

1. Record Nr.	UNINA9910862201003321
Autore	Vilarroya Oscar
Titolo	Neuroscience Without Representations : Building a Brain-In-a-World View
Pubbl/distr/stampa	San Diego : , : Elsevier, , 2024 ©2024
ISBN	9780443191732 0443191735
Edizione	[1st ed.]
Descrizione fisica	1 online resource (194 pages)
Disciplina	153
Soggetti	Cognitive neuroscience Philosophy of mind
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Front Cover -- Neuroscience without Representations -- Neuroscience without Representations: Building a Brain-in-a-World View -- Copyright -- Contents -- Preface -- Acknowledgments -- One - Some definitions -- Representation -- The representational theory of mind -- The notion of representation -- Neural code -- The code -- The information -- One word, two notions ... at least -- Folk psychology -- Intelligent behavior and cognition -- 4E cognition -- György Buzsáki inside-out terminology -- Outside-in strategy -- Inside-out strategy -- Inside, outside, and the environment -- I - What is the problem? -- Two - The outside-in strategy -- Criticism of folk psychology -- The spurious correlational approach -- Criticism of outside-in perspective -- The inside-out brain -- Grounding meaning in action -- Coda -- Three - The re-presentational issue -- Do we have evidence supporting the notion of neural re-presentation? -- The problem with correlations -- Is there evidence supporting the "standing for" property? -- Standing for things in the world? -- Standing for complex informational states? -- Coda -- II - What went wrong? -- Four - The flaws in the outside-in strategy -- Reifying folk psychology -- Analogies are risky -- Reverse-engineering -- Coda -- Five - Overlooking the re-presentational function of language -- Formal languages -- Natural languages as formal languages -- Framework of application -- The

tacit re-presentational exercise of natural languages -- The communicative properties of language -- The conflation -- Coda -- III - The inside basics -- Six - Neural trajectories as the building blocks of brain function -- The inside-out basics on brain mechanisms -- Cell assemblies -- Brain rhythms -- The brain functional unit: self-organized cell assembly sequences -- The sequential manager -- Coda.

Seven - The anticipatory nature of brain function -- Predictive models of brain functioning -- Behavioral models -- Bayesian brains -- Bayesian brain function -- Are brains Bayesian machines? -- Epistemic status -- Dark room problems -- Re-presentational feasibility -- Coda -- IV. - Viewpoints to embrace -- Eight - Adopting an evolution-minded perspective -- The complexities in characterizing the evolution of the brain -- Evolution-minded strategies: bounded functionality -- The bricoleur constraint -- Functional neuroanatomy -- The satisficing constraint -- Intuitive physics -- Walking as satisficing -- Evolutionary-minded methods: comparative models -- Neuroscientific approaches -- Evolutionary-minded methods: evolutionary models -- Fitness maximization models -- Evolution-minded methods: developmental approaches -- Evolution-minded methods: multimodal approaches -- Behavioral-ecology paradigms -- Coda -- Nine - Embodying 4E cognition -- 4E cognition -- Embodied cognition -- Writing skills -- The somatic marker in action -- Extended mind -- Cognitive offloading -- Neurologic deficits -- Situated cognition -- Enactivism -- Coda -- V - A framework proposal -- Ten - Enaction as an explanatory framework -- The inside: Neural trajectories -- Event segmentation -- Sequences of events -- The exterior: The embodied environment -- Enactions -- Enactions involve the brain and the embodied environment -- Enactions are meaningful -- Enactions are contextualized -- Coda -- Eleven - If not re-presentations, then what? -- Neural processing is operational -- How can operational roles account for acquiring, maintaining, and applying knowledge? -- Challenges: The decouplability condition -- Challenges: The abstract condition -- Language fills most re-presentational needs -- Enactive knowledge provides extra knowledge for free -- Coda -- Epilogue -- References.

Index -- Back Cover.

Sommario/riassunto

This book explores the conceptual underpinnings of cognitive neuroscience, questioning conventional approaches such as the computer analogy and folk psychology in understanding brain function. Authored by Oscar Vilarroya, it emphasizes an evolutionary perspective, viewing the brain as an adaptive organ shaped by evolutionary history rather than a computational machine. The text critiques the prevalent outside-in strategy for studying the brain and advocates for an inside-out approach that considers the brain's anticipatory nature and enactive cognition. The book is aimed at researchers and practitioners in neuroscience, offering a critical examination of current methodologies and proposing a framework based on enaction and embodied cognition.
