



Literacy Theories for the Digital Age



NEW PERSPECTIVES ON LANGUAGE AND EDUCATION

Series Editor: Professor Viv Edwards, *University of Reading, Reading, Great Britain*

Two decades of research and development in language and literacy education have yielded a broad, multidisciplinary focus. Yet education systems face constant economic and technological change, with attendant issues of identity and power, community and culture. This series will feature critical and interpretive, disciplinary and multidisciplinary perspectives on teaching and learning, language and literacy in new times.

Full details of all the books in this series and of all our other publications can be found on <http://www.multilingual-matters.com>, or by writing to Multilingual Matters, St Nicholas House, 31–34 High Street, Bristol BS1 2AW, UK.



NEW PERSPECTIVES ON LANGUAGE AND EDUCATION: 45

Literacy Theories for the Digital Age

Social, Critical, Multimodal, Spatial,
Material and Sensory Lenses

Kathy A. Mills

MULTILINGUAL MATTERS

Bristol • Buffalo • Toronto

*This book is dedicated to Ryan,
Lachlan, Juliette, Marie and Henry*

Library of Congress Cataloging in Publication Data

Mills, Kathy, 1974- author.

Literacy Theories for the Digital Age: Social, Critical, Multimodal, Spatial, Material and Sensory Lenses/Kathy A. Mills.

New Perspectives on Language and Education: 45

Includes bibliographical references and index.

1. Literacy—Study and teaching. 2. Literacy—Technological innovations. 3. Literacy—Social aspects. 4. Interactive multimedia. I. Title.

LC159.M55 2015

302.2'244—dc23 2015023398

British Library Cataloguing in Publication Data

A catalogue entry for this book is available from the British Library.

ISBN-13: 978-1-78309-462-2 (hbk)

ISBN-13: 978-1-78309-461-5 (pbk)

Multilingual Matters

UK: St Nicholas House, 31–34 High Street, Bristol BS1 2AW, UK.

USA: UTP, 2250 Military Road, Tonawanda, NY 14150, USA.

Canada: UTP, 5201 Dufferin Street, North York, Ontario M3H 5T8, Canada.

Website: www.multilingual-matters.com

Twitter: Multi_Ling_Mat

Facebook: <https://www.facebook.com/multilingualmatters>

Blog: www.channelviewpublications.wordpress.com

Copyright © 2016 Kathy A. Mills.

All rights reserved. No part of this work may be reproduced in any form or by any means without permission in writing from the publisher.

The policy of Multilingual Matters/Channel View Publications is to use papers that are natural, renewable and recyclable products, made from wood grown in sustainable forests. In the manufacturing process of our books, and to further support our policy, preference is given to printers that have FSC and PEFC Chain of Custody certification. The FSC and/or PEFC logos will appear on those books where full certification has been granted to the printer concerned.

Typeset by Techset Composition India (P) Ltd, Bangalore and Chennai, India.
Printed and bound in Great Britain by the CPI Books Group Ltd.



Contents

Figures	ix
Acknowledgements	xi
Foreword – <i>David Howes</i>	xiii
The Sensory Turn in Literacy Theory and Practice	xiii
Preface	xix
Rhizomatic Literacy Theories	xix
1 Globalisation, Mobile Lives and Schooling in the Digital Turn	1
Globalisation	1
Mobile Lives	5
Digital Challenge for Education Policy	6
Digital Challenge for Teachers of English – A Case Study	7
Digital Pedagogy: A Model for Practice	11
2 Socio-cultural Literacies	17
Key Concepts of Socio-cultural Literacies	17
Origins of Socio-cultural Literacies	20
Tensions for Socio-cultural Literacies	25
Recent Developments in Socio-cultural Literacies	28
Intersections between Socio-cultural and Critical Approaches	35
Implications of Socio-cultural Literacies for Practice	38
3 Critical Literacies	41
Key Concepts of Critical Literacies	41
Origins of Critical Approaches	46
Tensions for Critical Literacy Approaches	49
Recent Developments in Critical Approaches	52





vi Literacy Theories for the Digital Age

Intersections between Critical Literacy and Multimodal Literacy Paradigms	54
Implications of Critical Approaches for Literacy Practice	57
New Directions for Critical Approaches	62
4 Multimodal Literacies	65
Key Concepts of Multimodal Literacies	65
Origins of Multimodal Literacies	69
Tensions for Multimodal Literacies	74
Recent Developments in Multimodal Literacies	80
Intersections between Multimodal and Socio-cultural Approaches	82
Implications of Multimodal Literacies for Practice	85
New Directions for Multimodal Literacies	87
5 Socio-spatial Literacies	91
Key Concepts of Socio-spatial Literacies	92
Origins of Socio-spatial Literacies	94
Tensions for Socio-spatial Literacies	99
Recent Developments in Socio-spatial Literacies	101
Intersections between Socio-spatial and Socio-cultural Literacy Paradigms	109
Implications of Socio-spatial Literacies for Practice	111
New Directions for Socio-spatial Literacies	112
6 Socio-material Literacies	114
Key Concepts of Socio-material Literacies	115
Origins of Socio-material Literacies	117
Tensions for Socio-material Literacies	122
Recent Developments of Socio-material Literacies	126
Intersections between Socio-material and Socio-cultural Approaches	128
Intersections between Socio-material and Socio-spatial Approaches	130
Implications of Socio-material Literacies for Practice	133
New Directions for Socio-material Literacies	134
7 Sensory Literacies	137
Key Concepts of Sensory Literacies	137
Tensions for Sensory Literacies	140





Contents vii

Recent Developments in Sensory Literacies	142
Intersections between Sensory and Multimodal Literacy Paradigms	149
Implications of Sensory Literacies for Practice	153
New Directions for Sensory Literacies	156
References	163
Index	192





Figures

Figure 7.1 Locomotion and walking on a wall	155
Figure 7.2 Blowing dandelion seeds	155
Figure 7.3 Child walking in a safe place	157
Figure 7.4 Locomotion and balance on a wall	158
Figure 7.5 Movement on rotating playground equipment	158
Figure 7.6 Movement on the slide	159



Acknowledgements

Have you ever wondered about a book that you wanted to read, but it wasn't written yet? This is the book I wrote because I wanted to read it. It is my hope that others, including established and recent scholars and educators from a range of disciplines, will find value and renewed inspiration in the theories and conceptualisation of this work for their own research and practice. To the growing number of graduate students in education around the world, I trust you will find this volume a vital introduction to some of the key theories that are shaping the challenging and ever-relevant field of literacy education in the digital turn.

I acknowledge Professor Len Unsworth for his unfailing encouragement, for supporting our scholarly research collaborations, and for demonstrating how to extend the boundaries of current thinking in multimodality.

I greatly appreciate David Howes, a noted cultural anthropologist, who wrote the brilliantly insightful foreword to the book. He wrote his contribution more than once because he strives for quality.

I thank distinguished Professor Allan Luke, whose critical debate and co-authorship with me has influenced the framing of Chapter 3 on critical scholarship.

I thank Professor Barbara Comber for co-authoring with me since 2010, and for influencing my conceptualisation of Chapter 5, socio-spatial literacies.

Professor Kar-Tin Lee is acknowledged for leading and supporting me, and many other scholars, to continue the vital legacy of educational research for the public good.

I thank Maryam Sandhu for her contribution to the detailed formatting and pagination of the original manuscripts. Finally, I thank the blind peer reviewers and series editor, Viv Edwards, for their encouragement, constructive feedback, and support of this volume.





Foreword

The Sensory Turn in Literacy Theory and Practice



This book charts a range of established and emergent paradigms for literacy research. Classic paradigms include socio-cultural literacies, multimodal literacies and critical approaches to literacy. More recent paradigms include socio-spatial literacies, socio-material literacies, and presented for the first time here, sensory literacies. Kathy Mills lays out the key concepts of each of these approaches, notes their internal tensions, surveys recent developments, and draws out implications for the classroom. In the process, the old definition of literacy as essentially alphabetical is exploded, and replaced by the notion of ‘multiliteracies’, derived from the work of the New London Group (2000). There is also a strong focus on the extracognitive and extralinguistic dimensions of literacy. This will not sit well with many educational psychologists, who have a vested interest in the restricted definition of literacy. But it will appeal, and appeal strongly, to those who recognise, like Mills, that the digital revolution has put an end to literacy, as we knew it.



Texts are no longer static the way they were in the print era – they are interactive. And why shouldn’t a student be allowed to submit a home video alongside or even in place of an essay in English class? In the age of YouTube, it is visual literacy skills that students are most in need of – skills to produce videos themselves, and skills to analyse videos critically. Thus, whereas an earlier generation of educators stirred up lots of anxiety about our ‘amusing ourselves to death’ and ‘the closing of the American mind’ (i.e. ignoring the canon), or allowing ‘edutainment’ to take the place of education proper, Mills’ main message in this book is to get over it and get on with the show.

In one research project Mills and her colleagues conducted, upper primary school students were provided with camcorders and invited to make videos of their schoolyard activities. One video included clips of going down



a slide – from the perspective of the slider. Carsten Höller would approve. He is the German artist best known for installing a series of gigantic, glass-encased slides in the Tate Modern Turbine Hall gallery. Like many contemporary artists (Jones, 2006), Höller is bent on exploding the conventional understanding of aesthetic experience as one of ‘disinterested contemplation’. Art should be sensational, should be thrilling, and it is if you hurtle down one of his slides. In offering museum-goers this opportunity, Höller is also recovering and restoring the original meaning of the term aesthetic, which comes from the Greek *aisthēsis*, which translates as ‘perception from the senses’ without specification as to modality or limitation to ‘the beautiful’.

Mills explodes our understanding of literacy in the same way Höller explodes our conventional understanding of art. She does so through introducing her own theory of ‘sensory literacies’, which can be broken down into the visual, audio, gestural, tactile, spatial, olfactory, gustatory and various assemblages (e.g. audio-visual), all of which exceed, but also complement, the textual. This move is inspired in part by Mills’ reading of recent research in neuroscience and in the anthropology and history of the senses. Briefly, while we live in a society in which much of our knowledge comes to us through our eyes (e.g. the printed text, the computer screen), we now know that the senses work together to promote learning. As Rosalind Charlesworth, a professor of child development puts it: ‘We learn best through multisensory experiences’ (Charlesworth, 2014: 51). This is confirmed by neuroscientists, such as Jeanette Norden, who states, ‘The brain loves diversity’ (quoted in Henshaw, 2012: 249). Indigenous societies have long been aware of the importance of integrating the senses in learning experiences. In her article, *Other Ways to Wisdom: Learning through the Senses Across Cultures*, Constance Classen describes how for Indigenous cultures, ‘...each of the senses has a vital role to play in the acquisition of knowledge about the world’ (Classen, 1999: 269; see further Howes, 2014b). Engaging multiple senses makes events and objects more interesting and memorable in whichever culture one lives.

I had the pleasure of reading Mills’ book in manuscript form while on the plane to Toledo to attend the 47th annual meeting of the International Visual Literacy Association (IVLA), which was held at the Toledo Museum of Art (TMA). It enabled me to better comprehend the ground-breaking nature of that conference and its venue. In the words of John Debes (1969: 27), one of the founders of the IVLA, writing in 1969, ‘Visual literacy refers to a group of vision competencies a human being can develop by seeing and at the same time having and integrating other sensory experiences’. This definition, with its stress on multisensoriality, resonates with a point made by Brian Kennedy, the visionary Director of the TMA, in a TEDx Dartmouth

talk called ‘Visual literacy: Why we need it.’ In his talk, Kennedy expressed the view that ‘visual literacy is the key to sensory literacy’, and that creating conditions for sensory literacy should be the goal of the contemporary museum. The TMA accordingly staged a special exhibition entitled *InSight: Contemporary Sensory Works*, curated by Adam Levine, timed to coincide with the IVLA conference. The exhibition brochure states provocatively:

Is art meant only for the eyes? The three artists featured in this exhibition don’t think so. They [i.e. Pinaree Sanpitak, Aminah Robinson, and Magdalene Odundo] all create works that explicitly or implicitly evoke a multisensory experience. Although each artist’s work is highly visual, the art on display in *InSight: Contemporary Sensory Works* also plays with notions of tactility and sound.

The conference itself was entitled *The Art of Seeing: From the Ordinary to the Extraordinary*. This idea of seeing as an art, as a competency not a given, is a tremendously powerful one. Knowing how to see a painting is seen as equivalent to knowing how to read a book, and therefore, as a skill which requires training. The TMA has taken the promotion of visual literacy to extraordinary lengths, beginning with baby tours, and continuing with the publication of an alphabet book called *The Art of Seeing Art: A, B & See* under the direction of Director of Education, Kathy Dank-McGhee.

Reading and looking at this alphabet book of works from the Toledo Museum of Art will help children develop important looking skills that contribute to visual literacy. Being literate in the visual arts could give young children an advantage in learning to read and write. (Toledo Museum of Art, 2013: 3)

The extraordinarily rich body of research on the complementarity of visual and alphabetic literacy, and how skill at one not only could, but does, enhance performance in the other (see Dank-McGhee & Slutsky, 2007), as well as the notion of multiliteracies promoted throughout this book by Kathy Mills, gives the lie to phenomenological anthropologist Tim Ingold’s suggestion, in his critique of the anthropology of the senses, that ‘the eyes and ears should not be understood as separate keyboards for the registration of sensation, but as organs of the body as a whole’ (Ingold quoted in Mills, this volume). In his statement, Ingold belittles the differences between seeing and hearing (and completely ignores tasting, smelling and the rest). He is oblivious to the notion of multiple intelligences because of his diminished understanding of the multisensoriality of human experience, and his



dismissal of the growing body of research in the history and anthropology of the senses that points to the differential elaboration of the senses in different cultures and historical periods (see Howes & Classen, 2014). Ingold dismisses this vast corpus of work because it fails to cohere with what the philosopher Merleau-Ponty would lead us to expect. But Ingold's work is really just a testimony to the poverty of phenomenology and, in our estimation, only serves to underscore the need to take a sociologically savvy, cross-culturally aware approach to the study of the multimodality of human learning and experience (see Howes & Classen, 2014; Ingold & Howes, 2011). As Classen observes, when we examine the meanings vested in different modalities and sensations across cultures:

We find a cornucopia of potent sensory symbolism. Sight may be linked to reason or to witchcraft, taste may be used as a metaphor for aesthetic discrimination or for sexual experience, an odour may signify sanctity or sin, political power or social exclusion. Together, these sensory meanings and values form the *sensory model* espoused by a society, according to which the members of that society 'make sense' of the world, or translate sensory perceptions and concepts into a particular 'worldview.' There will likely be challenges to this model from within the society – persons and groups who differ on certain sensory values – yet this model will provide the basic perceptual paradigm to be followed or resisted. (Classen, 1997: 402)

In keeping with the spirit of exploding literacies that animates this book, I would like by way of closing, to address one last example of a kind of literacy practice that actually takes us beyond the pale of literacy and enucleates writing from an alphabetical perspective. It comes from the last chapter of *Worlds of Sense* (Classen, 1993b). It is a study of literacy as anti-culture, which has to do with the Andean experience of the written word.

Andean society was traditionally, and remains, a profoundly oral society. For example, according to Andean cosmogony, the world and its peoples were called into being by the creator, Viracocha, and his voice made the corn grow. While most of the empires of the world have depended on some form of writing, the Inca Empire was unique in that it depended on the quipu, described below.

Throughout the Andes today, there is an annual tradition of holding Conquest Plays. Unlike the Conquest Plays of Mexico, which celebrate the coming of the Spanish and the civilising influence of Christianity, these dramas commemorate the destruction of the Inca Empire. A common theme is the disjunction between orality and literacy, sound and silence. In one





version, the Spanish move their lips when they speak, but make no sound. The Inca Emperor Atahualpa is handed a written letter. He raises it to his ear in an attempt to listen to its contents, but to no avail. He passes it around among his followers, but the scratches on the paper equally mystify them:

Seen from this side, it is like a swarm of ants . . . Looking at it again, I see stags, upside down and their feet in the air. Who on earth could understand that?

The process is repeated with a Bible, which is handed to the Emperor by a Spanish priest. After examining it, Atahualpa drops it. This is the excuse the Spanish needed. Pizarro's soldiers rush in and seize the Inca for refusing to receive (and submit to) the Word. He will later be beheaded. In another version, the priest sets about beating the Indians with the Bible after Atahualpa drops it. These plays offer 'a graphic portrayal of the Andean experience of [the onslaught of] writing and Christianity as a brutal imposition' (Classen, 1993a: 117).

The beheading of Atahualpa plunged the Andean world into silence. Bereft of the Inca's commanding voice, the empire crumbled. The Inca's voice had used to be relayed by the quipu-makers to the far corners of the empire, just as information, typically used for accounting purposes, flowed back to the capital Cuzco via the same medium.

The quipu is a fascinating technology of communication. It consists of a set of knotted cords of different colours hung on a string. The information is encoded in the differences of colour and the position and size of the knots. The quipu is, then, 'a recording in three dimensions with colour' (Ascher & Ascher, 1981: 62). But unlike writing or photography, or any of the other recording and communications media with which we modern Westerners are familiar, the quipu does not store information independently of the mind or body of the recorder. It is a mnemonic device, nothing more, and each quipu maker had a personal style, a kind of shorthand, as it were. This is why several hundred extant quipu can only bear mute testimony to a vanished civilisation. Every attempt by scholars to decode them has failed.

Can quipu making and telling be considered a form of literacy? On the basis of Kathy Mills' definition, it could be so. It is actually a very sensual medium of communication, engaging touch and rhythm in the tying of the knots, and involving a wide range of colours and patterns (Classen, 1999: 125). Furthermore, the quipu is not flat and linear, as is writing; it is multi-dimensional – which makes it unlike a two-dimensional computer screen as well. Functioning on several sensory levels and in more than two-dimensions, the quipu is a highly sophisticated form of sensory literacy. As for cracking



the code, the quipu scholar Robert Ascher suggests that the problem lies with Western academics being too visualist in their approach. If we could but curb our visuality a little:

We might understand [quipu] writing as simultaneously tactile and visual, and probably more. Being that we are who we are, it is difficult to internalise this notion so that it becomes a part of us, but I think that it is the next step that must be taken in the study of Inka writing. (Ascher, 2002: 113)

The multisensoriality of the quipu rivals that of any digital device. There is a very real problem with truancy in the Andes. For example, Classen recounts a delightful myth that explains why children keep running away from school. This is not surprising, given the association of the kind of learning that goes on in school (i.e. learning to read and write) with anti-culture. What sort of policy would be needed to attract the children back? Certainly, it would not be a policy based on one copybook per child, however colourful, or even one laptop per child, but perhaps one quipu per child.

Hopefully, these ruminations have revealed something of how stimulating Kathy Mills' theory of sensory literacies can be. It is the same with each of the approaches to literacy she treats: the socio-cultural, the critical, the multi-modal, the socio-spatial and the socio-material approaches to literacy. This slim volume is a remarkable compendium, a brilliant work of synthesis – and the book to end all books.

David Howes
Sensory Anthropologist

1 Globalisation, Mobile Lives and Schooling in the Digital Turn

In an age of the 'global home,' literacy practices of the past are reduced in their power to determine the practices of the future.
(Mills)

Ways of thinking about literacy research arise in particular historical moments, and in relation to the social, economic, political and technological factors that set the stage and call for different ways of doing and theorising literacy. This book is an attempt to acknowledge the multiple and coexisting paradigms that are making a significant difference to the way we understand literacy in what I have called the 'digital turn' – the rapid digitalisation of literacy practices generated by human action, across a growing number of spheres of practice in the 21st century (Mills, 2010b: 246).

Globalisation

Children and youth today are growing up in a very different world than generations past: they can potentially use digital toys, tablets and mobile devices anywhere and anytime from much younger ages and earlier stages of language development than ever before. With the rise of the global home, a pun on McLuhan and Powers' (1989) book entitled *The Global Village*, the way young children are socialised in literacy practices is radically altered when compared with previous generations. For example, with the advent of touch-screen technologies, such as the iPad, babies and toddlers in many households can interact with an array of educational apps before they are able to correctly hold a pencil. At the same time, they are often surrounded

2 Literacy Theories for the Digital Age

at home and early childhood settings by an array of non-digital literacy materials, such as books, crayons, paper, craft, puzzles and alphabet blocks: the children switch between these and digital literacy practices with ease.

The elementary school age child can potentially interact with a broadened selection of screen-based entertainment, from handheld to full sized video game consoles, tablets, personal computers and laptops for multiplayer online games. They can view user-generated content from peers on YouTube about the latest crazes, from tutorials about loom bands to Minecraft parodies. Teenagers and adolescents use the internet for both social and non-social purposes, including support of their offline friendships with peers (Gross, 2004). In the context of continuing urbanisation and more blatant commercialisation through globalised media, children and youth are often surrounded by digital displays from small to large, from the handheld devices in the home to the electronic billboards on buildings, buses and almost any commercial object that has a vertical surface.

A walk through Times Square in New York provides an extreme example of the pervasiveness of the digital image by global corporations and economies. The large-scale distribution of mass media and popular culture that saturates urban life through globalisation and technological progress brings with it both new opportunities and new risks (Jones Diaz *et al.*, 2007). Beck (1992: 22) foresees that, 'Along with the growing capacity of technical options grows the incalculability of their consequences'. These social and technological changes bring new security concerns for end-users, such as cyber bullying, identity theft, social engineering, piracy, malware and phishing, while events such as the 11 September attacks demonstrate the presence of an instant global audience for the transnational organisation of terrorist acts on a global scale (Giddens, 2002).

Literacy has become a process of commodification in which literate learning is entangled with commodities. It is similarly implicated by what Kinder (1991: 3) terms a 'transmedia intertextuality' – a conglomeration of interconnected texts across modes and media. In the context of capitalist accumulation, literacy learning throughout the life course involves interaction with multiple objects, video games, websites, toys, movies, books, figurines and licensed merchandise, as literacy is made and remade in networks of practice, and as material texts circulate and are adapted into diverse commodified forms. Within these discursive repertoires, which are often tied to global commercial corporations, children actively construct and reconstruct their sense of self and identity (Hughes & Macnaughton, 2001). This calls for a problematising of the ideological effects of the hybridised textual environment, and nuanced accounts of everyday and school-based literacy practices within the social conditions of globalisation (Makin & Whiteman, 2007).



2 Socio-cultural Literacies

The view that literacy as a set of cognitive skills is an ideology that ignores racial, cultural, and other forms of social difference.

(Mills)

This chapter provides insights into recent changes within the socio-cultural paradigm of literacy research, which became known as the New Literacy Studies (Gee, 1999; Street, 1997b). Drawing on my review published in the *Review of Educational Research*, and extending it to recent developments, I define the socio-cultural literacy theory and interrogate its key themes (Mills, 2010b). I address some of the tensions in socio-cultural approaches, such as the boundaries or limits of literacy – a criticism that has also been raised in relation to multiliteracies approaches (see Cameron, 2000; Prain, 1997). I also consider the confines of regarding literacies as local practices, against the emerging features of digital practices more globally. I evaluate the extent to which critical approaches and other paradigms have shaped and continue to influence the New Literacy Studies. I trace some of the shared characteristics of literacy practices that have emerged in digital situations of use, and provide a vision of the future for teachers to integrate digital literacy practices into school curricula.

Key Concepts of Socio-cultural Literacies

Defined concisely by Street (2003: 79), literacy practices are ‘... particular ways of thinking about and doing reading and writing in cultural contexts’. Varieties of literacy practice are always constructed out of specific social conditions, including political and economic structures (Cook-Gumperz, 2006; Luke, 1994). What was unique and distinguished this view from the prevailing psychometric or autonomous paradigm is that knowledge and literacy practices were reconceived as constructions of particular social groups, rather than attributed to cognition alone (Street, 1984). This view



opposed theorists such as Hildyard and Olsen (1978), who appealed to the scientific, intrinsic and seemingly culturally and racially benign nature of literacy as a purely individual cognitive skill.

A key difficulty with interpreting literacy practices within any community is the problem of limiting what constitutes a literacy practice, an issue that has been raised elsewhere (see Barton *et al.*, 2000; Mills, 2010b). Gee (2012) provides an interesting answer to this question, using the term Discourses (with a capital D) rather than literacy. He defines Discourses as socially recognised ways of using words or other semiotic codes (e.g. images, sounds) and ‘... ways of behaving, interacting, valuing, thinking, believing and speaking ... and often reading and writing ...’ (Gee, 2012: 3). These are used to identify members of a socially meaningful group. To put it another way, Discourses are instantiations of identity.

As Gee (2005) explains, a major function of language is to act out different kinds of people for different sorts of roles and occasions. For example, in a job interview, one can attend not only to supplying the ‘correct’ verbal answers to questions, but to projecting a certain kind of ideal persona for the role. This includes how one enters and exits the room, where one sits, how one sits and even the direction one’s foot is pointed. Discourses include facial expression, eye contact, gesticulations, length of responses, volume, pacing, tone and expression of voice, grammatical choices, hairstyle, clothing, footwear and so on.

There are traces here of Goffman’s (1959: 136) well-cited theory outlined in his book, *The Presentation of Self in Everyday Life*. Goffman theorised that language is more than what is communicated through words or verbal symbols that have attached meanings familiar to those in the interaction. It is more than the expression that one ‘gives’. Rather, language is as much about the message that one ‘gives off’ – the wide range of action that is symptomatic of one’s identity, as one participates in social life.

A critical point is that groups often have different home and community-based Discourses that have differing degrees of alignment with the required language and Discourses in schools and institutions. This contributes a great deal to appreciating why groups in society have differing degrees of literacy ‘achievement’, as defined by schooling systems. While Gee acknowledges that there are also cognitive features of literacy learning, this is not his emphasis, given that the prevailing view of literacy, particularly in educational achievement psychometrics, reading research and school accountability discourses, has often been a cognitive one (Gee, 2012).

Explicitly drawing on Gee’s definition of Discourses, Lankshear and Knobel (2008: 255) similarly define literacies as ‘socially recognised’ ways of communicating ‘... through the medium of encoded texts ... as members of



3 Critical Literacies

We find contemporary society and culture wanting in many ways and believe that research should support efforts for change.

(Carspecken, 1996: 6–7)

Key Concepts of Critical Literacies

A critical orientation to literacy studies begins with a concern about social inequalities, social structures, power and human agency. Power relations mediate all thought and language, so that all language, textual practices and linguistic conventions are the product of relations of power and struggles for power. Poet and social activist Adrienne Rich once wrote:

My daily life as a teacher confronts me with young men and women who had language and literature used against them, to keep them in their place, to mystify, to bully, to make them feel powerless. (Rich, 1979: 61)

Critical orientations to literacy, whether in relation to new media or old, derive from varied schools of thought, from the Frankfurt School Institute of Social Research to Paulo Freire's ideals. However, centrally, critical approaches to literacy aim to disrupt hegemonic discourses about what counts as literacy and for whom. Such approaches consider the power of discourses in terms of who has access to literacies and literacy practices, and how the inequitable distribution of literacy can be changed. As Dewey perceived:

When language is used simply for the repetition of lessons, it is not surprising that one of the chief difficulties of schoolwork has come to be instruction in the mother tongue. Since the language taught is unnatural, not growing out of the real desire to communicate vital impressions and convictions, the freedom of children in its use gradually disappears. (Dewey, 1971: 55–56)



Critical approaches consider both power in languages and discourse, as well as the power behind language and discourses – the social structures and power relations that give rise to, maintain and reproduce language, and limit access to formal discourses for certain groups (Fairclough, 1989). Students need to be taught flexible and wide-ranging social competencies for educational, occupational and other social purposes, coupled with the ability to challenge ideologies of texts, textual practices and one's own place at any given point in time within the social structure (Luke, 1994). And regardless of what grammatical forms, bilingual approaches, modes or technologies are taught within the literacy curriculum, literacy pedagogy isn't inherently democratic or critical in nature. Critical approaches to literacy directly address the ideologies in books and media, and work towards the development of a critical consciousness (Shor, 1999).

Literacy events in schools are rule-governed social contexts that have embedded values, identities and symbols of the social world. The social roles and images circulated in school texts are not natural or inevitable, but can be interrogated. Critical approaches reposition teachers and students to deconstruct dominant selective traditions in schools and society, particularly in the complex textual and multimedia environments of navigating and remixing digitally mediated texts.

Domination and privilege

From a critical orientation, any serious analysis of literacy studies requires an attendant understanding of the way in which literacy pedagogies function in the process of social struggle, whether tied to race, class, gender, belief or other identities, and how literacy pedagogies may also legitimate or alternatively critically challenge the continued privileging of dominant groups (Apple, 1982). Literacy practices in schools need to be reinterpreted and repositioned with an attendant awareness of the changing demands of the historical, cultural and political context in which they are used (Luke & Freebody, 1997). As Luke (1997: 2) concluded, 'There is compelling historical and contemporary evidence that, the best intents and efforts of teachers notwithstanding, many school systems are not providing equitable access to powerful literacies'.

Providing new evidence for these patterns of literacy marginalisation in Australia, ethnographic data from students' home and school lives demonstrates that students' ability to take hold of multimodal design in the classroom is partially bounded by the consequences of social action more widely distributed (see Mills, 2011c). For example, in an Australian classroom, multilingual and Indigenous students who were not of the dominant, white



4 Multimodal Literacies

A multimodal approach to technology-mediated learning offers a way of thinking about the relationship between semiotic resources and people's meaning making
(Jewitt, 2006: 16)

Key Concepts of Multimodal Literacies

Multimodal approaches to literacy are currently prolific in educational research, indicated by the steady increase in the number of research studies of digitally mediated literacy practices (Mills, 2009). The popular terms 'multimodal' and 'literacy' now appear together in over 30,000 scholarly texts accessible to Google Scholar, though definitions of multimodality are not always alike. The dominant theory of multimodality addressed in this chapter is positioned within the theoretical framework of social semiotics (Kress & van Leeuwen, 2006). Social semiotics explicitly attends to meaning-making of diverse kinds, whether of words, actions, images, somatic meanings or other modes (Thibault, 1993). Therefore, by definition, social semiotics acknowledges the role of non-linguistic modes in human social meaning.

Multimodality is defined as '... the use of several semiotic modes in the design of a semiotic product or event' (Kress *et al.*, 2001: 20). Reading and writing have always been multimodal, since these literate practices involve the decoding and encoding of words, while similarly attending to spatial layout of the text, images and other modes of representation (e.g. gestural meanings of represented characters, material features of the book). Yet undeniably, people-driven technological developments of communication have given rise to a much more diverse range of texts and textual practices. There is more rapid dissemination of a greater number of multimodal texts than ever before, and more prolific flows of textual practices across cultures, sub-cultures and national borders via the internet (New London Group, 2000),



particularly given the ease of uploading user-generated content using Web 2.0 technologies (Mills & Chandra, 2011).

Humans have always learned to communicate through multiple sign-systems or modes, each of which offers a distinctive way of making meaning (Kress & Bezemer, 2008). However, many theorists see that there is cause for heightened interest given the affordances of digital technologies to capture, create, modify, combine and disseminate images on a much broader scale than in the past. The multimodal ways in which we remember our lived experiences, and preserve our heritages through the visual, are similarly more fluid and configured differently, coupled by greater immediacy and increased portability to share these representations (Giaccardi, 2012).

There are changing social roles and identities associated with multimodal assemblages of audio, visual, gestural, spatial, tactile and other modes that are combined and disseminated with greater ease by everyday users via mobile devices, and disseminated via social media sites, such as Twitter and Facebook (Mills, 2009) and image or video sharing sites (e.g. YouTube, Instagram, Pinterest, SoundCloud). While theorists see that conventional offline literacy practices and new online communication practices are epistemologically different (Knobel & Lankshear, 2007), culturally more participatory (Jenkins *et al.*, 2009) and defined by new online social orders (Snyder, 2001), it is fundamentally the transformation of modes to which multimodal approaches attend.

Modes as sign-systems

Definitions of the multiple resources that humans use to communicate have been multiple and varied, including definitions of 'modes'. For example, the New London Group (2000) uses the term 'modes' in conjunction with 'design'. They identify six major areas or modes of meaning: linguistic, visual, audio, gestural, spatial and multimodal. Multimodal design is considered the most significant, since it concerns the interrelationship of different modes of meaning and the patterns of interconnection among modes.

While Kress (2000b) has several chapters located within Cope and Kalantzis' volume by the New London Group, his interpretation of modes in his sole authored chapters differs slightly to the New London Group. For example, Kress includes music as an example of a mode, as opposed to the broader classification used by the New London Group – audio design. In the New London Group's account, music is listed as a sub-category of audio design, which can be grouped with other examples of audio, such as sound effects, recorded speech and silence (New London Group, 2000). Kress' usage of the term 'modes' is similar to Suhor's (1984) use of the term 'sign-systems',



5 Socio-spatial Literacies

... [S]paces ... are socially constructed ... This recognition alone opens up new ways of looking at literacy and learning.
(Soja, 2004: x)

Socio-spatial literacy research is transforming the way we think about the social and geographical distribution of literacy practices across regions. It has enriched our thinking most fundamentally about how literacy spaces are socially produced, and about how the social spaces of literacy are influenced by power (Mills & Comber, 2013). Literacy research is a field in which we have, for some time, acknowledged the interactions between globalisation and the circulation of literacy practices across transnational borders (New London Group, 1996).

There is a growing recognition that the spatial dimension of literacy, including the flows, networks and connections between literacy practices that circulate in society, are worthy of more serious attention in literacy research, including at the local level. For example, recent literacy studies have examined the connections between literacy practices in, within, and across specific social spaces of school and home (Bulfin & North, 2007; Nespor, 1997, 2008; Pahl, 2001), and within public spaces such as libraries (Nixon, 2003) and the mall (Moja, 2004). Others have examined literacies within institutional sites, such as prisons (Wilson, 2004), and in virtual environments (Valk, 2008). Fenwick and colleagues (2011: 130), who trace the spatial in educational research rather than literacy studies per se quip: 'Space is too important to be left to social geographers'.

These approaches that give priority to spatial themes in social and cultural geography have led to new theorisations of space as it pertains to literacy studies. For example, literacy theorists have borrowed Soja's term Thirdspace to take on a new meaning for literacy studies (Gutierrez, 2008; Lynch, 2008; Moje *et al.*, 2004). New phrases to encapsulate this strand of literacy research include spatial theories (Gulson & Symes, 2007), spatialised literacy (Leander & Sheehy, 2004) and geosemiotic approaches to language



and discourse that ‘... study the social meaning of the material placement of signs... discourses and... actions in the material world’ (Scollon & Scollon, 2003: 2). These spatial theories are sometimes coupled with the view that systems of signs are always located in the material or spatial world – as a necessary condition of their existence – and that literacy is more than a mental construct, detached from the space-time dimensions in which it is practiced.

The recognition of space in literacy studies can be called the spatial turn (Mills & Comber, 2013), which has concord with other literacy research paradigms, from a critical turn (e.g. Comber & Simpson, 2001; Luke, 1998), to the social turn (e.g. Gee, 1992; Street, 1995) and within what I have called the broader ‘digital turn’ (Mills, 2010b: 246). The spatial turn in literacy studies is not unique to our work, but has occurred throughout the past decade, with edited works, such as Leander and Sheehy’s (2004) book, *Spatializing Literacy Research*, which brings researchers together to reconceptualise literacy in ways that address spatial aspects of literacy practices. There is also an increasing number of literacy studies that demonstrate the significance of space in literacy practices, whether within single social sites or across social sites, at a micro-level (e.g. classroom interactions) or macro-level (e.g. globalisation) of social analysis (see Mills & Comber, 2013).

This chapter moves beyond general notions of space or à la mode spatial metaphors, to conceptualise a principled theory of spatial literacy. Soja perceives that spatial theory is sometimes at risk of becoming a ‘... now-fashionable attachment... to geographical facts and spatial metaphors’ (Soja, 2004: ix). To avoid the conflation of spatial metaphors with a systematic theory of space and literacy, it is important to begin by articulating the central principles of social-spatial literacy research, which we have outlined elsewhere (Mills & Comber, 2015).

Key Concepts of Socio-spatial Literacies

In socio-spatial literacy studies, there is first the recognition that language practices are distributed socio-geographically in patterned ways, appearing in distinct forms in certain social sites, while having similarities to literacy practices in other social spaces (Mills & Comber, 2015). Spatiality in literacy studies includes the socio-material relations of space-time that are central to literacy practices, conceiving of spaces as more than storehouses of social action. The spatiality of communication includes the temporal dimension of flows and connections between literacy practices across social sites and geographies, and the spatial dimensions of texts themselves



6 Socio-material Literacies

*Information only becomes knowledge when it is grounded quite concretely
in the social, material world.*

(Scollon & Scollon, 2003: 11)

There has been a recent upsurge of interest in the material dimensions of education, with the term ‘material’ referring to anything that possesses mass or matter, and which uses physical space (Haas, 1996). This includes the literacy practices and artefacts that cross between homes and communities. This interest stems from fields such as material culture studies and visual studies, and is associated with ethnographic and phenomenological approaches to inquiry. Within visual culture studies, there is an awareness that ethnographers need to attend not only to the visual content of local cultures, but also to their materiality (Pink, 2009). Social environments, classrooms, shopping malls, libraries, homes and workplaces, are inextricably tied to material culture. They are not culturally benign objects, but are ‘... active mechanisms for socialisation and enculturation’ (Johnson, 1980: 174).

The material elements of classrooms, the books, pencils, desks, chairs, tablets, visual displays and other learning materials, often function as heuristics for learning, and the connections between materials, actors and knowledge in the classroom can be mapped and problematised in relation to their connections to the wider society (Bloome, 2012). Literacy, as socially and materially situated practice, involves tools for encoding and decoding, and is materialised in different ways using the resources at hand by cultural groups in specific social and historical contexts (Pahl & Burnett, 2013).

Theories of learning have long attended to tool use as central to social cognition, following Dewey, Vygotsky and Piaget. For example, applying Vygotskian principles of tool use, we have conducted research into students’ use of Lego robots and programming software, which we regard as cultural tools (Mills *et al.*, 2013). A tool serves ‘as the conductor of human influence’ on goal-centred activity (Vygotsky, 1978: 55). We demonstrated that when children are confronted with new and challenging problems, they exhibit a



range of responses to attain the goal, drawing on sophisticated technology tools and speech directed toward other persons to mediate their practical activity. Problem-solving activity involved mediating interactions with Lego robots, computer screens and actors, and those materials were inextricably connected to students' problem-solving (Mills *et al.*, 2013).

The mediating power of tools is tied to the accumulation of knowledge of prior generations that are embedded in the design of the artefact (Cole & Engeström, 1993). Examples of tool use in Vygotskian problem-solving experiments include everyday objects, such as string or sticks to extend a child's reach for a candy (Vygotsky, 1978). A learning material can be as simple as a stick or a piece of chalk, or as complex as a robot. From the design of school furniture, to the structure of the built environment, materials, including tools, have always played a vital part in the structuring of learning (Lawn & Grosvenor, 2005).

Materiality is vital to literacy learning. Socio-material approaches to literacy emphasise the active and dynamic role of the tangible materials, whether of pencils or policies, of paper or iPods, and their interplay with human elements in literacy learning. It is presented here as a way of researching social action, such as in the context of education or literacy practices, rather than a grand meta-narrative of society. At the outset, it is acknowledged that socio-material literacy research can be used not only to represent or understand literacy practice, but also to intercept or change the shape of socio-material relations that are observed. This concept of the agency of materials is consistent with certain socio-material approaches in education more broadly (Fenwick & Edwards, 2010).

Key Concepts of Socio-material Literacies

Within literacy studies, there are some early examples of research that attend to socio-material principles, such as object ethnography, which uses objects as the starting point for ethnographic inquiry (Carrington & Dowdall, 2013). Other approaches that prioritise materials in literacy practices are artifactual literacy (Pahl & Rowsell, 2010), and critical artifactual literacy (Pahl & Rowsell, 2011), which both regard artefacts and objects as life presences that actively reflect identities (Rowsell, 2011; Turkle, 2007). These theories are not explicitly named as socio-material approaches, but demonstrate the shift toward examining the role and meaning of materials in literacy events.

There are several defining principles of socio-material approaches in literacy research. The first is that socio-materiality does not privilege human



7 Sensory Literacies

Without our bodies – our sensing abilities – we do not have a world...
(Arola & Wysocki, 2012: 3)

Key Concepts of Sensory Literacies

In this chapter I propose a new approach which I have coined ‘sensory literacies’. I also highlight areas of intersection with other established approaches to literacy practice. The sensory literacies approach is a revitalised way of thinking about the multisensoriality of literacy and communication practices, including their technologies of mediation and production. Such a view is grounded in an established research tradition in the social sciences that has foregrounded the sensorial nature of human experience, perception, knowing and practising, and which draws from anthropology, sociology and philosophy of the senses (Pink, 2009). While there has been a recognised sensorial direction in the anthropology of the senses (Howes, 2003), I see the potential of theorising the sensoriality of literacy practice, that is, deriving from or relating to the senses, across a diversity of cultures (see Mills *et al.*, 2013; Ranker & Mills, 2014).

Theorists, such as Abram (1997) in his highly cited work, *The Spell of the Sensuous*, have awakened a paradigm shift that emphasises the body and its connections to the natural world in language, without renouncing rationality. There are now recognised versions of sensory scholarship, (Stoller, 1997), sensuous ethnography (Stoller, 2004), sensual methodology (Warren, 2008), and sensuous geographies of the body and place (Rodaway, 1994). The social sciences have given attention to the sensoriality of culture (Howes, 2005), the sensoriality of film (MacDougall, 2005), the sensoriality of architecture (Pallasmaa, 2005), the sociology of the senses (Simmel, 1997 [1907]), the sensoriality of teamwork in medical procedures (Hindmarsh & Pilnick, 2007), the sensoriality of laundering (Pink, 2005), the sensoriality of





gardening (Tilley, 2006), the sensoriality of cooking and the sensoriality of memory (Sutton, 2006).

It is important to acknowledge at the outset that the corporeal acknowledgment of the bodily dimension of literacy practice does not conflict with established principles of socio-cultural literacy studies, outlined in Chapter 2 of this volume. Rather, by acknowledging different communities of practice and their diverse bodily ways of making meaning, socio-cultural views of literacy can support sensory approaches by illuminating cultural frames of reference for somatic literacy practices across culture, sub-cultures and social sites.

Senses and literacy practices

The sensoriality of literacy includes the aesthetic enjoyment of a film, curling up with a book on the sofa, and the entanglement of the body and senses in sensory walks with a camera (see Pink, 2009). In the context of a widened array of hybrid digital technologies affording heightened interactivity, increased mobility and convergence with multiple platforms, the sensoriality of literacy practices is constantly shifting. For example, the sensation of human movement and gestures is now fundamental to game playing with motion-sensing technologies. Full-body, three-dimensional, motion-capture technologies offer different sensory affordances in game consoles, such as Xbox Kinect. Without touching the screen, players use gross motor skills, such as dancing, bending, jumping, kicking, turning, swaying, locomotion and motioning with the arms to compete in game play. Nintendo DS games held in the palm of the hand are frequently responsive to the players' verbal instructions and deliberate blowing of breath into the device, in addition to the continual movement of the stylus controlled by the user on the screen.

Haptics – pertaining to touch – is also central to the touch screen controls of iPad games, e-books and smartphone applications, and software platforms for drawing and writing are frequently responsive to a tilt or shake of the mobile device. Many game technologies are also visually responsive, with features of eye tracking or pinpointing the user's eye-movements to alleviate the need for haptic controls, such as mouse, touch screen or track pad. Users positioned correctly in front of the computer or device can simply gaze at screen commands to select program options. The recent changes to the purview of interactive technologies for responding to human movement, touch, breath, gaze and other sensory forms calls for new approaches to literacy research that go beyond disembodied views of texts and textual practices to foreground the body and the senses.



References

- Abram, D. (1997) *The Spell of the Sensuous: Perception and Language in a More-Than-Human World*. New York: Random House.
- ACARA (2012) *My School*. See <http://www.myschool.edu.au> (accessed 1 May 2015).
- ACARA (2014) *Australian Curriculum*. See <http://www.acara.edu.au/curriculum.html> (accessed 1 May 2015).
- Ackerman, J.M. (1993) The promise of writing to learn. *Written Communication* 10 (3), 334–370.
- Adey, P. (2011) John Urry. In P. Hubbard and R. Kitchen (eds) *Key Thinkers on Space and Place* (pp. 432–439). Thousand Oaks, California: Sage.
- Ajayi, L. (2009) English as a Second Language learners' exploration of multimodal texts in a junior high school. *Journal of Adolescent & Adult Literacy* 52 (7), 585–595.
- Alborzi, H., Druin, A., Montemayor, J., Sherman, L., Taxen, G., Best, J., Hammer, J., Kruskal, A., Lal, A., Schwenn, T., Sumida, L., Wagner, R. and Hendler, J. (2000) Designing StoryRooms: Interactive storytelling spaces for children. Paper presented at Designing Interactive Systems (DIS) Brooklyn.
- Alvermann, D.E. (2000) Researching libraries, literacies, and lives: A rhizoanalysis. In E.A. St Pierre and W. Pillow (eds) *Working the Ruins: Feminist Poststructural Theory and Methods in Education* (pp. 114–129). New York: Routledge.
- Anderson, B. and Wylie, J. (2009) On geography and materiality. *Environment and Planning A* 41, 318–335.
- Anderson, G.L. and Irvine, P. (1993) Informing critical literacy with ethnography. In C. Lankshear and P. McLaren (eds) *Critical Literacy: Politics, Praxis, and the Postmodern* (pp. 81–104). Albany, NY: Suny Press.
- Anstey, M. and Bull, G. (2004) *The Literacy Labyrinth* (2nd edn). Frenchs Forest, NSW: Pearson.
- Apple, M. (1996) *Cultural Politics and Education*. New York: Teachers College Press.
- Apple, M.W. (1982) Reproduction and contradiction in education. In M.W. Apple (ed.) *Cultural and Economic Reproduction in Education* (pp. 1–31). Boston, MA: Routledge & Kegan Paul.
- Apple, M.W., Au, W. and Gandin, L.A. (2009) Mapping critical education. In M.W. Apple, W. Au and L. Armando Gandin (eds) *The Routledge International Handbook of Critical Education* (pp. 3–19). New York: Routledge.
- Applebee, A. and Langer, J. (2009) What is happening in the teaching of writing. *English Journal* 98 (5), 18–28.

- Arola, K.L. and Wysocki, A. (2012) *Composing (Media) = Composing (Embodiment)*. Logan, Utah: Utah State University Press.
- Ascher, M. and Ascher, R. (1981) *The Code of the Quipu: A Study in Media, Mathematics and Culture*. Ann Arbor, MI: University of Michigan Press.
- Ascher, R. (2002) Inka writing. In J. Quilter and G. Urton (eds) *Narrative Threads: Accounting and Recounting in Andean Khipu* (pp. 103–115). Austin: University of Texas Press.
- Au, W. (2009) Fighting with the text: Contextualising and recontextualising Freire's critical pedagogy. In M.A. Apple, W. Au and L.A. Gandin (eds) *The Routledge International Handbook of Critical Education* (pp. 221–239). New York: Routledge.
- Au, W. and Apple, M.A. (2009) Rethinking reproduction: Neo-Marxism in critical education theory. In M.A. Apple, W. Au and L.A. Gandin (eds) *The Routledge International Handbook of Critical Education*. New York: Routledge.
- Auerbach, E. (1997) Reading between the lines. In D. Taylor (ed.) *Many Families, Many Literacies*. Portsmouth, NH: Heinemann.
- Barab, S., Thomas, M., Dodge, T., Carteaux, R. and Tuzun, H. (2005) Making learning fun: Quest Atlantis, a game without guns. *Educational Technology Research and Development* 53 (1), 86–107.
- Barad, K. (2007) *Meeting the Universe Halfway*. Durham, NC: Duke University Press.
- Barthes, R. (1967) *Elements of Semiology*. London: Cape.
- Barthes, R. (1984) *Camera Lucida*. London: Fontana.
- Barton, D. (2001) Directions for literacy research: Analysing language and social practices in a textually mediated world. *Language and Education* 15 (2 & 3), 92–104.
- Barton, D. and Hamilton, M. (1998) *Local Literacies: Reading and Writing in One Community*. London: Routledge.
- Barton, D. and Hamilton, M. (2005) Literacy, reification and the dynamic of social interaction. In D. Barton and K. Trustin (eds) *Beyond Communities of Practice: Language and Social Context*. Cambridge: Cambridge University Press.
- Barton, D., Hamilton, M. and Ivanic, R. (2000) *Situated Literacies: Reading and Writing in Context*. London: Routledge.
- Beach, R. (2000) Using media ethnographies to study response to media as activity. In A. Watts Pailliotet and P. Mosenha (eds) *Reconceptualizing Literacy in the Media Age* (pp. 3–39). Stamford, CT: JAI Press.
- Beach, R. and Myers, J. (2001) *Inquiry-Based English Instruction: Engaging Students in Literature and Life*. New York: Teachers College Press.
- Beavis, C., Apperley, T., Bradford, C., O'Mara, J. and Walsh, C. (2009) *Digital Games: Literacy in Action*. Adelaide: Wakefield Press.
- Beck, U. (1992) *Risk Society: Towards a New Modernity*. London: SAGE.
- Bendix, R. (2000) The pleasures of the ear: Toward an ethnography of listening. *Cultural Analysis* 1, 33–50.
- Bernstein, B. (2000) *Pedagogy, Symbolic Control and Identity: Theory, Research, and Critique*. Oxford: Rowman & Littlefield.
- Beunza, D., Hardie, I. and Mackenzie, D. (2006) A price is a social thing: Towards a material sociology of arbitrage. *Organisational Studies* 27 (5), 721–745.
- Bigum, C. and Green, B. (1993) Technologising literacy or interrupting the dream of reason. In A. Luke and P. Gilbert (eds) *Literacy in Context: Australian Perspectives and Issues* (pp. 4–28). St Leonards, NSW: Allen and Unwin.
- Bijker, W.E. (1995) *Of Bicycles, Brakelites and Bulbs: Toward a Theory of Sociotechnical Change*. Cambridge, MA: MIT Press.

- Birdwhistell, R. (1952) *Introduction to Kinesics: An Annotation System for Analysis of Body Motion and Gesture*. Louisville, KY: University of Louisville.
- Bishop, R. (2003) Changing power relations in education: Kaupapa Maori messages for 'mainstream' education in Aotearoa/New Zealand. *Comparative Education* 39 (2), 221–238.
- Bissell, D. (2009) Conceptualising differently-mobile passengers: Geographies of everyday encumbrance in the railway station. *Social and Cultural Geography* 10 (2), 173–195.
- Black, A. (2005) Access and affiliation: The literacy and composition practices of English-language learners in an online fanfiction community. *Journal of Adolescent & Adult Literacy* 49 (2), 118–128.
- Black, R.W. (2009) Online fanfiction, global identities, and imagination. *Research in the Teaching of English* 43 (4), 397–425.
- Bloome, D. (2012) Classroom ethnography. In M. Grenfell, D. Bloome, C. Hardy, K. Pahl, J. Rowsell and B. Street (eds) *Language, Ethnography and Education: Bridging New Literacy Studies and Bourdieu*. New York: Routledge.
- Bloor, D. (1976) *Knowledge and Social Imagery*. London: Routledge and Kegan Paul.
- Bobick, A., Intille, S., Davis, J., Baird, F., Pinhanez, C., Campbell, L., Ivanov, Y., Schutte, A. and Wilson, A. (2000) The KidsRoom: A perceptually-based interactive and immersive story environment. *Presence: Teleoperators and Virtual Environments* 8 (4), 367–391.
- Bogatyrev, P. (1976) Costume as a sign. *Semiotics of Art*, 12–20.
- Bourdieu, P. (1973) Cultural reproduction and social reproduction. In R. Brown (ed.) *Knowledge, Education and Cultural Change* (pp. 100–104). London: Tavistock.
- Bourdieu, P. (1977) The economics of linguistic exchanges. *Social Sciences Information* 16, 645–668.
- Bourdieu, P. (1985) The genesis of the concepts of habitus and field. *Sociocriticism* 2, 11–24.
- Bourdieu, P. (1986a) *Distinction: A Social Critique of the Judgement of Taste* (R. Nice, trans.). London: Routledge & Kegan Paul.
- Bourdieu, P. (1986b) The forms of capital (R. Nice, trans.). In J.E. Richardson (ed.) *Handbook of Theory of Research for the Sociology of Education* (pp. 241–258). Westport, CT: Greenwood Press.
- Bourdieu, P. (1989) Social space and symbolic power. *Sociological Theory* 7 (1), 14–25.
- Bowen, T. (2013) Graffiti as spatializing practice and performance. *Rhizomes* 25, 1.
- Boyd, D. (2009) The public nature of mediated breakups. In M. Ito (ed.) *Hanging Out, Messing Round, Geeking Out: Living and Learning with New Media* (pp. 111–117). Cambridge, MA: MIT Press.
- Brandt, D. and Clinton, K. (2002) Limits of the local: Expanding perspectives on literacy as a social practice. *Journal of Literacy Research* 34 (3), 337–356.
- Brass, J. (2008) Local knowledge and digital movie composing in an after-school literacy program. *Journal of Adolescent and Adult Literacy* 51 (6), 464–478.
- Brown, A. (1994) The advancement of learning. *Educational Researcher* 23 (8), 4–12.
- Brown, A. and Campione, J. (1994) Guided discovery in a community of learners. In K. McGilly (ed.) *Classroom Lessons: Integrating Cognitive Theory and Classroom Practice* (pp. 229–270). Cambridge: MIT Press.
- Brown, A., Ash, D., Rutherford, M., Nakagawa, K., Gordon, A. and Campione, J. (1993) Distributed expertise in the classroom. In G. Salomon (ed.) *Distributed Cognitions: Psychological and Educational Considerations* (pp. 188–228). New York: Cambridge University Press.
- Brown, A., Collins, J. and Duguid, P. (1989) Situated cognition and the culture of learning. *Educational Researcher* 18 (1), 32–42.

- Bruner, J. (1986) *Actual Minds, Possible Worlds*. Cambridge, MA: Harvard University Press.
- Buchanan, M. (2002) *Nexus: Small Words and The Groundbreaking Science of Networks*. London: WW Norton.
- Buckingham, D. (2007) Digital media literacies: Rethinking media education in the age of the internet. *Research in Comparative and International Education* 2 (1), 43–55.
- Bulfin, S. and North, S. (2007) Negotiating digital literacy practices across school and home: Case studies of young people in Australia. *Language and Education* 21 (3), 247–263.
- Burbules, N. and Callister, T. (1996) Knowledge at the cross-roads: Some alternative futures of hypertext learning environments. *Educational Theory* 46 (1), 23–50.
- Burn, A. and Parker, D. (2003) Tiger's big plan: Multimodality and the moving image. In C. Jewitt and G. Kress (eds) *Multimodal Literacy* (pp. 56–72). New York: Peter Lang.
- Butler, K. (2006) A walk of art: The potential of the sound walk as practice in cultural geography. *Social and Cultural Geography* 7 (6), 889–908.
- Callard, F. (2011) John Urry. In P. Hubbard and R. Kitchen (eds) *Key Thinkers of Space and Place* (2nd edn, pp. 299–306). London: Sage.
- Callon, M. (1986) Some elements of a sociology of translation: Domestication of the scallops and the fishermen of Saint Brieuc Bay. In J. Law (ed.) *Power, Action and Belief: A New Sociology of Knowledge?* (pp. 196–233). London: Routledge.
- Cameron, D. (2000) Book review: Multiliteracies: Literacy learning and the design of social futures. By Bill Cope, Mary Kalantzis (eds) (2000), Routledge, London. *Changing English* 7 (2), 203–207.
- Campbell, M.A. (2005) Cyber bullying: An old problem in a new guise? *Australian Journal of Guidance and Counselling* 15 (1), 66–76.
- Carrington, V. and Dowdall, C. (2013) This is a job for Hazmat Guy: Global media cultures and children's everyday lives. In K. Hall, T. Cremin, B. Comber and L.C. Moll (eds) *International Handbook of Research on Children's Literacy, Learning, and Culture* (pp. 96–107). Oxford: John Wiley and Sons.
- Carspecken, P. (1996) *Critical Ethnography in Educational Research: A Theoretical and Practical Guide*. New York: Routledge.
- Castells, M. (2000a) Materials for an explanatory theory of the network society. *British Journal of Sociology* 53 (1), 1–18.
- Castells, M. (2000b) *The Rise of the Network Society* (2nd edn). Malden, MA: Blackwell.
- Cazden, C.B. (1988) *Classroom Discourse: The Language of Teaching and Learning*. Portsmouth, NH: Heinemann.
- Cazden, C.B., John, V.P. and Hymes, D. (eds) (1972) *Functions Of Language in the Classroom*. London: Teachers College Press.
- Chandler-Olcott, K. and Mahar, D. (2003) Tech-savviness meets multiliteracies: Exploring adolescent girls' technology-mediated literacy practices. *Reading Research Quarterly* 38 (3), 356–385.
- Charlesworth, R. (2014) *Understanding Child Development* (9th edn). Belmont, CA: Wadsworth.
- Cho, B. (2013) Adolescents' constructively responsive reading strategy use in a critical internet reading task. *Reading Research Quarterly* 48 (4), 329–332.
- Christie, F. and Martin, J.R. (1997) *Genre and Institutions: Social Processes in the Workplace and School*. New York, NY: Continuum.
- Clancy, S. and Lowrie, T. (2002) Researching multimodal texts: Applying a dynamic model. Paper presented at the Annual Meeting of the Australian Association for Research in Education, Brisbane.

- Clark, A. (2011) Multimodal map making with young children: Exploring ethnographic and participatory methods. *Qualitative Research* 11 (3), 311–330.
- Classen, C. (1993a) *Worlds of Sense: Exploring the Senses in History and Across Cultures*. London: Routledge.
- Classen, C. (1993b) *Inca Cosmology and the Human Body*. Salt Lake City: University of Utah Press.
- Classen, C. (1997) Foundations for an anthropology of the senses. *International Social Sciences Journal* 49 (153), 401–412.
- Classen, C. (1999) Other ways to wisdom: Learning through the senses across cultures. *International Review of Education* 45 (3/4), 269–280.
- Cobb, P., Confrey, J., diSessa, A., Lehrer, R. and Schauble, L. (2003) Design experiments in educational research. *Educational Researcher* 32 (1), 9–13.
- Coffey, A. (1999) *The Ethnographic Self: Fieldwork and the Representation of Identity*. London: Sage.
- Coiro, J., Knobel, M., Lankshear, C. and Leu, D.J. (eds) (2008) *Handbook of Research on New Literacies*. New York: Routledge, Taylor and Francis Group.
- Cole, M. (1996) *Cultural Psychology: A Once and Future Discipline*. Cambridge: Cambridge University Press.
- Cole, M. and Engeström, Y. (1993) A cultural-historical approach to distributed cognition. In G. Salomon (ed.) *Distributed Cognitions: Psychological and Educational Considerations* (pp. 1–46). New York: Cambridge University Press.
- Collins, J. and Blot, R. (2002) *Literacy and Literacies: Texts, Power, and Identity*. Cambridge: Cambridge University Press.
- Comber, B. (1997) Literacy, poverty and schooling. *English in Australia* 119–120 (20), 22–34.
- Comber, B. and Simpson, A. (eds) (2001) *Negotiating Critical Literacies in Classrooms*. Mahwah, NJ: Erlbaum Associates.
- Comber, B., Thompson, P. and Wells, M. (2001) Critical literacy finds a place: Writing and social action in a low-income Australian grade 2/3 classroom. *The Elementary School Journal* 101 (4), 451–464.
- Comber, B., Nixon, H., Ashmore, L., Loo, S. and Cook, J. (2006) Urban renewal from the inside out: Spatial and critical literacies in a low socioeconomic school community. *Mind, Culture and Activity* 13 (3), 228–246.
- Common Sense Media Research Study (2011) Zero to Eight: Children's Media Use in America. See <http://www.commonsensemedia.org/sites/default/files/research/zerotoeightfinal2011.pdf> (accessed 31 May 2015).
- Connerton, P. (1989) *How Societies Remember*. New York: Cambridge University Press.
- Cook-Gumperz, J. (ed.) (1986) *The Social Construction of Literacy: Studies in Interactional Socio-Linguistics* (Vol. 3). Cambridge: Cambridge University Press.
- Cook-Gumperz, J. (ed.) (2006) *The Social Construction of Literacy: Studies in Interactional Socio-Linguistics* (2nd edn, Vol. 3). Cambridge: Cambridge University Press.
- Cope, B. and Kalantzis, M. (1993) Introduction: How a genre approach to literacy can transform the way writing is taught. In B. Cope and M. Kalantzis (eds) *The Powers of Literacy: A Genre Approach to Teaching Writing* (pp. 1–21). London: Falmer Press.
- Cope, B. and Kalantzis, M. (1999) *Teaching and Learning in the New World of Literacy: A Professional Development Program and Classroom Research Project: Participants' Resource Book*. Melbourne: RMIT University: Faculty of Education, Language and Community Services.

- Cope, B. and Kalantzis, M. (2000a) Designs for social futures. In B. Cope and M. Kalantzis (eds) *Multiliteracies: Literacy Learning and the Design of Social Futures* (pp. 203–234). South Yarra, Australia: Macmillan.
- Cope, B. and Kalantzis, M. (2000b) *Multiliteracies: Literacy Learning and the Design of Social Futures*. South Yarra, Australia: Macmillan.
- Cope, B. and Kalantzis, M. (2014) New learning: Transformational designs for learning and assessment. See <http://newlearningonline.com> (accessed 20 Jan 2014).
- Council of Chief State School Officers & National Governors Association (2013) *Common Core State Standards for English Language Arts*. See www.corestandards.org/the-standards (accessed 1 May 2015).
- Courtland, M. and Paddington, D. (2008) Digital literacy in a grade eight classroom: An e-zine webquest. *Language and Literacy: A Canadian E-Journal* 10 (1).
- Coyne, R. (2012) Mosaics and multiples: Online digital photography and the framing of heritage. In E. Giaccardi (ed.) *Heritage and Social Media: Understanding Heritage in a Participatory Culture* (pp. 161–178). Routledge: London.
- Crafton, L.K., Brennan, M. and Silvers, P. (2007) Critical inquiry and multiliteracies in a first-grade classroom. *Language and Education* 84 (6), 510–518.
- Dalton, B., Proctor, C., Uccelli, P., Mo, E. and Snow, C.E. (2011) Designing for diversity: The role of reading strategies in interactive vocabulary in a digital reading environment for fifth-grade monolingual English and bilingual students. *Journal of Adolescent and Adult Literacy* 43 (1), 68–100.
- Damico, J. and Riddle, R. (2006) Exploring freedom and leaving a legacy: Enacting new literacies with digital texts in the elementary classroom. *Language Arts* 84 (1), 34–44.
- Dank-McGhee, K. and Slutsky, R. (2007) *The Impact of Early Art Experiences on Literacy Development*. Reston, VA: National Art Education Association.
- Darcy, R. and Auld, G. (2008) The production and distribution of Burarra talking books. *Australian Educational Computing* 23 (1), 19–23.
- Davidse, K. (1987) M.A.K Halliday's functional grammar and the Prague school. In R. Dirven and V. Fried (eds) *Functionalism in Linguistics* (pp. 39–79). Netherlands: John Benjamin's Publishing Company.
- Davies, J. and Merchant, G. (2007) Looking from the inside out: Academic blogging as new literacy. In C. Lankshear and M. Knobel (eds) *A New Literacies Sampler* (pp. 167–198). New York: Peter Lang.
- Davis, J. (2012) Community connections in education: Community Durithunga yarn-ing. In P. Phillips and J. Lampert (eds) *Introductory Indigenous Studies in Education: Reflection and the Importance of Knowing* (2nd edn, pp. 149–177). Frenchs Forest, NSW: Pearson.
- Debes, J. (1969) The loom of visual literacy: An overview. *Audiovisual Instruction* 14 (8), 25–27.
- Deleuze, G. and Guattari, F. (1987) *A Thousand Plateaus: Capitalism and Schizophrenia* (B. Massumi, trans.). Minneapolis and London: University of Minnesota Press.
- Dewey, J. (1971) *The School and Society*. Chicago: University of Chicago Press.
- Dirven, R. and Fried, V. (1987) M.A.K Halliday's functional grammar and the Prague school. In K. Davidse (ed.) *Functionalism in Linguistics* (pp. 39–80). Netherlands: John Benjamin's Publishing.
- Dixon, K. (2011) *Literacy, Power, and the Schooled Body: Learning in Time and Space*. New York and London: Routledge.
- Dolmage, J. (2012) Writing against normal: Navigating a corporeal turn. In K.L. Arola and A. Wysoki (eds) *Composing Media Composing Embodiment*. Logan, UT: Utah State University Press.

- Domico, J. (2006) Exploring freedom and leaving a legacy: Enacting new literacies with digital texts in the elementary classroom. *Language Arts* 84 (1), 34–44.
- Dyson, A. (1993) *Social Worlds of Children Learning to Write in an Urban Primary School*. New York: Teachers College Press.
- Edwards, A. (2011). Cultural historical activity theory. *British Educational Research Association on-line resource*. See <https://www.bera.ac.uk/wp-content/uploads/2014/03/Cultural-Historical-Activity-Theory-CHAT.pdf> (accessed 24 May 2015).
- Elliotte, A. and Urry, J. (2010) *Mobile Lives*. Abingdon, Oxon: Routledge.
- Emig, J. (1971) *The Composing Processes of Twelfth Graders*. New York: NCTE Press.
- Engeström, Y. (1999) Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen and R.L. Punamäki (eds) *Perspectives on Activity Theory* (pp. 19–38). Cambridge: Cambridge University Press.
- Engeström, Y., Miettinen, R. and Punamäki, R.L. (1999) *Perspectives on Activity Theory*. New York: Cambridge University Press.
- Enyedy, N., Danish, J.A., Delacruz, G. and Kumar, M. (2012) Learning physics through play in an augmented reality environment. *Computer-Supported Collaborative Learning*, 347–378.
- Ernst-Slavit, G. (1997) Different words, different worlds: Language use, power, and authorized language in a bilingual classroom. *Linguistics and Education* 9 (1), 25–48.
- Fairclough, N. (1989) *Language and Power*. London: Longman.
- Faraclas, N. (1997) Critical literacy and control in the New World Order. In S. Muspratt, P. Luke and P. Freebody (eds) *Constructing Critical Literacies: Teaching and Learning Textual Practice*. Allen & Unwin: Melbourne.
- Farnell, B. (2012) *Dynamic Embodiment for Social Theory*. UK: Taylor and Francis.
- Feenberg, A. (1991) *Critical Theory of Technology*. Oxford: Oxford University Press.
- Feld, S. and Basso, K. (1996) *Sense of Place*. Santa Fe, NM: School of American Research Press.
- Fenwick, T. and Edwards, R. (2010) *Actor Network Theory in Education*. London: Routledge.
- Fenwick, T. and Landri, P. (2012) Materialities, textures and pedagogies: socio-material assemblages in education. *Pedagogy, Culture and Society* 21 (1), 1–7.
- Fenwick, T., Edwards, R. and Sawchuck, P. (eds) (2011) *Emerging Approaches for Educational Research: Tracing the Sociomaterial*. London: Routledge.
- Ferrare, J.J. and Apple, M.W. (2010) Spatializing critical education: Progress and cautions. *Critical Studies in Education* 51 (2), 209–221.
- Flewitt, R., Melanie, N. and Payler, J.J. (2009) 'If she's left with books she'll just eat them': Considering inclusive multimodal literacy practices. *Journal of Early Childhood Literacy* 9 (2), 211–233.
- Flewitt, R., Hampel, R., Hauck, M. and Lancaster, L. (2011) What are multimodal data and transcription? In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 40–53). London: Routledge.
- Forceville, C. (1999) Review: Educating the eye? Kress and Van Leeuwen's reading images: The grammar of visual design. *Language and Literature* 8 (2), 163–178.
- Foster, E., Thomas, I. and Fraser, L. (1989) Appendix B: Computer access for English classes. In C. Selfe, D. Rodrigues and W. Oates (eds) *Computers in English and the Language Arts: The Challenge of Teacher Education* (pp. 287–289). Urbana, IL: National Council of Teachers of English.
- Foucault, M. (1977a) *Discipline and Punish: The Birth of the Prison* (A. Sheridan, trans.). London: Penguin Books.

- Foucault, M. (1977b) *Language, Counter Memory, Practice* (D. Bouchard, trans.). Oxford: Basil Blackwell.
- Foucault, M. (1980) *Power/Knowledge: Selected Interviews and Other Writings, 1972–77*. Brighton: Harvester Press.
- Foucault, M. (1986) Of other spaces. *Diacritics* 16, 22–27.
- Foucault, M. (1988) *Technologies of the Self: A Seminar with Michel Foucault*. Amherst: University of Massachusetts Press.
- Fowler, B., Hodge, G., Kress, G. and Trew, T. (1979) *Language and Control*. Kegan Paul: Routledge.
- Fowler, R. and Hodge, B. (1979) Critical linguistics. In R. Fowler (ed.) *Language and Control* (pp. 185–213). London: Routledge and Keegan Paul.
- Frei, P., Su, V., Mikhak, B. and Ishii, H. (2000) Curlybot: Designing a new class of computational toys. Paper presented at the CHI.
- Freire, P. (1970a) Cultural action and conscientization. *Harvard Educational Review* 40 (3), 452–477.
- Freire, P. (1970b) *Pedagogy of the Oppressed* (M. B. Ramos, trans.). New York: Continuum.
- Freire, P. (1982) Education as the practice of freedom (M. B. Ramos, trans.). In P. Freire (ed.) *Education for Critical Consciousness* (pp. 1–84). New York: The Continuum Publishing Company.
- Freire, P. (1985) *The Politics of Education: Culture, Power, and Liberation*. South Hadley, MA: Bergin and Garvey.
- Freire, P. (1998) *Teachers as Cultural Workers: Letters to Those Who Dare Teach*. Boulder, CO: Westview Press.
- Freire, P. and Macedo, D. (1987) *Literacy: Reading the Word and the World*. Hadley, MA: Bergin and Garvey.
- Frierson, P.R. (2014) Maria Montessori's epistemology. *British Journal for the History of Philosophy* 22 (4), 767–791.
- Fuller, B. (1987) What school factors raise achievement in the third world? *Review of Educational Research* 57 (3), 255–292.
- Galperin, P. (1992) The problem of activity in Soviet psychology. *Journal of Russian and East European Psychology* 30 (4), 37–59.
- Gee, J. (1992) *The Social Mind: Language, Ideology, and Social Practice*. New York: Bergin and Garvey.
- Gee, J. (2005) Semiotic social spaces and affinity spaces. In D. Barton and K. Tusting (eds) *Beyond Communities of Practice: Language Power and Social Context* (pp. 214–232). New York: Cambridge.
- Gee, J. (2007) *What Video Games Have to Teach us about Learning and Literacy* (2nd edn). New York: Palgrave, Macmillan.
- Gee, J. (2009) A situated sociocultural approach to literacy and technology. See <http://www.jamespaulgee.com/node/6> (accessed 24th June).
- Gee, J. (2012) *Social Linguistics and Literacies: Ideology in Discourses* (4th edn). NY: Routledge
- Gee, J.P. (1999) Critical issues: Reading and the new literacy studies: Reframing the National Academy of Sciences report on reading. *Journal of Literacy Research* September.
- Gergen, K. (1999) *An Invitation to Social Construction*. Thousand Oaks, CA: SAGE.
- Giaccardi, E. (2012) *Heritage and Social Media: Understanding Heritage in a Participatory Culture*. London and New York: Routledge.
- Gibbs, D. and Krause, K.-L. (2006) *Cyberlines 2.0: Languages and Cultures of the Internet*. Albert Park, VIC: James Nicholas.

- Gibson, J.J. (1979) *The Ecological Approach to Visual Perception*. Boston: Houghton Mifflin.
- Giddens, A. (2002) *Runaway World: How Globalisation is Reshaping our Lives*. London: Profile Books.
- Giroux, H. (1988) *Schooling and the Struggle for Public Life: Critical Pedagogy in the Modern Age*. Minneapolis: University of Minnesota Press.
- Goffman, E. (1959) *The Presentation of Self in Everyday Life*. New York: Doubleday.
- Goffman, E. (1993) The Interaction Order. *American Sociological Review* 48 (1), 1–17.
- Goodfellow, R. and Lea, M.R. (2005) Supporting writing for assessment in online learning. *Assessment and Evaluation in Higher Education* 30 (3), 261–271.
- Gorbet, M., Orth, M. and Ishii, H. (1998) Triangles: Tangible interface for manipulation and exploration of digital information topography, (pp. 49–56): ACM.
- Gore, J.M. (1988) Disciplining bodies: On the continuity of power relations in pedagogy. In J.M. Gore (ed.) *Foucault's Challenge: Discourse, Knowledge and Power in Education* (pp. 231–254). New York: Teachers College Columbia University.
- Gourlay, L. and Oliver, M. (2013) Beyond 'the social': Digital literacies as sociomaterial practice. In R. Goodfellow and M.R. Lea (eds) *Literacy in the Digital University: Learning as Social Practice in a Digital Age* (pp. 79–94). London: Routledge.
- Graddol, D. (1994) What is a text? In D. Graddol and O. Boyd-Barrett (eds) *Media Texts: Authors and Readers* (Vol. 40–50). Clevedon: Multilingual Matters.
- Graff, H. (1987) *The Legacies of Literacy: Continuities and Contradictions in Western Culture and Society*. Bloomington, IN: Indiana University Press.
- Graff, H.J. (1979) *The Literacy Myth: Literacy and Social Structure in the 19th Century City*. Waltham, Massachusetts: Academic Press.
- Graff, H.J. (1995) *The Labyrinth of Literacy: Reflections on Literacy Past and Present*. Pittsburgh, PA: University of Pittsburgh Press.
- Gramsci, A. (1971) *Selections from the Prison Notebooks* (Q. Hoare & G. N. Smith, trans.). New York: International Publishers.
- Grant, L. (2006) *Using Wikis in School: A Case Study*. London: Future Lab.
- Green, B. (1993) *The Insistence of the Letter: Literacy Studies and Curriculum Theorising*. London: The Falmer Press.
- Green, B. (1995) *On Compos(IT)ing: Writing Differently in the Post-Age*. Geelong: VIC: Deakin University Centre for Education and Change.
- Green, B. (1997) Reading with an attitude: Or deconstructing 'critical literacies'. In S. Muspratt, A. Luke and P. Freebody (eds) *Constructing Critical Literacies: Teaching and Learning Textual Practice* (pp. 227–242). St. Leonards, NSW: Allen and Unwin.
- Green, B. and Corbett, M. (2013) *Rethinking Rural Literacies: Transnational Perspectives*. New York: Palgrave MacMillan.
- Green, B. and Letts, W. (2007) Space, equity, and rural education: A trialectical account. In K. Gulson and C. Symes (eds) *Spatial Theories of Education: Policy and Geography Matters* (pp. 57–76). New York and London: Routledge.
- Green, B., Cormack, P. and Reid, J. (2008) River literacies: Discursive constructions of place and environment in children's writing about the Murray-Darling Basin. In F. Vanclay, J. Malpas, M. Higgins and A. Blackshaw (eds) *Making Sense of Place: Exploring Concepts and Expressions of Place Through Different Senses and Lenses*. Canberra: National Museum of Australia.
- Gregory, D. (1994) *Geographical Imaginations*. Oxford: Blackwell.
- Gregory, E. and Ruby, M. (2011) The insider/outsider dilemma of ethnography: Working with young children and their families in cross-cultural contexts. *Journal of Early Childhood Research* 9 (2), 162–174.

- Grenfell, M. (2012) Introduction. In M. Grenfell, D. Bloome, C. Hardy, K. Pahl, J. Rowsell and B. Street (eds) *Language, Ethnography and Education: Bridging New Literacy Studies and Bourdieu*. New York: Routledge.
- Griffin, P. and Cole, M. (1984) Current activity for the future. The zo-ped. *New Directions for Child Development* 23, 45–64.
- Grisham, D.L. and Wolsey, T.D. (2006) Recentering the middle school classroom as a vibrant learning community: Students, literacy and technology intersect. *Journal of Adolescent & Adult Literacy* 49 (8), 648–660.
- Gross, E. (2004) Adolescent internet use: What we expect, what teens report. *Applied Developmental Psychology* 25, 633–649.
- Gruszczynska, A., Merchant, G. and Pountney, R. (2013) 'Digital futures in teacher education': Exploring open approaches towards digital literacy. *The Electronic Journal of e-Learning* 11 (3), 193–206.
- Gulson, K. and Symes, C. (2007) Knowing one's place: Educational theory, policy and the spatial turn. *Spatial Theories of Education: Policy and Geography Matters* (pp. 1–16). New York: Routledge.
- Gumperz, J. and Hymes, D. (1972) *Directions in Sociolinguistics: The Ethnography of Communication*. New York Holt Rinehart and Winston.
- Gutierrez, K. (2013) Foreword. In T. Cremin, K. Hall, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture*. Oxford: Wiley-Blackwell.
- Gutierrez, K., Rymes, B. and Larson, J. (1995) Script, counterscript and underlife in the classroom: James Brown versus Brown versus Board of Education. *Harvard Educational Review* 65 (3), 445–471.
- Gutierrez, K.D. and Larson, J. (2007) Discussing expanded spaces for learning. *Language Arts* 85 (1), 69–77.
- Guzzetti, B.J. and Gamboa, M. (2005) Online journaling: The informal writings of two adolescent girls. *Research in the Teaching of English* 40, 168–206.
- Haas, C. (1996) *Writing Technology: Studies on the Materiality of Literacy*. New Jersey: Laurence Erlbaum Associates.
- Hagood, M. (2004) A rhizomatic cartography of adolescents, popular culture and constructions of self. In K. Leander and M. Sheehy (eds) *Spatializing Literacy Research and Practice* (pp. 143–160). New York, NY: Peter Lang.
- Hague, B.N. and Loader, B.D. (eds) (1999) *Digital Democracy: Discourse and Decision Making in the Information Age*. Routledge: London.
- Halewood, M. (2005) On Whitehead and Deleuze: The process of materiality. *Configurations* 13 (1), 57–76.
- Hall, E.T. (1959) *The Silent Language*. Garden City, NY: Doubleday.
- Hall, J.K. (1969) *The Hidden Dimension*. Garden City, NY: Doubleday.
- Hall, N. (2000) The materiality of letter writing: A nineteenth century perspective. In D. Barton and N. Hall (eds) *Letter Writing as a Social Practice* (pp. 83–108). Amsterdam: John Benjamins.
- Halliday, M. (1978) *Language as Social Semiotic: The Social Interpretation of Language and Meaning*. London: Edward Arnold.
- Halliday, M. (1985) *An Introduction to Functional Grammar*. London: Edward Arnold.
- Halliday, M. (2002) A personal perspective. *On Grammar* (Vol. 1, p. 6). London: Equinox.
- Halliday, M.A.K. and Hasan, R. (1989) *Language, Context, Text: Aspects of Language in a Social, Semiotic Perspective*. Oxford: Oxford University Press.

- Hamilton, M. (2001) Privileged literacies: Policy, institutional processes, and the life of the IALS. *Language and Education* 15 (2/3), 178–196.
- Hammond, J. (2001) Literacies in school education in Australia: Disjunctions between policy and research. *Language and Education* 15 (2 & 3), 162–173.
- Hamston, J. (2006) Pathways to multiliteracies: Student teachers' critical reflections on a multimodal text. *The Australian Journal of Language and Literacy* 29 (1), 38–51.
- Harvey, D. (1996) *Justice, Nature and the Geography of Difference*. Cambridge, MA: Blackwell Publishers.
- Hawkins, M.R. (2004) Researching english language and literacy development in schools. *Educational Researcher* 33 (3), 14–25.
- Hayles, N.K. (1999) *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics*. Chicago: University of Chicago Press.
- Headrick Taylor, K. and Hall, R. (2013) Counter-mapping the neighborhood on bicycles: Mobilizing youth to reimagine the city. *Technology, Knowledge and Learning* 18 (1–2), 65–93.
- Heath, S. (1983) *Ways with Words: Language, Life and Work in Communities and Classrooms*. Cambridge: Cambridge University Press.
- Heath, S.B. (2012) *Words at Work and Play*. Cambridge: Cambridge University Press.
- Heath, S.B. (2013) The hand of play in literacy learning. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research in Children's Literacy, Learning and Culture*. West Sussex: Wiley-Blackwell.
- Hegel, G.W.F. and di Geovanni, D. (2010) *The Science of Logic*. Cambridge: Cambridge University Press.
- Helgøy, I., Homme, A. and Gewirtz, S. (2007) Introduction to special issue local autonomy or state control? Exploring the effects of new forms of regulation in education. *European Educational Research Journal* 6 (3), 198–202.
- Henshaw, J.M. (2012) *A Tour of the Senses: How Your Brain Interprets the World*. Baltimore, MD: Johns Hopkins University Press.
- Hildyard, A. and Olson, D. (1978) Literacy and the Specialisation of Language. Ontario Institute of Studies in Education.
- Hindmarsh, J. and Pilnick, A. (2007) Knowing bodies at work: Embodiment and ephemeral teamwork in anaesthesia. *Organisation Studies* 28 (9), 1395–1416.
- Hodge, B. and Kress, G. (1988) *Social Semiotics*. London: Polity Press.
- Hodge, R.I.V. and Kress, G.R. (1979) *Language as Ideology* (2nd edn). London: Routledge.
- Hoijer, H. (1956) Review: Language in relation to a unified theory of the structure of human behaviour. *Language* 32 (3), 477–479.
- Honzl, J. (1976) Dynamics of the sign in the theater. *Semiotics of Art*, 74–93.
- Horst, H.A. (2009) From MySpace to Facebook: Coming of age in networked public culture. In M. Ito, S. Baumer, M. Bittanti, D. Boyd, R. Cody, B. Herr, H.A. Horst, P. Lange, D. Mahendran, K. Martinez, C.J. Pascoe, D. Perkel, L. Robinson, C. Sims and L. Tripp (eds) *Hanging Out, Messing Around, Geeking Out: Living and Learning with New Media* (pp. 83–99). Cambridge, MA: MIT Press.
- Howes, D. (1991) *The Varieties of Sensory Experience: A Sourcebook in the Anthropology of the Senses*. Toronto: University of Toronto Press.
- Howes, D. (2003) *Sensual Relations: Engaging the Senses in Culture and Social Theory*. Ann Arbor, MI: The University of Michigan Press.
- Howes, D. (2014a) Multimodality and anthropology: The conjugation of the senses. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (2nd edn., pp. 225–235). London: Routledge.

- Howes, D. (2014b) The secret of aesthetics lies in the conjugation of the senses: Rethinking the museum as a sensory gymnasium. In N. Levent and A. Pascual-Leone (eds) *The Multisensory Museum: Cross-Disciplinary Perspectives on Touch, Sound, Smell, Memory and Space* (pp. 285–300). New York: Rowman and Littlefield.
- Howes, D. (ed.) (2005) *Empire of the Senses: The Sensual Cultural Reader*. Oxford Berg.
- Howes, D. and Classen, C. (2006) The museum as sensescape: Western sensibilities and Indigenous artifacts. In E. Edwards, C. Gosden and R.B. Phillips (eds) *Sensible Objects: Colonialism, Museums and Material Culture* (pp. 199–220). Oxford: Berg Publishers.
- Howes, D. and Classen, C. (2014) *Ways of Sensing: Understanding the Senses in Society*. London and New York: Routledge.
- Hubbard, P. and Kitchen, R. (2011) *Key Thinkers on Space and Place* (2nd edn). London: SAGE.
- Hughey, M. (2012) *White Bound: Nationalists, Antiracists, and the Shared Meanings of Race*. Stanford, CA: Stanford University Press.
- Hughs, P. and Macnaughton, G. (2001) Fractured or manufactured: Gendered identities and culture in the early years. In S. Grieshaber and G. Cannella (eds) *Embracing Identities in Early Childhood Education: Diversity and Possibilities* (pp. 114–130). New York: Teachers College Press.
- Hull, G. and Nelson, M. (2005) Locating the semiotic power of multimodality. *Written Communication* 22 (2), 224–261.
- Hull, G.A. (2003) At last: Youth culture and digital media: New literacies for new times. *Research in the Teaching of English* 38 (2), 229–233.
- Hull, G.A. and Stornaiuolo, A. (2010) Literate arts in a global world: Reframing social networking as cosmopolitan practice. *Journal of Adolescent and Adult Literacy* 54 (2), 85–97.
- Hume, D.A. (1975) *Treatise of Human Nature* (2nd edn). Oxford: Clarendon Press.
- Hurdley, R. (2006) Dismantling mantelpieces: Narrating identities and materialising culture in the home. *Sociology* 40 (4), 717–733.
- Iedema, R. (2001) Resemiotization. *Semiotica* 137 (1), 4.
- Ingold, T. (2000) *The Perception of the Environment: Essays in Livelihood, Dwelling and Skill*. London: Routledge.
- Ingold, T. (2004) Culture on the ground: The world perceived through the feet. *Journal of Material Culture* 9 (3), 315–340.
- Ingold, T. and Howes, D. (2011) Worlds of sense and sensing the world: A reply to Sarah Pink and David Howes. *Social Anthropology* 19 (3), 313–331.
- Ingold, T. and Vergunst, L. (2008) *Ways of Walking: Ethnography and Practice on Foot*. Aldershot: Ashgate.
- Ito, M., Horst, H.A., Bittanti, M., Boyd, D., Herr-Stevenson, B., Lange, P. et al. (2008) *White Paper: Living and Learning with New Media: Summary of Findings from the Digital Youth Project*. Chicago, IL.
- Ito, M., Baumer, S., Bittanti, M., Boyd, D., Cody, R., Herr, B., Horst, H.A., Lange, P., Mahendran, D., Martinez, K., Pascoe, C.J., Perkel, D., Robinson, L., Sims, C. and Tripp, L. (2009) *Hanging Out, Messing Around, Geeking Out: Living and Learning with New Media*. Cambridge, MA: MIT Press.
- Iyer, R., Kettle, M., Luke, A. and Mills, K.A. (2014) Critical applied linguistics. In B. Street and C. Leung (eds) *The Routledge Companion to English Studies* (pp. 188–196). London: Routledge.
- Jacobs, C. (2005) On being an insider on the outside: New spaces for integrating academic literacies. *Teaching in Higher Education* 10 (4), 475–487.

- Jacobs, G.E. (2004) Complicating contexts: Issues of methodology in researching the language and literacies of instant messaging. *Reading Research Quarterly* 39 (4), 394–406.
- Janks, H. (2010a) Language, power and pedagogies. In N.H. Hornberger and S.L. McKay (eds) *Sociolinguistics and Language Education*. Bristol: Multilingual Matters.
- Janks, H. (2010b) *Literacy and Power*. New York and London: Routledge.
- Janks, H. and Comber, B. (2006) Critical literacy across the continents. In K. Pahl and J. Rowsell (eds) *Travel Notes from the New Literacy Studies* (pp. 95–117). Clevedon: Multilingual Matters.
- Jenkins, H., Puroshotma, R., Clinton, K., Weigel, M. and Robson, A.J. (2006) *Confronting The Challenges of Participatory Culture: Media Education for the 21st Century*. Chicago, Illinois: The MacArthur Foundation.
- Jenkins, H., Ravi, P., Weigel, M., Clinton, K. and Robison, A.J. (2009) *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*. Cambridge, MA: MIT Press.
- Jewitt, C. (2006) *Technology, Literacy and Learning: A Multimodal Approach*. Abingdon: Routledge.
- Jewitt, C. (2011a) An introduction to multimodality. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis*. London: Routledge.
- Jewitt, C. (2011b) *The Routledge Handbook of Multimodal Analysis*. London: Routledge.
- Johnson, M. (1987) *The Body in the Mind*. Chicago: University of Chicago Press.
- Johnson, N.B. (1980) The material culture of public school classrooms: The symbolic integration of local schools and national culture. *Anthropology and Education Quarterly* 9 (3), 173–190.
- Jones, C.A. (ed.) (2006) *Sensorium: Embodied Experience, Technology and Contemporary Art*. Cambridge, MA: MIT Press.
- Jones Diaz, C., Beecher, B. and Arther, L. (2007) Children's worlds: Globalisation and critical literacy. In L. Makin, C. Jones Diaz and C. McLachlan (eds) *Literacies in Childhood: Changing Views Challenging Practices* (2nd edn., pp. 71–86). Marrickville, NSW: Elsevier.
- Junquiera, E.S. (2008) Challenging the boundaries between standard and popular language situated in historical contexts: The communicative practices of high-school Brazilian students crafting hybrid multi-modal ways with words. *Language and Education* 26 (6), 393–410.
- Kalantzis, M. and Cope, B. (eds) (2005) *Learning By Design*. Melbourne, VIC: Victorian Schools Innovation Commission and Common Ground.
- Kalantzis, M. and Cope, B. (2008) *New learning: Elements of a Science of Education*. Port Melbourne, Vic: Cambridge Uni Press.
- Kalantzis, M. and Cope, B. (2012) *Literacies*. Port Melbourne, Victoria: Cambridge University Press.
- Kamberelis, G. (2004) A rhizome and the pack: Liminal literacy formations with political teeth. In K. Leander and M. Sheehy (eds) *Spatializing Literacy Research and Practice* (pp. 161–197). New York: Peter Lang.
- Kenway, J. and Bullen, E. (2001) *Consuming Children: Education-Entertainment-Advertising*. Buckingham: Open University Press.
- Kietzmann, J., Hermkens, K. and McCarthy, I. (2011) Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons* 54 (3), 241–251.
- Kincheloe, J. and McLaren, P. (1994) Rethinking critical theory and qualitative research. In N. Denzin and Y. Lincoln (eds) *Handbook of Qualitative Research* (pp. 138–157). New York: SAGE.

- Kincheloe, J.L. (2007) Critical pedagogy in the twenty-first century: Evolution for survival. In P. McLaren and J. L. Kincheloe (eds) *Critical Pedagogy: Where Are We Now?* (pp. 9–42). New York: Peter Lang Publishing.
- Kincheloe, J.L. (2008) *Critical Pedagogy* (2nd edn). New York: Peter Lang.
- Kinder, B. (1991) *Playing With Power in Movies: Television and Video Games from Muppet Babies to Teenage Mutant Ninja Turtles*. Berkley: University of California Press.
- Knight, L. (2009) Chapter 4: Desire and rhizome. In D. Masny and M. Cole (eds) *Multiple Literacies Theory: A Deleuzian Perspective* (pp. 51–62). Rotterdam, The Netherlands: Sense Publishers.
- Knobel, M. and Healy, A. (1998) Critical literacies: An introduction. In M. Knobel and A. Healy (ed.) *Critical Literacies in the Primary Classroom* (pp. 1–12). Arizona, USA: Zephyr Press.
- Knobel, M. and Lankshear, C. (eds) (2007) *A New Literacies Sampler* (Vol. 29). New York, NY: Peter Lang Publishing.
- Knobel, M., Stone, L. and Warschauer, M. (2002) *Technology and Academic Preparation: A Comparative Study*. California: Department of Education, University of California.
- Knoester, M. (2009) Inquiry into urban adolescent independent reading habits: Can Gee's theory of discourses provide insight? *Journal of Adolescent & Adult Literacy* 52 (8), 676–685.
- Knorr Cetina, K. (1997) Sociality with objects: Social relations in postsocial knowledge societies. *Theory, Culture and Society* 14 (4), 1–30.
- Kop, R. (2011) The challenges to connectivist learning on open online networks: Learning experiences during a Massive Open Online Course. *International Review of Research in Open and Distance Learning* 12 (3), 2–38.
- Koskos, K., Boehlen, S. and Walker, B.J. (2000) Learning the art of instructional conversation: The influence of self-assessment on teachers' instructional discourse in a reading clinic. *The Elementary School Journal* 100 (3), 229–252.
- Kress, G. (1985) *Linguistic Processes in Sociocultural Practice*. Victoria: Deakin University.
- Kress, G. (1990) Critical discourse analysis. *Annual Review of Applied Linguistics* 11, 84–99.
- Kress, G. (1993) Genre as social process. In B. Cope and M. Kalantzis (eds) *The Powers of Literacy: A Genre Approach to Teaching Writing* (pp. 1–21). London: Falmer Press.
- Kress, G. (1997) *Before Writing: Rethinking the Paths to Literacy*. London: Routledge.
- Kress, G. (2000a) Design and transformation: New theories of meaning. In B. Cope and M. Kalantzis (eds) *Multiliteracies: Literacy Learning and the Design of Social Futures* (pp. 153–161). South Yarra, VIC: Macmillan.
- Kress, G. (2000b) Multimodality. In B. Cope and M. Kalantzis (eds) *Multiliteracies: Literacy Learning and the Design of Social Futures* (pp. 182–202). South Yarra, VIC: Macmillan.
- Kress, G. (2005) *Literacy in the New Media Age*. London: Routledge.
- Kress, G. and van Leeuwen, T. (2001) *Multimodal Discourse: The Modes and Media of Contemporary Communication*. London: Arnold.
- Kress, G. and van Leeuwen, T. (2006) *Reading Images: The Grammar of Visual Design* (2nd edn). London: Routledge.
- Kress, G. and Bezemer, J. (2008) Writing in multimodal texts: A social semiotic account of designs for learning. *Written Communication* 25 (2), 166–195.
- Kress, G., Jewitt, C., Ogborn, J. and Tsatsarelis, C. (2001) *Multimodal Teaching and Learning: The Rhetorics of the Science Classroom*. London: Continuum.
- Kristien, Z. and Harmon, J. (2009) Picturing a writing process: Photovoice and teaching writing to urban youth. *Journal of Adolescent & Adult Literacy* 52 (7), 575–584.

- Labov, W. (1966) *The Social Stratification of English in New York City*. Washington DC: Centre for Applied Linguistics.
- Labov, W. (1969) *The Logic of Non-Standard English* (Vol. 22). Georgetown, Washington DC, USA: Georgetown University School of Languages and Linguistics.
- Labov, W. (1970) The logic of non-standard English. In J.E. Alatis (ed.) *Linguistics and the Teaching of Standard English to Speakers of Other Languages or Dialects* (pp. 1–44). Washington, DC, Georgetown: Georgetown University Press.
- Labov, W. (1972) *Sociolinguistic Patterns*. Philadelphia, PA: University of Pennsylvania Press.
- Ladson-Billings (2009) Race still matters: Critical race theory in education. In M.W. Apple, W. Au and L.A. Gandin (eds) *The Routledge International Handbook of Critical Education* (pp. 110–123). New York: Routledge.
- Lam, E.W.S. (2000) L2 Literacy and the design of the self: A case-study of a teenager writing on the Internet. *TESOL Quarterly* 34 (3), 427–482.
- Lam, E.W.S. (2009) Multiliteracies on instant messaging in negotiating local, translocal, and transnational affiliations: A case of an adolescent immigrant. *Reading Research Quarterly* 44 (4), 377–397.
- Landow, G. and Delany, P. (1991) Hypertext, hypermedia and literary studies: The state of the art. In P. Delany and G. Landow (eds) *Hypermedia and Literary Studies* (pp. 3–50). London: MIT Press.
- Lankshear, C., Gee, J., Knobel, M. and Searle, C. (1997) *Changing Literacies*. Philadelphia: PA: Open University Press.
- Lankshear, C. and Knobel, M. (2005) Paulo Freire and digital youth in marginal spaces. In G.E. Fischman, P. McLaren, H. Sunker and C. Lankshear (eds) *Critical Theories, Radical Pedagogies, and Global Conflicts* (pp. 293–306). Oxford: Rowman and Littlefield.
- Lankshear, C. and Knobel, M. (2008) Digital literacy and participation in online networking spaces. In M. Knobel and C. Lankshear (eds) *Digital Literacies: Concepts, Policies and Practices*. New York: Peter Lang Publishing.
- Lankshear, C., McLaren, P. and Greene, M. (eds) (1993) *Critical Literacy: Politics, Praxis, and the Postmodern*. New York: State University of New York Press.
- Lash, S. and Urry, J. (1994) *Economies of Signs and Space*. London: SAGE.
- Latour, B. (1987) *Science in Action*. Cambridge, MA: Harvard University Press.
- Latour, B. (1992) Where are the missing masses? Sociology of a few mundane artefacts. In W. Bijker and J. Law (eds) *Shaping Technology, Building Society: Studies in Sociotechnical Change* (pp. 225–258). MA: Cambridge, MIT Press.
- Latour, B. (1997) Trains of thought: Piaget, formalism, and the fifth dimension. *Common Knowledge* 6, 170–191.
- Latour, B. (2004) *Politics of Nature*. Cambridge, MA: Harvard University Press.
- Latour, B. (2005) *Reassembling the Social: An Introduction to Actor-Network Theory*. Oxford: Oxford University Press.
- Laurier, E. (2011) Bruno Latour. In P. Hubbard and R. Kitchen (eds) *Key Thinkers on Space and Place* (2nd edn., pp. 272–278). London: Sage.
- Lave, J. (1988) *Cognition in Practice: Mind, Mathematics, and Culture in Everyday Life*. Cambridge: Cambridge University Press.
- Lave, J. (1993) The practice of learning. In S. Chaiklin and J. Lave (eds) *Understanding Practice: Perspectives on Activity and Context* (pp. 3–32). Cambridge: Cambridge University Press.
- Lave, J. and Wenger, E. (1991) *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.

- Law, J. (2004) *After Method: Mess in Social Science Research*. Abingdon: Routledge.
- Law, J. (2008) Actor network theory and material semiotics. In B.S. Turner (ed.) *The New Blackwell Companion to Social Theory* (3rd edn., pp. 141–158). Chichester: Wiley-Blackwell.
- Law, J. (2012) Collateral realities. In F. Rubio and P. Baert (eds) *The Politics of Knowledge* (pp. 156–178). London: Routledge.
- Law, J. and Hetherington, K. (2003) Materialities, spatialities, and globalities. In M. Dear and S. Flusty (eds) *The Spaces of Postmodernism: Reading in Human Geography* (pp. 390–401). Oxford: Blackwell Publishing.
- Lawn, M. and Grosvenor, I. (2005) *Materialities of Schooling*. Oxford Symposium Books.
- Leadbeater, C. (2010) *Cloud Culture: The Future of Global Cultural Relations*. London: Counterpoint.
- Leander, K. and Sheehy, M. (eds) (2004) *Spatializing Literacy Research*. New York, NY: Peter Lang.
- Leander, K.M. (2002) Locating Latanya: The situated production of identity artifacts in classroom interaction. *Research in the Teaching of English* 37, 198–250.
- Leander, K.M. (2003) Writing travellers' tales on new literacyscapes. *Reading Research Quarterly* 38 (3), 392–397.
- Leander, K.M., Phillips, N.C. and Headrick Taylor, K. (2010) The changing social spaces of learning: Mapping new mobilities. *Review of Research in Education* 34, 329–394.
- Lee, C. (2007) Affordances and text-making practices in online instant messaging. *Written Communication* 24 (3), 223–249.
- Leeds-Hurwitz, W. (2005) The natural history approach: A Bateson legacy. *Cybernetics and Human Knowing* 12 (1–2), 137–146.
- Lefebvre, H. (1968) *Le Droit a la Ville*. Paris: Anthropos.
- Lefebvre, H. (1991) *The Production of Space* (D. Nicholson-Smith, trans.). London: Blackwell.
- Lemke, J. (1998) Multiplying meaning: Visual and verbal semiotics in scientific text. *Reading Science: Critical and Functional Perspectives on Discourses of Science*. London: Routledge.
- Lemke, J. (2002) Travels in hypermodality. *Visual Communication* 1 (3), 299–325.
- Lemke, J., Lecusay, R., Cole, M. and Michalchick, V. (2015) *Documenting and Assessing Learning in Media-Rich Environments*. Cambridge, MA: MIT Press and MacArthur Foundation.
- Leontiev, A.N. (1978) *Activity, Consciousness, and Personality*. Englewood Cliffs, NJ: Prentice Hall.
- Leu, D. (1996) Sarah's secret: Social aspects of literacy and learning in a digital information age. *The Reading Teacher* 50 (2), 162.
- Leu, D.J. (2009) The New Literacies: Research on reading instruction with the internet and other digital technologies. In S.J. Samuels and A.E. Farstrup (eds) *What Research Has to Say About Reading Instruction*. Newark, DE: International Reading Association.
- Leu, D.J., Reinking, D., Carter, A., Castek, J., Coiro, J. and Henry, L.A. (2007) *Defining Online Reading Comprehension: Using Think Aloud Verbal Protocols to Refine A Preliminary Model of Internet Reading Comprehension Processes*. Paper presented at American Educational Research Association Annual Meeting.
- Lewis, C. and Fabos, B. (2000) But will it work in the heartland? A response and illustration. *Journal of Adolescent & Adult Literacy* 43 (5), 462–469.
- Lewis, C. and Fabos, B. (2005) Instant messaging, literacies, and social identities. *Reading Research Quarterly* 40 (4), 470–501.

- Lipman, P. (2007) Education and the spatialization of urban equality: A case study of Chicago's Renaissance 2010. In K. Gulson and C. Symes (eds) *Spatial Theories of Education: Policy and Geography Matters* (pp. 155–174). London: Routledge.
- Lloyd, A. (2007) Learning to put out the red stuff: Becoming information literate through discursive practice. *The Library Quarterly* 77 (2), 181–191.
- Locke, J. (1690) *An Essay Concerning Human Understanding*. London: Taylor.
- Lopez-Gopar, M.E. (2007) Beyond alienating alphabetic literacy: Multiliteracies in Indigenous education in Mexico. *Diaspora, Indigenous, and Minority Education* 1 (3), 159–174.
- Luke, A. (1988) *Literacy, Textbooks and Ideology: Postwar Literacy Instruction and the Mythology of Dick and Jane*. London: Falmer Press.
- Luke, A. (1992) The body literate. *Linguistics and Education* 4, 107–129.
- Luke, A. (1994) *The Social Construction of Literacy in the Primary School*. Melbourne: Macmillan Education Australia.
- Luke, A. (1998) Critical approaches to literacy. In V. Edwards and D. Corson (eds) *Encyclopedia of Language and Education* (Vol. 2). Dordrecht: Kluwer.
- Luke, A. (2008) *Digital Innovation in Schooling: Policy Efficacy, Youth Cultures and Pedagogical Change*. Brisbane, Australia: Queensland University of Technology.
- Luke, A. and Freebody, P. (1997) Shaping the social practices of reading. In S. Muspratt, A. Luke and P. Freebody (eds) *Constructing Critical Literacies: Teaching and Learning Textual Practice* (pp. 185–225). Sydney, Australia: Allen & Unwin.
- Luke, A., Comber, B. and Grant, H. (2003) Critical literacies and cultural studies. In M. Anstey and G. Bull (eds) *The Literacy Lexicon* (2nd edn., pp. 15–35). Frenchs Forest: NSW.
- Lund, K. (2005) Seeing in motion and the touching eye: Walking over Scotland's mountains. *Etnofoor Anthropological Journal* 18 (1), 27–42.
- Luria, A.R. (1976) *Cognitive Development: Its Cultural and Social Foundations*. Cambridge, MA: Harvard University Press.
- Lynch, T.L. (2008) Rereadings and literacy: How students' second readings might open third spaces. *Journal of Adolescent and Adult Literacy* 52 (4), 334–341.
- MacDougall, D. (2005) *The Corporeal Image: Film, Ethnography, and the Senses*. Princeton, NJ: Princeton University Press.
- Makin, L. and Whiteman, P. (2007) Literacies in childhood: Changing views, challenging practice. In L. Makin, C. Diaz and C. McLachlan (eds) *Multiliteracies and the Arts* (pp. 168–182). Marrickville: MacLennan and Petty, Elsevier.
- Marsh, J. (2003) Connections between literacy practices at home and in the nursery. *British Education Research Journal* 29 (3), 369–382.
- Marsh, J. (2011) Young children's literacy practices in a virtual world: Establishing an online interaction order. *Reading Research Quarterly* 46 (2), 101–118.
- Martin, J. and Rothery, J. (1980) *Writing Project Report Number 1: Working Papers in Linguistics*. Sydney: University of Sydney.
- Martin, J. and Rothery, J. (1981) *Writing Project Report Number 2: Working Papers in Linguistics*. Sydney: University of Sydney.
- Martin, J. and Rothery, J. (1986) *Writing Project Report Number 4: Working Papers in Linguistics*. Sydney: University of Sydney.
- Martinec, R. (1996) *Rhythm in Multimodal Texts*. London: The London Institute.
- Martínez, K., Z. (2009) Sharing snapshots of teen friendship and love. In M. Ito, S. Baumer, M. Bittanti, D. Boyd, R. Cody, B. Herr, H.A. Horst, P. Lange, D. Mahendran, K. Martinez, C.J. Pascoe, D. Perkel, L. Robinson, C. Sims and L. Tripp (eds) *Hanging Out, Messing Around, Geeking Out: Living and Learning with New Media* (pp. 78–80). Cambridge: MIT Press.

- Marx, K. (1970) *Preface to a Contribution to the Critique of Political Economy*. New York: International Publishers.
- Marx, K. and Engels, F. (1968) Selected Works. London: Lawrence and Wishart.
- Massey, D. (1991) A global sense of place. *Marxism Today* June, 24–29.
- Massey, D. (ed.) (1994) *Space, Place, and Gender*. Cambridge: Polity Press.
- Massey, D. and Allen, L. (1984) *Spatial Divisions of Labour: Social Structure and the Geography of Production*. London and Basingstoke: Macmillan.
- Massey, D.B. (2000) The conceptualization of place. In D. Massey and P. Jess (eds) *A Place in the World? Places, Cultures, Globalization*. New York: Oxford University Press.
- Massey, D.B. (2005) *For Space*. London: Sage.
- Mauss, M. (1979) Techniques of the body (B. Brewster, trans.) *Sociology and Psychology: Essays by Marcel Mauss* (pp. 95–135). London: Routledge and Kegan Paul.
- Mavers, D. (2009) Image in the multimodal ensemble: Children's drawing. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis*. Abingdon, Oxen Routledge.
- McCarthy, C., Pitton, V., Soochul, K. and Monje, D. (2009) Movement and stasis in the neoliberal reorientation of schooling. In M.W. Apple, W. Au and L.A. Gandin (eds) *The Routledge International Handbook of Critical Education* (pp. 36–50). New York: Routledge.
- McGuinnis (2007) Khmer rap boys, X-Men, Asia's fruits, and Dragonball Z: Creating multilingual and multimodal classroom contexts. *Journal of Adolescent & Adult Literacy* 50 (7), 570–579.
- McKenna, M., Reinking, D., Labbo, L. and Kieffer, R. (1999) The electronic transformation of literacy and its implications for the struggling reader. *Reading and Writing Quarterly* 15, 111–126.
- McLaren, P. (1989) *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education*. New York: Longman.
- McLaren, P. (1993) *Schooling as Ritual Performance: Towards a Political Economy of Educational Symbols and Gestures* (2nd edn). London: Routledge.
- McLaren, P. (1994) *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education* (2nd edn). White Plains, NY: Longman.
- McLaren, P. (1995) *Critical Pedagogy and Predatory Culture: Oppositional Politics in a Postmodern Era*. London and New York: Routledge.
- McLuhan, M. and Powers, B.R. (1989) *The Global Village: Transformations in World Life and Media in the 21st Century*. Oxford: Oxford University Press.
- McNeil, D. (1992) *Hand and Mind: What Gestures Reveal About Thought*. London: The University of Chicago Press.
- McVee, M.B., Dunsmore, K. and Gavelek, J.R. (2005) Schema theory revisited. *Review of Educational Research* 75 (4), 531–566.
- Menezes de Souza, L. (2004) The ecology of writing among the Kashinowa: Indigenous multimodality in Brazil. In S. Canagarajah (ed.) *Reclaiming the Local in Language Policy and Practice* (pp. 73–98). New York: Psychology Press.
- Merchant, G. (2001) Teenagers in cyberspace: An investigation of language use and language change in internet chatrooms. *Journal of Research in Reading* 24 (3), 293–306.
- Merchant, G. and Burnette, C. (2013) Points of view: Reconceptualising literacies through an exploration of adult and child interactions in a virtual world. *Journal of Research in Reading* 37 (1), 36–50.
- Merchant, G. and Schamroth Abrams, S. (2013) The digital challenge. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture* (pp. 319–332). West Sussex: Wiley-Blackwell.

- Merleau-Ponty, M. (2002) *The Phenomenology of Perception*. London: Routledge.
- Metz, C. (1974) *Film Language*. New York: Oxford Press.
- Michaels, S. (1985) Hearing the connections in children's oral and written discourse. *Journal of Education* 167, 36–56.
- Miller, S.M. and McVee, M.B. (2012) *Multimodal Composing in Classrooms: Learning and Teaching for the Digital World*. New York: Routledge.
- Mills, K.A. (2005) Deconstructing binary oppositions in literacy discourse and pedagogy. *Australian Journal of Language and Literacy* 28 (1), 67–82.
- Mills, K.A. (2006a) Mr. Travelling-at-will Ted Doyle: Discourses in a multiliteracies classroom. *Australian Journal of Language and Literacy* 28 (2), 132–149.
- Mills, K.A. (2006b) *Multiliteracies: A critical ethnography: Pedagogy, power, discourse and access to multiliteracies*. Unpublished PhD thesis, Queensland University of Technology, Brisbane.
- Mills, K.A. (2006c) We've been wastin' a whole million watchin' her doin' her shoes: Situated practice within a pedagogy of multiliteracies. *The Australian Educational Researcher* 33 (3), 13–34.
- Mills, K.A. (2007) Have you seen Lord of the Rings? Power, pedagogy and discourses in a multiliteracies classroom. *Journal of Language, Identity, and Education* 6 (3), 221–241.
- Mills, K.A. (2008a) Transformed practice in a pedagogy of multiliteracies. *Pedagogies: An International Journal* 3 (2), 109–128.
- Mills, K.A. (2008b) Will large-scale assessments raise literacy standards in Australian schools? *Australian Journal of Language and Literacy* 31 (3), 211–226.
- Mills, K.A. (2009) Multiliteracies: Interrogating competing discourses. *Language and Education* 23 (2), 103–116.
- Mills, K.A. (2010a) Filming in progress: New spaces for multimodal designing. *Linguistics and Education* 21 (1), 14–28.
- Mills, K.A. (2010b) A review of the digital turn in the New Literacy Studies. *Review of Educational Research* 80 (2), 246–271.
- Mills, K.A. (2010c) Shrek meets Vygotsky: Rethinking adolescents' multimodal literacy practices in schools. *Journal of Adolescent and Adult Literacy* 54 (1), 35–45.
- Mills, K.A. (2010d) What learners 'know' in digital text production: Learning by Design. *E-Learning and Digital Media* 7 (3), 223–236.
- Mills, K.A. (2011a) 'I'm making it different to the book': Transmediation in young children's print and digital practices. *Australasian Journal of Early Childhood Education* 36 (3), 56–65.
- Mills, K.A. (2011b) Inciting the social imagination to realising the dream: A unfolding story of transformative action in a low-socioeconomic school. Paper presented at the AERA 2011 Annual Meeting, Published Proceedings, April 8–12 New Orleans, Louisiana.
- Mills, K.A. (2011c) *The Multiliteracies Classroom*. Bristol: Multilingual Matters.
- Mills, K.A. (2011d) 'Now I understand their secrets': Kineikonic texts in the literacy classroom. *Australian Journal of Language and Literacy* 34 (1), 24–37.
- Mills, K.A. (2013a) CUOL - See you online. *Screen Education* 70, 52–57.
- Mills, K.A. (2013b) Multimodal and monomodal discourses of marketization in higher education: power, ideology, and the absence of the image. Paper presented at Education and Poverty: Theory, Research, Policy and Praxis : Proceedings of AERA Annual Meeting 2013.

- Mills, K.A. and Chandra, V. (2011) Microblogging as a literacy practice for educational communities. *Journal of Adolescent and Adult Literacy* 55 (1), 35–45.
- Mills, K.A. and Comber, B. (2013) Space, place, and power: A spatial turn in literacy research. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture* (pp. 412–423). Oxford: Wiley Blackwell.
- Mills, K.A. and Comber, B. (2015) Socio-spatial approaches to Literacy Studies: Rethinking the social constitution and politics of space. In K. Pahl and J. Rowsell (eds) *Handbook of Literacy Studies*. London: Routledge.
- Mills, K.A. and Exley, B. (2014a) Narrative and multimodality in English language arts curricula: A tale of two nations. *Language Arts* 92 (2), 136–143.
- Mills, K.A. and Exley, B. (2014b) Time, space, and text in the elementary school digital writing classroom. *Written Communication* 31 (4), 368–398.
- Mills, K.A. and Levido, A. (2011) iPed: Pedagogy for digital text production. *The Reading Teacher* 65 (1), 85–91.
- Mills, K.A., Chandra, V. and Park, J. (2013) The architecture of children's use of language and tools when problem solving collaboratively with robotics. *Australian Education Researcher* 40 (3), 315–337.
- Mills, K.A., Comber, B. and Kelly, P. (2013) Sensing place: Embodiment, sensoriality, kinesis, and children behind the camera. *English Teaching: Practice and Critique* 12 (2), 11–27.
- Mills, K.A., Davis-Warra, J., Sewell, M. and Anderson M. (2015) Indigenous ways with literacies: Transgenerational, multimodal, placed, and collective. *Language and Education*, Online first. DOI: 10.1080/109500782.2015.1069836
- Mills, K.A., Sunderland, N., Davis, J., Darrah, J., Bristed, H., Wilson, G. and Hertslet, T. (2012) If I were a community leader: Knowing the world by changing it. *Queensland Teachers' Union Professional Magazine* November, 10–11.
- Mills, K.A., Unsworth, L., Bellocchi, A., Park, J. and Ritchie, S.M. (2014) Children's multimodal appraisal of places: Walking with the camera. *Australian Journal of Language and Literacy* 37 (3), 171–181.
- Mishra, P. and Koehler, M.J. (2006) Technological pedagogical content knowledge: A framework for integrating technology in teacher knowledge. *Teachers College Record* 108 (6), 1017–1054.
- Mitchell, R. (1999a) Catching literature in the 'net'. *Primary English Teaching Association* 117, 1–8.
- Mitchell, W. (1999b) *Iconology: Image, Text, Ideology*. Chicago, IL: University of Chicago Press.
- Mitsikopoulou, B. (2007) The interplay of the global and the local in English language learning and electronic communication discourses and practices in Greece. *Language and Education* 21 (3), 232–246.
- Moja, E.B. (2004) Tracing the out-of-school literacy spaces of Latino/a Youth. In K. Leander and M. Sheehy (eds) *Spatializing Literacy Research and Practice*. New York: Peter Lang.
- Moje, E. (2013) Hybrid literacies in a post-hybrid world. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture*. West Sussex: Wiley-Blackwell.
- Monaghan, J.E. and Saul, E.W. (1987) The reader, the scribe, the thinker: A critical look at the history of American reading instruction. In T.S. Popkewitz (ed.) *The Formation of the Schooled Subject* (pp. 85–122). New York: Falmer Press.
- Montessori-Pierson, M. (1913) *The 1913 Rome lectures: First International Training Course*. Amsterdam.
- Montessori-Pierson, M. (1991) *Spontaneous Activity in Education* Oxford, Clío Pres.

- Morley, D. and Robins, K. (1995) *Spaces of Identity: Global Media, Electronic Landscapes and Cultural Boundaries*. London: Routledge.
- Morrell, E. (2002) Toward a critical pedagogy of popular culture: Literacy development among urban youth. *Journal of Adolescent & Adult Literacy* 46, 72–77.
- Moss, G. (2000) Informal literacies and pedagogic discourse. *Linguistics and Education* 11 (1), 47–64.
- Moss, G. (2003) Putting the text back into practice: Junior-age non-fiction as objects of design. In C. Jewitt and G. Kress (eds) *Multimodal Literacy* (pp. 73–87). New York: Peter Lang.
- Moylan, M. and Stiles, L. (1996) *Reading Books: Essays on the Material Text and Literature in America*. Amherst: University of Massachusetts Press.
- Mukama, E. and Andersson, S.B. (2008) Coping with change in ICT-based learning environments: Newly qualified Rwandan teachers' reflections. *Journal of Computer Assisted Learning* 24, 156–166.
- Mukarovskiy, J. (1976) Art as semiotic fact. *Semiotics of Art*, 3–9.
- Nattiez, J.J. (1976) *Fondements D'une Semiologie Musicale*. Paris: Uge.
- Nespor, J. (1997) *Tangled Up in School: Politics, Space, Bodies, and Signs in the Educational Process*. London: Falmer.
- Nespor, J. (2008) Education and place: A review essay. *Educational Theory* 58, 475–489.
- Neuman, S.B. and Celano, D. (2006) Access to print in a low-income and middle income communities: An ecological study of four neighbourhoods. *Reading Research Quarterly* 36 (1), 8–26.
- Neumann, M.M. and Neumann, D.L. (2014) Touch screen tablets and emergent literacy. *Early Childhood Education Journal* 42 (4), 231–239.
- New London Group (1996) A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review* 66 (1), 60–92.
- New London Group (2000) A pedagogy of multiliteracies: Designing social futures. In B. Cope and M. Kalantzis (eds) *Multiliteracies: Literacy Learning and the Design of Social Futures* (pp. 9–38). South Yarra, Australia: Macmillan.
- Nichols, S., Rowsell, J., Nixon, H. and Rainbird, S. (2012) *Resourcing Early Learners: New Networks, New Actors*. London: Routledge.
- Nicolopoulou, A. (1993) Play, cognitive development, and the social world: Piaget, Vygotsky, and beyond. *Human Development* 36 (1), 1–23.
- Nixon, H. (2003) New research literacies for contemporary research into literacy and new media. *Reading Research Quarterly* 38 (3), 407–413.
- Nixon, H. and Hatley, E. (2013) Books, toys, and tablets: Playing and learning in the age of digital media. In K. Hall, T. Cremin, B. Comber and L. Moss (eds) *International Handbook of Research on Children's Literacy, Learning and Culture* (pp. 28–41). Malden, MA: Wiley and Sons Ltd.
- Norris, S. (2004) *Analysing Multimodal Interaction*. London: Routledge Falmer.
- Norris, S. (2011) Modal density and modal configurations: Multimodal actions. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 78–90). London: Routledge.
- O'Dowd, R. (2005) Negotiating sociocultural and institutional contexts: The case of Spanish-American telecollaboration. *Language and Intercultural Communication* 5 (1), 40–56.
- O'Halloran, K. (2004) *Multimodal Discourse Analysis: Systemic-Functional Perspectives*. London, NY: Continuum.
- O'Halloran, K.L. (1999) Interdependence, interaction and metaphor in multisemiotic texts. *Social Semiotics* 9 (3), 317–354.

- O'Halloran, K.L. (2009) Historical changes in the semiotic landscape: From calculation to computation. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 98–113). London and New York: Routledge.
- O'Reilly, T. (2005). What is web 2.0? Design patterns and business models for the next generation of software. See <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html> (accessed 30 Sept 2005).
- Orlikowski, W. (2007) Sociomaterial practices: Exploring technology at work. *Organization Studies* 28 (9), 1435–1448.
- Ormerod, F. and Ivanic, R. (2000) Texts in practices: Interpreting the physical characteristics of children's project work. In D. Barton, M. Hamilton and R. Ivanic (eds) *Situated Literacies: Reading and Writing in Context* (pp. 91–107). London: Routledge.
- Pahl, K. (2001) Texts as artefacts crossing sites: Map making at home and school. *Reading: Literacy and Language* 35 (3), 120–125.
- Pahl, K. (2002) Ephemera, mess and miscellaneous piles: Texts and practices in families. *Journal of Early Childhood Literacy* 11 (2), 114–140.
- Pahl, K. (2003) Children's text-making at home: Transforming meaning across modes. In J. Carey and G. Kress (eds) *Multimodal Literacy* (pp. 139–154). New York: Peter Lang.
- Pahl, K. (2014) The New Literacy Studies. In B. Street and C. Leung (eds) *The Routledge Companion to English Studies* (pp. 435–448). London: Routledge.
- Pahl, K. and Burnett, C. (2013) Literacies in homes and communities. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture*. West Sussex: John Wiley and Sons.
- Pahl, K. and Rowsell, J. (2005) *Literacy and Education: Understanding the New Literacy Studies in the Classroom*. London: Chapman.
- Pahl, K. and Rowsell, J. (2006) *Travel Notes from New Literacy Studies: Instances of Practice*. Clevedon: Multilingual Matters.
- Pahl, K. and Rowsell, J. (2010) *Artifactual Literacies: Every Object Tells a Story*. New York: Teachers College Press.
- Pahl, K.H. and Rowsell, J. (2011) Artifactual critical literacy: A new perspective for literacy education. *Berkeley Review of Education* 2 (3), 129–151.
- Painter, C., Martin, J.R. and Unsworth, L. (2013) *Reading Visual Narratives: Image Analysis of Children's Picture Books*. Sheffield: Equinox Publishing
- Pallasmaa, J. (2005) Lived space: Embodied experience and sensory thought. *Encounters: Architectural Essays*. Hameenlinna, Finland: Rakennustieto Oy.
- Pandya, V. (1993) *Above the Forest: Andamanese Ethnoanemology, Cosmology, and the Power of Ritual*. Bombay: Oxford University Press.
- Pascoe, C.J. (2009) You have another world to create. In M. Ito, S. Baumer, M. Bittanti, D. Boyd, R. Cody, B. Herr, H.A. Horst, P. Lange, D. Mahendran, K. Martinez, C.J. Pascoe, D. Perkel, L. Robinson, C. Sims and L. Tripp (eds) *Hanging Out, Messing Around, Geeking Out: Living and Learning with New Media* (pp. 51–57). Cambridge, MA: MIT Press.
- Paterson, M. (2007) *The Senses of Touch: Haptics, Affects and Technologies*. Oxford: Berg.
- Pegg, J. and Panizzon, D. (2007) Inequities in student achievement for literacy: Metropolitan versus rural comparisons. *Australian Journal of Language and Literacy* 30 (3), 177–190.
- Pels, D., Hetherington, K. and Vandenberghe, F. (2002) The status of the object: Performances, mediations and techniques. *Theory, Culture and Society* 19 (5/6), 1–21.
- Pennycook, A. (2007) The myth of English as an International language. In S. Makoni and A. Pennycook (eds) *Disinventing and Reconstituting Languages* (pp. 90–115). Clevedon: Multilingual Matters.

- Peppler, K.A. and Kafai, Y.B. (2007) From SuperGoo to Scratch: Exploring creative digital media production in informal learning. *Learning, Media, & Technology* 32 (2), 149–166.
- Piaget, J. (1952a) *The Origins of Intelligence in Children*. New York: International Universities Press: International Universities Press.
- Piaget, J. (1952b) *Play, Dreams and Imitation in Childhood*. New York: W.W Norton and Co. Inc.
- Pickering, A. (1995) *The Mangle of Practice: Time, Agency and Science*. Chicago, IL: University of Chicago Press.
- Pike, K. (1954) *Language in Relation to a Unified Theory of the Structure of Human Behaviour*. Glendale, CA: Summer Institute of Linguistics.
- Pink, G. (2007) Walking with video. *Visual Studies* 22 (3), 240–252.
- Pink, S. (2005) Dirty laundry: Everyday practice, sensory engagement and the constitution of identity. *Social Anthropology* 13 (3), 275–290.
- Pink, S. (2009) *Doing Sensory Ethnography*. London: SAGE.
- Porteous, D. (1990) *Landscapes of the Mind: Worlds of Sense and Metaphor*. Toronto: University of Toronto Press.
- Potter, J. (2010) Embodied memory and curatorship in children's digital video production. *English Teaching: Practice and Critique* 9 (1), 22–35.
- Prain, V. (1997) Multi(national)literacies and globalising discourses. *Discourse: Studies in the cultural politics of education* 18 (3), 453–467.
- Price, S., Jewitt, C. and Brown, B. (eds) (2013) *The SAGE Handbook of Digital Technology Research*. London: SAGE.
- Prinsloo, M. and Snyder, S. (2008) Young people's engagement with digital literacies in marginal contexts in a globalised world. *Language and Education* 21 (3), 171–179.
- Ranker, J. (2007) Designing meaning with multiple media sources: A case study of an eight-year-old student's writing processes. *Research in the Teaching of English* 41 (4), 402–434.
- Ranker, J. and Mills, K.A. (2014) New directions for digital video creation in the classroom: Spatiality, embodiment, and creativity. *Journal of Adolescent and Adult Literacy* 57 (6), 440–443.
- Reese, D. (2008) Indigenizing children's literature. *Journal of Language and Literacy Education* 4 (2), 59–72.
- Reinking, D. and Pickle, M. (1993) Using a formative experiment to study how computers affect reading and writing in classrooms. In D.J. Leu and C.K. Kinzer (eds) *Examining Central Issues in Literacy Research, Theory, and Practice: 42nd Yearbook of the National Reading Conference* (pp. 263–270). Chicago National Reading Conference.
- Reinking, D., McKenna, M., Labbo, L. and Kieffer, R. (eds) (1998) *Handbook of Literacy and Technology: Transformations In a Post-Typographic World*. Mahwah, NJ: Lawrence Erlbaum.
- Resnick, M., Rusk, N. and Cooke, S. (1998) The Computer Clubhouse: Technological fluency in the inner city. In D. Schon, B. Sanyal and W. Mitchell (eds) *High Technology and Low-Income Communities*. Cambridge, MA: MIT Press.
- Reyes, I. and Estebann-Guitart, M. (2013) Exploring multiple literacies from homes and communities: A cross-cultural comparative analysis. In K. Hall, T. Cremin, B. Comber and L. Moll (eds) *International Handbook of Research on Children's Literacy, Learning and Culture* (pp. 155–171). West Sussex: Wiley-Blackwell.
- Rich, A. (1979) *On Lies, Secrets, and Silences*. New York: Norton.
- Richardson, P. (1991) Language as personal resource and as social construct: Competent views of literacy pedagogy in Australia. *Educational Review* 43 (2), 171–190.
- Riggins, S.H. (ed.) (1997) *The Language and Politics of Exclusion: Others in Discourse*. London: SAGE.

- Robertson, S. and Dale, R. (2009) World Bank, IMF, and the possibilities of critical education. In M. A. Apple, W. Au and G. Armando (eds) *The Routledge International Handbook of Critical education* (pp. 23–35). New York: Routledge.
- Rodaway, P. (1994) *Sensuous Geographies: Body, Sense and Place*. London: Routledge.
- Roe, M. (2012) Book Review: Pahl, K., and Rowsell, J. (2010). *Artifactual Literacies: Every Object Tells a Story*. New York, NY: Teachers College Press. *Journal of Educational Research* 105, 299–301.
- Rojas-Drummond, S.M., Albarran, C.D. and Littleton, K.S. (2008) Collaboration, creativity and the co-construction of oral and written texts. *Thinking Skills and Creativity* 3, 177–191.
- Rosowsky, A. (2008) *Heavenly Readings: Liturgical Literacy in a Multicultural Context*. Bristol: Multilingual Matters.
- Rowsell, J. (2011) Carrying my family with me: Artifacts as emic perspective. *Qualitative Research* 11 (3), 331–346.
- Rowsell, J. and Chen, L. (2014) English studies through a New Literacy Studies - multimodal lens. In C. Leung and B. Street (eds) *The Routledge Companion to English Studies* (pp. 464–474). London: Routledge.
- Ruesh, J. and Kees, W. (1954) *Nonverbal Communication: Notes on the Visual Perceptions of Human Relations*. Berkeley, CA: University of California Press.
- Ryokai, K. and Cassel, J. (1999) Computer support for children's collaborative fantasy play and story telling. Paper presented at the CSCL Stanford, CA.
- Sanford, K. and Maddil, L. (2006) Resistance through video game play: It's a boy thing. *Canadian Journal of Education* 29 (1), 287–345.
- Sannino, A., Daniels, H. and Gutiérrez, K. (2009) *Learning and Expanding with Activity Theory*. New York: Cambridge University Press.
- Schwartz, A. and Rubinstein-Ávila, E. (2006) Understanding the manga hype: Uncovering the multimodality of comic-book literacies. *Journal of Adolescent & Adult Literacy* 50 (1), 40–49.
- Scollon, R. and Scollon, S.W. (2003) *Discourses in Place: Language in the Material World*. London: Routledge.
- Scollon, R. and Scollon, S.W. (2009) Multimodality and language: a retrospective and prospective view. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 170–180). London and New York: Routledge.
- Scribner, S. and Cole, M. (1981) *The Psychology of Literacy*. Cambridge, MA: Harvard University Press.
- Selfe, C.L. (1992) Preparing English teachers for the virtual age: The case for technology critics. In G.E. Hawisher and P. LeBlanc (eds) *Reimagining Computers and Composition: Teaching and Research in the Virtual Age* (pp. 24–42). Portsmouth, NH: Heinemann.
- Semali, L.M. (2002) *Transmediation in the Classroom: A Semiotics-Based Media Literacy Framework* (Vol. 176). New York: Peter Lang.
- Semali, L.M. and Fueyo, J. (2001) Transmediation as a Metaphor for New Literacies in Multimedia Classrooms. *Reading Online* 5 (5).
- Sensenbaugh, R. (1990) Multiplicities of Literacies in the 1990's, *ERIC Clearing House on Reading and Communication Skills (ED320138)*: Bloomington.
- Sheehy, M. and Leander, K.M. (2004) Introduction. In *Spatialising Literacy Research and Practice* (pp. 1–14). New York: Peter Lang Publishing.
- Shields, R. (2011) Henri Lefebvre. In P. Hubbard and R. Kitchin (eds) *Key Thinkers on Space and Place* (2nd edn, pp. 279–285). London: SAGE.

- Shilling, C. (1991) *The Body and Social Theory*. London: SAGE.
- Shor, I. (1999) What is critical literacy? *Journal of Pedagogy, Pluralism and Practice* 4 (1), 1–27.
- Short, K.G., Kauffman, G. and Khann, L.H. (2000) I just need to draw: Responding to literature across multiple sign systems. *The Reading Teacher* 54 (2), 160–171.
- Siegel, M. (1995) More than words: The generative power of transmediation for learning. *Canadian Journal of Education* 20 (4), 455–475.
- Siegel, M. (2006) Rereading the signs: Multimodal transformations in the field of literacy education. *Language Arts* 84 (1), 65.
- Simmel, G. (1997 [1907]) Sociology of the senses. In D. Frisby and M. Featherstone (eds) *Simmel on Culture: Selected Writings*. London: Sage.
- Simon, R. (2012) Remembering together: Social media and the formation of the historical present. In E. Giaccardi (ed.) *Heritage and Social Media: Understanding Heritage in a Participatory Culture* (pp. 89–106). London: Routledge.
- Siu, K.W., Lam, M. and Seung, M. (2005) Early childhood technology education: A socio-cultural perspective. *Early Childhood Education Journal* 32 (6), 353–358.
- Skerrett, A. (2014) Religious literacies in a secular literacy classroom. *Reading Research Quarterly* 49 (2), 233–250.
- Smith, D. (1990) *Text, Facts and Femininity*. London: Routledge.
- Smith, D. (1999) *Writing the Social: Critique, Theory and Investigation*. Toronto: University of Toronto Press.
- Snyder, I. (1997) *Page to Screen: Taking Literacy into the Electronic Era*. London: Routledge.
- Snyder, I. (1999) Using information technology in language and literacy education: An introduction. In J. Hancock (ed.) *Teaching Literacy Using Information Technology* (pp. 1–10). Carlton South, Australia: Australian Literacy Education Association.
- Snyder, I. (2001) A new communication order: Researching literacy practices in the network society. *Language and Education* 15 (1 and 2), 117–131.
- Snyder, I., Angus, L. and Sutherland-Smith, W. (2002) Building equitable literate futures: Home and school computer-mediated literacy practices and disadvantage. *Cambridge Journal of Education* 32 (3), 367–383.
- Soja, E. (1996) *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places*. Oxford: Basil Blackwell.
- Soja, E. and Hooper, B. (1993) The spaces that difference means: Some notes on the geographical margins of the new cultural politics. In M. Keith and S. Pile (eds) *Place and the Politics of Identity*. London: Routledge.
- Soja, E.W. (1989) *Postmodern Geographies: The Reassertion of Space in Critical Social Theory*. Oxford: Verso.
- Soja, E.W. (2004) Preface. In K.M. Leander and M. Sheehy (eds) *Spatialising Literacy Research and Practice* (pp. ix–xv). New York: Peter Lang.
- Soja, E.W. (2008) The city and spatial justice. Paper presented at the Spatial Justice Conference, March 12–14 Nanterre, Paris.
- Somerville, M.J. (2007) Place literacies. *Australian Journal of Language and Literacy* 30 (2), 149–164.
- Sorenson, E. (2009) *The Materiality of Learning: Technology and Knowledge of Educational Practice*. Cambridge: Cambridge University Press.
- Spencer, M. (1986) Emergent literacies: A site for analysis. *Language Arts* 63 (5), 442–453.
- Stanton, D., Bayon, V., Neale, H., Ahmed, G., Benford, S., Cobb, S., Ingram, R., O'Malley, C., Wilson, J. and Pridmore, T. (2001) Classroom collaboration in the design of tangible interfaces for storytelling. *CHI Letters* 3 (1), 482–489.

- Stein, P. (2006) The Olifantsvlei fresh stories project: Multimodality, creativity, and fixing in the semiotic chain. In C. Jewitt and G. Kress (eds) *Multimodal Literacy* (pp. 123–138). New York: Peter Lang.
- Stein, P. and Slonimsky, L. (2006) An eye on the text and an eye on the future: Multimodal literacy in three Johannesburg families. In K. Pahl and J. Rowsell (eds) *Travel Notes from the New Literacy Studies: Instances of Practice*. Clevedon: Multilingual Matters.
- Steinkhuehler, C. (2007) Massively multiplayer online gaming as a constellation of literacy practices. *E-Learning* 4 (3), 297–318.
- Stevens, L.P. and Bean, T.W. (2007) *Critical Literacy: Context, Research and Practice in the K-12 Classroom*. Thousand Oaks: SAGE.
- Stoller, P. (1989) *The Taste of Ethnographic Things: The Sense in Ethnography*. Philadelphia, PA: University of Pennsylvania Press.
- Stoller, P. (1997) *Sensuous Scholarship*. Philadelphia, PA: University of Pennsylvania Press.
- Stoller, P. (2004) Sensuous ethnography, African persuasions, and social knowledge. *Qualitative Inquiry* 10 (6), 817–835.
- Strassman, P. (1997) Information systems and literacy. In G. Hawisher and C. Selfe (eds) *Literacy, Technology and Society: Confronting the Issues* (pp. 134–141). Upper Saddle River, NJ: Prentice Hall.
- Street, B. (1975) The Mullah, the Shahname and the Madrasseh. *Asian Affairs* 6 (3), 290–306.
- Street, B. (1984) *Literacy in Theory and Practice*. Cambridge: Cambridge University Press.
- Street, B. (1995) *Social Literacies: Critical Approaches to Literacy in Development, Ethnography and Education*. London: Longman.
- Street, B. (1997a) *Cross-Cultural Approaches to Literacy*. Melbourne: Cambridge University Press.
- Street, B. (1997b) The implications of the new literacy studies for literacy education. *English in Education* 31 (3), 45–59.
- Street, B. (1999) The meaning of literacy. In D. Wagner, R. Venezky and B. Street (eds) *Literacy: An International Handbook* (pp. 34–40). Boulder, CO: Westview Press.
- Street, B. (2003) What's 'new' in New Literacy Studies? Critical approaches to literacy in theory and practice. *Current Issues in Comparative Education* 5 (2), 77–91.
- Street, B. (2012) New Literacy Studies. In M. Grenfell, D. Bloome, C. Hardy, K. Pahl, J. Rowsell and B. Street (eds) *Language, Ethnography, and Education: Bridging New Literacy Studies and Bourdieu*. UK: Routledge.
- Street, B. (ed.) (1993) *Cross Cultural Approaches to Literacy*. Cambridge: Cambridge University Press.
- Street, B. and Street, J. (1991) The schooling of literacy. In D. Barton and I. R. (eds) *Writing In the Community* (pp. 143–166). London: Sage.
- Street, B., Pahl, K. and Rowsell, J. (2009) Multimodality and the New Literacy Studies. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 191–200). London: Routledge.
- Suhor, C. (1984) Towards a semiotic-based curriculum. *Journal of Curriculum Studies* 16 (3), 247–257.
- Sunderland, N., Bristed, H., Gudes, O., Boddy, J. and Da Silva, M. (2012) What does it feel like to live here? Exploring sensory ethnography as a collaborative methodology for investigating social determinants of health in place. *Health and Place* 18 (5), 1056–1067.
- Sutton, R.E. (2006) Cooking skill, the senses, and memory: The fate of practical knowledge. In E. Edwards, C. Gosden and R.B. Phillips (eds) *Sensible Objects*. Oxford: Berg.
- Thibault, P.J. (1993) Editorial: Social Semiotics. *The Semiotic Review of Books* 4 (3), 1.

- Tilley, C. (2006) The sensory dimensions of gardening. *Senses and Society* 2 (3), 329–351.
- Toledo Museum of Art (2013) *The Art of Seeing Art: A, B and See*. Toledo, OH: Toledo Museum of Art.
- Tollefson, T. (2007) Language policy and the construction of national cultural identity. In A. Tsui and J. Tollefson (eds) *Language Policy, Culture and Identity in Asian Contexts* (pp. 1–20). Mahwah, New Jersey: Lawrence Erlbaum.
- Trimbur, J. (2001) Review: Multiliteracies: Literacy learning and the design of social futures. *College Composition and Communication* 52 (4), 659.
- Turkle, S. (2007) *Evocative Objects: Things We Think With*. Cambridge, MA: MIT Press.
- Ulmer, G. (1989) *Teletheory: Grammatology in the Age of Video*. New York: Routledge.
- Unsworth, L. (2001) *Teaching Multiliteracies Across the Curriculum: Changing Contexts of Text and Image in Classroom Practice*. Buckingham, United Kingdom: Open University Press.
- Unsworth, L. (2002) Changing dimensions of school literacies. *The Australian Journal of Language and Literacy* 25 (1), 62–77.
- Unsworth, L. (2006) *E-Literature for Children: Enhancing Digital Literacy Learning*. London: Routledge.
- Unsworth, L. (2014) Multimodal reading comprehension: Curriculum expectations and large-scale literacy testing practices. *Pedagogies: An International Journal* 9 (1), 26–44.
- Unsworth, L., Thomas, A., Simpson, A. and Asha, J. (2005) *Children's Literature and Computer Based Teaching*. New York: Open University Press.
- Urry, J. (2000) *Sociology Beyond Societies: Mobilities For the Twenty-First Century*. London: Routledge.
- Urry, J. (2007) *Mobilities*. Cambridge: Polity.
- Valk, F.V. (2008) Identity, power, and representation in virtual environments. *Journal of Online Learning and Teaching* 4 (2), 201–211.
- van Leeuwen, T. (1985) Rhythmic structure of the film text. In T. van Dijk (ed.) *Discourse and Communication* (pp. 216–232). Berlin: de Gruyter.
- van Leeuwen, T. (1999) *Speech, Music, Sound*. London: Macmillan.
- van Leeuwen, T. (2011) Parametric systems: The case of voice quality. In C. Jewitt (ed.) *The Routledge Handbook of Multimodal Analysis* (pp. 68–77). London: Routledge.
- van Leeuwen, T. and Jewitt, C. (2001) *Handbook of Visual Analysis*. London: SAGE.
- van Sluys, K., Fink, L.S. and Fisher, D. (2008) Engaging as ethnographers: Insights into the collaborative study of a literacy learning community. *Voices from the Middle* 16 (1), 15–22.
- Varga-Dobai, K. (2014) Responding to literature through storytelling, artifacts and multigenre writing practices: Explorations of cultures and self. *Literacy* 49 (2), 57–59.
- Vasudevan, L.M. (2014) Multimodal cosmopolitanism: Cultivating belonging in everyday moments with youth. *Curriculum Inquiry* 44 (1), 45–67.
- Vaughn, M. (2012) Review: Artifactual literacies: Every object tells a story, by Kate Pahl and Jennifer Rowsell, New York, Teachers College Press, 2010, p. 176. *Community Development* 43 (5), 684–685.
- Vygotsky, L. (1962) *Thought and Language*. Cambridge, MA: Massachusetts Institute of Technology.
- Vygotsky, L. (1978) *Mind in Society: The Development of Higher Psychological Processes*. London: Harvard University Press.
- Vygotsky, L. (1987) *The General Problems of General Psychology: Including the Volume Thinking and Speech* (Vol. One). New York: Plenum Press.

- Wakkary, R., Desjardins, A., Muise, K., Tanenbaum, K. and Hatala, M. (2012) Situating the sociability of interactive museum guides. In E. Giaccardi (ed.) *Heritage and Social Media: Understanding Heritage in a Participatory Culture* (pp. 217–238). London: Routledge.
- Wall, W. (2010) Literacy and the domestic arts. *The Huntington Library Quarterly* 73 (3), 383.
- Walton, M. (2007) Cheating literacy: The limitations of simulated classroom discourse in educational software for children. *Language and Education* 21 (3), 197–215.
- Warner, J.M. (2013) Mapping literacy in poverty: Rhizoanalysis of the multimodal digital literacy practices of low achieving, low income high school students. Paper presented at the Education and Poverty: Theory, Research, Policy and Praxis: Annual Meeting of the American Educational Research Association, April 27 - May 1 San Francisco, CA.
- Warren, S. (2008) Empirical challenges in organizational aesthetics research: Towards a sensual methodology. *Organization Studies* 29 (4), 559–580.
- Warschauer, M. (2004) *Technology and Social Inclusion: Rethinking the Digital Divide*. Cambridge, MA: MIT Press.
- Warschauer, M. and Matuchniak, T. (2010) New Technology and digital worlds: Analysing the evidence. *Review of Research in Education* 34 (1), 179–225.
- Waters, M. (1995) *Globalisation*. London: Routledge.
- Weiner, E.J. (2002) Beyond remediation: Ideological literacies of learning in developmental classrooms. *Journal of Adolescent and Adult Literacy* 46 (2), 150–168.
- Wellman, B. and Gulia, M. (1999) Net-Surfers don't ride alone: Virtual communities as communities. In B. Wellman (ed.) *Networks in the Global Village: Life in Contemporary Communities* (pp. 331–366). Boulder, CO: Westview Press.
- Wenger, E. (1998) *Communities of Practice: Learning, Meaning and Identity*. Cambridge: Cambridge University Press.
- West, A. (1992) Reading against the text: Developing critical literacy. *Changing English: Studies in Culture and Education* 1 (1), 82–101.
- Wheeler, S. and Wheeler, D. (2009) Using wikis to promote quality learning in teacher training. *Learning, Media and Technology* 34 (1), 1–10.
- White, S. (1998) Foreword. In M. Cole (ed.) *Cultural Psychology: A Once and Future Discipline* (pp. ix–xvi). Harvard: Harvard University Press.
- Whitehead, A.N. (1967) *Adventures of Ideas*. New York: The Free Press.
- Whitehead, A.N. (1978) Process and reality. In D.R. Griffin and D.W. Sherburne (eds) *An Essay In Cosmology*. New York: Free Press.
- Wilf, E. (2010) Swinging within the iron cage: Modernity, creativity, and embodied practice in American postsecondary jazz education. *American Ethnologist* 37 (3), 563–582.
- Williams, D. (1982) 'Semasiology': A Semantic anthropologist's view of human movements and actions. In D. Parkin (ed.) *Semantic Anthropology* (pp. 161–182). London: Academic Press.
- Wilson, A. (2000) There is no escape from third-space theory: Borderland discourse and the 'in-between' literacies of prison. In D. Barton, M. Hamilton and R. Ivanic (eds) *Situated Literacies: Reading and Writing in Context* (pp. 54–69). London: Routledge.
- Wilson, A. (2008) Moving beyond the page in content area literacy: Comprehension instruction for multimodal texts in science. *The Reading Teacher* 62 (2), 153–156.



References 191

- Wilson, J. (2004) Four days and breakfast: Time, space, and literacy/ies in the prison community. In K. Leander and M. Sheehy (eds) *Spatializing Literacy Research and Practice*. New York: Peter Lang Publishing.
- Yi, Y. (2008) Relay writing in an adolescent online community. *Journal of Adolescent & Adult Literacy* 51 (8), 670–680.
- Young, I.M. (1992) Five faces of oppression. In T.E. Wartenberg (ed.) *Rethinking Power* (pp. 174–195). Albany: State University of New York Press.

Index

- abbreviation 26, 31–32, 79
Abram, D. 137, 150
abstract/immaterial entities 117
abstract skills, literacies as 147
access to digital technologies 26, 36, 64, 161
Ackerman, J.M. 8
actor networks 28–31, 119–120, 124–125, 130, 131
Adey, P. 95
Adorno, T. 46
advertising and marketing 2, 53, 76
aesthetic, the xiv
affect 61, 81, 102, 107, 127, 156
affinity spaces 32–33, 147
after-school provision 30
agency
 and Actor Network Theory 119–120
 critical literacies 45–46, 48, 53, 62
 of materials 115–116, 124–125, 131
 multimodal literacies 82
 privileging of human agency xxiii
Ajayi, L. 27
Alborzi, H. 160
Allen, L. 98
alliances of literacy practice 32–33
alphabetic literacy *see also* writing/
 written word
 analphabetic perspective xvi
 historic privilege of 6, 85–86, 141–142
 social semiotics broader than 70
Alvermann, D.E. 106
analphabetic perspective xvi
Andean society xvi–xvii
Anderson, B. 130
Anderson, G.L. xxi, 50
Andersson, S.B. 22, 27, 36
Anstey, M. 147
anthropology
 cultural anthropology xx, xxiv, 151, 153
 multimodal literacies 78, 84
 sensory literacies xiv, xv–xvi, 137, 144, 148, 151, 162
anti-culture, literacy as xvi–xvii, xviii
Apple, M.A. 50
Apple, M.W. xxi, xxv, 42, 53–54, 63, 112
apps 3, 161
Arola, K.L. 137, 141, 162
art xiv–xv, 103, 160
artefacts/artifactual literacy 115, 120–121, 126, 127, 129, 133–135
articulated moments 99
Ascher, M. xvii
Ascher, R. xvii, xviii
assessment 8, 33, 39
attention, selective 148–149
Au, W. 47, 48, 50, 63
audio literacies xiv, 66–67, 77, 78, 144–145, 152–153
Auerbach, E. 35
Auld, G. 22
authenticity 13
author-centric practices 32
authority
 authoritarian teachers 52
 dominant cultural types 90
 sources of authoritative knowledge 33
 of sources on the internet 13
authors' assumptions 37
autonomous model of literacies xx, 17, 25
avatars 21, 23, 90

- babies and toddlers *see* early childhood contexts
- bandwagon effects 79
- Barab, S. 22, 29
- Barad, K. 130
- barriers to literacies 64, 95
- Barthes, R. 70
- Barton, D. 19, 21, 35, 76, 82, 123, 124, 128–129
- basic literacy 46
- basic skills approaches xx
- Basso, K. 154
- Beach, R. 37
- Bean, T.W. 62
- Beck, U. 2, 3
- behaviourist perspectives xx, 70
- belief systems 13, 42, 49, 52, 129
- Bendix, R. 141
- Benjamin, W. 46
- Bernstein, B. 7, 8, 10, 74, 77
- Beunza, D. 119
- Bezemer, J. 19, 66, 141, 151
- bias, cultural 49
- bi-dialectal approaches 48–49
- Bigum, C. 73, 90, 101
- Bijker, W.E. 119
- bilingualism 22, 27, 38, 49
- billboards 2
- Birdwhistell, R. 69
- Bishop, R. 43
- Bissell, D. 95
- Black, R.W. 23, 27, 29, 31, 34
- blogging 12, 59–60 *see also* microblogging
- Bloome, D. 114
- Bloor, D. 117
- Blot, R. 83
- Bobick, A. 160
- Bogatyrev, P. 69
- books, multisensory 161
- border crossing xxvi
- boundaries of literacies 17, 18, 76–77, 96
- Bourdieu, P. 15, 90, 100, 142–143, 148, 161
- Bowen, T. 103
- Boyd, D. 33
- Brandt, D. 25, 62
- Brass, J. 22, 23
- Brown, A. 13, 15, 20
- Bruner, J. 64
- Buchanan, M. 5
- Buckingham, D. 34, 36
- built environment 71, 76, 115, 144
- Bulfin, S. 22, 91, 109
- Bull, G. 147
- Bullen, E. 52
- Burbules, N. 73, 86, 87
- Burn, A. 77
- Burnett, C. 24, 114, 127
- Burnette, C. 29
- Butler, K. 157
- Callard, F. 98, 131
- Callister, T. 73, 86, 87
- Callon, M. 119, 131
- Cameron, D. 17, 74, 77
- Campbell, M.A. 64
- Campione, J. 13
- capitalism
 - commodification of literacy 2, 44
 - critical literacies 44, 45, 46, 54, 63
 - multimodal literacies 71
 - socio-material literacies 126, 135
 - socio-spatial literacies 95
- Carrington, V. 115, 126, 127
- Carspecken, P. 41, 47, 49
- Cassel, J. 160
- Castells, M. xxiii, 3, 95, 98
- Cazden, C.B. xx, 21
- Celano, D. 129
- copyright 13
- challenge (iPed) 13
- Chandler-Olcott, K. 22, 31, 33, 34
- Chandra, V. 22, 29, 31, 66, 78, 87, 96, 97
- Charlesworth, R. xiv
- Chen, L. 85
- Cho, B. 63
- Christie, F. 79
- civil rights movements 47, 108
- Clancy, S. 22
- Clark, A. 39, 145
- class *see* social class
- Classen, C. xiv, xvi–xvii, 128, 148
- classrooms
 - materiality of 114
 - as multimodal texts 81, 153
 - socio-spatial literacies 111
- clay animation movies 81, 134, 145, 153
- Clinton, K. 25, 62
- Cobb, P. 39

- co-create (iPed) 13–15
 Coffey, A. 143
 cognitive models of literacy xxvi, 13, 17–18, 44, 116, 147, 149
 Cole, M. 19, 115, 120, 159
 collaborative working
 assessment 33
 co-create (iPed) 13–15
 collaborative nature of digital practices 32
 production vs. usage skills 34–35
 socio-material approaches 127
 collateral achievements 39
 collective action 108
 Collins, J. 83
 colonialism 20, 23, 44–45, 47, 49, 62
 Comber, B. 22, 50, 92, 93, 96, 100, 103, 104, 105, 106, 108, 110
 commodification 2, 44–45, 54, 101
 Common Core State Standards (CCSS) USA 6
 Common Sense Media Research Study 161
 communities of practice 20, 21–22, 29, 33, 124, 129, 147
 community-building 129, 133
 comparative research designs 25–26
 compulsory schooling 51, 57
 Computer Clubhouse (Los Angeles) 34
 Connerton, P. 147
 conscientisation 45, 48
 contemporary art xiv–xv
 continuous action, learning as 62
 Cook-Gumperz, J. 17, 44, 51, 57, 62
 Cope, B. 3, 4, 12, 55, 66, 73–74, 77–78, 79, 89, 105
 counter-cultural messages 60
 counter-narratives 49
 Courtland, M. 22, 33
 Coyne, R. 99
 Crafton, L.K. 37
 criterion-referenced assessments 8
 Critical Linguistics xxi, 54
 critical literacies
 key concepts 41–46, 93
 origins 46–49
 tensions 49–52
 recent developments 52–54
 implications for practice 57–62
 new directions 62–64
 intersections with multimodal 54–56
 intersections with socio-cultural 35–38
 challenge (iPed) 13
 critical artifactual literacy 115
 and mobile devices 102
 in the new knowledge economy 4
 Critical Race Theory xxi
 cross-cultural modalities xvi, 20, 89
 crowd sourcing 97
 cultural anthropology xx, xxiv, 151, 153
 cultural artefacts 120–121, 129, 135
 cultural capital 15, 44
 cultural geography 31, 91, 109, 143, 153
 Cultural Historical Activity Theory (CHAT) 120–121, 130
 cultural mediation 120–121
 cultural tools 114
 curricula
 digitally-mediated writing 6, 10
 domination of alphabetic literacy 85–86
 and ideologies 44, 62
 integrating literacy practices in formal curricula 38–39
 multimodal literacies 74, 76–77, 78, 87–88
 narrowness of 24–25
 socio-material literacies 135
 cyber-bullying 53, 64
 Dale, R. 46, 47
 Dalton, B. 10
 Damico, J. 22, 27
 dance xxii
 Dank-McGhee, K. xv
 Darcy, R. 22
 Davidse, K. 70
 Davies, J. 23
 Davis, J. 61
 Debes, J. xiv–xv
 dehumanisation 45
 Delaney, P. 73, 86
 Deleuze, G. xxiv, xxv, xxvi, xxvii, 96, 104, 105–109, 106, 107, 108, 118–119
 democracy of the senses 141
 democratic communication tools 11–12
 democratic participation 53, 60, 64
 democratisation of knowledge 52–53
 demonstration 13–15
 Descartes, R. 156
 design experimental research methods 39

- design grammars 10, 24, 56, 75, 77, 83–84, 151
- detritorialisation xxvi, 28, 95–97, 102–105, 108, 112
- Dewey, J. 41, 114, 156
- di Geovanni, D. 61
- dialogue 48
- differentiation 51, 57
- 'digital divide' 28
- digital pedagogy: a model for practice 11–16
- digital text creation case study 7–11
- digital video xxiii–xxiv
- Digital Youth Project 26, 30–31
- Dirven, R. 73
- disability 146
- discourses
- critical literacies 42
 - discourse analysis 35, 82
 - Discourses 18
 - marketisation of educational discourse 76
 - multi-vocal metadiscourse 87
 - neutrality of 64
 - power relations 55, 57, 142–143
 - transnational discourses 89, 94
- distributed expertise 15
- distributed intelligence 32
- diversity 26, 55, 62, 89
- Dixon, K. 93–94
- documentary making 7, 61
- Dolmage, J. 146
- Domico, J. 37
- dominant cultural types 25–28
- domination and privilege 42–43, 50, 56, 62, 77, 90, 96, 102–105
- Dowdall, C. 115, 126, 127
- drawing 68, 82, 160
- Durkheim, E. 57
- dynamism
- activity systems 121
 - digital texts 74–75, 87
 - language 150–151
 - social spaces 111
- Dyson, A. 134
- early childhood contexts
- critical literacies 37
 - embodied play 158
 - and mobile devices 102
 - multimodalities 88
 - rhizomatic analysis 107
 - socio-material literacies 126
 - socio-spatial literacies 100, 101
 - and technology 1–2
 - touch-screen technologies 1–2, 161
- East Anglia School 54
- ecology 153, 154
- Edmodo 29
- education policy 6–7, 9–10
- Edwards, A. 121
- Edwards, R. 115, 117, 118
- electronic billboards 2
- Elliotte, A. 5
- embodiment 139–140, 142, 145–148, 153–156, 162
- Emig, J. 146
- empiricism 140
- emplacement 143–144
- employment, linked to literacy 45, 51, 89, 103
- encoding and decoding 18–19, 63, 65, 114, 136, 139, 151, 162
- Engels, F. 43–44
- Engeström, Y. 115, 120, 121
- English
- as dominant mode of instruction xxi
 - English as a Second Language (ESL) 27–28
 - globalisation 55, 89
 - 'Standard English' ideologies 83, 102–103
- Enlightenment 46
- Enyedy, N. 145
- epistemologies
- multimodal literacies 66
 - socio-cultural literacies 33–34
 - socio-spatial literacies 99
- ERIC Clearinghouse 72
- Ernst-Slavit, G. 22, 27
- Estebann-Guitart, M. 29
- ethnographic approaches
- and Critical Theory 35
 - in the future 39
 - object ethnography 115
 - sensory ethnography 144
 - sensory literacies 137, 141, 148, 151–152
 - socio-cultural literacies xx, xxv, 20–21, 22, 26, 30, 84

- ethnographic approaches (*Continued*)
 socio-material literacies 114, 127
 socio-spatial literacies 110, 111
 evaluation of student's work 8–11,
 15–16, 53–54
 Exley, B. 6
 experiential learning xxiv, xxvi
 expert-dominated practices 32
 Exploring Freedom 37
 eye-tracking 138
- Fabos, B. 22, 29
 Facebook 29, 63, 66, 87, 90, 97 *see also*
 social media
 Fairclough, N. 42, 54–55, 64
 fan sites 29, 31, 97, 118
 Faraclas, N. 52
 Farnell, B. 148, 156, 162
 feedback loops 53–54
 Feenberg, A. 53
 Feld, S. 154
 Fenwick, T. xxiii, xxvi, 91, 95, 96, 97, 98,
 105, 115, 116, 117, 118, 119, 120,
 123, 125, 129, 130, 135
 Ferrare, J.J. 112
 filmmaking xxiii–xxiv, 70, 153–156,
 157–159
 Flewitt, R. 22, 82, 84
 flows 95, 98, 105, 106, 109
 Forceville, C. 75
 Foster, E. 73
 Foucault, M. xxv, 50, 64, 93, 94,
 142, 147
 Fowler, R. xxi, 54
 Frankfurt School 41, 46, 47
 Freebody, P. 42, 44, 93
 Frei, P. 160
 Freire, P. xxv, 41, 44, 45, 47, 48, 49, 50, 103
 Fried, V. 73
 friendship-driven practices 29
 Frierson, P.R. 126, 149
 Fueyo, J. 67
 Fuller, B. 136
 functional grammar 147
 functional load 84
 fuzzy borders 76–77
- Galperin, P. 120
 Gamboa, M. 29
- gaming
 in the knowledge society 2–3
 sensory literacies 138, 147, 159
 socio-cultural literacies 22, 29, 36–37
 socio-material literacies 118
 socio-spatial literacies 97
 gaze xxii, 138
 Gee, J. xx, 17, 18, 21, 32–33, 34, 58, 64,
 73, 92, 147
 gender 42, 49, 50, 142
 generative vocabulary 48
 genre xxii, 4, 31, 79, 86
 geography *see* cultural geography; socio-
 spatial literacies
 geosemiotic approaches 91–92,
 109–110, 144
 Gergen, K. 147
 gestural literacies xiv, xxii, xxvi, 71,
 77–78, 139, 153, 162
 Giaccardi, E. 66, 80, 97
 Gibbs, D. 105, 106, 108
 Gibson, J.J. 154, 156, 162
 Giddens, A. 2
 Giroux, H. xxv, 35
 'global village' 28
 globalisation
 critical literacies 45, 63
 deterritorialisation 95–97
 and the digital turn 1–5
 link (iPed) 12–13
 multimodal literacies xxi–xxii, 88
 and paradigmatic approaches xxiv
 socio-cultural literacies 28
 socio-material literacies 127, 135
 socio-spatial literacies 91, 94–97, 98,
 105, 131
 time-space compression xxiv, 95, 105
 Goffman, E. xxii, 18, 69, 70
 Goodfellow, R. 33
 'Googling' 53
 Gorbet, M. 160
 Gore, J.M. xxv
 Gourlay, L. 124
 Graddol, D. 129, 135
 Graff, H.J. 21, 71–72
 graffiti/street art 103
 grammars
 audio grammars 77, 152–153
 image grammars 77, 81

- multimodal grammars 10, 24, 56,
 77–78, 80–81, 83–84, 152
 social semiotics 76
 sound grammars 152–153
 visual design grammars 10, 24, 56, 75,
 77, 83–84, 151
 Gramsci, A. 49
 Grant, L. 33
 Green, B. 52, 58, 72, 73, 85, 86, 90, 94,
 101, 109
 Gregory, D. 130
 Gregory, E. 129
 Grenfell, M. xx
 Griffin, P. 159
 Grisham, D.L. 23
 Gross, E. 2
 Grosvenor, I. 115, 116
 Grunberg, C. 46
 Gruszczynska, A. 23
 Guattari, F. xxiv, xxv, xxvi, xxvii, 96, 104,
 105, 106, 107, 108
 guided social participation 14
 Gulia, M. 101
 Gulson, K. 91, 93
 Gumperz, J. xx, 21
 gustatory literacies xiv, 152
 Gutierrez, K. 31, 63, 91, 94
 Guzzetti, B.J. 29

 Haas, C. xxvi, 114, 122, 136, 139, 145,
 146, 147, 148
 habitus 148, 161
 Hagood, M. 106, 107
 Halewood, M. 119
 Hall, E.T. 69, 70
 Hall, J.K. 144
 Hall, N. 129, 135
 Hall, R. 145
 Halliday, M.A.K. xxii, 20, 54, 70, 72, 73,
 76, 79, 82, 147
 Hamilton, M. 21, 124–125, 135
 Hammond, J. 58, 77
 Hamston, J. 74, 82
 handwriting, decline of 88
 haptics xxvi, 138, 140, 144–145, 152,
 160–161
 Harvey, D. 93
 Hasan, R. 20
 Hately, E. 126

 Hawkins, M.R. 27, 36, 94
 Hayles, N.K. 162
 Headrick Taylor, K. 145
 Healy, A. 51
 Heath, S. 21, 25, 29, 110, 111
 Hegel, G.W.F. 46, 61
 Helgøy, I. 6
 heritage 66, 80, 99, 133
 Hetherington, K. 117
 heuristics of learning 114
 Hildyard, A. 18
 Hindmarsh, J. 137
 history 58, 80, 127
 Hodge, B. xxi, xxii, 82
 Hodge, R.I.V. 54
 Hoijer, H. 70
 Holland, D. 124
 Höller, C. xiv
 homogenisation 20
 Honzl, J. 69
 Hooper, B. 113
 Horkheimer, M. 46
 Horst, H.A. 33
 Howes, D. xvi, xxvi, 128, 137, 140, 141,
 143–144, 148, 151, 152
 Hubbard, P. xix, xxiii, 131, 142
 Hughey, M. 104
 Hughs, P. 2
 Hull, G. 22, 23, 27, 29, 30, 82, 85
 human vs. non-human elements of social
 practices 116, 118–119, 123, 124,
 130–131
 Hume, D. 149
 Hurdley, R. 126
 hybridity
 and dynamic multimodal texts 75
 hybridisation of literacy practice xxvi,
 31–32
 hybridised textual environments 2
 and identity 104
 linguistic hybridity 4
 and local literacies 26
 multimodal literacies 81, 88
 sensory literacies xxvi, 138
 Hymes, D. xx, 21
 hypermedia 73, 86–87, 88, 98, 105, 108, 121

 iconographic interfaces 89
 ideational functions 76

- identity
 and artefacts 134
 and body odour 140–141, 148
 Discourses 18
 hybridity 104
 multimodal literacies 90
 online identities 11 *see also* avatars
 ‘portable personhood’ 5
 socio-material literacies 127
- ideologies
 critical literacies 42, 43–44, 48, 62
 ideological struggle of digital text
 production 9
 reading as an ideological practice 58
 socio-cultural literacies 35
 and socio-linguistics 55–56
 socio-spatial literacies 93–94
- Iedema, R. 76, 79
- illiteracy 45
- image
 image grammars 77, 81
 image meanings 24
 multimodal literacies xxii, 66, 67
 risky digital images on social media 99
 socio-cultural literacies 19
- immaterial entities 117, 121
- immediacy 26
- (im)mobilities paradigm 130
- impression management 70
- Inca society xvi–xvii
- indexicality xxii, 110
- Indigenous societies xiv, 12, 15–16,
 23–24, 42–43, 61
- inequity 45, 51, 94
- informality 26, 29, 30
- information flows 3
- Ingold, T. xv–xvi, xxvi, 78, 79, 140, 141,
 144, 148, 152, 157, 158
- inquiry-based approaches 37
- InSight: Contemporary Sensory Works xv
- instant messaging (IM) 4, 31–32, 87
- Institute of Social Research 46
- intellectual property 13
- intentionality/motivation 44, 148–149, 162
- interactional approaches xxii, 82
- inter-contextuality 35
- interest (selective attention) 148–149
- interest-driven networks 29, 30–31, 32,
 33–34
- International Visual Literacy Association
 (IVLA) xiv–xv
- internet *see also* gaming; online
 communities; social media; Web 2.0
 critical literacies 53, 63–64
 and the digital turn 4–5
 and embodiment 146–147
 iPad 11–16
 multimodal literacies 65
 non-linear intertextual pathways 86–87
 sensory literacies 141–142
 smooth and striated spaces 108
 socio-material literacies 118, 128
 socio-spatial literacies 96
 user-generated content 2, 11–12, 29,
 32, 34–35, 59–60, 97–99
- interpersonal functions 76
- intersemiotic relations 84
- intertextuality 2, 26, 35, 86–87, 98
- iPed 11–16, 102
- Irvine, P. xxi, 50
- Ito, M. 22, 26, 29, 30, 33, 34
- Ivanic, R. 81, 129
- Iyer, R. xx, xxi, 20
- Jacobs, C. 22, 27
- Jacobs, G.E. 22, 27, 29
- Janks, H. 22, 43, 93, 94
- Jenkins, H. 53, 66, 97
- Jewitt, C. xxii, xxvi, 24, 56, 65, 67, 73, 74,
 80, 82, 83, 84, 85, 150, 152, 153
- Johnson, M. 147
- Johnson, N.B. 114
- Jones, C.A. xiv
- Jones Diaz, C. 2
- Junquera, E.S. 27
- Kafai, Y.B. 23, 34
- Kalantzis, M. 3, 4, 12, 55, 66, 73–74,
 77–78, 79, 89, 105
- Kamberelis, G. 106, 107, 108
- Kant, E. 46
- Kees, W. 69, 70–71
- Kennedy, B. xiv–xv
- Kenway, J. 52
- KidPad 159–160
- Kietzmann, J. 97
- kinaesthetic literacies 78, 156–160
- Kincheloe, J. 43, 45, 46, 47, 90

- Kinder, B. 2
 kineikonic texts 81, 84
 Kitchen, R. xix, xxiii, 131, 142
 Knight, L. 106, 107
 Knobel, M. 18–19, 22, 28, 32, 34, 48, 51, 53, 66, 73, 84
 Knoester, M. 22
 Knorr Cetina, K. 119
 knowledge
 content knowledge 4
 critical literacies 57–58
 and deterritorialisation 96
 and differentiation 57
 knowledge society/new economy 3–4
 and the mediating power of tools 115
 and mobile devices 101–102
 and power relations 50, 142
 and sensory literacies 141
 and transformative action 47
 transmediation 67–68
 Koehler, M.J. 102
 Kop, R. 104
 Koskos, K. 22
 Krause, K.-L. 105, 106, 108
 Kress, G. xxi, xxii, xxvi, 19, 24, 54, 55–56, 57, 64, 65, 66, 69, 70, 72, 74, 75–76, 77, 79, 80, 81, 82, 83, 84, 141, 150, 151, 152, 153
 Labov, W. 20, 21
 Lam, E.W.S. 22, 27, 29, 89
 Landow, G. 73, 86
 Landri, P. 123, 125, 129, 135
 language
 and the body 137
 critical literacies 42, 54–55
 dynamic nature of 150–151
 embodiment of language learning 142
 materiality of writing 122
 metalanguages 7, 11, 81, 147, 151
 never value-neutral 64
 non-linguistic features of language 54, 65, 69–70, 81
 non-verbal communication xxvi, 18–19, 69–70
 power relations 54–55
 socio-cultural literacies 18, 20, 24
 socio-material literacies 126
 Lankshear, C. xxi, 18–19, 22, 32, 34, 48, 53, 66, 73, 84
 Larson, J. 94
 Lash, S. 94
 Latino youth 104
 Latour, B. 117–118, 119, 124, 131, 132
 Laurier, E. 131
 Lave, J. 13, 20, 33, 147
 Law, J. 116, 117, 119, 125, 131, 133, 134, 135
 Lawn, M. 115, 116
 Lea, M.R. 33
 Leander, K. xxiii, 22, 91, 99, 101, 103–104, 106, 109, 110, 111, 132, 135
 Lee, C. 4, 22, 27, 31–32
 Leeds-Hurwitz, W. 80
 Lefebvre, H. xxiii, 93, 109, 130, 131
 Lego 114, 127
 Lemke, J. 24, 30, 31, 71
 Leontiev, A.N. 120
 Letts, W. 94
 Leu, D.J. 73, 86, 87
 Levido, A. 11, 13, 14, 15, 59, 78, 102
 Levine, A. xv
 Lewis, C. 22, 29
 liberation theology 47
 liberatory educational practice 47
 lifeworlds 12
 linguistic imperialism 6, 56
 link, co-create, challenge, share (iPed) 11–16
 Lipman, P. 94
 literacyscapes 97
 Lloyd, A. 145, 146
 local literacies 25–26, 37, 83, 98, 110–111
 Locke, J. 149
 locomotion 141, 154–155, 157–160
 logo-centrism 24, 54, 62, 85
 Lopez-Gopar, M.E. 27
 Luke, A. 13, 17, 32, 35, 39, 42, 44, 46, 50–51, 58, 60–61, 62, 86, 90, 92, 93, 142, 143
 Lund, K. 157, 158
 Luria, A.R. 120
 Lynch, T.L. 91
 MacArthur Foundation 30
 MacDougall, D. 137, 154
 Macedo, D. 44, 47, 49

- Macnaughton, C. 2
 Maddil, L. 23, 37
 Mahar, D. 22, 31, 33, 34
 Makin, L. 2, 4
 manga comic books 82
 Marcuse, H. 46
 marginalised groups
 critical literacies xxi, 42–43, 53–54, 62, 64
 multimodal literacies 90
 and power relations 36–38, 45
 socio-cultural literacies xx, 26
 socio-spatial literacies 93–94, 99–100, 103–104
 transculturation 60–61
 market flows 95
 marketing and advertising 2, 53, 76
 marketisation 54, 55, 76, 77
 Marsh, J. 22, 128
 Martin, J. 79
 Martinec, R. 72
 Martinez, K. 33
 Marx, K. 43–44, 46, 63
 Marxism 51, 62
 masculinity 37
 Massey, D. 93, 97, 98, 99, 112, 130, 131
 Massive Open Online Courses (MOOCs) 88
 material literacies *see* socio-material literacies
 materialism 62
 materiality of learning xxiii, 119
 materials, bodies and texts 117, 123
 Matuchniak, T. 74
 Mauss, M. 140, 162
 Mavers, D. 82
 McCarthy, C. 53
 McGuinnis 23, 27, 82
 McLaren, P. xxv, 43, 44, 47, 62, 90
 McLuhan, M. 1, 28
 McNeil, D. 77
 McVee, M.B. 121
 meaning-making
 and the body 139–140
 in digital texts 24
 human and non-human elements 116
 intermodal meanings xxii
 in the knowledge society 3
 multimodal literacies xxii, 55, 66–67, 86, 150, 152, 153
 non-linear intertextual pathways 87
 rhizoanalytic literacy studies 106
 sensory literacies 150, 153
 social semiotics 65, 71, 72–73, 76
 socio-material literacies 117, 123, 127
 transmediation 67–69
 media 63, 70–71
 mediating tools, digital technologies as 67–69, 115
 memory 66, 99, 117, 127, 143
 Menezes de Souza, L. 82, 89
 Merchant, G. 6, 8, 23, 29
 Merleau-Ponty, M. xvi, 148, 155, 156
 message sticks 61
 metadiscourse 87
 metalanguages 7, 11, 81, 147, 151
 Metz, C. 70
 Michaels, S. xx
 microblogging 29, 31, 87
 micro-documentaries 7, 11, 61
 micro-genetic analysis 34–35
 micro-textual analysis xxii
 migration 63, 110
 Mills, K.A.
 2005 79, 147
 2006a 43, 90
 2006b 88, 89
 2006c 14
 2007 90
 2008a 36, 39, 43, 89, 90
 2008b 39
 2009 3, 39, 65, 76, 77
 2010 25
 2010a xxii, 39, 81, 109, 145, 153
 2010b xix, xx, xxii, 1, 4, 11, 17, 19, 21, 25, 32, 76, 84, 86, 92
 2010c 30, 39, 78, 82, 134
 2010d 3, 4
 2011a 22, 61, 67, 68, 77, 78, 84
 2011b 74, 86
 2011c xxi, 27, 31, 33, 36, 42, 43, 62, 96
 2011d 25, 78, 81, 84, 94
 2013 xxiii
 2013a 11, 88
 2013b 44, 76, 82, 88
 Mills and Chandra 2011 22, 29, 31, 66, 78, 87, 96, 97
 Mills and Comber, 2013 91, 92

- Mills and Comber, 2015 92, 93, 96, 100, 104, 105, 106, 108, 110, 112
- Mills and Exley, 2014a 7
- Mills and Exley, 2014b 6–11, 28, 85
- Mills and Levido 11, 13, 14, 15, 59, 78, 102
- Mills *et al.* 2012 61, 62
- Mills *et al.* 2013 xxiii, 23, 114, 115, 137, 139, 152, 153–155
- Mills *et al.* 2014 xxiii, 81
- Mills *et al.* 2015 23
- Ranker and Mills, 2014 xxiii, xxiii–xxiv, 23, 88, 137, 139
- Minecraft 90, 97, 99, 147
- Mishra, P. 102
- Mitchell, R. 86
- Mitchell, W. 56
- Mitsikopoulou, B. 22, 27
- mixed-methods research 39
- mobile devices
- and the digital turn 5
 - multimodal literacies 66
 - sensory literacies 147–148, 160–161
 - socio-material literacies 134–136
 - socio-spatial literacies 94–95, 98, 101–102, 111–112
- mobile lives 5–6
- mobile societies 94–95, 101–102
- mobilities paradigm 130
- modes 24, 66–67, 71–74, 76, 79, 83–85
- see also* multimodal literacies
- Moja, E.B. 91
- Moje, E. 31, 91, 104
- Monaghan, J.E. 86
- Montessori-Pierson, M. 126, 149
- Morley, D. 96
- Morrell, E. 22
- Moss, G. 81
- Moylan, M. 129
- Mukama, E. 22, 27, 36
- Mukarovskiy, J. 69
- multiliteracies xiii, 17, 19–20, 55, 73–74, 95
- multimodal literacies
- key concepts 65–69
 - origins 69–74
 - tensions 74–80
 - recent developments 80–82
 - implications for practice 85–87
 - new directions 87–90
 - intersections with critical approaches 54–56
 - intersections with sensory literacies xvi, 149–153
 - intersections with socio-cultural 23, 82–85
 - intersections with socio-material 127, 129
 - multimodal approaches xxi–xxii
 - multimodal discourse analysis (MDA) xxii
 - multimodal grammars 10, 24, 56, 77–78, 80–81, 83–84, 152
 - multimodal interactional analysis xxii
 - multimodal semiotics 10
 - multimodal text creation (Australian case study) 7–11
 - multimodal texts in education policy 6–7
- multiplayer online games 29, 99, 147
- multiple intelligences xv–xvi
- multisemiotics 72
- multi-site research designs 25–26
- multi-vocal metadiscourse 87
- music xxii, 19, 66–67, 70, 81
- music/video/photo sharing sites 63, 79–80, 97
- Myers, J. 37
- National Assessment Program: Literacy and Numeracy (NAPLAN) Australia 6
- national tests 6
- Nattiez, J.J. 70
- naturalistic methodologies xx
- Nelson, M. 22, 82, 85
- neoliberalism 53–54, 135
- neo-Marxism 47
- Nespor, J. 91, 109, 139
- networks of practice 2, 28–31, 124
- Neuman, S.B. 129
- Neumann, D.L. 23
- Neumann, M.M. 23
- neuroscience xiv *see also* cognitive models of literacy
- New Learning (website/wiki) 78
- New Literacy Studies 17 *see also* socio-cultural literacies

202 Literacy Theories for the Digital Age

- New London Group xiii, 19–20, 24, 31, 55, 65, 66, 72, 73, 75, 76, 88, 91, 95, 151, 152, 153
- new mobilities 94–95, 101–102, 135
- Nichols, S. 22, 100
- Nicolopoulou, A. 159
- Nixon, H. 91, 102, 126
- No Child Left Behind (USA) 6
- non-essentialism 118–119
- non-human elements of social practices 116, 118–119, 123, 124, 130–131
- non-institutional settings 30, 36
- non-linear intertextual pathways 121
- non-linear process of writing 146
- non-linearity of digital texts 86–87
- non-linguistic features of language 54, 65, 69–70, 81
- non-verbal communication xxvi, 18–19, 69–70
- Norden, J. xiv
- Norris, S. 81, 84, 152
- North, S. 22, 91, 109
- object ethnography 127
- oculocentrism 78, 140–141 *see also* visual literacies
- O'Dowd, R. 22, 27
- O'Halloran, K. xxii, 72, 73, 79, 82
- olfactory literacies xiv, 78, 140–141, 144–145, 152
- Oliver, M. 124
- Olson, D. 18
- Onge culture 140–141, 148
- online communities 16, 22, 29, 33, 79, 97, 146–147
- oppression 44–45, 47, 50–51, 63, 142
- oral cultures xvi–xvii
- O'Reilly, T. 4, 11
- Orlikowski, W. 119, 130, 132
- Ormerod, F. 81, 129
- out-of-school contexts 26
- pack-multiplicities 108
- Paddington, D. 22, 33
- Pahl, K. 22, 25, 82, 85, 91, 109, 114, 115, 123, 127, 129, 133, 134
- Painter, C. xxii, 25, 77, 81, 90
- Pallasmaa, J. 137
- Pandya, V. 140–141
- paradigmatic approaches xxiv–xxv
- paralinguistic features 54, 71
- parametric systems 84
- Parent Project 37–38
- Paris School 70
- Parker, D. 77
- parody 60
- participatory culture 52–53, 64, 97–99, 129
- participatory research methods 39
- Pascoe, C.J. 33
- Paterson, M. 140, 160
- peers
- and the dominant culture groups 43
 - peer networks via social media 29, 30–31
 - peer support 14–15
 - sources of authoritative knowledge 33
- Peirce, C.S. 70
- Pels, D. 132
- penmanship 86
- Pennycook, A. 20, 74
- Peppler, K.A. 23, 34
- performance models 9
- phenomenology xv–xvi, 78, 114, 148
- philosophy
- philosophy of organism 118–119
 - philosophy of the senses 137
 - and sensory literacies 151, 153, 162
 - and socio-material literacies 118–120, 132
- photo/video/music sharing sites 63, 79–80, 97
- Piaget, J. 13, 114, 159
- Pickering, A. 119
- Pickle, M. 73
- picture books 24
- Pike, K. 69, 70, 80
- Pilnick, A. 137
- Pink, G. 155, 157
- Pink, S. xxvi, 78, 114, 137, 138, 140, 141, 144, 152
- place, and sensory literacies 143–145 *see also* socio-spatial literacies
- policies
- education policy 6–7, 9–10
 - integrating literacy practices in formal curricula 38–39
 - and multimodalities 74
 - socio-material literacies 135
 - socio-spatial literacies 96

- politics
 and the boundaries of literacy 77
 and critical theories 48, 50, 51–52
 and ideologies 43–44
 integrating literacy practices in formal
 curricula 38–39
 and mobile societies 95
 socio-spatial literacies 110, 113
 popular culture 52
 portable devices *see* mobile devices
 ‘portable personhood’ 5
 Porteous, D. 140, 141
 postcolonialism 136
 post-Fordist subjectivity 53
 post-human arguments 123, 124
 postmodernism xxiv, 50, 135
 poststructuralism 31, 50, 80
 posture xxii
 Potter, J. 156
 power relations
 agency 48
 challenge (iPed) 13
 critical literacies 41–46, 48–49, 50–51,
 53, 54, 57
 and cultural capital 15
 domination and privilege 42–43, 50, 56,
 62, 77, 90, 96, 102–105
 ideologies 43–44, 48
 and language 54–55
 multimodalities 55–56
 multiple relations of power 63
 oppression 44–45, 47, 50–51, 63, 142
 sensory literacies 142–143
 socio-cultural literacies 36–38
 and socio-linguistics 55
 socio-material literacies 124
 socio-spatial literacies 93–94, 99–100
 and visual communication 56
 Powers, B.R. 1, 28
 pragmatics 70–71
 Prague School 69, 73
 Prain, V. 17, 74, 75, 76–77
 Predict, Demonstrate and Do 13–15
 ‘principles of composition’ 151
 Prinsloo, M. 26
 problem posing 48
 product-consumer relationships (teacher-
 student) 53–54
 production vs. usage skills 34, 79–80, 87
 professional networking 97
 progressive education xx
 psychometric paradigm of literacy 17, 57
 psychometric testing xx
 public-private boundaries, blurring of
 79–80
 quipu xvi–xvii
 race
 and critical literacies 37, 42, 49, 50
 Critical Race Theory xx–xxi
 embodiment and power 142
 in fairy tales 59
 and multimodalities 90
 socio-cultural literacies 28
 socio-spatial literacies 102–105
 Ranker, J. xxiii, 22, 23, 88, 137, 139
 rationality xxvi, 47, 137
 reading
 hypertextual 105
 multimodalities 86–87
 situated reading 58
 socio-material literacies 121
 read-write web 5, 11–12 *see also* Web 2.0
 recreation 29
 recursivity 150
 Reese, D. 58
 register xxii
 regulatory frameworks 5, 6, 9–10
 Reinking, D. 73, 121
 relay writing 29, 31
 Resnick, M. 34
 responsible processes 3
 reterritorialisation 102–105, 108
 Reyes, I. 29
 rhetorical techniques 60
 rhizoanalytic literacy studies xix–xxvii,
 106–109
 Rich, A. 41
 Richardson, P. 79
 Riddle, R. 22, 27
 Riggins, S.H. 44
 Robertson, S. 46, 47
 Robins, K. 96
 Rodaway, P. 137, 143
 Roe, M. 130
 Rojas-Drummond, S.M. 22, 34–35
 Rosowsky, A. 129

- Rothery, J. 79
 Rowsell, J. 22, 85, 115, 123, 127, 129, 133, 134
 Rubinstein-Ávila, E. 82
 rubrics 8
 Ruby, M. 129
 Ruesh, J. 69, 70–71
 Ryokai, K. 160
- Sanford, K. 23, 37
 Sannino, A. 119
 Saul, E.W. 86
 Saussure, F. de 70
 scaffolding 13, 14–15
 Schamroth Abrams, S. 6, 8
 schema theory 121
 schools
 critical literacies 49–50, 51, 52
 education policy 6–7
 normative role 52
 Schwartz, A. 82
 Scollon, R. xxii, 69, 70, 71, 80, 92, 99, 109, 112, 114, 139, 144
 Scollon, S.W. xxii, 69, 70, 71, 80, 92, 99, 109, 112, 114, 139, 144
 Scribner, S. 19
 Searle, C. 73
 security (online) 5, 13
 selective attention 148–149
 Selfe, C.L. 73
 self-initiated practices 29–30, 63
 self-promotion 45
 Semali, L.M. 67
 semasiology 148
 semiotics
 geosemiotic approaches 91–92, 109–110, 144
 intersemiotic relations 84
 multimodalities xxii, 65–69, 152
 multisemiotics 72
 semiotics of consumption 55
 sensory literacies 141–142
 sign-systems vs. ‘modes’ 66–67
 social semiotics xxi, 65, 69, 71, 72–73, 76–78, 80–81, 82–83, 153
 socio-cultural literacies 24, 83
 socio-spatial literacies 92
 teachers need understanding of multimodal semiotics 10
- Sensenbaugh, R. 72
 sensory literacies
 key concepts 138–140
 tensions 140–142
 recent developments 142–149
 implications for practice 153–156
 new directions 156–162
 all senses work together 78–79
 domination of the visual 55, 77, 78, 140–141, 144–145, 152
 International Visual Literacy Association (IVLA) conference xiv–xvi
 intersections with multimodal approaches 149–153
 intersections with socio-cultural literacies 138, 140
 sensory models xvi
 sensory research methodologies xxiv
 sensory walks 153–154
 share (iPed) 15–16
 Sheehy, M. xxiii, 91, 99, 109, 111, 132
 Shields, R. 93, 131
 Shilling, C. 143
 shopping malls 104, 114
 Shor, I. 42, 48, 49, 50, 60–61
 Short, K.G. 67
 Siegel, M. 67
 Simmel, G. 137
 Simon, R. 99
 Simpson, A. 92
 simultaneous production/consumption 11, 80, 87
 situated cognition 13, 20
 situated learning 147
 situated reading 58
 Siu, K.W. 27
 Skerrett, A. 52
 skills-based approaches xx, 25
 Skylanders 118
 Slonimsky, L. 89
 Slutsky, R. xv
 smell *see* olfactory literacies
 Smith, D. 123, 124
 smooth and striated spaces 107–108
 Snyder, I. 36, 66, 73, 86
 social action 7–11, 62, 63, 131, 144, 148
 social change 48–49
 social class xx, 25–28, 42, 49, 50, 102–105, 142

- social cognition xxiii, 114
- social geography xxii–xxiii, xxiv
- social justice xxi
- social media
- critical literacies 37
 - multimodalities 66
 - social mediafication 97–99, 105–109
 - socio-cultural literacies 29, 30–31
 - socio-spatial literacies 97–99, 105–109
- social networking
- critical literacies 53, 63
 - and the digital turn 2
 - in the knowledge society 4–5
 - rhizomatic nature 105
 - socio-cultural literacies 29
 - socio-material literacies 118
 - socio-spatial literacies 97–99, 101–102
- social semiotics xxi, 65, 69, 72–73, 76–78, 80–81, 82–83, 153
- socio-cultural literacies
- key concepts xx, 17–20
 - origins 20–25
 - tensions 25–28
 - recent developments 28–35
 - implications for practice 38–40
 - intersections with critical approaches 35–38
 - intersections with multimodal approaches 82–85
 - intersections with socio-material 124–125, 128–130
 - intersections with socio-spatial literacies 109–111
 - and sensory literacies 138, 140, 162
- socio-economic backgrounds 25–28, 36
see also social class
- sociolinguistics xx, 55
- socio-material literacies
- key concepts xxiii, 115–117
 - origins 117–122
 - tensions 122–125
 - recent developments 126–128
 - implications for practice 133–134
 - new directions 134–136
 - intersections with socio-cultural 124–125, 128–130
 - intersections with socio-spatial 130–133
- socio-spatial literacies
- key concepts 92–94
 - origins 94–99
 - tensions 99–100
 - recent developments 101–109
 - implications for practice 111–112
 - new directions 112–113
 - intersections with multimodalities 78, 81
 - intersections with socio-cultural 109–111
 - intersections with socio-material 130–133
 - and sensory literacies 143–145, 154
- Soja, E. xxiii, 91, 92, 93, 103, 112, 113, 130, 132
- somatics 65, 138, 147, 148, 152, 162
- Somerville, M.J. 109
- Sorenson, E. 116, 128, 135
- sound grammars 152–153
- space of flows 95, 98
- spatial justice xxvi
- spatial literacies *see* socio-spatial literacies
- Spencer, M. 72
- ‘Standard English’ ideologies 83, 102–103
- Stanton, D. 159–160
- Stein, P. 89, 94, 145
- Steinkhuehler, C. 29
- Stevens, L.P. 62
- Stiles, L. 129
- Stoller, P. 137, 140
- Stornaiuolo, A. 23, 29
- storytelling 127, 129, 159–160
- Strassman, P. 73
- Street, B. xx, 13, 17, 20–21, 25, 30, 31, 35, 83, 84, 85, 92, 93, 110
- street art 103
- striated (vs. smooth) spaces 108
- subjective worlds 76
- subjectivity 90
- Suhor, C. 66–67
- Sunderland, N. 61, 153
- superstructures 47
- surveillance 5, 53
- Sutton, R.E. 138
- Symes, C. 91, 93
- synchronicity
- and local literacies 26
 - synchronous vs. anywhere-anytime communication 79, 98
 - time-space compression xxiv, 95, 105
- Synder, S. 26

206 Literacy Theories for the Digital Age

- systemic functional linguistics xix, 20, 24, 54, 70, 73, 79, 82
- systemic functional multimodal discourse analysis (SF-MDA) xxii
- tactile literacies xiv, 78 *see also* haptics; sensory literacies
- taste *see* gustatory literacies
- teachers
- agency 45
 - and the body 143
 - critical literacies 50, 56, 62
 - and digital writing 10–16
 - and mobile devices 102, 111–112
 - moral high ground 52
 - multimodalities 74
 - neutrality of 64
 - product-consumer relationships (teacher-student) 53–54
 - socio-cultural literacies 33–34, 38
 - socio-spatial literacies 102, 111–112
 - teacher agency 56
- technology *see also* internet; mobile devices
- as actor-networks 119
 - critical literacies 52–53
 - and kinaesthesia 159–160
 - mobile literacies 101–102
 - multimodalities 71–74, 88, 141
 - over-use of technologies 3
 - production vs. usage skills 3
 - rate of change 89
 - risks of technology 2
 - sensory literacies 138–139, 142
 - socio-cultural literacies 21–22
 - and socio-economic background 36
 - socio-material literacies 117, 118, 121, 122, 128, 132–133, 134–136
 - socio-spatial literacies 96
 - technological determinism 53
 - technological knowledge 3
 - transmediation 67–69
- temporal dimensions 7–11, 84
- testing 6
- textual knowledge 3–4
- thermal literacies 144–145
- Thibault, P.J. 65
- Thing Theory 127
- third generation web 5
- third spaces xxvi, 91, 103
- three-dimensional model of literacy 101
- Tilley, C. 138
- time-space compression xxiv, 95, 105
- toddlers *see* early childhood contexts
- Toledo Museum of Art xiv–xv
- Tollefson, T. 20
- tool use 114–115, 121, 128, 133
- touch-screen technologies 1–2, 88, 138, 156, 160–161
- transculturation 60–61
- transformative action 47–48, 103
- transformative principles 47–48
- transience of textual practices 123
- translations 49
- transmediation 67–69, 84
- transnational discourses 89, 94
- transport 5
- Trimbur, J. 74
- Turkle, S. 115
- Twitter 29, 97, 105 *see also* social media
- Uganda 26
- Ulmer, G. 72
- unified theory 70
- universalist views of literacy 25
- Unsworth, L. 24, 74, 77, 79, 81
- urban space 103, 108
- urbanisation 2, 93
- Urry, J. 5, 94, 95, 96, 130
- usage vs. production skills 34, 79–80, 87
- user-generated content 2, 11–12, 29, 32, 34–35, 59–60, 97–99
- Valk, F.V. 91
- van Leeuwen, T. xxvi, 54, 55–56, 65, 69, 70, 74, 75–76, 77, 80, 81, 83, 84, 151, 152, 153
- van Sluys, K. 22, 27, 37
- Varga-Dobai, K. 127
- Vasudevan, L.M. 82
- Vaughn, M. 129
- verbocentrism 141–142
- Vergunst, L. xxvi
- video calling 63
- video games *see* gaming
- video production 81, 153–156 *see also* filmmaking
- video/photo/music sharing sites 63, 79–80, 97

- virtual communities of practice 21–22
 virtual worlds 63, 128
 virtualisation 53
 visual arts xxii
 visual culture studies 114
 visual design grammars 10, 24, 56, 75, 77, 83–84, 151
 visual literacies
 carrying meaning in language 55
 definitions xiv–xv
 domination of 55, 77, 78, 140–141, 144–145, 152
 interdependence of all senses 141
 as part of sensory literacies xiv
 patterns of coding orientation 81
 primacy of the visual xiv
 and social media 105–106
 and social semiotics 76
 voluntary spaces of participation 31, 32
 Vygotsky, L. xxiii, 13, 14, 20, 114, 115, 120

 Wakkary, R. 99
 Wall, W. 145
 Walton, M. 26, 27
 Warner, J.M. 82, 106, 107
 Warren, S. 137
 Warschauer, M. 21, 74
 Waters, M. 97
 Web 2.0 *see also* social media
 authoring skills 34
 critical literacies 45
 defined 4–5
 high levels of literacy needed 45
 iPad 11, 13, 16
 multimodalities 66, 87, 90
 simultaneous production/ consumption (author/reader) 11, 80, 87
 social mediafication 97–99
 socio-cultural literacies 23, 32, 34
 socio-spatial literacies 96, 105–109
 Weber, M. 46
 Weil, F. 46
 well-being and happiness 61

 Wellman, B. 101
 Wenger, E. 20, 33, 124, 147
 West, A. 45, 50–51
 Western cultures, focus on 151–152
 Wheeler, D. 5, 11, 23, 32
 Wheeler, S. 5, 11, 23, 32
 White, S. 120, 121
 Whitehead, A.N. 118–119
 Whiteman, P. 2, 4
 wikis 32, 97
 Wilf, E. 145
 Williams, S. 148
 Wilson, A. 129
 Wilson, J. 91
 wireless communication 95, 101
 Wolsey, T.D. 23
 word-based literacies, domination of 24, 54, 62, 85
 World Wide Web (WWW) 4–5 *see also* internet; Web 2.0
 writing/written word
 carrying a lot of the meaning in multimodal texts 23–24
 composition 29
 digital writing case study 7–11
 digitally-mediated writing in school curricula 6
 domination of 56, 71–74, 85–86, 141–142
 dynamic processes of 146
 as embodied practice 145–146, 147–148
 essential multimodality of 65
 relay writing 29, 31
 simultaneous production/ consumption 11, 80, 87
 socio-material literacies 122
 Wylie, J. 130
 Wysocki, A. 137, 141, 162

 Yi, Y. 22, 23, 29, 34
 Young, I.M. 45
 YouTube 2, 33, 60, 63, 79–80, 90, 97, 118, 147 *see also* social media

 zone of proximal development (ZPD) 14