

PROJECT NEUROPRAG

.Neuropragmatics: Disorders of social communication and contextual processing in patients with Traumatic Brain Injury (TBI) and Dementia

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Topic

The aim of the research projects is to systematically examine the pragmatic level in the language of people with TBI and Dementia with newly developed diagnostic procedures. Even though it is well known that *language processing in context* and *acting with language*, both core elements of pragmatics, can be affected by neurological disorders, the impact on social discourse and communicative participation is less clear (Bambini & Bara 2016; Douglas et al. 2010; Guendozi & Savage 2017; Hallhuber & Büttner 2017; Schröter et al. 2018). Using an innovative and transdisciplinary approach pragmatic abilities will be examined throughout the lifespan as well as in connection with cognitive functions (e.g. executive functions). For this purpose language data of two of the most frequent occurring neurological disorders, TBI and Alzheimer dementia, will be compared with the performance of an age and education matched control group and also with the performance of people with frontal dementia.

The central research issues are:

- What are the most common pragmatic disorders after Traumatic Brain Injury?
- Are there special language profiles in the discourse of people with dementia (Alzheimer type vs. Fronto-Temporal Dementia)? Are pragmatic abilities particularly affected by the decline? Or do pragmatic abilities stay preserved over a relative long period?
- How can the relationship between language, components of executive functions and social cognition be outlined? Do pragmatic inferences (e.g. in indirect speech acts; in narrative text processing) play an important role in this context?
- Is it possible to unify language, executive functions and empathy in an integrative model of pragmatic processing? And finally, based on the research findings, is it possible to develop a taxonomy of neuropragmatic disorders?

Research in neuropragmatic disorders is a topic of high social relevance, because it can be assumed that with “demographic change” and thus with the ageing of society the occurrence

of neurodegenerative disorders will increase. A detailed knowledge of neuropragmatic disorders can lead to a better health care situation and improve the participation of people with Dementia and with TBI (e.g. Achhammer et al. 2016, Bambini & Bara 2017).

Method

Phase 1: Text- and Discourse Abilities in Neurologically Unimpaired Persons: Based on the text-corpus-method the MAKRO-Corpus (Büttner 2013-2018) and the data of the experimental investigations of the German version of the La Trobe Communication Questionnaire (LCQ), it will be analysed which pragmatic abilities are subject to change across the lifespan starting from observations in young adults (18-45 y.) to elderly people (65-85 y.) (see Büttner et al. 2016).

Phase 2+3: Text- and Discourse Abilities in TBI and Dementia: Building on the results of phase 1, it is intended to clarify in which parameters (e.g. type and amount of inferences, core propositions, topic maintenance) people with TBI (01.07.2020-31.12.2021) and Dementia (01.01.2020-31.12.2021) differ from each other and the neurologically unimpaired control group. Against the background of recently models of text- and discourse processing (e.g. Büttner & Glindemann 2019) the new findings of phase 1-3 will be used to develop an integrative model of pragmatic processing, which also takes into account several components of executive functions and social cognition.

Transfer of findings

Upon project completion it is planned to provide practical recommendations for diagnosis and treatment of Neuropragmatic Disorders in cooperation with professional associations (dbs, GAB, BKL). The project NEUROPRAG concludes with an international conference at LMU University of Munich in 2022. At this occasion it is intended to invite Prof. Dr. Jacinta Douglas, an absolute expert for communication disorders in people with TBI, as Key-Note Speaker for this conference, to intensify the international network for the research field of Neuropragmatics.

Project schedule and working packages

<p>Phase 1: Pragmatic abilities throughout the lifespan</p> <ul style="list-style-type: none"> • Analysis of the MAKRO-Corpus (N=166) • Empirical investigations of age-sensitive pragmatic parameters: e.g. type and amount of 	<p>Phase 2: Empathy, Pragmatics und Cognition in TBI Recruitment of people with TBI (n=20)</p> <ul style="list-style-type: none"> • Conversation analysis and transcription of test data • Quantitative and qualitative assessment of the pragmatic test procedures / questionnaires (e.g. MAKRO (Büttner 2018), LCQ (Douglas et al. 2000, BEKOS (Regenbrecht in prep.) and the cognitive tests (Regensburger Fluency Test: switching semantic categories; Reading-The-Mind-In the Eyes-Test (German Version; Bölte 2005): Empathy;
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<p>inferences, core propositions or topic maintenance in social discourse and oral text production</p>	<p>Tower of London: Planning; digit span backward: working memory)</p> <ul style="list-style-type: none"> • Statistical analysis • Publications in peer-reviewed international journals
<p>Phase 3: Empathy, Pragmatics und Cognition in Dementia Recruitment of people with dementia (n=40)</p> <ul style="list-style-type: none"> • Conversation analysis and transcription of test data • Quantitative and qualitative assessment of the pragmatic test procedures / questionnaires (e.g. MAKRO (Büttner 2018), LCQ (Douglas et al. 2000, BEKOS (Regenbrecht in prep.) and the cognitive tests (Regensburger Fluency Test: switching semantic categories; Reading-The-Mind-In the Eyes-Test (German Version; Bölte 2005): Empathy; Tower of London: Planning; digit span backward: working memory) • Statistical analysis • Publication in peer review international journals 	<p>Project completion presentation / Usage of results:</p> <ul style="list-style-type: none"> • Conclusions and publications of the final results • Development of a theoretical framework and linguistic model for Neuropragmatics based on the research data (Phase 1-3) • Providing practical recommendations for diagnosis and treatment of Neuropragmatic Disorders • Cooperation with professional associations (dbs, GAB, BKL) • Workshop/Conference for Neuropragmatics in Munich (LMU University) 2022
<p>Visibility of Research Presentation and Discussion of project outcome on national (dbs Symposium, GAB Congress) and international conferences (e.g. ASHA Congress, ICPLA Congress, Academy of Aphasia)</p>	
<p>International Cooperations / Networking Prof. Dr. Jacinta Douglas (La Trobe University, AUS) Prof. Dr. Simone Falk (University of Montreal / BRAMS)</p>	
<p>National Cooperations (selection) Prof. Dr. Stefan Heim (RWTH Aachen) Dr. Anna Rosenkranz (University of Cologne) Prof. Dr. Hielscher-Fastabend (Univ. Bielefeld) Dr. Gudrun Klingenberg, Neurological Clinic Bad Aibling Frank Regenbrecht University Leipzig, day-care hospital, Speech-Language Therapy NEUROKOM Bad Tölz, Neurological Rehabilitation, Neuropsychology & Speech-Language Therapy</p>	

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