Cognitive Neuroscience of Natural Language Use

When we think of everyday language use, the first things that come to mind include colloquial conversations, reading and writing emails, sending text messages or reading a book. But can we study the brain basis of language as we use it in our daily lives? As a topic of study, the cognitive neuroscience of language is far removed from these language-in-use examples. However, recent developments in research and technology have made studying the neural underpinnings of naturally occurring language much more feasible. In this book a range of international experts provide a state-of-the-art overview of current approaches to making the cognitive neuroscience of language more 'natural' and closer to language use as it occurs in real life. The chapters explore topics including discourse comprehension, the study of dialogue, literature comprehension and the insights gained from looking at natural speech in neuropsychology.

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Contents

Plates

The color plate section appears between pages 114 and 115

Figures

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Abbreviations

AD	Alzheimer's disease
aI	anterior insula
aIPS	anterior intraparitel sulcus
Amy	amygdala
ANEW	Affective Norms for English Words
ANS	autonomic nervous system
AOS	apraxia of speech
AROM	associative read-out models
aTL	anterior temporal lobe
BA	Brodmann area
BAWL	Berlin Affective Word List
BIASLESS	Biasless Identification of Activated Sites by Linear Evaluation of Signal Similarity
BOLD	blood-oxygenation-level dependent
bvFTD	behavioral variant frontotemporal dementia
CBS	corticobasal syndrome
dACC	dorsal anterior cingulate cortex
DCM	dynamic causal modelling
DEF	definitive
DMN	default-mode network
dmPFC	dorsomedial prefrontal cortex
DoA	Dictionary of Affect
dPCC	dorsal posterior cingulate cortex
EEG	electroencephalography
ELN	extended language network
ERP	event-related potential
EST	event segmentation theory
FA	fractional anisotropy
FAS	verbal fluency test using the letters F, A, S
FFG	fusiform gyrus
fMRI	functional magnetic resonance imaging
fNIRS	functional near-infra red spectroscopy

FPC	frontopolar cortex
FTD	frontotemporal dementia
fvFTD	frontal variant frontotemporal dementia
FWE	family-wise error
FWHM	full width at half maximum
GLM	general linear model
GM	gray matter
HRV	heart rate variability
IAPS	International Affective Picture System
ICA	independent components analysis
IFG	inferior frontal gyrus
IFGOp	inferior frontal gyrus, pars opercularis
IFGOr	inferior frontal gyrus, pars orbitalis
IFGTr	inferior frontal gyrus, pars triangularis
IPL	inferior parietal lobule
ISC	inter-subject correlations
LBD	Lewy body disease
LBSD	Lewy body spectrum disorder
LH	left hemisphere
LIFG	left inferior frontal gyrus
lvPPA	primary progressive aphasia, logopenic variant
mCC	middle cingulate cortex
MEG	magnetoencephalography
MLU	mean length of utterance
MMSE	mini Mental State Examination
mPFC	medial prefrontal cortex
MR	magnetic resonance
MRI	magnetic resonance imaging
MROM	multiple read-out model
MT+	middle temporal complex
MTG	middle temporal gyrus
MVPA	multi-voxel pattern analysis
naPPA	primary progressive aphasia, non-fluent/agrammatic variant
NOLB	natural organization of language and the brain
NP	noun phrase
OLB	organization of language and the brain
OS	object–subject
OSV	object–subject–verb
OVS	object–verb–subject
PCG	precentral gyrus

PD	Parkinson's disease
PDD	Parkinson's disease with dementia
PFC	prefrontal cortex
PPA	primary progressive aphasia
PPI	psycho-physiological interactions
PRS	present tense
PSP	progressive supranuclear palsy
pSTS	poster superior temporal sulcus
REFL	reflexive
RH	right hemisphere
ROI	region of interest
RS	repetition suppression
rTMS	repetitive transcranial magnetic stimulation
SD	standard deviation
SEM	structural equation modeling
SFG	superior frontal gyrus
SII	secondary somatosensory cortex
SMA	supplementary motor area
SMG	supramarginal gyrus
SO	subject–object
SOA	stimulus onset asynchrony
SOV	subject–object–verb
SPL	superior parietal lobule
STG	superior temporal gyrus
STP	supratemporal plane
svPPA	primary progressive aphasia, semantic variant
TL	temporal lobe
ToM	Theory of Mind
TPJ	temporo-parietal junction
TS	time series
tvFTD	temporal variant frontotemporal dementia
VAR	vector autoregressive modelling
vmPFC	ventromedial prefrontal cortex
VP	verb phrase
vPMC	ventral premotor cortex
WM	white matter
wpm	words per minute