AFLiCo JET 2016
Cognitive Linguistics before and after the empirical turn

May 27, 2016 – Université Paris Ouest Nanterre

Table of contents

Analysis of Pronouns and Pragmatics in Alzheimer's Disease

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The overall aim of this study is to synthesize the current discrepancies found by linking pragmatics with Alzheimer's Disease. In particular to explore the pronoun and reflexive loss associated with Alzheimer's Disease.

There is a growing number of persons who will be diagnosed with Alzheimer's Disease in Canada. It is estimated that there will be 1.4 million persons diagnosed cases of Alzheimer's Disease by 2031 (Alzheimer Society Canada, 2012). At the current rate, Canada is in dire need to better understand diagnosis, prevention, and rehabilitation of Alzheimer's Disease in order to keep up with the rising demand. Bridging the gap between linguistics and Alzheimer's Disease will provide a better framework for understanding language loss with patients with Alzheimer's Disease. In discourse, it is observed that patients with Alzheimer's Disease either misuse pronouns or are missing referents to the pronouns. This same misuse does not occur with reflexives to the same extent. Working within Binding Theory, it seems that principle B is impaired while principle A is not. However, currently the literature proposes that syntax is preserved up until the later stages of the disease. It is puzzling that syntax is preserved yet one syntactic property (principle B) is not. This misuse or missing referents in Alzheimer's Disease could be linked to a loss of the pragmatic principle, proposed by Reinhart (1983, 1986).

The purpose of this study is to determine whether the pragmatic principle is related to pronoun and reflexive loss in patients with Alzheimer's Disease. Specifically questions are whether it is the syntactic principle B that is impaired or if it is the pragmatic principle instead. How do these results impact current literature about syntax preservation in Alzheimer's Disease? How is the pragmatic impaired during discourse? This study will allow for greater understanding and minimization of the discrepancies found between the current framework used to study Alzheimer's Disease, and the actual results obtained in practice.

The study was a judgement comprehension task that consisted of a statement coinciding to a picture. Judgement was if the statement matched the picture. Results from this study showed that the difference in performance between the two groups was found to be significant. Patients with Alzheimer's Disease incorrectly allowed mismatching statements at a significantly higher rate than was found in the control group, where such errors were not observed. Future steps from this preliminary study would be to extend this to include working memory and fMRIs.

The implications of the study could potentially have long standing effects. The theoretical framework of neurolinguistics and dementia is being tested and it could start the process to revising how we view pragmatics in discourse with patients with Alzheimer's Disease. This hy-

pothesis could also be extended to other neurological degenerative diseases as well as the general aging population.

Cross-linguistic psycholinguistic study of the cognitive impact of language typologies

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Space is a central domain for human cognition. We depend on it not only to move, locate and interact with our environment, but also to process non-spatial information. Many abstract domains, like time, feelings, social status, communication etc. are understood and expressed in spatial terms (Lakoff & Johnson, 2003). The spatial domain has naturally been of great interest to cognitive linguistics for some time, especially in cross-linguistic comparative research.

Linguistic variation in the spatial domain is well-documented through wide-ranging corpus studies (Slobin 2004, Levinson 2003). Is this variation strictly linguistic, or does it influence or interact with non-verbal concepts? The extent of the cognitive variation potentially associated with different language typologies is still controversial. Using appropriate empirical methods to access non-verbal cognition is crucial to explore the link between language and thought.

In recent years, some headway has been made in Simulation Semantics and Embodiement Theory by using methods inherited from psychology.

Studies in neurology have found evidence that, to some extent, simulation and actual perception use the same parts of the brain. The same neural regions are activated when perceive or perform an action and when we merely simulate perception or action. This can lead to a variety of effects (interference, priming, etc.). According to the Embodied Simulation hypothesis, language also depends on these mental simulations: while processing language, people unconsciously engage their perceptual and motor systems to internally simulate described scenes. Understanding language would involve the mental simulations of previous, embodied experiences of seeing, hearing, moving etc.

There is evidence in favour of this hypothesis, for instance in experimental studies done by Rolf Zwaan et al. (2002). Their work shows that linguistic utterances (for example *the carpenter hammered the nail into the wall* or *the ranger saw the eagle in the nest*) have a clear priming effect on the processing of the following picture: participants are quicker to recognise the object has been mentioned when it is in a compatible orientation than when it is not, due to the mental images triggered by the understanding of the sentences.

These methods can be used to investigate the effect of different language typologies on mental images, and thus linguistic diversity.

French speakers use neutral verbs ('être', *be*) in locative phrases, whereas speakers of Dutch

are compelled to use one of the three posture verbs ('zitten', 'liggen', 'staan', *sit, lie, stand*). In English, both neutral verbs and posture verbs are used. In other words, whenever they are engaged in linguistic activity, Dutch speakers, unlike French or English speakers, will necessarily consider aspects expressed by these verbs (orientation, shape, function...).

Habitual use of orientation-specific verbs in Dutch might make orientation more salient and readily available than they are for speakers of French or English. By using mental simulation experiments, we can investigate this possible influence cross-linguistically.

Mental simulation is expected to lead to a priming effect in any language, but habitual attention to orientation, associated with language typology, could have an added effect on response time.

Defining paradigms and metaphorical models: the case of POLITICS in British discourse

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In her analysis of corporate discourse, Koller (2009, 116) argues that metaphor selection in her corpus is influenced by "a paradigm shift" from religion to politics to business as the main conceptual schema relied on by Western society. Her data eventually suggest a multi-directional relation between the three domains, thereby extending her original definition of society paradigms. In this paper, I propose to test this concept of defining paradigms in the analysis of the domain of POLITICS and of its discursive representations in Britain after 1945. I hypothesize that a detailed look at metaphor choice can accurately account for the evolution of the representation of POLITICS, and uncover strategies of speaker- representation in British discourse after WW2.

I present a *cognitive corpus-based analysis* (L'Hôte 2014) of an original collection of speeches and texts of about 1,000,000 words, produced by the Labour Party and the Conservative Party from 1945 to 2013. Through a combination of quantitative and qualitative analyses performed with the online software WMatrix (Rayson 2009), three main categories of political metaphors are identified in the data (Pragglejaz 2007), in which POLITICS is understood in terms of EN-TITIES, SPACE, and HUMAN ACTIVITIES. While the source domain of ENTITIES occurs with relatively stable frequency throughout our data, spatial metaphors are more prominent in present-day British discourse; human-activity metaphors on the other hand, are significantly more frequent before 1994. The study of the discursive functions of these three groups of metaphors in context points to a movement towards a more neutral, non-threatening represen-tation of POLITICS, which becomes an object of redefinition in present-day British discourse. As a consequence, the use of the more antagonistic human-activity metaphors is reduced. The growing importance of ethical discourse in contemporary British politics is also uncovered, as a non-metaphorical counterpart for human-activity metaphors of politics.

In conclusion, I suggest that a model understood in terms of Shore's "foundational schemas" (1996) can describe the evolution of the representations of politics in British discourse more accurately than Koller's defining paradigms.

Keywords: Corpus linguistics, Discourse Analysis, Metaphor, Politics, Britain

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Keywords: corpus linguistics, politics, discourse, metaphors

Implicit attitudes in politics Applying the profile-based approach to critical analysis

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Within the cognitive paradigm, early research by Lakoff (1993, 1996) employed analytical frameworks such as cognitive models and conceptual metaphors to reveal implicit structures in society and culture. This line of research mirrored work in Critical DiscourseAnalysis in its aim to inform and improve society. However, the research remained largely theoretical in that its descriptions were neither readily falsifiable norsensitive to social variation. Other early research within the cognitive paradigm (Driven*et al.* 1982, Rudzka-Ostyn 1989, Schmid 1993) developedquantitative empirical methods to the study of semantics. Can these different lines of research inform each to produce an empirical critical approach? This study presents an attempt to apply multifactorial feature analysis (behavioural approach) to an inherently social question – the representation of asylum seekers in political discourse. Specifically, we hypothesis that politically leftdiscoursescorrelate with a discourse of humanism and apositive attitude and this is contrasted by politically conservativediscourses correlating with nationism and attitudes of alterity.

The data consist in Australian parliament unprepared debates. The fundamental challenge is to identify and quantify the subtleties of the covert expression of attitude. The tokensconsist in manually identified reference to asylum seekers. In order to ascertain the reliability of the tokenisation, secondary analysis is performed and inter-coder reliability ascertained using aKappa statistic. In total, the sample constitutes 600 occurrences that are analysed for a range of usage-features designed to reveal implicit attitudes and ideologies in the language. The feature analysis follows the behavioural profile methodology (Geeraerts *et al.*1994; Gries 2003;Glynn & Fischer 2010; Glynn & Robinson 2014). The choice of features is based on Bednarek's (2007) work onevaluation and Martin & White's (2005) work on attitude. The results of the usage-feature analysis are subsequently analysed using multivariate statistics employed toquantitativelyidentifypatterns.

Correspondence analysis reveals complexinteractions between attitude types andpoliticaldiscourses but also how these dimensions interact withthe kind of event being discussed. Contrary to our hypothesis, the leftpolitical discourse does not clearly correlate with humanist ideologies and positive attitude. Such correlations are only revealed with regards to specific events. Logistic regression is used to test the hypothesis more specifically. A fundamental limitation of the study is that the sample includesmultiple tokens for individual speakers. For this reason, speaker is added as a random effect to the model. The model does not confirm the hypothesis that political left discourses correlate with discourses of humanism. Rather, it seems their attitudes, challenged by the opposition's questionscriticising their humaniststance prompts leftist politicians to adopt a discourse of security. However, the hypothesis that right wing political discourses correlate with evaluations of alterity and negative attitudeis supported. Given the complex results of the correspondence analysis, it is likely that other variables need to be included in order to propose an explanatory model. In order to incorporatemorevariables, the

sample will need be increased. Despite limitations, the study remains proof-of-principle that quantification is powerful addition to socially critical lines of research.

On the Use of Empirical Evidence in Cognitive Linguistics

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Whoever writes the history of ideas of our era will no doubt one day tell us about "the linguistic turn" the humanities took in the 1960s and 1970s, about "the cognitive turn" that linguistics took in the 1970s and 1980s, and also about "the empirical turn" that cognitive linguistics took in the late 1990s and early 21st century. A "turn" refers to changes in how research gets done in certain disciplines. The term implies that there was a "before" and an "after," and is not unlike the paradigm shifts seen in the history of science. In general, the new methods yield results of the sort that were usually unavailable before the "turn." In cognitive linguistics today, there is no shortage of signs of "the empirical turn" as methods and materials from corpus linguistics are used more and more often in cognitive linguistics. But what does it mean to use the methods and materials of corpus linguistics in cognitive linguistics? While a short presentation cannot fully answer that question, in my presentation I suggest what an answer might look like. I specifically discuss three recent articles from the journal, Cognitive Linguistics, where the authors rely on empirical evidence from corpus linguistics to support their claims. My three case studies involve research on the linguistic expression of emotions (Oster 2010), metaphor (Dunn 2013), and grammatical gender (Beller et al. 2015). For her article, Oster (2010) gathered examples of the emotion concept "fear" from the Corpus of Contemporary American English (COCA), and then used both qualitative and quantitative methods in her project. For his article, Dunn (2013) also gathered attested examples from COCA, coded them for metaphoricity, and then used his calculations in his argument about cognitive metaphors. In their paper, Beller et al (2015) questioned 107 participants who spoke two varieties of Norwegian in order to test for the gender congruency effect and then discuss its possible causes. In these three articles, which are rather representative, statistical data are first part of the Results, and then they are used as evidence for arguments put forward during a Discussion of the significance of the results. Yet methods are methods for generating results; they are means rather than ends. Thus the core issue of "the empirical turn" is the status of empirical evidence in scientific arguments, including those made by cognitive linguists. As Schmid and K'uchenhoff (2013) recently concluded, corpus data can be useful, but we might be more cautious about our confidence level when our arguments rely heavily on such data.

Que peut apporter une expérimentation psychologique pour une analyse sémantique cognitive ? Étude du cas de l'unité " voilà ".

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Une unité linguistique comme *voilà* pose autant de problèmes de catégorisation que de problèmes de signification. La littérature est unanime sur ce point dès le XIXe siècle, cette unité est multicatégorielle : préposition (Girault-Duvivier, 1851, et Dauzat, 1947), interjection (Nyrops, 1914), factif strumental épidictique (Damourette et Pichon, 1927), particule démonstrative (Wagner et Pinchon, 1962), adverbe présentatif (Brunot and Bruneau, 1969), verbe (Moignet, 1969). Les travaux plus récents proposent 3 catégories : préposition (*Il a été élu voilà 8 mois*), présentatif (*Tiens, voilà Jean-Pierre !)* et marqueurs du discours ou connecteur (Riegel *et al.* 1994) (*Mais bon, voilà* !). C'est cette dernière catégorie qui attire notre attention dans la mesure où elle correspond à un emploi encore peu décrit, et qu'elle semble être l'usage grandissant à l'oral actuellement.

Pour ce qui est de la signification de *voilà*, on est également confronté à des sens assez variés. L'étude récente de Porhiel (2012) propose par exemple 5 critères d'analyse de l'emploi textuel de présentatif : *voilà* introduit un référent et pose son existence, *voilà* peut avoir une fonction textuelle ou non, *voilà* introduit des référents discrets ou non, *voilà* introduit un référent exprimé linguistiquement ou non, *voilà* présente ou bien représente (sans être suivi d'un item nominal). Du point de vue cognitif, Bergen et Plauché (2001) proposent comme sens central celui de " Pointing Out " (monstration et direction de l'attention) et associent cette idée à celle de localisation d'une entité. Enfin l'hypothèse de Delahaie (2013) développe un point de vue stéréotypique (Anscombre 2001) qui donne à *voilà* la responsabilité d'inscrire le nom ou la prédication dans une succession de faits ou d'événements antérieurs assertés.

L'objectif de cette présentation est de comprendre à partir d'analyses de corpus écrit et oral (avec l'outil Analec) comment *voilà* se développe aussi rapidement à l'oral, de tenter de dégager des critères de facilitation (sa " niche ") et de proposer une explication de son évolution. Cet objectif demande alors d'adapter les méthodologies habituelles développées quand on étudie langue, langage et cognition. Si l'hypothèse cognitive de Bergen et Plauché, axée sur le sens

déictique de *voilà*, propose une explication de type métaphorique avec extensions de sens, nous suggérons plutôt une hypothèse cognitive fondée dans un premier temps sur des observations de corpus (*corpus-based*) et dans un second temps, sur des expérimentations psychologiques pour tester des aspects très spécifiques de *voilà*. Les données sur corpus nous fournissent une cartographie indispensable pour comprendre l'usage de *voilà* et les expérimentations nous permettent de tester des usages liés à des processus cognitifs particuliers (notamment lorsqu'un locuteur est en situation de difficulté). L'hypothèse que nous défendons, à l'aide d'une expérimentation qui comprend la réalisation d'une tâche (réalisation de figures du jeu de Tangram) effectuée en interaction dialogique, est que *voilà* est une unité qui évoque le regroupement d'informations et leur partage en " terrain commun " (Clark & Marshall, 1981).

Sexist and Homophobic Metaphors in English, French, German and Spanish: Perception of Intensity and Frequency

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To what extent are English, German, Spanish and French discriminatory towards hetero- and homosexual men and women and to what extent are respective native speakers aware of such language use? In times of women's and homosexuals' increasing quests for gender equality (e.g. Lakoff 1973, Hornscheidt 2012) it is crucial to comprehend the differences in language awareness of hetero- and homosexual males and females in order to be able to promote non-discriminatory language use. In my dissertation project I will attempt to find an answer to the question above by analysing metaphors used for the four groups of people based on the cognitive metaphor theory by Lakoff/Johnson 1980. In order to be able to conclude on both the intensity of a discriminatory expression and the perceived frequency of its appearance in everyday language, I will design respective online questionnaires in which native speakers of both sexes rate the expressions. The questionnaires will list metaphors and their supposed meaning (e.g. Engl. *bird* 'woman') together with two scales from 1 to 6 (1 being very rare expression/very positive expression; 6 being very common expression/very negative expression) (regarding perceptive variety linguistics cf. Krefeld/Pustka 2010).

By doing so, I will expand my previous research in the form of my state exam dissertation in which I compiled and analysed a corpus of 436 degrading Spanish metaphors and metonymies for heterosexual women and homosexual men. 36 native speakers participated in the online questionnaire. The major findings showed that both sexes feel women are more intensely and frequently degraded than homosexual men. Additionally, females find insults for both women and gay men more intense than males and feel that they encounter both of them more often in everyday language use. The latter correlates with Gauger 2012, who explains that it is men rather than women who provide language of sexuality. Since they are the 'creators' of such language they perceive it as less degrading and frequent.

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When Linguistics meets Neuroscience: New light on the neurofunctional architecture of sentence comprehension models

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During the past 30 years, considerable attention has been directed towards the information used by the human parser to guide processing decisions and the timing of information use. In psycholinguistics, in the research domain of sentence comprehension, one can distinguish two main classes of behavioral models: serial, syntax-first and parallel, interactive, constraint-satisfaction models. These models differ on two central issues: (1) the degree of autonomy of the syntactic parser, and (2) the number of structural options the processor is able to compute simultaneously. This theoretical controversy has proven difficult to resolve on the basis of behavioral data, partly because off-line measures and even on-line reaction times are not exactly time-locked with the stimulus and cannot capture the dynamics of the processing at the millisecond level. Fortunately, electroencephalography (EEG) provided the crucial timing information. The millisecond time-course resolution of event-related brain potentials (ERPs) allows us to trace the exact moment when linguistic information begins to be processed as well as the possible interplay between different sources of linguistic information. The " electrified " psycholinguistics therefore enabled a significant progress in the description of the neurofunctional architecture of sentence comprehension models. In cognitive neuroscience, however, the issue of how the neural generators underlying the processing of the different sources of information are coordinated in time (i.e., in a serial, parallel or interactive fashion) is still a matter of considerable debate in the modeling of the brain-language relationship. In my talk, I will present selected neuroimaging data that have clarified some aspects of the longstanding theoretical debate on the syntax-semantics relationship in sentence comprehension.

Keywords: psycholinguistics, neuroscience, syntax, semantics

Aptitude, focus on form and motivation in er... first language acquisition

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It is often asserted that first language acquisition and adult second language learning are "fundamentally different". In contrast to L2 learning, first language acquisition is believed to rely almost entirely on implicit learning. Children, it is often asserted, are unable to focus on form, and because of this, language aptitude (as measured by foreign language aptitude tests such as the MLAT and PLAB) is irrelevant. There are also important differences in motivation: adult learners typically have the explicit goal of learning a new language, while children's motivation is simply to communicate, and learning occurs as a byproduct of engaging in communicative interaction.

While acknowledging that there are important differences between first and second language learning, I argue that they are typically massively overstated. I argue that language aptitude plays a significant role in both L1 and L2 language learning, and that children are not only able, but also highly motivated to pay attention to form. Thus, the same cognitive mechanisms are involved in both types of learning, albeit not necessarily to the same extent.

Keywords: language acquisition, L1, L2, form, motivation