapter is a voice against derivational relationships between certain constructions coming from within the generative quarters, the chapter by Konrad Szcześniak is a balanced voice in favour of derivational relationships between constructions coming from a researcher known for his work within the Construction Grammar paradigm.

Construction Grammar (CxG) is a set of approaches to grammar which reject the dynamic derivational view of syntax characterised by Generative Linguistics and claim that grammatical constructions are basically stored as relationships between form and function, the latter encompassing aspects of meaning and usage.

Two principles of CxG that the author discusses are the idiosyncrasy of constructions and its strictly monostratal architecture. The former emphasises the arbitrariness of the relationship between the form and function of any given construction, while the latter postulates the rejection of any possible derivational link between even the most intuitively related grammatical constructions.

Szcześniak (p. 125) claims that the extent to which constructions are arbitrary and idiosyncratic has been exaggerated and that this state of affairs stems from the overzealous rejection of levels of derivation. The focus on the idiosyncratic and the playing down of the role of relationships between constructions led to the overlooking of the similarities between them and to the unnecessary complication of the model.

The first set of phenomena that the author uses to illustrate his point is the class of alternations found in English in which two elements of a sentence are allowed to swap places. These are the Ditransitive-Prepositional alternation (5a), the locative alternation (5b), the particle placement alternation (5c) as well as a number of miscellaneous word-order alternations (see e.g. 5d).

(5) a. Chloe sold Chase a book. *vs.* Chloe sold a book to Chase.
b. Pat loaded the wagon with the hay. *vs.* Pat loaded the hay onto the wagon.
c. throw out the garbage *vs.* throw the garbage out
d. Put all relishes on the table. *vs.* Put on the table all the relishes.

Under most analyses couched within the CxG and related frameworks each of the phrases presented in (5) would constitute a separate construction, i.e. a separate form-function association. This is based on the fact (never questioned by the proponents of transformational analyses) that each of them has its own usage, frequency and stylistic load.

According to Szcześniak, such an interpretation not only leads to the multiplication of constructions *ad infinitum*, burdening the long-term memory, but also misses the generalisation whereby once a speaker acquires one word-order pattern, they are able to correctly produce the alternative pattern.

In his discussion of the treatment of questions in CxG, the author points out that the proponents of the framework treat questions as a 'combination of constructions'. The very notion of 'combination of constructions' seems to be just another way of legitimising the need for dynamic processes within the grammar: the need that most proponents of CxG and related approaches would readily deny. Szcześniak also notes that treating declaratives and questions as unrelated surface-oriented constructions, each of which must be acquired by the speaker separately, does not allow for the explanation of the absence of the so-called *wanna*-contraction in sentences such as (6a), the classic explanation being the blocking of the contraction by the presence of the trace of *who* in between *want* and *to* (6b) (see Anderson and Lightfoot 2002).

(6) a. *Who do you wanna go?
b. Who$_i$ do you want t_i to go?

The third type of construction discussed in the chapter is the passives. While certain idiosyncratic properties of passives, especially so-called adjectival passives, might suggest that the derivational link between passive and active propositions is decidedly loose, Szcześniak notes that the CxG approach is incapable of capturing certain important generalisations concerning passives in Slavic languages. To be more precise, Slavic predicates that do not assign the accusative case do not form passives (see 7).[5]

(7) a. *Sędzi-a* *u-wierz-y-ł* *świadk-owi.*
judge-NOM.SG at-faith-TH-PTCP witness-DAT.SG
'The judge believed the witness'
b. **Świadek* *by-ł* *u-wierz-on-y.*
witness-NOM.SG be-PTCP at-faith-PTCP-NOM.SG
'The witness was believed'

Szcześniak notes that although the observed generalisation does not point to the passives being derived from the surface forms, the constraint clearly points to a link between the active and passive forms of the predicate, a link that the radical CxG philosophy cannot account for.

The author concludes by claiming that, although an architecture of grammar that relies too much on transformations is not a promising research perspective, a genuinely monostratal architecture in not one, either. He suggests a model which incorporates at least a limited number of, broadly understood, derivations that will make it possible to account for certain obvious affinities between constructions.

What is rather unclear to us is what particular implementation of Generative Grammar the author refers to when writing about 'Chomsky's model of grammar' (p. 122) or what authors he refers to when mentioning 'generative grammarians' (p. 129) and 'proponents of derivational link' (p. 132). Whereas Construction Grammar should be viewed as a reaction to the often unjustifiably lavish Government and Binding generative architecture of the 1980s, one has to keep in mind that Generative Grammar itself had its own response to it. The Minimalist Program of the 1990s and 2000s (Chomsky 1995, 2000, 2008) and its recent outgrowth, the Problems of Projection (Chomsky 2013), restrict the transformational apparatus to the operation Merge, which combines sets of elements to form larger sets.

Many pairs of constructions mentioned by the author, e.g. the Ditransitive-Prepositional alternation (5a), the locative alternation (5b), or the passive (especially adjectival passives, see Bruening 2014), are no longer considered to be traditional transformations. As discussed in the

[5] There are some exceptions to this generalisation. In Polish, verbs which assign the inherent Instrumental case, such as *zarządzać* 'govern, administer' (i), do form passives (see ii).

(i) *Marek* *dobrz-e* *zarządz-a* *majątki-em.*
Mark-NOM good-ADV administer-PRS.3.SG estate-INST.SG
'Marek administers the estate well.'

(ii) *Majątek* *jest* *dobrz-e* *zarządz-a-n-y* *przez* *Mark-a.*
estate.NOM.SG is good-ADV govern-TH.PTCP.NOM.SG by Mark-ACC.SG
'The estate is administered by Mark well.'

previous section, even seemingly basic argument structure alternations such as the causative-anticausative alternations are no longer regarded as transformational by many scholars. The syntactico-semantic affinities between the constructions that traditionally featured as members of 'alternations' are analysed as a function of the same elements or sets of elements (roots, causative Verb Phrases, transitive Voice Phrases) that the pairs of constructions may share.

At the same time, as far as we can see, the formation of wh-questions in languages such as English is still treated as involving movement (Internal Merge) by many scholars (a step that might be dictated by phenomena such as the restrictions on *wanna*-contraction mentioned above).

It may, therefore, be the case that the 'mixed architecture' model suggested by Szcześniak (p. 138) which incorporates idiosyncratic constructions and regular 'transformations' already exists in the form of the Minimalist Program. It, clearly, differs from the CxG and similar models in that it is not a usage-based model and it has still a modular architecture. Nevertheless, it definitely does justice to the semantico-pragmatic differences between members of alternating pairs such as the ones in (5), and at the same time captures the affinities between them.

2.7. The information structure of Dative Experiencer psych verbs

The discussion presented by Rozwadowska and Jiménez-Fernández revolves around psychological predicates in Polish, Spanish and English. Psychological predicates include Subject Experiencer verbs (SE), Object Experiencer (OE) verbs, and Dative Experiencer (DE) verbs. In particular, the authors focus on the discourse functions and syntactic positioning of the arguments of psych verbs. They argue that different Information Structure (IS) interpretations correspond to different word orderings. The claim itself does not seem to be novel, yet the authors draw an interesting distinction between English, Polish and Spanish with regard to the positioning of Dative Experiencers. DEs, according to the authors, do not target a single syntactic position and may value different sets of features.

The experiment in which the authors asked native speakers about their preferences of psych verbs shows that English speakers prefer answers with psych verbs that have an element carrying information focus to its right, i.e. sentence finally. In the case of all-focus sentences, both constructions, i.e. SE and OE constructions, were chosen as possible answers. It does show that IS influences the choice of the psych verb in English. As for Spanish, not all answers provided by the respondents comply with the generalisation made by the authors. For example, the chart in (36) shows that the majority of informants when asked about the Experiencer chose an option in which two answers were equally acceptable; one of them had an Experiencer at the end of the sentence and the other had a Stimulus at the end of the sentence. According to the proposed hypothesis, the answer with an Experiencer sentence-finally should be the most popular one. In fact, it was the least popular choice. The results of the experiment also contradict the authors' judgements presented in examples (14–16), which show that the most felicitous answer to the question about the Experiencer is the one with the Experiencer at the end of the sentence. Secondly, when it comes to all-focus sentences, the option with both constructions,

i.e. SE and OE constructions, being acceptable was not the most popular choice in contrast to the claims made in the article. The biggest percentage of informants showed a preference towards the Subject Experiencer construction. This exceptional behaviour is not mentioned in the article. As for Polish, some reservations concerning clarity could be raised. The examples presented in (26–28) differ from those used in the experiment and shown in (38–40). Only one of the two possible answers provided in (26) and (27) contains the same verb as the question, which could distort the results of the questionnaire. Speakers in their answers tend to use the same lexical verbs as in the questions they hear. The use of the same verb in questions and answers could produce biased results. The English and Spanish sets of answers contain lexical verbs different from the ones used in the questions. Apart from that, the results of the experiment conducted in Polish overlap with the results obtained for English but not for Spanish. Yet, the authors maintain that the three languages behave in the same way with regard to the choice of the psych predicates.

In Polish and Spanish sentences, DEs can be placed either sentence finally or sentence initially depending on which constituent is in focus. What seems to be an important conclusion drawn in the article is the fact that Spanish and Polish OVS order sentences with DEs are all-focus sentences. Following Erteschik-Shir (2007), among others, the authors maintain that the order in all-focus sentences is an unmarked order. Since Spanish and Polish DEs appear in all-focus sentences with the OVS order, this word order has to be an unmarked order. This is a very interesting observation as the two languages under investigation are known to be SVO languages. The experiment was supposed to confirm those observations. In the experiment with Polish and Spanish the majority of speakers chose the option in which both orders are acceptable. The authors, however, seem to formulate their conclusions on the basis of the other two groups of responses in which only one of the two orders could be chosen. In Spanish each order was equally felicitous, while in Polish it was the SVO order that was more acceptable for the participants of the experiment. Again, it could be argued that the claims made in the text do not always match the results of the experiment presented in the charts. As for all-focus sentences, the preferred order in Spanish was supposed to be OVS. However, the chart in (43) shows that the same percentage of respondents who chose answers with an OVS order chose DE constructions with an SVO order. The majority of speakers picked the option in which both orders are acceptable. In the text, however, the authors argue that it is an OVS order that is the most popular one in all-focus sentences in Spanish. The experiment also shows that Polish does not exhibit a preference towards only one word order in neutral contexts. The majority of Polish informants chose the option that accepts both orders, SVO and OVS, in all-focus contexts. According to the chart in (43), contrary to the claim made in the text, Spanish informants made a similar decision.

Moreover, the sentences in (41–43) do not correspond to the set of sentences presented earlier in (29–31). This different selection of sentences remains unexplained. The same can be observed for Polish, except for the identical sentences in (34) and (46). Furthermore, the same lexical verb appears in the questions and in the answers (see (41) and (42) for Spanish and (45) for Polish). As already mentioned, the repetition of the same lexical verb could produce biased results.

The formal analysis presented in Section 6 successfully accounts for the differences between English, Spanish and Polish with regard to the sentential positioning of Experiencers. Rozwadowska and Jiménez-Fernández conclude that DEs move to spec-TP in Spanish while in English and Polish Experiencers target spec-CP if they are discourse marked. In Spanish all-focus sentences, the closest argument of a given DE verb moves to Spec-TP but the movement is not discourse-feature driven. This explanation, however, does not account for the results of the experiment presented in (43), according to which DE constructions with OVS order and SVO order were equally well accepted. It seems that the status of the closest element is not unambiguous. In Polish DE constructions, DEs always move to spec-CP. Yet the analysis presented in (51), in which it is the Stimulus that functions as the information focus remains questionable. The topic feature is valued in the CP while the focus feature agrees with the [Foc] feature on the same element. Thus, it seems that the Experiencer is both a focus and a topic. The authors also argue that whenever the DE is a topic, the [Foc] feature remains in v. In the structure in (51), however, it is V and not v that bears the [Foc] feature. In all-focus sentences both orders, namely OVS and SVO, are equally acceptable. It is either the Experiencer or the Stimulus that functions as an about-ness topic.

The analysis offered by Rozwadowska and Jiménez-Fernández seems to be valid and provides an interesting insight into the nature of Dative Experiencers.

3. Contrastive studies of words and their meanings

Whereas the extent to which languages differ in terms of phonological and syntactic computation is a matter of debate, no one has any doubt as to the fact that linguistic systems differ with respect to the content of the lexicon. The second part of the book is concerned with a discussion of different aspects of the study of the lexical resources in different languages. Bożena Duda contributes a case study of the conceptualisation of the term *prostitute* in languages as different as English, Italian and Turkish. The conceptualisation of the term *life* in American English, Hungarian and Polish is the subject of the study by Marcin Kuczok. Eleonora Joszko analyses the content of selected general-knowledge dictionaries with respect to the presence of specialised equestrian terms. The chapter by Jacek Rachwał is preoccupied with a comparison of the formal and semantic characteristic of Polish and English *house*-related technical vocabulary. The presence of English loan translations in the domain of the vocabulary of naming professions is the subject of the chapter contributed by Marcin Zabawa. Finally, Joanna Jasińska-Bryjak and Lucyna Marcol-Cacoń discuss the presence of English-borrowed job titles in the Polish and Italian job markets.

3.1. Contrastive analysis of selected synonyms of prostitute in English, Italian, and Turkish

Bożena Duda's contribution is a contrastive analysis of the synonyms of the basic concept *prostitute* in three languages: English, Italian and Turkish. An analysis of the etymologies of the expressions synonymous to *prostitute* allows the author to formulate generalisations

concerning the conceptualisation of the names for the occupation under consideration found within a given language.

A closer investigation of the mechanisms of conceptualisation attested in the three languages reveals that the metaphors used in the conceptualization of *prostitute* involve zoosemy, as is visible in the English words *cow*, *loose fish* or Italian *falena* 'lit. moth', *porca* 'lit. pig', *lupa* 'lit. she-wolf', etc. Interestingly, this mechanism is not used in Turkish. Another type of metaphor used in the conceptualisation of *prostitute* is the foodsemic metaphor SEX IS EATING. This is also illustrated by the English word *tart*, as well as Turkish *kaşer* 'lit. cheddar' and *lakerda* 'lit. pickled tunny'. The foodsemic metaphor mechanism is not attested in Italian. Finally, the metaphor SEX IS A DRIVE/VEHICLE is exclusively a feature of Turkish and is exemplified by words such as *çufçuf* 'lit. train' and *motor* 'lit. engine'.

Two metonymic mechanisms attested in all three languages include the metonymies LOCATION FOR PROFESSION, e.g. Eng. *street girl*, *horizontal*, Ita. *donna di marciapiede* 'lady of the pavement' or Tur. *yosma* 'pavement flower' and FEATURE FOR PERSON, e.g *bad girl*, *buona donna* 'good woman', Tur. *paçoz* 'lit. bad-looking person'.

Additionally, the three languages under investigation use understatements as well as lexical borrowings to express the concept of *prostitute*. As noted by the author in the conclusion, the lack of zoosemic metaphors in Turkish and foodsemic metaphors in Italian is one of the most striking differences in the conceptualization patterns observed in the three languages. Other intriguing gaps encompass the lack of the metaphor SEX AS DRIVE/VEHICLE in English and Italian and the absence in English of the conceptualisation based on the idea of 'knowing life' instantiated by the Italian *donna di vita* 'lady of life' and the Turkish *hayatkadını* 'woman who knows life'.

This being said, the reasons behind the abovementioned gaps are not explored in much depth within the confines of the chapter. This reflects the general flaw of the onomasiological conceptualisation-based perspective on the structure of vocabulary: it is not predictive but rather abridged to a description emphasising the utmost importance of the obscure culture-specific metapragmatic rules affecting the equivalence and deciding about the degree of overlapping in the conceptualisation patterns attested in languages.

What would certainly be viewed as a scientific advancement in the understanding of the structure of vocabulary and the studies of conceptualisation would be a model that is capable of predicting, on the basis of certain linguistic and cultural variables, whether and to what extent speakers of a given language are likely to utilise particular conceptualisation mechanisms, e.g. a particular metaphor or metonymy.

3.2. Precious possession, war or journey? Conceptual metaphors for life in American English, Hungarian and Polish

Whereas Bożena Duda's analyses the conceptualisation patterns relevant for the concrete notion PROSTITUTE, Marcin Kuczok investigates the conceptualisation of the abstract and fuzzy notion LIFE in three languages: American English, Polish and Hungarian. As indicated by the author, abstract and fuzzy concepts are usually conceptualised by means of metaphors.

The aim of this study is to contrast the preference in the use of particular metaphors in the conceptualisation of LIFE in the three relevant languages.

Typical ontological metaphors, i.e. CONCEPT IS ENTITY, used by English speakers comprise LIFE IS A CONTAINER, LIFE IS A GIFT, LIFE IS A BUILDING. English speakers also often resort to structural metaphors, i.e. $CONCEPT_1$ IS $CONCEPT_2$, such as LIFE IS A GAMBLING GAME, LIFE IS A JOURNEY or LIFE IS A SEA VOYAGE.

According to an empirical study reported in Kövecses (2005), speakers of Hungarian typically utilise structural metaphors such as LIFE IS A STRUGGLE, LIFE IS A COMPROMISE, LIFE IS A JOURNEY, LIFE IS A POSSIBILITY, LIFE IS A PUZZLE as well as an (arguably) ontological metaphor LIFE IS A GIFT. Kövecses assigns the differences in conceptualisation to the differences in the culture and history of the US citizens and Hungarians. Apparently, the latter nation was forced to struggle and participate in military conflicts and thus tends to conceptualise life as a struggle, compromise and possibility.

Kuczok's methodology was to replicate the experiment reported in Kövecses (2005) with the speakers of Polish. 20 native speakers of Polish were asked to provide answers to four general open questions concerning their subjective opinion on life and success. The author classified and calculated the metaphors used by the speakers. The most frequent metaphors used by the participants were: LIFE IS A JOURNEY (appearing 25 times in the answers), LIFE IS WORK/EFFORT (14), LIFE IS WAR/STRUGGLE (12), LIFE IS SCHOOL (12), LIFE IS PRECIOUS POSSESSION (11), LIFE IS CONTAINER (10).

Summarising the results, Kuczok observes that the 'conceptualisation of life in Polish is very serious when compared to (…) American English and Hungarian'. His tentative interpretation of the results is that Polish people conceptualise life as a journey, quest, work, effort and school due to relatively high mobility (many Polish people left the country at the beginning of the 21st century) and the difficult situation in the job market (the high unemployment rate).

As we have mentioned in the previous section, it seems clear that an approach that insists on culture-driven conceptualisation by means of ontological and structural metaphors would benefit from a methodological twist in which the type of metaphors used by the speakers to conceptualise fundamental yet fuzzy concepts such as LIFE, LOVE, GOD, COUNTRY, etc. is *predicted* on the basis of cultural and socio-economic variables and not simply accounted for *post hoc*. For some reason, authors investigating conceptualisation opt for the *post hoc* theorising on the basis of the data observed rather than deducing the preferences for certain metaphors used by the speakers on the basis of such hard data as the migration rate or unemployment rate. Such an approach would certainly render the conceptualisation approach much less speculative and much more empirically interesting.

3.3. Inside information: Specialized vocabulary in general-language dictionaries as exemplified by English and Polish equestrian terms

This chapter examines the presence of equestrian terms in English and Polish general-language dictionaries. The three dictionaries scrutinised by the author with regard to a strictly selected

list of equestrian terms are *PWN-Oxford English-Polish dictionary* (2003), *Longman dictionary of contemporary English* (2005) and *PWN-Oxford Polish-English dictionary* (2004). Joszko shows that the general-language dictionaries lack an exhaustive list of equestrian terms. Not all of the terms that can be found in them include a specialised meaning. Others are wrongly defined. All of these point to a great need of lexicographic works with a narrowed, yet specialised, range of vocabulary.

The first part of the chapter describes the relationship between specialised vocabulary, lexicography and translation. Joszko points out how invaluable specialised dictionaries are in the work of translators whose knowledge does not match the expertise possessed by the subject field specialists. Terminology, in contrast to translation, is a static, analytical process immune to loans or direct borrowings that creates a fixed match between concepts and terms. Translation, being the complete opposite, uses it as a tool. The author argues that the relationship between them is not perfect. No concrete examples supporting this view are provided. As for specialised lexicographic works, most of them are passive, providing no context of use. Moreover, they are limited in their scope, leaving translators at a terminological loss. A lack of corpora revealing textual characteristics is another problem translators face. The author concludes here with the view that translation-specialised dictionaries should be managed by generalised translational lexicography (see Zmarzer 1991). The second part of the chapter aims to show whether it actually works in three widely used generalized dictionaries.

Section 10.3 is the most revealing as we learn how the dictionaries mentioned above manage equestrian terminology. The subject matter mistakes observed by the author are not that many. Two out of the three investigated dictionaries contain the same type of mistake. The author rightly highlights the mistake in both dictionaries and provides corrections. The corrections, however, are not supported by other sources apart from the author's own knowledge indicated by the abbreviations of the author's name and surname. In one place, though, on page 176, in Table 1, in the definition of the word *canter*, Joszko provides the abbreviation *E.P.* which remains unexplained in the article. Moreover, the title of Table 3, *The most frequent English terms in PWN-Oxford Polish-English dictionary* (2004), is confusing as the table contains a list of Polish, not English, terms. Each Polish term is accompanied by an English equivalent. Joszko does not provide any source(s) for the equivalents. The author observes that *PWN-Oxford Polish-English dictionary* contains more terms with equestrian meanings, namely 12, than *PWN-Oxford English-Polish dictionary*, namely 10. According to Joszko, this supports a common observation that it is more difficult to translate from a foreign language than from one's mother language. This claim seems to be unfounded with regard to the data just quoted. The difference concerns only 2 items, which does not seem to be a significant number. What is more, those 10 items constitute a bigger part of the studied sample (24.4%) than the other 12 items (17.4%). It is also difficult to decide unambiguously what could stand behind the difference highlighted by the author. Since terminology, in contrast to translation, is a static process of describing terms, the author's mother tongue should not have that much influence on the choice of the terms in question.

Joszko's work provides a valuable insight into the presence and absence of specialised vocabulary in general language dictionaries. Despite the narrow range of the study, important conclusions are drawn that can be tested against further data.

3.4. A morphological, semantic, and etymological comparison of English and Polish house-related technical terms

The contrastive analysis presented by Rachfał focuses on *house*-related technical terms in English and Polish. The architectural lexicons are compared in terms of their morphology, semantics and etymology.

As for morphology, two processes are described in both English and Polish, namely compounding and derivation. Rachfał lists the following popular compounds among English *house*-related terms.

(8) a. *N*+*N* compounds: *cornerstone*;
b. *N*+*N*+*N* compounds (the first two being themselves a compound): *brickwork bond*;
c. *relational adjectives* (RAs)+N compounds: *thermal insulation, thatched roof*;
d. V+N compounds: *flyway*;
e. synthetic (verbal) compounds: *rough-hewn*;
f. synthetic (non-verbal) compounds: *dog-legged*;
g. synthetic nominal compounds with gerund heads: *rafter framing*;
h. "combination of deverbal substantive determining a common substantive": *dining room*;
i. *N*+*N* compounds with the head noun being a product of conversion: *door reveal*;
j. nominal compounds with phrasal modifiers: *tongue-and-groove joint*;
k. compound adjective+*N*: *side-hung window*.

The only thing that could have been elaborated on for the sake of better understanding in this part of the chapter is the meaning of relational adjectives, especially in the case of examples in which the relational adjective is not denominal, e.g. *total going*. Rachfał also provides a list of prefixes and suffixes that appear with *house*-related technical terms. From the discussion it can be inferred that the technical terms in question do not exhibit any unusual behaviour as they comply with the observations already made in the literature.

As for Polish, Rachfał notes that the most popular type of juxtaposition is *N*+*RA* nominal compounding with the adjectival nonhead placed to the right of the head noun (e.g. *kamień węgielny* 'cornerstone'. There are also $N+N_{GEN}$ compounds where the second element bears genitive case (e.g. *przypora muru* 'counterfort wall'). The former group of compounds accepts word order changes more readily than the latter group. The other group described by Rachfał comprises lexicalised phrases with fixed denotations (e.g. *układanie na zaprawie* 'bedding'). The last group of compounds contains examples of synthetic compounds (e.g. *wiatrołap* 'draught lobby'). All types of compounds found by Rachfał are endocentric. The author makes an interesting comparison between the English compound *concrete curing* and its Polish equivalent *dojrzewanie betonu*. The former compound contains a deverbal head noun derived from a transitive verb while the latter has a deverbal noun derived from an intransitive verb. It would be interesting to examine more examples of this kind from both languages to see whether one can talk about some regularity. When it comes to derivation, *house*-related nouns in Polish can be denominal (e.g. *mur-arka* 'brickwork'), de-adjectival (e.g. *pust-ak* 'hollow brick'), deverbal (e.g. *ściąg-acz* 'tie'), of phrasal origin (e.g. *namur-nica* 'wall plate') and with the diminutive suffix *–ek* (e.g. *słup-ek* 'small post'). The author does not fail to mention cases of prefixation as a result of which we receive perfective verbs (e.g. *pod-niesi-enie* 'riser').

The morphological comparison ends with a summary of the general differences between English and Polish. What could be added here is a comparison of the same list of compounds with their equivalents in both languages. It would show how both languages morphologically approach the same compound expressions.

In Section 11.3, we learn about possible semantic analyses of *house*-related terms. The author discusses the terms with regard to semantic decomposition and lexical relationships. As for semantic decomposition, the author concludes that the analysis proposed by Pustejovsky (1991) accounts for the differences between architectural terms in a more satisfactory way than the one along the lines of Riemer (2010). Although each analysis is presented, we do not see in exactly what way the former is better than the other. Section 11.3.3 deals with a semantic interpretation of compounds. The author starts the discussion by mentioning a well-known inherent ambiguity among *N+N* compounds. On the basis of Jackendoff (2009), Rachfał shows how such ambiguity can be avoided. However, more attention should be devoted to a detailed explanation of the abovementioned inherent ambiguity of compounds. Some examples would also clarify the discussion and would constitute an important background for the proposed solution.

The last part of the analysis concerns the etymology of architectural terms. It is the most revealing part of the chapter. Rachfał notes that the first group of *house*-related terms in both languages was borrowed from sister languages, namely English borrowed from Old Norse and Polish from Czech. Later, English absorbed *house*-related expressions from Old French while Polish from Middle High German.

Without a doubt, Rachfał's chapter constitutes a significant contribution to contrastive studies. It also poses different questions that could lead to more detailed studies of architectural terminologies encompassing more languages.

3.5. English loan translations in the Polish names of professions

In this chapter, Zabawa examines the nature of loan translations. The contribution is divided into two parts. First, he focuses on terminological confusion as a result of which it is hard to unambiguously distinguish loan translations from different types of borrowings. Then he narrows down his analysis to the loan translations in the Polish names of professions found in the official list of professions prepared by the Polish Ministry of Labour.

In the first part of his chapter, Zabawa introduces the reader to the definitions of popular types of borrowings, such as lexical borrowings and semantic borrowings. In Section 12.3.1, we learn about the detailed classification of loan translations. Despite being a section with general remarks only, it lacks examples, especially, of semi-calques and semi-renditions. They would help the reader follow the terminological confusion mentioned by the author. The following three sections deal with differences between loan translations and semantic loans (Section 12.3.2), loan translations and loan renditions (Section 12.3.3), and loan translations and native phraseological innovations (Section 12.3.4). In Section 12.3.2, on the basis of two concrete examples, Zabawa shows how difficult it is to distinguish between phrases that are only calques and those that are only semantic loans. One of the examples, namely *architekt stron*

internetowych (website architect), has already appeared in Section 12.1, where it is discussed as an example of a semantic loan. In Section 12.4, however, it is categorised as a semi-calque. Presenting the same example from three different perspectives does not help eliminate the confusion. It must be admitted, though that, indeed, some examples do contain features of both semantic loans and loan translations. For the sake of classification, instead of discrediting such examples, the existence of such a group of borrowings that exhibit features of both types could be admitted. Section 12.3.3 shows three ways in which we can recognise the difference between loan translations and loan renditions. One example provided by the author could raise some questions, namely, *drapacz chmur* (lit. cloud-scraper, modelled after English *skyscraper*), which is argued to be a loan rendition of the phrase *skyscraper*. Since *cloud* is not *sky*, *drapacz chmur* cannot be considered a loan translation. That is undoubtedly true and, yet, both phrases considered as a single unit mean exactly the same. A more detailed definition of loan renditions including information about whether we should consider the meaning of the parts of a given phrase or a phrase as a whole would clarify the discussion. Section 12.3.4. provides a very useful set of criteria that illustrate the difference between loan translations and native phraseological innovations. The following section focuses on the difference between semi-calques and lexical borrowings. The reader is presented with a set of examples which may cause confusion but no detailed discussion is proposed. As a result, we are not able to tell what the author considers as a semi-calque and in what respect it differs from lexical borrowings. This would be beneficial from the perspective of one of the following sections, namely Section 12.4, in which some phrases are named semi-calques even though they do resemble lexical borrowings. Section 12.4 provides a list of Polish names of professions borrowed from English. They are categorised by the author as calques, semi-calques, renditions and loan creations. The section ends with an analysis of two examples of calques from the list using the criteria provided in Section 12.3.4. We can see that, indeed, the two phrases chosen by the author have to be calques and not native phraseological innovations. The list, however, could raise some questions. It remains unclear why some phrases are categorised as semi-calques and not lexical borrowings. The example *kierownik działu zarządzania zasobami ludzkimi* (human resource manager) in Section 12.4 is classified as a calque but in Section 12.3.2 it is discussed as an example that causes confusion as it complies with the definition of a semantic loan and loan translation. What seems to be an arbitrary classification is not a solution.

Zabawa discusses a challenging area of contrastive analysis. The terminological confusion is clearly explained, and this is, undoubtedly, an important advancement in the analysis of loan translations.

3.6. KAM, CEO, HRM: 'who is who' on the job market? A contrastive analysis of foreign job titles in Italian and Polish

In their chapter Joanna Jasińska-Bryjak and Lucyna Marcol-Cacoń present an analysis of the use of foreign job names in Polish and Italian. The aim of the chapter is to investigate to what extent the two languages utilize foreign names to name professions and to what extent they stick to native vocabulary for that purpose.

The material analysed by the authors comprised 2000 job titles. 1000 were collected from job advertisements posted online on two Polish websites: http://gazetapraca.pl/ and http://pracuj.pl/ over the course of two months of 2014. Another 1000 were obtained through an Italian website http://lavoro.corriere.it in the same period.

The analysis of the gathered material showed that frequently the authors of advertisements decide to use the English name without any modification. Additionally, the Polish part of the sample included English names followed by their Polish translations, e.g. *Project Manager – Kierownik projektu*, *Accountant – Księgowy/Księgowa*, Polish job titles with English elements, e.g. *Pracownik w dziale Hotline* 'Hotline operator', *Kierownik Działu Leasingu* 'Leasing Division Manager' as well as rare cases of Polish names followed by their English equivalents, e.g. *Kierownik Projektu/Project Manager*.

Apart from the large number of English loans the Italian part of the sample also contains many bilingual names, e.g. *Agenti di commercio – Sales accountant*, *Addetto Assistenza Clienti – Customer Service*, Italian job titles with English elements, e.g. *Supply chain manager con conoscenza della lingua tedesca* 'Supply chain manager with knowledge of the German language', *Licensing manager – settore media entertainment* 'Licensing manager in the sector of media entertainment', *PM – Esperto in Logistica e trasporti* 'PM – an expert in Logistics and transportation'.

The authors note the visible signs of instability of certain borrowings. This is manifested in the Polish part of the sample by an inconsistent spelling of the word *manager*, which is sometimes spelled as *menedżer* or *menadżer*, while on other occasions the original spelling is preserved. An interesting case in Italian is observed in phrases with fluctuating word order: an English *Junior Manager* and an Italian *Manager Junior*.

In sum, the authors point out that in many cases English lexemes for the job names found in the compiled material were there due to the lack of Polish and Italian equivalents. There is also a numerous group of job names which were referred to by means of loan-words and which possess Polish and Italian translations. In other words, many of the English job titles found in the sample were not necessary.

It is also noted that the frequent use of English terms is dictated by the different organisation of the companies in the English speaking world and in Poland and Italy. At the same time, the most striking difference between the use of job titles in the Polish and Italian sample is the huge disproportion in the number of English loans in the Polish advertisements (216/1000) and in the Italian part of the collected material (555/1000). The authors note this difference but do not attempt to investigate what caused it. Does Italian lack the terms to express the relevant job titles? Is the presence of English loans in job titles considered more prestigious among speakers of Italian than it is among speakers of Polish? It would clearly be interesting to check whether this discrepancy is accidental by comparing samples from different periods of time.

4. Contrastive linguistics beyond language forms

The last part of the collection is entitled "Contrastive linguistics beyond language forms" and contains a miscellaneous collection of studies that did not easily fit into the first two parts. Many of them discuss patterns of language use. Such is the focus of the chapter by Elżbieta Mańczak-Wohlfeld, who analyses attitudes towards the presence of English in Polish scientific discourse. The chapter by Ewa Bogdanowska-Jakubowska discusses the differences and similarities in self-presentation strategies by analysing the discourse of the debate between politicians representing the two major Polish parties. In her chapter, Paulina Biały highlights the cultural underpinnings of the differences in the use of diminutives by the English and the Polish. Olena Vialikova's contribution focuses on the linguistic and non-linguistic aspects of various types of creolised verse texts in Ukrainian and English. The contribution by Teresa Maria Włosowicz offers a discussion of the category of cognates and how their existence and properties impact on foreign language learning. In the final chapter of the contribution, Victoria Camacho-Taboada, Ángel Jiménez-Fernández and Susana López-Rueda present a detailed study of the acquisition of the presence and absence of surface subject pronouns by speakers of English learning Spanish.

4.1. English language use in scientific discourse

Mańczak-Wohlfeld focuses on the role and use of English in scientific discourse. The discussion starts with a closer look at English in three diasporas, each marked with a different status of English, namely English as a native language, English as a second language and English as a foreign language. The statistics provided by Mańczak-Wohlfeld show the popularity of English in each diaspora. We learn that generally English is spoken by 2 billion speakers. The author stresses that each diaspora speaks a different English. In the same section, the author presents her own modified model of the spread of English. Instead of diasporas, we have three circles: the Inner Circle, the Outer Circle, and the Expanding Circle. The Inner Circle sets the norm, the Outer Circle develops the norm while the language of the Expanding Circle depends on the norm. The author classifies the English used in Poland as one that belongs to the Expanding Circle.

The next part outlines the history of the use of English in scientific discourse. The author presents the statistics of different authors showing how the role of English has changed with time in scientific discourse. Between 1890 and 2007 the popularity of English increased significantly. Not only do we learn that English has gradually overtaken German, but we also see in which aspects of scientific discourse English has dominated other languages. As a possible explanation for the popularity of English in original research, exact sciences and theoretical linguistics as opposed to surveys, the humanities, and applied sciences, the author mentions its international character. The reader assumes that what is meant by the international character is its world-wide accessibility. However, we do not see how, for example, it accounts for the applied sciences.

Section 14.4 concerns Polish academia. The author argues that Polish scholars working in exact sciences, natural sciences, and technical sciences prefer English while those who specialise in the humanities and social studies choose their native language as the language of scientific

discourse. In the next part of this section, the author presents the results of a research study carried out among students of English and Polish philology. The author argues that it would be difficult to conduct such a study among academics. This, however, is not supported by any argument. At the very beginning of this section the author provides opinions of scholars who argue in favour of the use of Polish in scientific discourse. The answers provided by students do not seem to be conclusive, which may be connected with the methodology undertaken in the study. The question posed in the study was the following: what do you think about the use of English in scientific texts in the following fields: the humanities, social studies, exact studies, natural sciences and technical sciences. The results among students of English philology were presented in the following way: 16 opted for publishing only in English, 9 for English and Polish publications within the humanities and social studies, 2 considered Polish to be used as the only academic language (p. 240). It remains unclear why students who were asked about English provided answers that included both English and Polish or only Polish. According to the author, the results are slightly different from what was expected. The reader may be confused as the claims made in this section concerned scholars and not students, so it remains unclear what expectations the author has in mind.

In the last section of the chapter, the author expresses her opinions on the use of English in academic discourse. According to Mańczak-Wohlfeld, researchers who focus on the exact sciences and the technical sciences should write and present their papers in English. This standpoint is supported by the general tendencies reported by different authors concerning the increasing popularity of English. However, researchers that specialise in the social sciences and the humanities present a more complex issue. They should turn to Polish if they write about, for example, grammatical gender which exists in their native language but is absent in English. If they discuss local matters with a target of local and not an international audience, they should also publish in Polish. The author admits that this may be a controversial point of view. Indeed, it may be considered quite difficult to determine what is of a local and not international interest. The border between them is unclear. It could be argued that the development of science is not dependent that much on the extent of the research area covered by a single author as on the availability of the sources made possible thanks to a lingua franca. Grammatical gender in Polish can be knowledgeably described in English using glosses. English does not cause that much of a problem here. It appears that, considering the well-known popularity of English, every scholar realises that publishing in their native language limits the audience to the local one. Translation, with its usual limitations, is a useful tool everyone can always turn to if one targets an international audience. Other drawbacks of publishing matters of local interest only in English remain unknown.

The chapter written by Mańczak-Wohlfeld brings to light an interesting aspect of using English in academic discourse, namely the division between the exact sciences, on the one hand, and the humanities and social sciences, on the other. It ends with useful pieces of advice for scholars from both fields.

4.2. Differences in self-presentational patterns: A community-of-practice perspective

The chapter by Ewa Bogdanowska-Jakubowska is one of the few contributions that do not focus on comparing sets of data from more than one language, but rather highlight a different dimension of contrast. In her contribution the author analyses different self-presentation strategies visible in the discourse used by representatives of the two major Polish political parties: Civic Platform (pol. *Platforma Obywatelska, PO*) and Law and Justice (pol. *Prawo i Sprawiedliwość, PiS*).

The theoretical perspective assumed in the study encompasses the Critical Discourse Analysis (see e.g. Wodak 2011) and the post-modern/discursive approach to face and (im)politeness (Watts 2003, 2005). The Critical Discourse Analysis approach defines discourse as a form of social practice and recognises and highlights the interaction between situations and events and social structures which constitute the frame for the relevant situations and events. The assumption about the continuous interaction between the social and the linguistic which is the foundation of the Critical Discourse Analysis approach implies that the careful analysis of discourse allows us to formulate claims about the self-presentation style of its participants.

The post-modern/discursive approach to face and (im)politeness underlines the social importance of face. Accordingly, face is not so much a property assumed by an individual as it emerges or is created in the course of social interaction. Similarly, (im)politeness is no longer thought of as the property of isolated phrases or sentences but rather as emerging as a result of interaction: it is considered to be a social practice.

The author proposes treating political parties as strictly defined Communities of Practice (see Mills 2011). Like all communities of practice, political parties have: (i) their particular domains of interest, i.e. their members share a worldview and ideas as to how countries should be administered; (ii) the community: party members engage in important activities together, support each other and learn from each other; (iii) the practice: members of a particular party develop or adopt the same tools of social interaction with voters as well as political opponents. According to the author, the particular community membership is reflected in the discourse. In particular, it is manifested in the way they engage in negotiating relationships and face.

In the empirical part of her work the author analysed the discourse of a TV interview with the politicians managing the electoral campaigns in the 2014 European Parliament elections. Tadeusz Zwiefka was the campaign manager for PO, while Andrzej Duda managed the PiS's campaign.

In her conclusions, Bogdanowska-Jakubowska notes that both politicians use the same strategies of self-representation (presenting the party in good light, stressing the positive attributes of their party, explaining their actions and words by the general agenda of the party, non-verbal behaviour) but implement them in a different way.

Whereas Zwiefka is promoting a composed, logical and cultivated image of himself and the party, i.e. community-of-practice, that he represents, Duda is more emotional, often resorts to understatements, makes exclamations and accusations. He tends to display satisfaction at his opponents' failure. According to the author, both politicians construct their face in the way typical of the members of PO and PiS, although certain individual traits should also be taken into consideration.

Let us observe that none of the images and the complex strategies used in manifesting them seem to be more effective than the other in the context of Polish political life. Both the parties achieved the same result in the said 2014 European Parliament election (19 members in the EP). The 'logical and composed' face of PO allowed them to win two parliamentary elections in Poland (2007, 2011), while the 2015 election was a triumph of the 'emotional' face of PiS, which is the ruling party at the time of writing of this review. While Zwiefka has continued his work in the European Parliament since 2004, Duda has been elected the President of Poland in 2014. It seems, therefore, that the 'composed and logical' face of PO and the 'emotional' face of PiS are not decisive factors in influencing the opinions of Polish voters.

4.3. The English and the Poles: Two different cultures, two different approaches to the use of diminutives

The chapter by Biały is based on the assumption that the use of diminutives in a given language is connected with the culture of that language. The comparison between English and Polish culture is to account for the differences in the use of diminutives between the two languages.

A significant number of sources presented by the author supports the claim on the strong relationship between cultures and languages. The author starts the discussion by describing features of English and Polish culture.

English culture represents an individualistic culture of a masculine nature rather than a feminine or childish one. It is more reserved than other cultures. This, according to the author, explains a glaring poverty of diminutive forms. The section ends with a quotation from Fox (2005), according to whom English culture does not seem to value children to the same extent as other cultures do. The author does not comment on what appears to be a rather controversial statement, as affection can be expressed in a variety of ways, not only a linguistic one. Polish culture, on the other hand, is a collective one of a feminine nature that is more emotional than English culture. This, in turn, is reflected in the widespread use of diminutives. The author addresses the issue of diminutives not only as a means of referring to size but also as a means of showing an attitude to the world. For example, we learn that by using diminutive forms Polish hosts show their hospitality that encourages guests to eat more. In such a case guests do not appear to be greedy. In conversations between buyers and sellers diminutives are used as a persuasive strategy which shows respect towards a customer. The author supports each observation with relevant sources. As pointed out by the author, the not uncommon overuse of diminutive forms in Polish, however, may be also interpreted as offensive or even insincere by addressees.

In the last part of the chapter the author presents the results of her own research in which a group of Polish and English native speakers were asked to comment (describe feelings, suggest functions and meanings) on the use of diminutives in a given sentence. The results, however, seem to be unclear. For example, the author maintains that 22.5% of the Polish respondents negatively evaluated a sentence with diminutives referring to food while the whole group argued that it sounded natural. If 22.5% of the respondents have negative feelings about a sentence, it is hard to imagine how the whole group was satisfied with it. The problem lies either in the

results themselves or in the lack of clarity with regard to the evaluation criteria. It transpires from the text that 'negative evaluation' (artificiality, over-exaggeration) has nothing to do with 'naturalness', which is counterintuitive. As for English, the author observes that the same number of respondents interpreted the same sentence in two completely different ways. For the first group, diminutives implied a lack of problem on the part of the host, suggested that the guests are not greedy or minimised the effort of the host. For the other group, the diminutives in the same sentence referred only to size. One cannot fail to observe that the same two interpretations of diminutives were described by the author in Section 16.3.3.1 that referred only to Polish. It could have been stressed at some point that the same two interpretations (one showing attitude and the other a literal one) are also possible in English, yet to a different extent than in Polish.

This chapter presents a valuable collection of sources on the relationship between culture and language and the way this relationship has an influence on the use of diminutives. No doubt culture and language are intertwined, yet one cannot forget that the structure of a given language has an equally decisive role in the usage of a given linguistic form.

4.4. Semiotic structure of the creolized verse text

Vialikova examines Ukrainian and American poetic texts that combine verbal and non-verbal components. Generally, this chapter is well structured as it starts with a theoretical background and then proceeds to the analysis of specific texts. However, there are too many mental shortcuts which make the text less approachable for a reader.

In the Introduction the author mentions criticism of Peirce's taxonomy of sign systems but the link between this criticism and the methodological basis in the same line in the text is too indirect, especially for an introduction. The author then draws attention to the inseparable relationship between semantics and pragmatics and between semantics and syntax. This is followed by a something of a conclusion that underlines the interaction between semantics, syntactics and pragmatics in the lingvosemiotic analysis. It remains unexplained, though, why this tripartite structure makes the semiotics 'a system of a special kind' (p. 281). In one of the sections in the Introduction, Vialikova discusses Lotman's (2010) image of semiotic space as multi-layered complex relationships. The author's interpretation of Lotman's image also remains unclear, as reality at one point forms a separate layer of the whole while later we learn that reality is beyond the layers. In another section of the Introduction, the author uses the phrase 'similar problems' although no clear reference to any problems was made in the text before. Neither do we learn what the author means by 'cyber methods' (or 'macrosing' in Section 17.2). The next paragraph also generates confusion. The reader may find the difference between the analysis of the creolised verse text and the interpretation of the text-in-text hard to understand. The author does not elaborate much on the latter concept, hence its doubtful contribution to the whole analysis. In sum, the Introduction mentions many aspects of text analysis but it is hard to see any logical train of thought behind them or any direct contribution from the point of view of what follows.

The second part of the chapter presents three models of creolised verse texts: concrete poetry, shape poetry and zaum poetry. The research method chosen by the author is the semiotic study of texts (text as a sign system) with an analysis of the syntactic, semantic and pragmatic relationships between verbal and non-verbal signs. In the same section, the author describes the types of analyses undertaken when creating lingvosemiotic models of creolised verse texts. These are a component analysis (the elicitation and structural organisation of units) and systemic (and not 'systematic' or 'system' as called by the author) functional analysis. Another method used in the analysis is the so-called contextually-interpretive method that positions a given text in relation to other texts. The description of the approaches and methods appears to be a necessary introduction to the analysis of the particular texts.

The first text analysed by the author represents shape poetry in Ukrainian. The description of the syntactic level remains unclear. This may be caused by the unfortunate use of the word 'sequentially'. The author calls some links paradigmatic and syntagmatic but does not provide much explanation. The table which describes the model does not help either. It is hard to see how the snake and the apple form a syntagmatic link. The pragmatics level, as well as the level of semantics, are well outlined.

Another poem analysed by the author is a concrete poem. This time, the verbal and non-verbal signs at all three levels of lingvosemiotic approach are well explained. The name of the concrete poetry is not that obvious, as is the case with the shape poetry. The author could also pay more attention to details. The poem on page 287 contains an octagon and not a hexagon.

Zaum poetry is often connected with confusion. The verbal and non-verbal signs are briefly described at the semantic and pragmatic level. The author fails to explain the signs at the syntactic level which require clarification. In the text preceding the analysis of the poem, there are concepts which do not seem to contribute much to the understanding of zaum poetry. For example, the author mentions a 'letter tradition' which remains unexplained or the fact that 'that game and poetic (bri)colage are biased for Honchar creavity'. Much more attention should be devoted to the poem itself.

In sum, the information on the Ukrainian creolised verse texts contained in the tables is too condensed. The elaboration on the signs in each stage of the model would facilitate the reader's comprehension of the author's analysis. What is more, the Ukrainian poems should be accompanied by English translations. Otherwise, non-speakers of Ukrainian will find it hard to verify the author's observations.

In the last part of Section 17.2, Vialikova analyses three American creolised verse texts. As for the shape poem, the author observes a lack of rhyme in contrast to the Ukrainian shape poem. As rhyme was not discussed earlier in the text, it is hard for a reader to relate to it in any way. Generally, though, the lingvosemiotic analysis of all three examples of different types of American creolised verse texts is carried out in a clear way.

All in all, the chapter by Vialikova presents an interesting perspective on the analysis of creolised verse texts. Even though the discussion does refer to two languages, no space is devoted to a comparison of creolised verse text in English and Ukrainian. Apart from the rhyme, we do not learn much about the differences or similarities between Ukrainian and American creolised verse text. The Conclusion which appears to be a general summary of lingvosemiotic analysis does not help either.

4.5. Cross-linguistic similarities and differences between cognates and implications for foreign language learning

Włosowicz's chapter discusses formal differences between cognates. It adopts an interesting perspective on cognates which are most often associated with a common overlap among languages and the facilitation of a foreign language learning.

In Section 18.2, the author presents the reader with a definition of a cognate which is much broader than the traditional definition, namely that cognates should be linked not only to semantic properties but also to formal ones and, as a category, they encompass cognates of common origin, borrowings and internationalisms. The similarities between cognates are an advantage in foreign language learning. In the middle of the section, however, the author presents a different side of cognates. False friends, for example, also share formal similarities but semantically they do differ. The recognition of similarities and differences, despite its learning potential, very often requires the use of awareness-raising activities as not all learners find them that obvious. The successful recognition of cognates is often hindered by graphemic differences and depends more on phonological differences. The paragraph ends with a statement that is hard to relate to the rest. It states that the understanding of languages from the same language family can be difficult due to differences in vocabulary. The direct contribution of this statement is doubtful. The author refers to Section 18.4 as a discussion on formal and semantic similarities between cognates. We cannot agree that this section deals with similarities. The author's title for this section ('Cognates as a special area of vocabulary') much better reflects its content.

Section 18.3 begins with a discussion of Lado's (1957) Contrastive Analysis Hypothesis (CAH), under which learning difficulties can be predicted from the comparison of languages. Włosowicz refers to sources that show how similarities among closely related languages may, in fact, cause learning difficulties. Czech learners of Russian and English when using Russian may make mistakes that are based on the similarities between the two Slavic languages. Since those types of mistakes are less evident, they are more likely to result in a fossilized interlanguage. The author also points out that similarities among languages do not guarantee facilitation as language learners expect languages to be different, hence their intentional avoidance of similar constructions. The section ends with a pedagogical implication under which the results of contrastive analysis should be adapted before their implementation in the classroom.

The next section is an illustration of the formal and semantic differences between cognates. The author looks at their morphological, orthographical, syntactic, morphosyntactic, semantic and phonological properties.

The section on morphology shows how morphological differences in given cognates may lead either to the use of interlingual blends or to the use of non-target cognates. The pair of languages from which examples were taken should have been provided much earlier in this section. As for didactics, the author argues that morphological differences should be taught explicitly. The author could elaborate on the teaching methods regarding morphological differences as they do not seem to be that obvious. As for orthography, similar difficulties arise

from the similarities between cognates. Learners produce either non-target or interlingual blends.

Before the presentation of mistakes that arise due to syntactic and morphosyntactic properties, the author usefully explains what she means by those properties. The former refer to the selection of prepositions by verbs. Table 4 on page 303 gives German and English examples of the syntactic differences between semantically identical cognates. The German prepositions in the table, as well as in the text, should be accompanied by their English translations for the sake of a better comparison by the reader. No comment is made here with regard to the process of learning. As for semantics, the author underlines the existence of false friends and partial false friends that may lead to confusion on the part of the learner. The phonology of cognates presents some regularities but there are also unpredictable differences. The author also mentions interlingual homophones, which may lead to serious mistakes among learners.

It is interesting that the contrast made by the author does not only include languages from the same language families but a cross section of languages from different language families. The author touches upon a complex topic from the point of view of linguistics and didactics. Differences among cognates are discussed in more detail than the implications for foreign language learning. This chapter is certainly a worthy contribution to the theme of this volume.

4.6. The acquisition of null/explicit subject pronouns in Spanish as L2 by English speakers

This chapter looks at the distribution of null and explicit subject pronouns in the interlanguage of English learners of Spanish.

In the introduction the authors emphasise the fact that null pronouns have been approached from different angles. They, however, take a discourse-oriented point of view which is less well-known than the traditional generative one based on different aspects of agreement. We learn that the distribution of null/explicit pronouns in Spanish depends on verb morphology and discourse factors. The authors focus in detail solely on the latter. Four hypotheses are laid down to be verified by the results of the tests designed by the authors.

The title of Section 19.2 can be a bit confusing with regard to its content. It refers to the acquisition and use of null/pronominal subjects in L2 Spanish. The section, however, elaborates on formal European and Spanish recommendations concerning the development of discourse competence. More importantly, the Spanish adaptation of the CEFR explicitly mentions the use of null/overt subjects. In addition, the authors state that they are the first to conduct a purely Information-Structure based analysis of null pronouns from the point of view of their acquisition. The use of explicit pronouns is not discussed here.

Section 19.3 contributes significantly to the whole chapter. The authors present definitions of different types of topics and foci. One has the impression, though, that each definition lacks a comment on whether the given topic/focus is usually null or explicit in Spanish. This would give the reader a fuller picture when it comes to different discourse categories in Spanish. Moreover, the addition of glosses could eliminate some confusion with regard to, for example, sentence (1) where the English translation has the Aboutness-Shift Topic while its original

Spanish sentence appears to be missing it. The section ends with a table with features of different discourse categories. Generally, it turns out to be a useful summary. Yet a question arises about the feature specification of C-Focus (contrastive focus) which is marked with the positive value of the feature 'given'. In Section 19.3, it is noted, however, that contrastive focus may refer either to a shared piece of information or it may represent a new piece of information. Thus, it seems that it should be marked in the same way as C-Topic (Contrastive Topic) or AS-Topic (Aboutness-Shift Topic), namely with a plus and a minus.

Section 19.4 presents the methodology and results of the tests. The experiment was conducted among a varied group of English learners of Spanish. The variety of respondents is impressive. There were four groups of English learners divided according to their level of proficiency in Spanish. An acceptability judgement test was the first test. The results are clearly presented. What is interesting is that the authors do not only focus on acceptability judgements but also provide a scale of learning difficulty. There are some points that could be improved, though. Firstly, on page 320 the authors state that in Figure 2 the curve of the 4-5 value has dashes. Yet, the curve of the 4-5 value in Figure 2 on page 321 is a line and it does not have dashes. In the descriptions of diagrams no reference is made to Figure 9a. Furthermore, for the sake of clarity, the authors could explain the presence of question marks next to some of the discourse categories. The table summarising the results on page 324 contains shaded cells, which could also be clearly explained. The scale of learning difficulty concerning the recognition of non-felicitous answers differs from that presented in the conclusion (Section 19.5) as the latter contains question marks while the former lacks them. The second test involved a translation task. Again, the authors present the results using diagrams and commenting on the scale of difficulty. Interestingly, they observe that, as for G-Topics, most students and near-natives drop explicit subject pronouns more often in subordinate clauses than in the main clauses. This is ascribed to transference errors without any further explanation of what is meant by this in the context of the English-Spanish pair of languages.

The last section of the chapter verifies the hypotheses proposed at the beginning of the chapter. The only unclear conclusion is reached with regard to hypothesis 2 (H2) in which the authors state that 'students get good results when they have to evaluate a sentence with NS but not when they have to do it with explicit ones.' Nowhere in the text do the authors make a similar observation. Neither does any diagram with test results seem to confirm this.

In general, the chapter provides a valuable insight into the interlanguage of English speakers of Spanish. It certainly contributes to the field of contrastive studies, unveiling a novel discourse-related perspective on the use of null/explicit pronouns between typologically different languages.

5. Concluding remarks

To conclude, it must be said that each contribution of the collection is a valuable and important voice within the relevant domain represented by its author(s). The division of the book into three parts gives it the required coherence and makes it more accessible to potential readers. At the same time, the title of the third part 'Contrastive Linguistics beyond Language Forms' is a bit misleading as the contributions by Olena Vialikova, Teresa Maria Włosowicz and Victoria

Camacho-Taboada, Ángel Jiménez-Fernández and Susana López-Rueda partially or entirely focus on different aspects of linguistic form or formal aspects of the languages under consideration. In addition to that, although all the contributions are valuable from the point of view of the respective domains that the contributors represent, few of them can be considered to be genuine contributions to linguistics as a contrastive discipline. One would expect some of the chapters to contain proposals concerning novel methods of carrying out comparative analyses across languages or to address current controversies concerning cross-linguistic diversity. Certain fundamental questions such as why languages differ, what is the cause of the geographical diversification of linguistic systems and how to account for it, what is the source of language change and how to model it, have not been asked. To our mind, the proposals concerning these fundamental issues deserve a place in a volume devoted *inter alia* to the cross-linguistic variation.

This being said, Various Dimensions of Contrastive Studies is a diversified and well-planned collection of highly stimulating and inspiring contributions. Certainly worth recommending to any linguist who desires to stay in touch with up-to-date trends within the formal as well as functional approaches to language analysis.

References

Anderson, Stephen R., and David W. Lightfoot. 2002. *The Language Organ: Linguistics as Cognitive Psychology*. Cambridge: Cambridge University Press.

Beard, Robert. 1995. *Lexeme-Morpheme Base Morphology*. Albany, NY: SUNY Press.

Beard, Robert and Mark Volpe. 2005. Lexeme-Morpheme Base Morphology. In Pavel Štekauer and Rochelle Lieber (eds.), *Handbook of Word-Formation*, 189–205. Dordrecht: Springer.

Bloch-Rozmej, Anna. 2008. *Melody in Government Phonology*. Lublin: Wydawnictwo KUL.

Bloch-Trojnar, Maria. 2013. *The mechanics of transposition. A study of action nominalisations in English, Irish, and Polish*. Lublin: Wydawnictwo KUL.

Bruening, Banjamin. 2014. Word formation is syntactic: Adjectival passives in English. *Natural Language and Linguistic Theory* 32: 363–422.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Roger Martin, David Michaels and Juan Uriagereka (eds.), *Step by Step*, 89–115. Cambridge, MA: MIT Press.

Chomsky, Noam. 2008. On Phases. In Robert Freidin, Carlos P. Otero and Maria Luisa Zubizarreta (eds.), *Foundational Issues in Linguistic Theory. Essays in Honor of Jean-Roger Vergnaud*, 134–166. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of Projection. *Lingua*, 130, Special Issue "Core Ideas and Results in Syntax". 33–49.

Dowty, David. 1979. On the syntax and semantics of the atomic predicate CAUSE. *Papers from the 8th Regional Meeting. Chicago Linguistic Society*, 62–74.

Erteschik-Shir, Nomi. 2007. *Information Structure*. Oxford: Oxford University Press.

Fox, Kate. 2005. Watching the English: The hidden rules of English behaviour. London: Hodder and Stoughton Ltd.

Harris, John. 1994. *English sound structure*. Oxford: Blackwell.

Jackendoff, Ray. 2009. Compounding in the parallel architecture and conceptual semantics. In Rochelle Lieber and Pavol Štekauer (eds.), *The Oxford handbook of compounding*, 105–128, Oxford: Oxford University.

Kaye, Jonathan, Jean Lowenstamm and Jean-Roger. Vergnaud. 1990. Constituent structure and government in phonology. *Phonology* (7): 193–231.

Knight, Chris. 2016. Puzzles and mysteries in the origins of language. *Language and Communication* 50: 12–21.
Koontz-Garboden, Andrew. 2009. Anticausativization. *Natural Language and Linguistic Theory* 27: 77–138.
Kövecses, Zoltan. 2005. *Metaphor in culture. Universality and variation.* Cambridge: Cambridge University Press.
Lado, Robert. 1957. *Linguistics across cultures*. Ann Arbor, MI: The University of Michigan Press.
Levin, Beth and Malka Rapaport Hovav. 1995. *Unaccusativity: At the syntax-lexical semantics interface* (Linguistic Inquiry Monograph 2). Cambridge, MA: MIT Press.
Longman Dictionary of Contemporary English. 2005. 4th ed. With Writing Assistant. Harlow: Longman.
Lotman, Yuri. M. 2010. *Semiosfera.* St. Petersburg: Iskusstvo.
Mills, Sara. 2011. Discoursive approaches to politeness and impoliteness. In Linguistic Politeness Research Group (eds.), *Discoursive approaches to politeness*, 19–56. Berlin-Boston: De Gruyter Mouton.
Pustejovsky, James. 1991. The generative lexicon. *Computational linguistics* 17(4): 409–441.
PWN-Oxford English-Polish dictionary. 2003. Warszawa: Wydawnictwo Naukowe PWN.
PWN-Oxford Polish-English dictionary. 2004. Warszawa: Wydawnictwo Naukowe PWN.
Riemer, Nick. 2010. *Introducing semantics*. Cambridge: Cambridge University Press.
Rutkowski, Paweł and Ljiljana Progovac. 2015. Classification projection in Polish and Serbian: The position and shape of classifying adjectives. In Steven Franks, Frank Y. Gladney and Mila Tasseva-Kurktchieva (eds.), *Formal approaches to Slavic linguistics: The South Carolina meeting 2004*, 289–299. Ann Arbor, MI: Michigan Slavic Publications.
Scheer, Tobias. 2004. *A lateral theory of phonology. Vol. 1: What is CVCV, and why should it be?* Berlin: Mouton de Gruyter.
Scheer, Tobias and Markéta Zikova. 2010. The Coda Mirror v2. *Acta Linguistica Hungarica* 57: 1–21.
Wodak, Ruth. 2011. *The discourse of politics in action. Politics as usual*. Basingstoke: Palgrave Macmillan.
Watts, Richard. 2003. *Politeness*. Cambridge: Cambridge University Press.
Watts, Richard. 2005. Linguistic politeness research: Quo vadis? In Richard J. Watts, Sachiko Ide, and Konrad Ehlich (eds.), *Politeness in language. Studies in its history. Theory and practice*. 2nd edn., 43–69. Berlin: Mouton de Gruyter.
Zmarzer, Wanda. 1991. Leksykografia terminologiczna. In Franciszek Grucza (ed.), *Teoretyczne podstawy terminologii*, 117–132. Wrocław: Zakład Narodowy im. Ossolińskich.