

Fourth Edition

# Neuropsychology for Occupational Therapists

Cognition in Occupational Performance

Edited by Linda Maskill and Stephanie Tempest



WILEY Blackwell

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Cognition in Occupational Performance

Fourth Edition

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**Neuropsychology for Occupational Therapists**

## About the Editors

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Linda has worked in higher education for 27 years, teaching student occupational therapists and physiotherapists at undergraduate and postgraduate levels. She is a senior lecturer in occupational therapy and the Departmental Director for Learning and Teaching, in the Department of Clinical Sciences at Brunel University London. Her teaching and scholarship focus upon physiology, neurology, ageing, cognition and neurorehabilitation. She has a particular interest in ageing and frailty. Prior to teaching, Linda worked in neurorehabilitation and community physical disability services.

### **Stephanie Tempest PhD MSc PGCert LTHE BSc(Hons) FHEA**

Stephanie is the Education Manager for Professional Development at the College of Occupational Therapists (COT). Prior to this, she worked at Brunel University London, teaching occupational therapy and neurorehabilitation students at undergraduate and postgraduate levels. She has a clinical background in neurosciences and stroke rehabilitation. Stephanie has published a number of articles in peer-reviewed journals and contributed to the third edition of this text. She was a reviewer for the fifth edition of the National Clinical Guidelines for Stroke. Her research interests are varied and include the *International Classification of Functioning, Disability and Health* (ICF), service development, cognition and the lived experience of disability. A central theme throughout her career is supporting lifelong learning for the benefit of those who use services.

## About the Contributors

### Tess Baird MSc Bsc(Hons)

Tess graduated as an occupational therapist from Oxford Brookes University in 1995. She has worked in the field of neurology, specifically stroke, for over 20 years. Tess completed her MSc Neurorehabilitation at Brunel University London in 2005, publishing the output from her dissertation. She has worked across London in hyperacute, inpatient and community neurology and stroke teams. She has been actively involved with the College of Occupational Therapists – Specialist Section in Neurological Practice including the London Committee and the National Committee, via the Stroke Forum. She was part of the team collaborating on the recent COT/ACPIN Clinical Guidelines for splinting. Tess is currently the Clinical Lead for Stroke in Barts Health, managing therapists working across hyperacute, acute and community stroke rehabilitation, and is part of the training staff for 'Bridges – Self Management in Stroke'.

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Sacha qualified at the University of Cape Town, South Africa, in 2000 and spent her first seven years working in London NHS hospitals specialising in adult neurorehabilitation. Since returning to South Africa, she has worked in private healthcare in Johannesburg and is the Clinical Director of Occupational Therapy in a multidisciplinary neurorehabilitation practice. Sacha's areas of particular interest include cognitive rehabilitation, vocational rehabilitation and return to driving.

### Richard Jefferson MSc PGCE DipCOT

Richard has worked primarily in neurology since graduating from the London School of Occupational Therapy in 1988. He gained his MSc Neurorehabilitation from Brunel University London in 1999 and completed a Postgraduate Certificate in Education at Greenwich University in 2006. His career has moved from acute inpatient to community neurorehabilitation and developing clinical services with the brain injury charity Headway. Previous positions have included clinical lead and specialist posts in

community neurology teams. Currently Richard is writing up his PhD thesis exploring the introduction of the *International Classification of Functioning, Disability and Health* (ICF) into clinical practice. He has published on this subject and presented nationally and internationally on both the introduction of the ICF and neurorehabilitation. When not working in neurology, he taught rehabilitation in Malawi and worked as a community therapist in Canada.

## Preface

This book was written primarily for pre-registration students and novice practitioners of occupational therapy. Experienced practitioners will find a useful review of frameworks used within the profession to structure assessment and intervention, together with an update of knowledge in neuropsychology. Members of the multidisciplinary team will gain an insight into the unique role of the occupational therapist in cognitive rehabilitation.

The first edition of *Neuropsychology for Occupational Therapists* was written at a time when cognitive rehabilitation was becoming one of the major areas of occupational therapy practice. The aim was to create an understanding of the part played by cognition, and the effects of its impairment, in daily living.

Relevant assessments of perception and cognition were presented and developed further in the second edition to reflect an increase in the number of standardised assessments available. In the third edition, Linda Gnanasekaran (now Maskill) introduced chapters that related the study of cognitive functions and impairment to current occupational therapy practice. In this fourth edition, Linda Maskill has been joined by Stephanie Tempest to further update the content and introduce new material relating to the maintenance of cognitive health and function in later years. Guest contributors, occupational therapists and experts in their fields of practice, have updated the chapters on attention, memory and executive functions.

Part 1 introduces cognition within the context of occupational performance, emphasising its pivotal role. An occupational focus for cognitive rehabilitation is proposed based upon two theoretical frameworks: one an internationally recognised framework and classification for health and health-related states, the other specific to occupational therapy. The value of these frameworks is explored in relation to the occupational therapy process, exemplifying how theoretical constructs, core skills and knowledge are combined to achieve a rigorous approach to rehabilitation. Not only the student or novice practitioner but also experienced practitioners are given a succinct review of the occupational therapy process. Part 1 establishes the therapeutic context for the knowledge presented in Part 2.

Part 2 outlines the theoretical background for each of the components of the cognitive system and describes the disorders associated with their impairment. The presentation of cognitive functions in separate chapters facilitates both the discussion of relevant research in neuropsychology and the presentation of detailed knowledge. It must, however, be remembered that occupational therapists are often confronted



with people who present with multiple impairments. The challenges of ageing and maintaining healthy cognitive function are addressed in a new chapter (11), that reflects current concerns about multimorbidity and cognitive impairments in later years. Activities in earlier editions, that encourage the reader to focus on their own cognitive abilities, have been retained and extended. Case studies have been retained, and summaries of the functional consequences of disorders reinforce the effects of impairment on function. Narratives of the lived experience have been included for the first time, to further illustrate the impact of cognitive impairments upon occupational performance.

Part 2 carries over the general guidelines given in Part 1 to suggestions for assessment and intervention related to specific areas of cognition.

Our task of integrating basic knowledge with occupational therapy has proved daunting and exciting. If this text is found useful as a resource for neuropsychology, and for guidance to practice, then we have continued to uphold and build upon this aim as first expressed by June Grieve, its original author.

*Linda and Stephanie*

## Acknowledgements

We owe an enormous debt of gratitude to June Grieve, the original author of *Neuropsychology for Occupational Therapists*, whose work made this fourth edition possible. June was an inspirational teacher and mentor, and we both had the honour and privilege of working with her on the third edition. We hope we have carried her spirit with us into this new edition. We also wish to acknowledge Jo Creighton, who produced original line drawings for all the preceding editions of this book, some of which appear again in this edition.

## Our Thanks

We would like to express our thanks to Richard Jefferson, Tess Baird and Sacha Hildebrandt, who updated and revised Chapters 5, 8 and 10 respectively.

## About the Companion Website

Don't forget to visit the companion website for this book:



**[www.wiley.com/go/maskill/neuropsychologyOT](http://www.wiley.com/go/maskill/neuropsychologyOT)**

There you will find valuable material designed to enhance your learning, including:

- interactive multiple choice questions
- links to further reading.

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## **Part I**

### **Cognition and the Occupational Therapy Process**



# Occupation and Cognitive Rehabilitation

Stephanie Tempest and Linda Maskill

## AIMS

- 1) To understand cognition and the role of cognitive skills in occupational performance.
- 2) To introduce and discuss the importance of using two specific frameworks – the International Classification of Functioning, Disability and Health (ICF) and the Occupational Therapy Practice Framework (OTPF).
- 3) To demonstrate the use of the ICF and the OTPF to guide our analysis of occupational performance in cognitive rehabilitation.

## What is Cognition?

Cognition is ‘the process of obtaining knowledge through thought, experience and the senses’ (*Oxford English Dictionary* 2005). It derives from a Latin verb, the meanings of which include to get to learn, to recognise and to find out.

Cognition is studied in many different disciplines and the meaning varies when applied to psychology, philosophy, linguistics or computer science. For example, in computer science, cognition includes the development of artificial intelligence and robotics.

But our understanding of cognition draws upon health science, neuropsychology and the concept of occupational performance. As therapists, we need to understand how the brain functions and subsequently dysfunctions following neurological insult, in specific cognitive modalities such as attention, memory and purposeful movement. Then we need to apply this knowledge of cognitive body functions to understand how people use them to build skills and to perform activities within the context of their everyday life.

There are different ways to classify cognitive functions and some of these debates will be evident in Part 2 when we seek definitions of ‘individual’ impairments. For the purposes of this introduction, when answering the question ‘What is cognition?’, let us consider two main groups. First, there are the broad cognitive functions which, it could be argued, are the foundation stones for our function, comprising consciousness, orientation, intellect, psychosocial skills, temperament and personality, energy, drive



and sleep (WHO 2001). Second, there are specific cognitive modalities, the building blocks for our function, comprising attention, memory, psychomotor functions, emotions, perceptual skills across all the senses, higher level skills (executive functioning), praxis and experience of self and time (WHO 2001). Our ability to interact in a meaningful way, within our environment, is dependent on a complex interplay of these skills.

## The Functional and Social Impact of Cognitive Impairments

The impact of cognitive impairments on the individual, their partners, family and friends can be significant. The lived experience allows us some insight into the real story.

**The lived experience of cognitive impairments (adapted from Erikson and Tham 2010; Gelech and Desjardins 2011; Lorenz 2010)**

I can get tired, irritable and worried because basic activities need more energy, planning and attention. These difficulties have persisted and sometimes I feel out of control. I wonder about the sort of person I have become but I recognise my old self when I do my previous occupations: 'I am a customer; yes I can be that for a while'. I use tricks so I can remember to do things like setting the table; sometimes I need them but not always.

Living with the effects of brain injury is like living in a fog; sometimes my head is scrambled and the shell of my life is broken. I think about my lost dreams and feel the chaos of my daily life. But I compensate for this; I put labels on things, I use a timetable and all the time I'm developing a new identity.

I'm building a new self now, with elements of my old self and new bits, some are good and some are not so good. But I need to accept the death of my old self.

The need for cognitive rehabilitation may be self-evident. But there is debate about what it is and the contributions made by occupational therapy. Within all forms of rehabilitation, models and frameworks help us to conceptualise the processes involved (Wilson 2002) and to think about how and why we should assess, intervene and evaluate. Of great importance is that they help us, as therapists, to understand and articulate the impact of, for example, cognitive impairments on an individual and their family.

To this end, Chapter 1 will start with a brief debate on what comprises cognitive rehabilitation and the unique role for occupational therapy within the process. Specific theoretical frameworks and models will be described in terms of their usefulness to aid our clinical reasoning and then applied to the occupational therapy process, to demonstrate the need to embed our clinical practice within the theory base. Finally, this chapter will summarise why it is essential for occupational therapists to understand the nature of cognitive impairments.

## The Scope of Cognitive Rehabilitation

Cognitive rehabilitation draws upon theories from a number of disciplines including neuropsychology, occupational therapy, speech and language therapy and special education; therefore it is not the exclusive domain of one profession. A single definition of