literacies

Digital Literacies

Julia Gillen

ROUTLEDGE

DIGITAL LITERACIES

With our increasing use of digital and online media, the way we interact with these forms of communication is having an enormous impact on our literacy and learning.

In *Digital Literacies*, Julia Gillen argues that to a substantial extent Linguistics has failed to rise to the opportunities presented by studying language in digital contexts. Assuming no existing knowledge, and drawing from a wide range of research projects, she presents a range of approaches to the study of writing and reading language online.

Challenging some of the existing concepts, *Digital Literacies* traces key ideas through both the history of literacy studies and contemporary approaches to language online, including linguistic ethnography and corpus linguistics. Examples, taken from real life studies, include the use of digital technologies in everyday life, online teenage communities and professional use of Twitter in journalism. Within each chapter, the relevant research methods used are explored and then tied to the theory underpinning them.

This book is an innovative and essential read for all those studying and researching applied linguistics, particularly in the areas of literacy and multimodality, at an upper undergraduate and postgraduate level. The title will also be of interest to those working with new media in the fields of Media and Communication Studies, Cultural Psychology, and Education.

Julia Gillen is Director of the Literacy Research Centre and Senior Lecturer in Digital Literacies at Lancaster University, UK. She is co-editor of *Virtual Literacies* (Routledge, 2013).

LITERACIES

Edited by David Barton
Lancaster University

Literacy practices are changing rapidly in contemporary society in response to broad social, economic and technological changes: in education, the workplace, the media and in everyday life. This series reflects the burgeoning research and scholarship in the field of literacy studies and its increasingly interdisciplinary nature. The series aims to provide a home for books on reading and writing which consider literacy as a social practice and which situate it within broader institutional contexts. The books develop and draw together work in the field; they aim to be accessible, interdisciplinary and international in scope, and to cover a wide range of social and institutional contexts.

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DIGITAL LITERACIES

Julia Gillen

Routledge
Taylor & Francis Group
LONDON AND NEW YORK

First published 2014
by Routledge
2 Park Square, Milton Park, Abingdon, Oxon OX14 4RN

and by Routledge
711 Third Avenue, New York, NY 10017

Routledge is an imprint of the Taylor & Francis Group, an informa business

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

Library of Congress Cataloging-in-Publication Data
Gillen, Julia.
Digital literacies / Julia Gillen.
(Literacies)
Includes bibliographical references and index.
1. Digital media–Technological innovations. 2. Internet literacy.
3. Computer literacy. 4. Information literacy. I. Title.
P96.T42G55 2014
302.23'1–dc23
2013035421

ISBN: 978-0-415-66089-1 (hbk)
ISBN: 978-0-415-66093-8 (pbk)
ISBN: 978-1-315-81353-0 (ebk)

Typeset in Sabon
by Taylor and Francis Books

FOR CONOR, KATHLEEN AND DANIEL

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ACKNOWLEDGEMENTS

I am grateful to David Barton, Director of the Literacy Research Centre, the series editor, for encouragement and valuable comments on an earlier draft.

I am also extremely grateful to the Bowland Trust for its generous support of my research.

I am fortunate to work in the Department of Linguistics and English Language at Lancaster University and am thankful for a very supportive research environment. I belong to the Literacy Research Centre, an extraordinary site for sharing ideas about literacy studies. We have welcomed many external speakers over the years to whom I owe substantial intellectual debts. Within the centre, I am particularly grateful to David Barton, Awena Carter, Mary Hamilton, Greg Myers, Uta Papen, Diane Potts, Mark Sebba, Karin Tusting, and Johnny Unger. I'm also grateful to Don Passey and my former research student Ruby S-Y Chen.

Previously, I worked at the Centre for Language and Communications (CLAC) at the Open University, led by Joan Swann. Besides Joan, I benefited from working with many others in CLAC and the faculty more widely, including Caroline Coffin, Guy Cook, Sharon Goodman, Roger Hancock, Ann Hewings, Liz Jackson, Judith Kleine-Staarman, Theresa Lillis, Karen Littleton, Barbara Mayor, Neil Mercer, Martin Rhys, Alison Twiner and Rupert Wegerif.

The Schome Park programme, which I've written about in chapters 1 and 5, was extremely important to me, and remains a thought-provoking experience. There are too many people to name whom I am grateful to; or perhaps relatively few 'real' names! I can thank those I worked with since, writing up research about the experience, especially Peter Twining, the benevolent dictator. That's an in-joke; I doubt there's anyone more effective in encouraging democracy and creativity among young people and others. I have really enjoyed thinking and writing with Rebecca Ferguson and Anna Peachey.

I gained my PhD and postdoctoral experience at Manchester Metropolitan University (MMU). I have continued since that time to work with Nigel Hall; the fruit of that collaboration is particularly evident here in chapter 3. The atmosphere at MMU was very lively and stimulating. I am particularly grateful to David Hustler and Ian Stronach for inspirational leadership and

willingness to challenge any prevailing discourses. Researching in the Early Years with Lesley Abbott OBE and her colleagues was unforgettable, teaching me many lessons about 'working up to the Early Years', in Lesley's words. In the Centre for Human Communication at MMU, I worked with Angela Goddard on a paper bridging our two empirical research agendas we called *Mediated discourse as learnable social interaction* (Goddard & Gillen, [2004] 2013). With Angela's kind permission I draw heavily on that work here, as the collaboration was very influential in my engagement with dialogical approaches to language. Angela Goddard has been particularly important, as is evident, in my writing Chapter 4. I am extremely grateful to her for allowing me to return to our earlier work and make use of her data and for making very useful comments on drafts. In that chapter, as others, all remaining shortcomings are of course my own.

My MMU experience led me to meeting Ann Cameron, of the University of British Columbia, with whom I've been delighted to work ever since. She is a continuing good influence on me.

I thank Jonathan Agnew for commenting on a draft of Chapter 5.

Some of my intellectual debts are evident through my bibliography. I've greatly benefited from membership of professional associations, especially the American Educational Research Association, the British Association of Applied Linguistics, the International Society for Cultural and Activity Research and the United Kingdom Literacy Association. I've also benefited from attending many conferences and being invited to speak or work in places including Canada, Finland, Hong Kong, Norway and the USA. I apologise for not listing my thanks in greater details; those visits have very much helped me write this book.

Three seminar series supported by the Economic and Social Research Council (ESRC) have been of unaccountable assistance in my professional development. The most recent was *Children's and young people's digital literacies in virtual online spaces* 2009–2010 (RES-451-26-0731). Working with Julia Davies and Jackie Marsh of Sheffield University and Guy Merchant in convening that series was wonderful. I am extremely grateful to Julia, Jackie and Guy also for co-editing our recent book *Virtual Literacies* (Routledge, 2012) an evident predecessor to this one. That seminar series led on from two others in which I was a core member. Those experiences enabled me to make the turn into digital literacies. Therefore I am grateful to Jackie Marsh and Elaine Millard for leading the seminar series on *Children's Literacy and Popular Culture* 2002–2004 (R451265240) and Muriel Robinson OBE and Rebekah Willett for *Play, Creativity and Digital Cultures* 2005–2007 (RES-451-25-4151).

I thank a very professional team at Routledge, including Louise Semlyen, Sophie Jaques and Daniel Bourner.

Finally, I thank my family. I am reliant on support from Jim Gillen. The book is dedicated to our children. I'm grateful to them for allowing me, yet again, to draw on so much I've learnt from them.

The author and publishers would like to thank the following for kind permission to use the following material:

An amended version of Gillen, J. (2009) Literacy practices in Schome Park: a virtual literacy ethnography. *Journal of Research in Reading* 32(1), 57–74 in Chapter 5. The *Journal of Research in Reading*, a journal of the United Kingdom Literacy Association.

The Information and Communications Technology Council (Canada) for permission to reprint Figure 3.4

Jonathan Agnew, for permission to use Figure 6.2.

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1

'NO NEED TO BUILD CAVES'

Digital literacies: an introduction

The caves of Lascaux

Some people had come together to learn about archaeology in an informal study group meeting held mostly on Friday evenings. One peripheral conversational topic was often the next study theme; looking ahead helped members to prepare. At one of the meetings a person I'll refer to for the time being as R, said, 'Just an idea … I was thinking about the caves of Lascaux – the most famous cave art in the world which was discovered by teenagers. So young people were responsible for maybe the best archaeological discovery ever! I don't know if there is anything we can do with our caves, or art, or just discussing it … .' One of the teachers, V, responded, smiling: 'I love this place. Well, I've never been there but it's fascinating. I have read about it.' Shortly afterwards the other teacher, M, took R aside and quietly proposed, 'The caves of Lascaux sound really interesting. Would you like to lead the session on Friday? I'm keen to allow different people to take the lead, and it's even better 'cos you know about them.' He continued pleasantly, offering encouragement and support but suggesting an alternative course of action if R felt unable to take up the challenge. R's initial response was rather reluctant, explaining the week ahead looked exceptionally busy and so the amount of preparation time would be limited. She was persuaded to lead the proposed session.

So far, this reads as an unexceptional account. In terms of linguistic data, I do not seem to have provided much of interest, nor indeed presented it properly. In terms of educational or simply everyday practice the event might seem a little unusual in that archaeology does not sound the most likely topic for an informal study group meeting on Friday evenings. Perhaps it sounds a little engaging in that there is a participatory approach, with students encouraged to lead off sessions. A reader with experience of teaching might respect the tactful way in which M encouraged the slightly diffident student R to lead off a session; another might notice the way in which V and M seem to be working together in partnership, not perhaps the most common teaching pattern. I hope that in reading even this short description you have gained in a small degree the impression that the group was characterised by enthusiasm, meeting

together on Friday evenings, and that the atmosphere was generally collegial and warm.

My reason for these hopes is that not only am I now involved in writing about those dialogues, I can explain that I am R, the author of this book and a university lecturer. These events occurred during my first experience of studying archaeology. V and M, who were leading the group, were teenagers. However, I never knew their real names, despite interacting with them for over a year. In fact, although V portrayed herself as female and M as male, I do not know anything about their real appearance and cannot even be certain about their gender. Yet this study group was among the most fascinating learning engagements of my life and I can confirm that the atmosphere was indeed collegial, warm and constructive.

I did not ever meet V and M, as we were interacting online. But I had a strong impression, full of colour and vibrancy, of them, our study environment and how we proceeded. If you look at Figure 1.1 you will see an image of us meeting together, a snapshot I took during one of our other meetings. Unfortunately you are most probably viewing this in monochrome.

Materiality of interactions

From the illustration in Figure 1.1 you will have seen that we were interacting together as avatars, projections of fictional selves into an online environment. You may have had some experience with virtual worlds – persistent online

Figure 1.1 Archaeology meeting in Schome Park.

spaces, often with simulations of 3D interactions – or perhaps not. You may have some experience of video games, and although there are crucial differences between such games and the virtual world project we were engaged in, those can rest for now. Even from just the still image in Figure 1.1 I hope you will have some impression of part of what I could see via my computer monitor, and how therefore I could have some kind of impression of meeting people who were situated in 'real' physical space a distance away from me (I still do not know where V, M and the others lived, other than it was the UK).

There is more complexity behind these interactions than might be immediately apparent, even if we leave as sketchy for the moment the qualities of the environment of the virtual world. In fact, the interactions outlined above did not occur *within* the virtual world, as illustrated in Figure 1.1, the location for the meetings' 'main business'. Substantial elements of the study group affairs occurred elsewhere, similarly to how an informal study group might use a variety of spaces and indeed spill over into corridors or cafés. We made use of other arenas to meet in. Indeed, the conversation reported above, between myself, Rowan (R), MissVibia (V), and Marsbar9 (M), took place in an online discussion forum. This was an online space, dedicated to the project but actually readable by anybody, that was especially appropriate for asynchronous communications. There were also some private areas of the forum – for example, accessible to staff members only – as will be explained later. The quality of asynchronicity, one person being able to produce a communication that another can access and respond to later, widens the opportunities for interaction and so was useful for peripheral discussions. Some group members, including school students, used to log into the forum in their lunch hours, for example, and so plans could be progressed gradually.

Figure 1.2 shows a view of the first interaction between R and V in the forum, captured as a screenshot five years later, at the time of writing this book. There are a number of features characteristic of this forum, but here I will introduce just two. The first is to make a distinction between the structured parts of the forum – the elements of each box that appear more or less automatically – and the individually authored elements of the postings. The more automatic elements, which might be termed templated, surround the freeform texts. So, for example, when I was logged in and making a posting, the left-hand side of the box, from 'Rowan' down to the three symbols immediately above the horizontal line, would appear without any action at that moment by me. Some of the template elements are customisable, in various ways, by various parties, and others are not – by everyday users, that is. For example, the number of posts I have made altogether in the project forum is automatically counted and displayed for me. On the other hand, at any time I wish I can customise the little 'badge' or image that I have chosen to project Rowan's appearance; late on in the project I had made this composite to show several changes in my avatar's appearance. However, most of the times I made a posting I would find that the features on this left-hand side appeared by

Figure 1.2 Schome Park forum extract.

themselves. What I actually input, through my PC keyboard, was the freeform text that begins, 'Just an idea … ' and ends with a website address, which appeared in blue.

The second point to introduce now about the forum's appearance and functionality is to point out that under the top five stars on the left-hand side there is a box next to 'online' which in the image is shown as filled. It actually looked like a green light. It is important to note that this 'being online' relates to presence at the time of reading the posting. That is, here it shows that I was online and logged into the forum at the time of taking the screenshot. This function had a very useful affordance – that is, it was a feature of the technology perceived as useable by project members. Many came to realise that if two people were online (and logged in) and one read a posting immediately after the other had written it, an instant response was possible, leading to the possibility of conversational communication. Therefore, although the forum was mainly designed for asynchronous communication, this facility means that it could act as a synchronous channel – that is, allowing contiguous communications, close together in time.

The timing of the original interactions is logged and permanently displayed with the posting. So in this case we can see that in my first account I 'collapsed' the conversation, rendering it as if it had happened at one moment in time. In fact, the two communications occurred two days apart. Yet Vibia, the contracted version of her name I usually adopt, was able to indicate that she was directly responding to Rowan's posting, through placing her response immediately after it. In everyday face-to-face conversation one of the main

ways an interlocutor indicates s/he is responding to what another person has said is to speak immediately afterwards – that is, to place their communication contiguously in time. Of course, another element of responsiveness lies in the content of what is said. In a forum such as this, contiguity and responsiveness can occur partly through placing the new message in sequence with the original posting or postings in what is then called a 'thread'. As in face-to-face communication, we are then primed to expect links in the content of what is said and generally to infer a continuity of topic. Even though the temporal gap is much greater, the effect of placing the communications next to one another in chronological sequence, bringing them together visually, is to bring about this effective dialogic quality.

These forum communications are public. At the time of writing it is still possible for anybody to read them, as part of the public website of the Schome Park programme.[1] However, in my initial account I wrote of M taking R quietly aside to make the suggestion that she, that is I, might lead the next session on the Caves of Lascaux. Indeed, M did make it a private communication, through using the direct message function of the forum. This is most easily accessible through clicking the right hand of the three icons (small images) below the avatar badge on the left-hand side of the posting. Figure 1.3 displays a view of the direct messages, as now preserved in a section of the site accessible in precisely this form only to me. This kind of direct message, via the forum, was also asynchronous, but shared only between sender and receiver rather than visible to all on the forum.

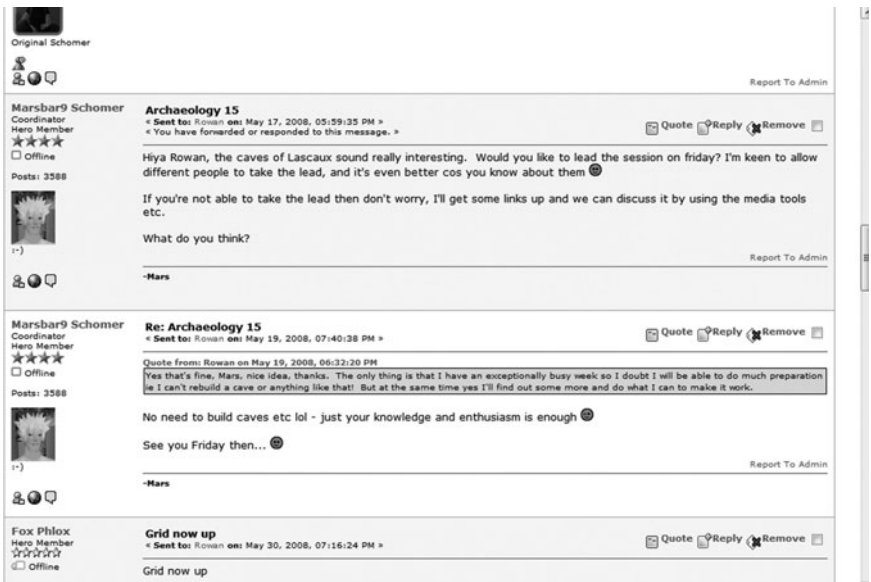


Figure 1.3 Extract from filed direct messages.

In the view shown in Figure 1.3, the two consecutive messages at the centre are of relevance. The first displays, in a fuller form than my original retelling, Marsbar9 Schomer's encouraging message to Rowan, ending in the question, 'What do you think?'

Of particular interest here is the second message. Note that this has not appeared contiguously to the first because its author deliberately intended it that way; rather, here we see something like a chronological filing system. Rather than preserving the messages in a dialogical thread, they are filed here automatically according to when I received them; thus, messages relating to the same topic thread may or may not be stored together depending on whether I have received any other messages on any topic in the interim. In this case the messages are related (although the two partially shown above and below the messages I am focussing on here are not).

The second message demonstrates another element of the forum's functionality to assist coherence. When Marsbar9 Schomer, whom I will usually abbreviate to Mars, responded to Rowan's message just over an hour after receiving it, he first selected part or whole of an element of Rowan's message that he wanted to address. Owing to the particular way the forum software is designed, he could make this appear as a highlighted box within his message simply by highlighting it. This was then labelled as a quote, with its originator and timing appearing automatically. Thus, Mars made absolutely clear precisely what he was responding to. Being relieved of the need to retell personally the point that he wants to answer means he can formulate a relatively short answer. So in this case Mars added to the quotation his own response: 'No need to build caves etc lol – just your knowledge and enthusiasm is enough. See you Friday.' Again, as in the public forum posting, even though considerable time has elapsed between communications, there is no doubt who has said what to whom, although the ways of establishing the links between the communications are subtly different.

These were not then spoken conversations as I intended the reader of my initial vignette to assume. In terms of purpose and outcome these exchanges had much in common with what they might have been had they taken place in an informal study group of people who knew one another and met face to face. In quite subtle ways, some of the functionality might be seen as establishing a kind of equivalence to turn-taking in spoken language, as I have demonstrated through illustrating how coherence across the exchanges was achieved. Other relevant points could be made too – for example, how smiling and winking emoticons appear in the written messages as a kind of simulation of such paralinguistic features as smiling and winking in face-to-face settings. In the UK, unlike some places in the world, winking is generally understood positively as making a brief yet warm reference to a shared understanding. Yet what I hope I have made very clear is that what actually occurred was very different from spoken interactions. The participants had to know a great deal about the different technical functionalities of the forum in order to construct

communications across space and time that would have the effects they desired. They also demonstrate considerable cultural knowledge, including politeness strategies, which can be linked to their own intentions and understanding of roles within the project, which was at the same time culturally shaped and renewed through such interactions. It is also inevitable that to some degree they are drawing on cultural knowledge gained outside the project, including clearly the English language and some norms of social behaviour. Some of these matters can be investigated through examination of much more of the project data but to some degree some will always be occluded, since the project existed online.

Aims of this book

Exploring such interactions is fascinating to me, in part because I was fortunate enough to be part of the Schome Park programme, a highly innovative educational project, at its best very successful and for many reasons worth researching for several years after its close. I want to explore how some exciting work in digital literacies expands our understanding of what is possible, particularly in respect of interactions that involve learning. This is not a book centrally about education, although, as so many others have suggested (e.g. Marsh and Millard, 2000; Jenkins *et al.*, 2006, Ito *et al.*, 2009; Lankshear and Knobel, 2013), many diverse experiences that involve learning have implications for education.

In order to come to any such understandings I need to explore and theorise, that is, propose useful frameworks to operate with. I draw on a number of disciplines, including cultural psychology, education, sociology and human computer interaction. I particularly want to investigate how the study of language can contribute to understanding online interactions and in turn what the study of digital literacies has to contribute to the study of language. So my second aim is to develop linguistics, practically and theoretically. The term digital literacies is highly relevant in that I want to engage in unpicking connections that underlie effective interactions around learning activities involving digital tools and environments. Learning is here understood very broadly, in that I include any activities whereby people develop their expertise online.

Locating the digital literacies of the Schome Park project

To situate and then move beyond the short episodes discussed above, to better understand the activities of that small archaeology group, it is necessary to investigate at a number of levels. The Time Explorers group, for that is what we called ourselves, constituted a tiny subset of the activities of the Schome Park programme. This project lasted for 15 months; in order to effectively portray these activities of May 2008 I need to explain something of what could be called the media ecology of the project. By 'media ecology' I mean 'the study of complex communication systems as environments' (Media Ecology Association, 2013); the term will be discussed more fully below, especially in Chapter 6.

What were the origins and design of the project? Why were certain communicative domains central to the project and others not? To what extent was this due to how the project was set up? Why did people adopt names not their own and what were the effects of projecting their identities through avatars and forum interactions? What purposes did people have? How did they acquire any necessary new skills and how did they draw upon existing knowledge and understandings? How did it come about that Mars and Vibia were at this time acting in a role I have here called 'teaching' and what did that mean in practice? I will return to the Schome project specifically in Chapter 5, but some of these issues will be explored in other chapters. In chapters 2, 3 and 4 I consider the nature of mediated discourse and the relationship between purpose, language and channel in a variety of examples. (I do not seek to make a clear demarcation between 'mode', 'channel' and 'communicative domain'; these are overlapping terms with differing connotations). In Chapter 6 I return to the notion of a media ecology, which, although I do not adopt any hard-and-fast boundaries or perspective, can nonetheless be of use in examining digital literacy practices.

To return again to the discussions from the Schome project above, at another level I have introduced a few texts and demonstrated how the three characters involved used the functionality of an online forum to construct coherent dialogues. Even looking at just a few key features, it was immediately apparent that these were very different from spoken interactions in how they were achieved, not least in the construction of coherence across time. One layer of examination thus can be examining the details of the technology and how people make decisions about how and when to understand and manipulate it, moment by moment. In Chapter 2 I argue that it is extremely important to keep mode in the forefront of attention and investigate how a prevalent tendency in the study of computer-mediated communication to gloss over distinctions between speech and writing arose.

Discourse analysis, which will be explored in various manifestations in later chapters, is usually concerned with intentions and values emerging through language and other semiotic means. In what might be a kind of middle layer, perhaps termed the verbal, there may be a particular focus on the language used, the choice of words – inferred intentions and features of expression. Pointing to the language used, I have shown an instance of Vibia in a leadership role being supportive to Rowan's comments, and two communications in which another leader, Mars, encouraged future input from Rowan in an interpersonally sensitive style.

But although for the purpose of analysis one might separate an object of study, say an element of a project, into layers such as the linguistic, it can be seen that these always interpenetrate one another. That in this instance teenagers were taking on teacher identities and the older person a student identity was intrinsically related to the aims and design of the project. In the moment, Vibia and Mars were not merely 'taking the role of teacher' – as when, for example, a teacher in a classroom engineers a moment when she moves to the

back and briefly yields the floor to a student presentation. Indeed, in the project we avoided the label 'teacher' partly because of that powerful school connotation. But their leadership was instantiated and can be revealed through study of their activities: their organisational skills, pedagogic strategies and interpersonal style. Their use of language was an intrinsic aspect of their interactions and demands specific examination, while understood to be materially embedded in specific environments.

These environments, like all human environments, need to be understood as both physically and culturally shaped, and then in a dialectic relationship shaping human society itself in a constant process. So understood more ecologically as social and cultural phenomena, each interaction was shaped by people's understandings, expectations and experiences, in this case of the Schome Park programme. That project developed, and could only develop, through such specific interactions. In Chapter 5 I will return to the Schome Park project to further investigate some of the issues regarding learning that I have raised. Other chapters will bring very different kinds of evidence into purview. In this book, as will become apparent, I have adopted an overtly personal perspective, eschewing other roles such as evaluator or consultant. This leads necessarily to considerable limitations of scope in some ways, but permits the kind of intensive immersion that can also be called fascination.

Approaching digital literacies through a sociocultural, ethnographic perspective

In this book I present a perspective on digital literacies that I see as particularly embedded in sociocultural and ethnographic understandings. I draw on a range of theories and methods, in an integrated and principled way, to investigate and discuss challenging issues involved in digital literacies. My use of the term digital literacies signals my strong interest in language, considered within a particularly dialogic tradition that I will describe in the following chapter. I understand language to be mediated interaction – that is, purposeful activity by embodied humans making use of communication channels and technologies open to them (Scollon, 1998). Literacy studies can and should operate in all actual and potential conditions of human communication that involve elements of reading and writing (Barton and Lee, 2013). By using the term Literacy Studies (or New Literacy Studies), capitalised, I mean to signal my alignment with a field of study that I see as highly characterised – permeated – by sociocultural and ethnographic traditions. These traditions will both be explored further; for now I set out the main reasons for highlighting them.

Introducing the sociocultural angle

The chief reason for taking a sociocultural approach to digital literacies is an appreciation of the dynamic relationship between activities and context. Rather

than make a particular digital text the focus of interest and seeking the surrounding 'context' as a kind of bucket, I see the details of written language used, the technologies, the cultural practices, the historically informed understandings, as entwined. What I here term a sociocultural approach is an 'umbrella' that draws upon a range of relating and indeed overlapping theories and ideas. This includes the cultural-historical activity theory (CHAT) of Leontiev (1978: 13):

> Cognition does not exist outside the life process that in its very nature is a material, practical process. The reflection of reality arises and develops in the process of the development of real ties of cognitive people with the human world surrounding them; it is defined by these ties and, in its turn, has an effect on their development.

Written long before online virtual worlds existed, this nonetheless encapsulates a sense of just how well the notion of 'human world' and dynamic interaction works. The sociocultural approach is also seen in Wertsch's (1985) contribution to an integrated, holistic understanding of cognition and human behaviour, drawing on the 'inherently cross-disciplinary (in a sense even nondisciplinary)' work of Vygotsky (Wertsch, 1985: 230).

The examples from the Schome project taken above instantiate the sociocultural approach to the building of knowledge through activity. A group of people are doing cognitive work together, bringing different knowledge and skills together. Scribner ([1983]1997: 297) set out a sociocultural perspective on people interacting together, employing texts, reading, writing and talking, that works for both offline and online environments:

> We understand cognitive tasks, not merely as ends in themselves but as means for achieving larger objectives and goals; and we carry out these tasks in constant interaction with social and material resources and constraints … people think while playing, working, creating art and talking with one another.

Participants' intentions and their understanding of what they are doing and interpretation of others' actions are unlikely ever to align perfectly and may indeed greatly diverge. It is essential to take this into account since people's personal histories, let alone the characteristics of different societies, will always vary and yet be critical to people's understanding of any new challenge or situation they might face in the moment. This diversity of experience and the consequent inevitability of variation in understandings, values and dispositions are a strong obstacle in the path of those who think it possible to adopt any standardised, stand-alone perspectives on digital literacies and impose them on people with equal effects. We are inescapably dealing with phenomena that shift in space and time and appear differently from different points of view. Yet for all that it is possible and desirable to seek out what can

be meaningfully researched, to provide evidence on 'what works' that might support ideas for working effectively in the future.

By adopting a generally sociocultural perspective, I do not mean to signal a narrow adherence to any specific set of ideas and associated methods of research – and neither do I shut the door on approaches that do not announce themselves as 'sociocultural'. A sociocultural perspective encompasses the possibility of adopting a wide range of methods, as different tools and approaches to understanding can be appropriate for different foci (Larson and Marsh, 2005). I hope to show that a dynamic process, combining insights gained from looking closely at tiny details with attempts to comprehend patterns on a larger scale, is most appropriate. This is rather as if a combined ocular instrument, at one moment a telescope, at another a microscope, is pulled and pushed (Chang, 2008). Moreover, there is a person deciding whether to pull or push, how and when to wield the instrument; the role of the researcher reflecting on their own decisions is also a key part of the research. The researcher who takes decisions, myself in this book, is a person very conscious of a specific range of experiences, and influences.

Introducing the ethnographic angle

A key aspect of my approach to digital literacies is a commitment to an ethnographic approach. In writing of the Schome Park programme, I recognise that the project was so vast, a 'world' indeed in space and time, that the recognition of limitations to any viewpoint, the inevitability of partiality, means that for me an alignment to ethnography is most appropriate. Linguistic ethnography considers that

> language and the social world are mutually shaping, and that close analysis of situated language use can provide both fundamental and distinctive insights into the mechanisms and dynamics of social and cultural production in everyday activity.
>
> (Linguistic Ethnography Forum, 2004: 2)

Central to ethnographic work is the activity of participant observation, of immersion in environments and societies studied, combined with other methods in an interpretive approach. This was associated with an established tradition in Literacy Studies, long before this incorporated online work, as argued by Schieffelin (1986: viii) when editing a collection of empirical studies:

> literacy, viewed as a cultural phenomenon that interacts with certain social processes, is best studied by adopting an ethnographic perspective. By ethnographic we mean descriptions that take into account the perspectives of members of a social group, including the beliefs and values that underlie and organize their activities and utterances.

> An ethnographic perspective allows the researcher to find out the meaning of events for those who are involved in them. This entails investigating the contexts of the uses of literacy, the meanings of literacy, and the forms of literate communication as it is organized and plays a role in organizing particular social interaction.

Within this overall understanding there is room for a number of research approaches and methods. Hine (2000: 27) found fruitful 'real time engagement with the field site and multiple ways of interacting with informants'. In this book I demonstrate a flexibility in terms of perspective and scale. Chapter 3 consists of an autoethnography inflected by Suchman's (2008) approach to situated action. I work out some ideas about digital literacies through responses to three different sources of evidence encountered at the same time. In Chapter 4 I re-examine three empirical studies of learners of communications technologies; taking a new perspective on past studies demonstrates how the challenges that faced them would be different in another era, such as today. Returning to the Schome project in Chapter 5, I research interactions I was part of at the time as well as those I only became aware of later. In Chapter 6, considering the digital literacy practices of a professional journalist, I work for much of the time at a relative distance. I shift between roles as audience member of broadcast media and reader of print books to an interactant on Web 2.0 platforms. Finally, I was able to engage directly when the journalist read a draft of my findings.

Whatever the focus of the ethnographic method, I find it fruitful to work on various scales, from the close examination of short texts, as begun above, to the use of tools that permit the investigation of huge quantities of text. So I extend beyond the methods most commonly associated with ethnographic work, deploying, for example, the tools of corpus linguistics. At all points it is salutary to reflect not merely on the opportunities and limitations of research methods but also on their effect on the researcher's view of the world. As Latour (2005: 143) counsels, 'Tools are never 'mere' tools ready to be applied: they always modify the goals you had in mind.'

Ethnography, like sociocultural approaches, will be further discussed later on. My more immediate task is to tackle head on a more thorny relationship than those two have with Literacy Studies (or studies of digital literacies). The relationship between the study of language and digital literacies or, indeed, between linguistics and digital literacies, is problematic. I seek to explain this assertion, look into the dynamics of the problem and propose some steps towards a new framework in the next chapter.

Note

1 www.schome.ac.uk/forum/. All URLs are given in good faith but of course there are any number of reasons why some might have moved, vanished or become inaccessible between the writing of this book and any future reading. Most of this website has been dormant since 2008 and therefore reads as somewhat out of date.

2

'LINGUISTICS IS A DISCIPLINE WITH ITS OWN HISTORY'

Language, linguistics and digital literacies

Many significant studies of computer-mediated language never go near any concepts or methods from linguistics. In June 2012 I attended the Sixth International Association for the Advancement of Artificial Intelligence Conference on Weblogs and Social Media in Dublin, Ireland. Virtually all participants worked a great deal with language data. However, I heard very little mention of linguists, no real application of any linguistic method and the word does not appear in the index of proceedings. This is not a matter of using quantitative methods as opposed to qualitative. Many linguists use quantitative methods and corpus linguistics works with datasets as large as those of computer scientists. Human–computer interaction is another area where language is often focussed upon but linguistics generally eschewed. I believe people working in these areas might benefit from studies at least influenced by linguistics, and also that linguists working with online communication can benefit from exposure to other relevant disciplines.

In this chapter I concentrate on problematic underlying issues within the study of language and digital literacies and work towards a new framework. Many examinations of digital language eschew linguistics entirely. First I turn to the discipline of linguistics itself to argue that the central ground of that discipline has historically been occupied by ways of theorising about language that are not primarily concerned with language as used. The domains regarded as most central to linguistics are relatively unconcerned with authentic communications and associated issues such as (language) learning. The second issue I term an evasion of materiality. I argue that much scholarship on digital communications – the field of study often termed computer-mediated communication (CMC) – takes a particular position on speech and writing that blurs the differences between modes. I identify and contest some underlying assumptions and arguments relating to such positions.

I argue that mode or modality, the quality of having form, is at the heart of language and so should be made a central element of theorising language and hence of linguistics. This insight will be beneficial to future work on digital literacies and linguistics alike, and perhaps mean that work in both areas is

better equipped to 'speak' to each other. Why has linguistics been so irrelevant to digital literacies?

Contesting the centre ground of linguistics

The study of digital literacies is to a degree held back by shaky foundations as far as the understanding of language is concerned. To an extent this is unsurprising as it is perhaps not easy to successfully marry the study of phenomena that appear so new with theories based on specific understandings of language that belong to other eras. Some useful approaches to digital literacies have drawn from distinctive strands of work in linguistics. For example, much work on multimodalities, emanating from a language-based approach that then expanded into other areas, has drawn on the systemic functional linguistics/social semiotics approaches most closely associated with Halliday (1978; see for example Jewitt, 2009; Kress, 2010; Rowsell, 2013). Although this path has certainly been fruitful, I intend to trace a distinctive alternative.

'Linguistics is a discipline with its own history' (Linell, 2004: 116); it is vital to look back into that history to come to an understandings of the fractures and fissures in today's work. Part of the reason why the study of digital literacies has drawn relatively little from mainstream linguistics lies in what the discipline of linguistics has appeared to be concerned with over much of the last century or so. Therefore I outline this territory to explain the historical background to this lacuna.

The American linguist Bloomfield was a central figure in the twentieth century, albeit a kind of springboard to successors who defined themselves in part through strongly differentiating themselves. Nonetheless, he perhaps defined the territory of mainstream linguistics in the twentieth century in deploring the possibility of truly investigating meaning-making.

> The situations which prompt people to utter speech, include every object and happening in their universe. In order to give a scientifically accurate definition of meaning for every form of a language, we should have to have a scientifically accurate knowledge of everything in the speakers' world. The actual extent of human knowledge is very small, compared to this … The statement of meanings is therefore the weak point in language-study, and will remain so.
>
> (Bloomfield, 1933: 139–40)

As a logical development of that position, the scientific study of language became a study for universals, for 'inductive generalizations' (Bloomfield, 1933: 20) that pertained across all language systems. To attempt to place all languages at least potentially in purview it was necessary to hold them still, as it were, to distinguish systems as idealised forms rather than messy realities. In the nineteenth century Humboldt had distinguished the creative capacity of

each speaker from a language's formal constitution and structure (*innere Sprachform*); better known became the similar distinction of de Saussure between *langue* and *parole* (Robins, 1979: 174–5). *Parole* is the imperfect, fragmented form of language we use every day, but both our production and understanding of that stems from our underlying knowledge of language as a system. This is more than the standard form that is written down and codified as 'correct', but it is certainly far closer to that than to authentic spoken language, with its hesitations and redundancies.

Chomsky, the most influential Anglophone linguist of the twentieth century, can be seen as embodying some continuities from these understandings as well as the sharp ruptures from the past that were more immediately obvious at the time. According to Robins (1979: 228), Chomsky's radical move with *Syntactic Structures* (1957) was to assert as possible descriptions of language 'in terms of rules that embody the creative capacity of a native speaker to produce and to understand an infinite number of sentences'. This became the aim of transformational-generative linguists, as he and his followers were known for some years. They rejected Bloomfield's concern with languages, making a distinction between externalised E-language and internalized I-language, stressing the importance of the latter, 'concerned with what a speaker knows about language' (Cook and Newson, 2007: 13).

Owing to the enormous influence of Chomsky in particular – although at the same time it could be argued that the study of language was ripe for being taken in the direction he pursued – the main direction for linguistics in the second half of the twentieth century was generative theory. This involved studying possible sentences in order to identify regularly occurring patterns and constraints, a representation of knowledge in the brain 'in structures that we can hope to characterize abstractly, and in principle quite concretely, in terms of physical mechanisms' (Chomsky, 1980: 1–2).

Generative linguistics continues then to be based on an often cited and clear explanation of this contrast:

> Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech community, who know its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance.
>
> (Chomsky, 1965: 3)

A consequence of emphases on language as a system, underlying the use of every speaker or writer, essentially equally, is that any process of learning involved becomes essentially irrelevant. Development of the 'intrinsic processes and structures' of language are merely 'triggered by experience' (Chomsky, 1980: 2). Differences in verbal environments then, featuring a range of

languages, are relatively superficial and unimportant in comparison with the specification of the underlying system.

This is a theory of a Universal Grammar, associated with a distinct, innate capacity for language, that ensures child language acquisition. The term 'acquisition' here therefore signals that most fundamental and important is the child's existing capacity for language knowledge, rather than the effectiveness of processes of engaging with others and the environment. That latter emphasis is better captured in psychological terminology by terms that include 'learning' and perhaps 'development'. I have often wondered what people who attended the Boston University Child Language Conference in 1986 made of Chomsky's assertion that all child language research falls into one of three categories: wrong, trivial and absurd (Snow, 1994: 4).

The effect of all this was to move interest in learning to psychology, a discipline originally centred on problems related to individual cognition and which has also evolved rich traditions in theorising language and culture. (I should add for accuracy that of course it is possible to be interested in language acquisition from a generative linguistics approach and considerable research has been done, but even its adherents admit that it is rare for people whose starting point emerges from an interest in children's language development to take this path.) And, although for decades now, linguists have been able to involve themselves in issues relating to learning through psycholinguistics, education and other disciplines, there is a lingering sense that these do not lie at the centre of linguistics.

Before moving on to consider digital literacies more centrally, it is useful to consider aspects of the more current positioning and indeed contestation of the generative approach. It is useful to understand the trajectory of contemporary linguistic theorising in order to consider how the discipline might turn in another direction.

Some linguists argue that the radical shifts in conceptualising models of Universal Grammar that have occurred over the last 30 years represent significant progress (Bickerton, 2003), while others perceive them as irreconcilable:

> what one generative commentator will attach another will defend – indeed it would be easy to show how they effectively shoot each other.
>
> (Levinson and Evans, 2010: 2734)

An important point to be made about generative linguistics is that despite Chomsky's own lack of interest in specific languages it does in a real sense depend on investigation of world languages, albeit at arm's length. These have to be as varying as possible. If any set of principles or rules identified solely resided on Indo-European languages, i.e. the family to which almost all European and some Asian languages belong, then it could be argued that such principles originated with the earliest collective form of these languages – commonly referred to as Proto Indo-European. It has been vital therefore that

scholarship has ranged across the world's languages so that any claim to universality could be tested against the study of well-formed sentences that a native speaker judges as plausible. In the next paragraph I briefly describe one of these disputes; although apparently far distant from digital literacies, in centring on evidence from a spoken language of the Amazon jungle certain points can be drawn from it.

A dispute of central importance here concerns the importance of the property of recursion. 'Recursion consists of embedding a constituent in a constituent of the same type, for example a relative clause within a relative clause (a book that was written by the novelist you met last night)' (Pinker and Jackendoff, 2005: 211). Chomsky, as discussed by Koschmann (2010) and Hauser, Chomsky and Fitch (2002), argued that recursion is an essential property of Universal Grammar, crucial to the potential of creating an infinity of sentences. Dramatically, Everett (2005) argued that he had found an exception to this in Pirahã, an Amazonian language. 'Pirahã culture constrains communication to nonabstract subjects which fall within the immediate experience of interlocutors', Everett (2005: 621) declared. Consequences of this include the absence of such embedding as recursive structures, as well as many other features that might be presumed by at least some people to be universals, such as the absence of colour terms. Interestingly, his claim is not that in this exceptionality Pirahã is somehow a 'primitive' language; it has its own complexities, including 'the most complex verbal morphology I am aware of and a strikingly complex prosodic system' (Everett, 2005: 621). If Everett's claims were accepted, his study would seem to invalidate the Chomskyan assertion that recursion is the essential property of human language. His argument was challenged by Nevins, Pesetsky and Rodrigues (2009), but see also Everett (2009) for a defence of the exceptionality of Pirahã.

Despite the apparent force of such challenges, many advocates of Universal Grammar have insisted they value the work of typologists attempting to find 'failed universals' as challenges that help envigorate their models and act as a defence against the 'tired old charge of ethnocentrism' (Rooryck, Smith, Liptak and Blakemore, 2010: 2653). They continue to believe that their models can evolve to take account of any specific finding of properties of language.

Whatever may turn out to be the judgements of history on the generative theory endeavour as it has evolved through forms such as the Minimialist Program, it can certainly be contrasted with approaches that are more interested in the complex skills involved in using language: language as communicative competence (Hymes, 1972), rather than as 'a characterisation of knowledge of language' (Rooryck *et al.*, 2010: 2655).

Complaints about linguistics overly centring on theorising formal structures of language and pushing interest in language as social interaction to the boundaries have resounded for decades. In 1964, Hymes, already mentioned as one of the founders of an approach known as the ethnography of

communication, harked back to Sapir's plea that linguistics 'must become increasingly concerned with the many anthropological, sociological, and psychological problems which invade the field of language' (Sapir, 1929, cited in Hymes, 1964: 1). Arguing that the term '"linguistics" itself would do, of course, if linguists generally would agree to such a scope for the discipline', Hymes (1964: 2) feared that otherwise terms such as 'sociolinguistics' would continue to indicate a certain lack of centrality in the discipline for his interests. This argument was published in the *American Anthropologist*.

Many linguists have found the typologists' orientation to language as code deeply problematic. Blommaert and Rampton (2011) contest the identification of language as code, arguing this systematisation is deeply linked to the construction of the nation state. In practice, whether speaking or writing, people have always drawn on different aspects of their linguistic repertoire at different times, often connected with the performance of identify. This might be considered variation in style, dialect or language, depending on the vantage point of the person doing the considering.

Sebba (2007) studied the language of websites devoted to 'Ali G', a persona created by the performer Sacha Baron Cohen. He explains how the comedy character is created by drawing on recognisable 'street' London linguistic features, including Jamaican Creole, far distinct from Baron Cohen's own. Ali G performs orally; on his fan websites there are many written responses to his work. At the time of Sebba's study there was an extremely strong convention that however distant, culturally or geographically, the commenters may be themselves – for example, posting from Norway – they imitate Ali G's Creole and other non-standard features in their comments. This is achieved through various kinds of non-standard orthography, often imaginatively combined and deployed to achieve a comic effect in writing, a different mode from the original spoken performance.

There may seem to be a huge gap between the Pirahã and contributors to Ali G websites, too large to make any kind of connection, but I would argue there is not. When people's actual linguistic engagements in the world are studied, multilingualism is the norm rather than the exception, and even with those considered monolingual – for example, spending all their time with English – most will have experience of dialects and/or different levels of formality and linguistic repertoires. (And of course those whose repertoires most closely match the most prestigious standard forms find formal education closest to what they do much of the time already.) Further, one might assume that the Pirahã are an isolated case, monolingual through lack of contact with other languages and unsophisticated through lack of contact with new technologies. Neither is true (Sakel, 2012).

Whether a member of the Pirahã getting to grips with a video camera, the language of visiting officialdom (Portuguese) or American missionaries and linguists or a Norwegian fan of Ali G, learning will always be part of how we develop our linguistic repertoire. But as I have shown, learning is strongly

downgraded in generative linguistics and this has had a distancing effect on the whole relationship between linguistics and digital literacies.

Perhaps the most salient issue that digital literacies can return to the field of language study, and ultimately the discipline of linguistics, is a recognition of the centrality of learning when developing effective use of language involving technologies. None of us working with computers can think, 'I've learnt it now'; on the contrary, involvement with technologies necessitates a constant learning process. Every technological interface changes; new devices bring about new challenges. Arguably, the most useful characteristics to possess in the context of digital literacies is a disposition to learn, resilience in the face of temporary setbacks and a willingness to explore various resources in the environment, including other people.

I now turn to a second issue in linguistics, more obviously relevant to the study of digital literacies but equally contentious.

Evasion of materiality

The speech-writing blur

Much of the scholarship in linguistics that deals with empirical texts makes use of what might be termed a deliberate confusion between speech and writing. At first glance it seems surprising that speech and writing should ever be conflated, as the commonsense view is that they are easily distinguishable in, for example, our personal experience.

Most of the people we know, and of course everybody reading this, knows that at a personal level they spend some of their time talking and listening and some of their time reading and writing, and although these activities might be mixed up we are so used to diverse modes we don't confuse them. We don't suddenly expect an interlocutor to begin writing to us mid-conversation other than in the most exceptional circumstances and if they have a particular point to make by doing so. When using our mobile phones we generally have little difficulty in distinguishing between SMS (text messaging) and voice calls. We know whether we are accessing YouTube to watch a video, upload a video, engage in commenting or a mixture of these. If using VOIP such as Skype, we decide whether to talk, write or both. We often blend activities – while watching TV or video for example, we are unlikely to be disturbed by written captions running along the bottom of the screen and will be able, if our eyesight and the equipment allows, to choose whether or not to attend to it. We know if we are reading comments below a video or have chosen to fill the frame with the moving image. If asked, we would be able to demonstrate our understanding of which activities or which blend of modes we are attending to at any given time.

Yet many scholars in the discipline of linguistics have chosen to make what I term a deliberate confusion between speech and written language that

I term the speech-writing blur. This has a variety of antecedents, with complex interwoven strands of influence on research in digital literacies. The first might be deemed a historical issue which has certainly been discussed before; see for example Barton (2007). But it still has strong resonance for digital literacies today, whether or not it is consciously appreciated as pervading a research culture.

Resistance to the 'Great Divide' theory

One rationale for a lack of emphasis on differences between speech and writing lies in a principled resistance to the so-called 'Great Divide' theory of orality and literacy (Finnegan, 1973). The Great Divide notion of literacy posited a radical distinction between 'oral' and 'literate' societies, proposing that the latter must be more advanced and progressive than the former, at societal and individual levels. Ong (1982) declares that humankind became literate very late in its development and that literacy is crucial to change and to the development of a changing society, of civilisation.

> Since in a primary oral culture conceptualized knowledge that is not repeated aloud soon vanishes, oral societies must invest great energy in saying over and over again what has been learned arduously over the ages. This need establishes a highly traditionalist or conservative set of mind that with good reason inhibits intellectual experimentation.
>
> (Ong, 1982: 41)

This was encapsulated in the formulation: 'Civilization = writing' (Goody, 1980, cited by Akinnaso, 1982b: 97). At the same time, Graff (1979) was questioning 'the literacy myth' which asserts an automatic association of literacy with economic and cultural success.

The Great Divide view instantiates the 'autonomous view of literacy', as characterised and criticised by Street (1984), in which the acquisition of literacy is seen to determine cognitive gain and social and economic benefits. Criticising the influential work of Greenfield (1972) and others, Street interrogated the arguments which imply that literacy creates improved cognitive capacities in the individual that cannot otherwise occur. The acquisition of literacy competences, it had been claimed, enables people to step out of a context-bound limited framework imposed in interpersonal conversations towards the greater abstraction and logical thinking afforded by writing. Exposing the faulty steps in this argument is now relatively familiar to many of us. For example, Street draws on the work of Labov, who showed that a group of black children deemed illiterate were failing certain tests according to 'the social conventions of a dominant class, rather than universal logic' (Street, 1984: 27). Street highlights the deficit view of this 'autonomous' model, arguing that it is in fact intensely ideological. Later he argued:

> one of the major features of ideology is its use of the strategy of appearing to be neutral, of denying its own ideological preconceptions; indeed much of the power of dominant positions derives exactly from their appearance of neutrality and universality rather than particularity, of offering a view of the world – whether regarding literacy, education, gender, religion, etc. – that hides its local and cultural positioning.
>
> (Street, 2010: 229)

One of the most powerful and influential empirical studies of literacy and oracy was conducted by Scribner and Cole (1981; Scribner [1984] 1997). Since their work exemplifies the attention to 'local and cultural positioning' Street advocates, overturning many preconceived generalisations, it is worth reviewing their findings.

They studied literacies among the Vai people of Liberia and Sierra Leone. Any literacy skills were confined to a minority of men (and a far smaller number of women), but among that number were three different systems, associated with specific languages and learning practices. Vai, the indigenous language, was learnt and taught informally and used for everyday purposes, in mostly social exchanges – reading aloud and writing personal letters while gathered together in groups, for example. Schooling was very limited, but where it did exist then it was the place where the official language, English, was learnt, the gateway to official spheres of life and careers in the capital city. Almost every village had a Qur'anic school, where boys and young men sat outside and learnt to memorise and recite the Qur'an; the most advanced proceeding to reading in Arabic. Scribner and Cole, deploying both ethnographic and experimental methods, found that cognitive gains, as demonstrated in the performance of tasks, could be correlated to the skills and foci of the specific literacy practices. It was not the case that 'literacy' or indeed 'schooling' led to blanket gain; reading skills, for example, were associated with the set of processes involved in each literacy system. This study is deservedly often regarded as foundational work in cultural psychology and literacy studies, not least because of the researchers' honest admission of a radical shift in methods after a relatively unproductive first year. When they moved from translating top-down theories into standard laboratory tasks to placing 'ethnographic observations' at the heart of their methodology they began to attain key insights into their research participants' linguistic repertoires (Scribner and Cole [1978]1991: 247).

Gee (1996) argued from this and other careful empirical studies that any literacy skill or event can only be understood in the context of literacy practices; that literacy practices involve not just reading and writing but the talking and thinking around them; and that literacy practices are part of broader social practices. Gee sprang from this recognition to urge the necessity of uncovering and challenging inequalities, ideologies that dictate the valuing of some literacy

practices rather than others according to how they fit the interests of the most powerful sections of society. Essential to this sociocultural perspective is recognition of the dialectical relationship between literacy events, including those involving digital domains and, more broadly, the social world.

Mediated discourse

The late 1990s saw many scholars of linguistics, communication, education, sociology and other areas take an interest in the term 'discourse'. They often preferred to write and talk about discourse (rather than language) because it was taken to signify language in use, opening up communicative practices, or semiotics, beyond the scope of language alone. A much-discussed term, its origins are twofold. In linguistics it was particularly introduced as standing for any text longer than a sentence, by its very nature therefore signalling that such a text came from circumstances of actual use, external to the analyst. Discourse analysis became an umbrella term used by generations of linguists deploying different approaches such as conversation analysis, systemic functional linguistics, critical discourse analysis and so on to signal their common orientation to language in use as opposed to the generative linguistics theory endeavour.

Further, across related disciplines as well as linguistics, a stress on language in use demanded recognition that any communicative practice makes use of other modes (e.g. eye contact and gesture in face-to-face conversation; print and paper in books, and so on). Meaning can be conveyed through interactions that do not include language. Gee (1996) uses the example of the behaviour of a leather-jacketed person entering a bar and simply sitting down on a bar stool to explore how details of appearance and the appropriate way of sitting (not wiping the stool with a napkin first, for example) can signify a claim of belonging to a biker bar community. Earlier, Goffman had examined how tiny details of behaviour, even when no language at all is used, 'give off' signals about a person's perceptions of their social role and function at that moment. 'The individual effectively projects a definition of the situation when he enters the presence of others' (Goffman, 1959: 11).

Recognising then that the relationship between language and context is mutually constitutive and that ways of meaning-making extend beyond language, discourse embodies such a relationship between semiotic practices and the world. Gee (1996: viii) set out these ideas in a powerful way:

> Discourses, then, are ways of behaving, interacting, valuing, thinking, believing, speaking, and often reading and writing that are accepted as instantiations of particular roles (or 'types of people') by specific groups of people, whether families of a certain sort, business people of a certain sort, church members of a certain sort, African-Americans of a certain sort, women or men of a certain sort, and so on through a

> very long list. Discourses are ways of being 'people like us'. They are 'ways of being in the world'; they are 'forms of life'. They are, thus, always and everywhere social and products of social histories.

At around the same time Scollon (1998) developed an approach known as mediated discourse as social interaction. He was emphasising that any communicative act is intrinsically social, that it cannot be understood without reference to the historical trajectories behind the act, and indeed related acts, and that all communication is mediated. As Bourdieu (1977: 81) insisted, even

> 'interpersonal' relations are never, except in appearance, individual-to-individual relationships and [that] the truth of the interaction is never entirely contained in the interaction.

One of the important implications of these approaches to discourse is the inescapability, at all times and in all places, of ideologies, that is cultural systems of evaluation with some persistent power over a greater scale of place and time than any single momentary activity. For some, ideology is an awkward word, as Gee (1996: 1) suggests:

> To many people, ideology is what other people have when they perversely insist on taking the 'wrong' viewpoint on an issue.

Whether or not we accept that connotation of the word, theories of discourse and sociocultural theories as a whole give us plenty of ways to otherwise express the intrinsically value-laden elements of communicative practices, as all cultural practices in general. Culture is a dynamic process, perhaps better understood as verb rather than noun (Heath and Street, 2008). Hammel (1990: 457) proposed:

> Culture is an evaluative conversation constructed by actors out of the raw materials afforded by tradition and ongoing experience. It is continually modified by them in processes of social interaction, and their behavior is guided by anticipation of such cultural evaluation.

Hammel's idea of anticipation of cultural evaluation, implicitly shared within social relations, thus connects strongly with ideas of ideology and discourse, in a sociocultural frame of understanding, retaining space for human agency and creativity.

For some the term discourse continues to expand and become increasingly influential. Van Dijk (2011) places 'text and talk' at the heart of the concept of discourse, while also perceiving as expanding 'linguistic, semiotic, cognitive, neurological, social, political and cultural aspects of discourse' (van Dijk, 2011: xvii). Others have moved a little away from centring on the term

discourse; perhaps it is the very breadth of discourse, as well as diverse understandings of discourse, discourses and Discourses (see for example Gee, 1996; van Leeuwen and Kress, 2011), that has contributed to this. Scollon (Scollon and Scollon 2007; Scollon 2008) came to see the idea of nexus of practice as a preferred extension to mediated discourse analysis. Nexus analysis focusses on social action as its unit of analysis, making it more appropriate to a sociocultural framework (Scollon 2008: 11). Nevertheless, one lasting legacy of the so-called 'discursive turn' in the social sciences has been awareness of the inescapability of ideology in language, something that the most committed scholars turn into a commitment to socially engage with inequalities of power, to combat racism and other injustices in the world (Hall, 1997; Fairclough, 1989; Scollon and Scollon, 2007; Scollon, 2008; Wodak, 2009).

The approach known as critical discourse analysis, committed to understanding and challenging power and injustice, also takes this position, asserting 'the discursive event is shaped by situations, institutions and social structures, but it also shapes them' (Fairclough, Mulderrig and Wodak, 2011: 357). Critical discourse analysis then is one approach which seeks to combine the fine-grained analysis of texts with recognition of the inter-relationship between events and society. Although beyond my scope here, it is not difficult to see strong links between this remit and a sociocultural perspective. Each would seek to examine the specifics of any activity, including textual, and be likely to challenge a ready acceptance of the Great Divide, as instantiating a hegemonic attitude to progress as stemming from a sense that one's own attitude to civilisation is 'natural' or 'right'.

To turn back then to the Great Divide theory, discourse-based analysts usually seek to unravel the complexities of language in use. At what might be termed one extreme, Conversation Analysis holds that the proper field of investigation is the fine-grained examination of language in use. The analyst must hold back from making *a priori* assumptions about any effects of context, power and status. From a very different critical discourse analysis stance, Lauritsen (2006) considers that promulgation of the Great Divide theory is underpinned by vested interests in particular ways of promoting, or rather reconstructing, the past.

Resistance to the Great Divide theory, then, in some ways understandably led to a sense that it might be more appropriate not to emphasise oral versus written communication as such, if that might lead to faulty ideological assumptions about what cognitive and social benefits are associated with each. But it is possible, and I argue necessary, to be precise about mode, about the materiality and affordances of any specific medium, while still endeavouring to avoid evaluative presumptions that rest more on attitudes of technological determinism than outcomes of specific empirical investigation. Besides resistance to the Great Divide theory, whether conscious or not, I identify other reasons behind the speech-writing blur and now turn to another.

Apparent transparency, or lack of interest in mode

One reason for occluding the difference between speech and writing in studies of online contexts has been insightfully explained by Georgakopoulou (2006), considering CMC. In her view, the particular specification of the term CMC made it abundantly clear that the focus of attention was on language, what Lillis (2013) terms the verbal dimension of writing. Since its outset CMC was mainly focussed on the content of texts and less on so-called features of presentation. These were generally considered as so constrained from the user's perspective that they could be of little interest. I imagine as salient here the experience of early users of Usenet or bulletin board systems (BBS) in the 1980s or 1990s. In these precursors of internet fora, people could read and post messages and play some part in organisation of threads but would have little or perhaps no sense of being able to affect their experience of the visual display beyond the transparent rendition of keyboard keys. Every message would essentially look the same, so any interest would be focussed on the content. In such circumstances the mode becomes as it were transparent, or of little interest to users or researchers – at least once the initial interest or novelty has worn off. Equally, there was relatively little stress on contextualisation, since this was usually beyond the scope of investigation, or at least accepted as such. Of course, this remains a valid approach to the study of CMC, yielding many insights. At the time of writing the social networking platform Twitter is very popular in many countries. If one wants to collect and study an enormous number of texts posted while anonymising their producers and not looking directly at the relationships between them, context is of no interest beyond considering features of the medium. See for example Zappavigna's (2012) exploration of the HERMES corpus of almost seven million English-language tweets.

Georgakopoulou (2006) also identified an understanding of what is spoken and what is written as not an absolute distinction in linguistics but rather a matter of degree, 'making for example spoken and written at best two ends of a continuum that cuts across social practices rather than well definable poles of a dichotomy (a view put forward as early as e.g. Tannen, 1982).' This idea then characterises language as a continuum rather than a dichotomy, a view of language that places characteristics other than mode as centrally of interest. Aligning itself with a well-established stance as to language, the rationale for a continuum can become essentially a lack of interest in mode, in comparison with other factors. So the essential reason for the speech-writing blur is that there is no need to be precise about mode.

I will return again to why I think this view is not helpful, but before moving on to a related point, note one salient objection. Besnier (1988) criticised the continuum idea by suggesting that even if a multiplicity of characteristics are taken into account, the resulting taxonomy has to be multidimensional rather than linear.

But now I turn to another rationale for a lack of precision in empirical work in linguistics, an identification of a seeming lack of orientation to mode by language users themselves. Jones, Schieffelin and Smith (2011: 28) point out that young people in their corpus on instant messaging 'consistently construe IM as a form of talk'. Their evidence here is the frequency with which their participants use words like 'say', 'talk' and 'hear'. This is also common in much of my own data, including that of instant messaging. However, rather as radio presenters regularly use the word 'see', I would suggest the lack of distinction in much everyday speech is operationalised as a strategy to reduce a sense of distance, whether temporal or spatial. The radio presenter who says, 'See you tomorrow' seeks to convey a sense of a connection between herself and individual members of the audience, to set up a sense of intimacy. I do not suggest such presenters and users of IM are consciously paying attention to qualities of the medium, but I believe that if it were brought to the forefront of their consciousness, through a research interview for example, they would be unlikely to exhibit confusion as to whether they had been using their voices, or whether they could see their audience over the radio waves.

The focus of interest by Jones *et al*. (2011) on the use of such words ('talk', etc. in IM) is comprehensible, but I disagree (with them and many other scholars) that as researchers of language in use we should accept this lack of distinction and be willing to ignore mode. Jones *et al*. (2011) draw on the everyday elision between speech and writing, as made apparent through choice of words, and then make the leap to see as legitimate the application of 'conversation analysis'. Conversation analysis was developed as a research method to analyse 'audio recordings of naturally occurring conversations' (Sacks, Schegloff and Jefferson, 1974: 697) and as such has proved fruitful in yielding insights as to the intricate way interlocutors orientate to each other, as mentioned above. In claiming the framework to be 'the dominant approach to the study of human social interaction across the disciplines of Sociology, Linguistics and Communication', Sidnell and Stivers (2012: 1) collapse 'human social interaction' into interactions that involve speech. However, I agree with the implicit view of their recent key collection that CA should not be applied to written communication: the forms of data, methods of organising data, research questions and means of analysis are all otherwise (Sidnell and Stivers, 2012).

But my stance here is not currently a popular one in the field of digital literacies. Where new media are involved, conversation analysis is frequently applied to studies of written communication as if such a transfer were unproblematic. For example, del-Teso-Craviotto (2006) applies conversation analysis to the study of chatroom talk. Pojanapunya and Jaroenkitboworn (2011) apply conversation analysis to the study of the closing of (written) exchanges in the virtual world Second Life. In contrast, however, Garcia and Jacobs (1999) problematised the use of a conversation analytic approach to

study how participants in CMC 'chat' orientated to each other, turn by turn. They found that the sequential organisation of turns in the dialogues they studied was fundamentally different from face-to-face talk:

> although posted messages are available synchronously to participants, the message production process is available only to the person composing the message. Thus the process of message transmission (posting) … is not synchronous with message production.
>
> (Garcia and Jacobs, 1999: 339)

They argued that this makes such a fundamental difference to the system for coordinating turns, in comparison with face-to-face talk, that the term 'synchronous' is not appropriate and that 'quasi-synchronous' should more properly be used instead. In Chapter 5 I will illuminate this further.

Essentially then, I see one root of the speech-writing blur as a failure to take account of observations and concepts such as those proposed by Garcia and Jacobs (1999), stemming from a lack of interest in mode. But another stem of this rhizome is very different. It rests on a thoughtful attitude towards speech and writing in new media that I disagree with, while recognising its strong and enduring influence. I will set out this position and mention the degree of its influence.

Blurring speech and writing in the study of new media

Extremely influential in digital literacies scholarship has been an examination of issues of speech and writing that concludes that, rather than unimportant, the differences are significant but are not located in mode or channel as such.

In the US the anthropologist and communications scholar Brenda Danet (1997: 5) wrote in a relatively early study of email:

> Digital writing is doubly attenuated; it is 'oral', yet it lacks the social and physical cues accompanying speech, and although it is a form of writing, it has no physical substance.

Baron (1998: 137) made a particular dichotomy between speech and writing, based not on the material distinctions that I identified above, but rather on an asserted relation to context:

> *Endophoric language* (associated with writing) is constructed with the assumption that the text can be interpreted without reference to extra-linguistic information ('decontextualized'). *Exophoric* language (associated with speech) is created more freely, often requiring reference to extralinguistic, real-word context to make sense of the linguistic message ('contextualized') [emphasis as in original].

Baron does communicate a clear sense that her data gathering was situated at a particular point in time and presumably in a certain social setting. Nevertheless, she grounds her analysis on the basis of her constructed view of differences between speech and writing. Thus, she claimed that email exhibited characteristics of 'predominantly writing' in its 'social dynamics' and also of 'predominantly speech' in its 'lexicon' and 'style'. Its 'format' and 'syntax' were found to be mixed (Baron, 1998: 155).

Baron's (1998) discussion of email has been extremely influential. I have traced the influence of Baron's work, an interesting exercise in digital literacies in itself, and found that this is extremely diverse and penetrating, across a range of topics, journals and indeed disciplines. One important reason for this is the Web of Science database, which disregards most published work on CMC, digital literacies or indeed applied linguistics as a whole. But the journal Baron published in, *Language and Communication*, was ranked in two subject areas, linguistics and communication. It has subsequently been so much cited, even in publications within the Web of Science's purview, as to cause some confusion; in January 2011 I spotted that the article had been entered by them nine times – it should be entered once, then all recognised citations would be duly attributed. The publisher immediately undertook to correct the error.

Crystal (2006: 31) developed the theme of disregarding the material boundary between speech and writing in online communications with even more bold proposals than Baron. Crystal deployed the term 'Netspeak' for online communication: 'What makes Netspeak so interesting, as a form of communication, is the way it relies on characteristics belonging to both sides of the speech/writing divide.' Having explained that many webpages do use written language in relatively traditional ways, he continued,

> In contrast to the Web, the situations of e-mail, chatgroups, virtual worlds, and instant messaging, though expressed through the medium of writing display several of the core properties of speech. They are time-governed, expectimg or demanding an immediate response; they are transient, … and their utterances display much of the urgency and energetic force which is characteristic of face-to-face conversation … chatgroups are for 'chat' and people certainly 'speak' to each other there.
>
> (Crystal, 2006: 32)

Many linguists and other writers have since similarly alluded to a blurring of the boundaries. Yus (2011: 19) proposes 'oralized written text' or even 'textual deformation' for the language of text-based chatrooms. In a particularly thoughtful discussion of 'the written chat language produced by West Flemish teenagers', Vanderkerckhove and Nobels (2010: 657) tease apart the influences of standard and non-standard written Dutch and their local West Flemish spoken dialect in their repertoires. Nevertheless, despite their careful attention

to mode, they plump for a characterisation of the genre as combining characteristics of written and spoken language. Baym (2010: 63) offers a supportive summary of such approaches, concluding that online interaction 'resembles both written language and conversation', and indeed is an 'uncooked linguistic stew'.

This new orthodoxy is essentially ahistorical, despite its claim to an understanding of the new. The argument relies on a clustering of properties around 'writing' and 'speech'; Lillis (2013) has identified a large set of binaries such as formality and informality and distance and involvement and effectively critiqued this way of thinking. The dichotomy rests on certain prototypical examples that are essentially unexamined linguistic stereotypes. 'Writing' becomes prototypically represented by print media, restricted to a narrow range of genres such as newspapers and academic articles, read some time after they were written. 'Speech' is represented by everyday, dyadic, synchronous conversation. In my opinion, these stereotypes emanate from unexamined Western, white and indeed gendered underpinning discourses. Think formal published print prose, mostly by (dead) white males versus trivial face-to-face conversations over the washing line or garden fence by women. Think of the relative permanence of the printed book versus the ephemerality of the whispered item of gossip.

But really it takes little conscious effort to think of examples of other activities and events involving speech and writing that are very different in such qualities. Suppose we think of a shopping list written by one member of a household and immediately handed to another as a prototypical piece of writing and Martin Luther King's 'I have a dream' speech as a prototypical speech event. The first is dyadic, trivial and ephemeral; the second resounds for generations, especially through the power of recordings.

Over the decades some linguists have challenged linguistic stereotypes. Akinnaso is a scholar with a very different background from that of many linguists, having grown up in what might be called an oral society. This experience led him to call into question many assumptions of mainstream Western linguistics, particularly the suggestion that complex sentence structures were more characteristic of writing than speech and indicated more sophisticated cognitive capacities (Greenfield, 1972).

Akinnaso himself investigated qualities of specific oral texts while taking the cultural context very much into purview. He considered a corpus of recordings of sixteen-cowry divination in Yoruba, collected in 1951 by the anthropologist William Bascom in a village at that time little affected by literacy.

Sixteen-cowry divination is a ritual communication form that Akinnaso is at pains to show has many features in common with phenomena in other communities but at the same time an extremely elaborate ritual specific to its society. Diviners make use of an enormous discursive repertoire that combines set verses with archaic vocabulary passed down through generations with constrained opportunities for creativity in interpretation of the mythology

drawn upon. The supplicant is seeking to find out what blessing or problem may lie in store and precisely what sacrifice or other action may be required to ameliorate the situation. I quote two lines from Bascom, cited by Akinnaso (1982a: 12), that I find particularly moving:

> Ikú wá gbàgbé mi lóòní
> Death, forget me today;
> Àgbè rokoroko, won kò sài gbàgbée ewé kàn.
> Farmers hoe and hoe, they still forget one weed.

With reference to this complex genre, Akinnaso successfully challenged some previously held assumptions as to differences between oral and written language use in five kinds of characteristics: '(1) modes of acquisition and transmission; (2) mechanisms and contexts of production; (3) the kinds and degree of planning required; (4) language structure and degree of complexity; and (5) the social and cognitive functions specific in each modality' (Akinnaso, 1982a: 7). Effectively he provided a critique for any unexamined assumption of a dichotomy between speech and writing in any of these factors.

Others have since supported this through their empirical and theoretical work. Besnier (1988: 707) investigated Nukulaelae Tuvaluan and found that 'spoken Tuvaluan is not necessarily more involved, less complex, and more context-dependent than written Tuvaluan'. There were patterned differences of linguistic features according to certain dimensions of register; these connected with specific literacy practices but did not evidence differences of cognitive demand according to mode.

Working with huge datasets of empirical data in English, Biber (1988) demonstrated that six dimensions of genre accounted for variation more clearly than any dichotomous distinction between speech and writing. The important point here is that the dimensions, themselves clusters of commonly occurring linguistic features, were independent of one another, discouraging generalisation but rather pointing towards careful investigation of text types. As well as linguistic features, Biber (1988: 207) concluded that 'situational, communicative and processing' characteristics must be included in analysis, rather than assumptions made about relations between them.

The tendency in linguistics to operate on the basis of an unexamined set of stereotypes also essentially harks back to the traditional practices of the discipline, to think or at least act analytically as if it is possible to work fruitfully with apparently decontextualized sentences. The assumptions behind the linguistic stereotypes conflate a number of qualities, such as degree of (in)formality, numbers of participants and temporality. They blur these failures to distinguish genre characteristics and the very essential material matter of channel that 'speech' and 'writing' as modalities denote. The blur orthodoxy, whether deliberate or not, is not as helpful to linguistic analyses as better precision around notions of mode would be. So, if it is a false step to blur

speech and writing, how can a different approach be taken, one that puts mode at the heart of the matter?

Putting mode at the heart of language

A really useful proposition about the nature of language, approached as a system, has been laid out by Bickerton, whose theories emerged from considering language from an evolutionary perspective. That is, how did language evolve? What are the characteristics of human language that make it so different from other systems of communication, including that of animals? Bickerton wrote with some despair about the conflation of 'speech' with 'language' in much work on language evolution. Some people simply fail to understand there is any real difference, or perhaps to put it more fairly, any difference between the terms does not really matter to them. For others, including linguists (Lieberman, cited by Bickerton, 2003: 80), speech is necessarily primary – 'once speech was there, the rest followed', as Bickerton characterises a common assumption he disagrees with. He suggests that one useful way of breaking down the question of language evolution is to abandon a conception of it as a unitary phenomenon and consider it rather as the bringing together of three things: modality, symbols and structure.

Symbols and structure are at the heart of the enterprise of linguistics as traditionally understood, embracing phonology, morphology, semantics and syntax, extending out to pragmatics, sociolinguistics and so on. But the tripartite nature of the modality, symbols and structure framework emphasises that language in practice always has materiality; it would be a correction to what Jackendoff (2002, cited by Cook and Newson, 2007: 6) terms the 'syntactocentrism' of generative linguistics. As far as I know, Bickerton has not applied this framework to the study of communication in new digital channels; his purpose is particularly to interrogate this assumption as regards the origins of language. Mine here is somewhat different.

I argue then that modality is a central, essential feature of language that does not allow us to take any particular instantiation or simple linear characterisation for granted. This could be applied to all areas of linguistic study, grounded in people's activities as they participate in diverse kinds of cultural practices.

In conclusion, linguistic theory should be applicable across time and space, applicable whatever the specifics of communication. In the field of linguistic theory there are relatively few scholars outside the deaf community who place mode or modalities at the centre of their frameworks. It is far more common to assume that synchronous speech is the only performance of an underlying linguistic system that is central to our understanding of language.

Much contemporary scholarship on the digital does carefully tease apart mode or channel from other kinds of quality such as formality, participation and so forth – see for example Gee and Hayes (2011); Herring (2004) and

work collected by Thurlow and Mroczek (2011). Nevertheless, there is still a great deal of influence attached to the orthodoxy that the digital represents a new kind of blurring of speech and writing.

Virtuality, as a term for the online sphere of communications, cannot evade materiality. Ito (1997: 88) remarked, 'I am wary of the tendency to view the virtual as a radically disjunctive and purely imaginary space that lacks consequentiality, location, or materiality.' Hayles (1990) has shown through painstaking historical study of computer science that information, data, however we may term or think of anything that exists online is inescapably material. If we pay attention to the nature of this materiality, then we must make key distinctions between the forms virtuality takes (Gillen and Merchant, 2013a). Physicality is an inescapable quality of existence.

In the following chapters, especially Chapter 4, I show how dialogic theory can be woven together with an approach that does carefully attend to mode and materiality of communication. As Linell (2004: 116) explains, this modifies the subject of study from traditional linguistic theory:

> in dialogue theory, communicative practices and language use, pragmatics and speech are in focus, whereas in linguistics, language structure, syntax and semantics are foregrounded, and communication involves the secondary application of language in use.
>
> (Linell, 2004: 116)

The study of digital literacies is clearly involved with language in use. But it should not avoid theoretical constructs about the nature of language and communication. I have argued that if the discipline of linguistics is understood properly in its historical development, it is ripe for rethinking on the basis of symbol, structure and mode.

In the next chapter I turn to an autoethnographic investigation of digital literacies, enacting Leontiev's proposition about the development of cognition in the flow of materialities of life, as discussed on p. 10 above.

3

'DIFFERENT PEOPLE UNDERSTAND DIFFERENT ASPECTS OF IT, BUT NOBODY KNOWS IT ALL'

An autoethnographic approach

Digital literacies: a problem of terminology or understanding?

Digital literacies is a useful term at the present moment, a kind of focussing on a particular sphere of meaning-making practices that is significant for professional life and many other purposes, including in connection with learning. But one clear problem with the term is connected with its strong exclusionary aspect, its apparent assumption of a wall between the digital and non-digital. I remember the first time such a division was put to me starkly, in a way that seemed to throw everything I thought I knew about the wall upside down. It could only have happened to me in a period when it seemed digital technologies were becoming pervasive and yet still felt new, in the mid 1990s. A world without the digital, such as that the one I had been a child in, was still imaginable. I was at Manchester Metropolitan University and enthusiastic about the possibilities of bringing a virtual learning environment (VLE) into our department for the first time. A thoughtful and innovative learning technologist, whom I'll call Bill, came into a meeting that included professors, academics and research students. In that decade we were all strongly affected by post-structuralism and were used to trying to invert discursive norms around us. Bill drew a large circle on the blackboard with a piece of chalk and labelled it 'TRW'. I cannot remember what else was in the diagram, just that after a while somebody asked what 'TRW' stood for. 'The real world', Bill replied, and everyone went quiet. It was a very different way of thinking about our proposed VLE.

This was my introduction in my professional domain to 'the new world of cyberspace … a previously unknown environment where little has been determined and the opportunities and perils appear to be immeasurable' (Gunkel and Gunkel, 1997: 123–4). The assertion that there is a relatively new realm of digital, online existence that lies beyond and outside our physical bodies was

dichotomised in relation to 'the real world'. Before that I had thought of cyberspace as appertaining to the arts and culture, to films like *Bladerunner* (directed by Ridley Scott, 1982) and novels such as Gibson's (1984) *Neuromancer*. It had seemed that information and communication technologies could be assimilated into sociocultural frameworks as tools, but this term was already sounding too narrow and limiting, signalling mere additions of new equipment to otherwise unchanged environments.

It is already apparent that I conceive of interactions with digital data as interwoven with the immediately present physical world. As late as 2009 I was, with some discomfort, still trying to use the word 'tool' in connection with virtual worlds, drawing on the idea that 'tool' can include all sorts of symbolic systems such as language (Vygotsky, [1930]1999; Leontiev, 1978). I was very struck by a question from Keating (personal communication) about how something could simultaneously be a 'tool' and an 'environment'. Her formulation of 'technological mediation of space' in a study of how members of the deaf community were creatively adapting their linguistic practices in response to very specific opportunities and obstacles in an online space offers a fertile development (Keating, Edwards and Mirus, 2008).

Indeed, the phrase 'physical world' makes me uncomfortable, but I adopt the stance of Ferguson (2011) that we do not seem yet to have devised a better term to index the 'offline' when we need to. If materiality is taken into consideration as I have argued it should be, then there is no easy way of dichotomising between the 'digital' and all else. As I have been writing this section, on 27 April 2012, I have interspersed various activities. Indeed, at this very moment I admit I have beside me headphones lying on the table with the volume turned right down. I am attending a conference online that is taking place in another university. The online attendance seems, as far as I can tell, fairly minimal; perhaps that is because it is Friday afternoon, or maybe everybody who wanted to engage travelled to be in the same room together. However, my online presence feels relatively prominent: when I asked a question in the chat box (we are using Adobe Connect) it was immediately relayed to the speaker. A coffee break intervened and then I began listening to a new speaker. My name is shown as part of the online audience. The talk did not interest me, but I did not want this scholar and the audience to be aware of my leaving the discussion; in this particular situation this would have something of the impact one would have if one were in the room and got up and left. This might be interpreted as an insult. Therefore, not wishing to be thought rude, I am typing this while the headphones lie on the table, enacting a pretense of online presence. Complex webs of relationships interweave among human and non-human entities and their environments in highly technologised ecologies (Vaninni, 2009).

Yesterday, I received an email from Guy Merchant of Sheffield Hallam, a colleague and friend. We have been writing about Twitter in a dual autoethnography and the main part of the email concerned progress in this. But Guy continued:

> Now, I've spent this pm going through the Twitter paper with a fine tweetcomb. I can't find anything I'd want to change. I've looked through everything in Dropbox and it's all in order (well done and thanks very much). I'm a Dropbox newbie - I think I've put a message in there, so this is just belt and braces. Hey Ho - off to the postbox to send your cheque. And as I think of doing this, I'm struck by the densely layered nature of communications.as follows:
>
> 1 Read Julia's latest email on desktop before leaving for work.
> 2 Communicated with aforesaid Julia semi-formally in pre-meeting space on Skype on my iPad.
> 3 Looked at the same Deft docs as J in a different location.
> 4 Communicated with J on Skype on iPad in official meeting context.
> 5 Read Julia's archived emails and amended paper as Word document print-off.
> 6 Used email to access Dropbox.
> 7 Read docs and messages from J in Dropbox.
> 8 Located envelope, biro and cheque book to send money to J.
> 9 Wrote this email to J to explain all the above.
> 10 Set off with aforesaid envelope (aka snail mail) to post box.
> 11 I hope I make it!

Of course, part of the intent of the email is to reflect playfully on how, although we might have weeks without any professional contact, that day we had contact via many different media and for different purposes. Rainie and Wellman (2012) term this density 'hyperconnectivity'.

Guy mentions the following communications technologies:

- The post – 'snail mail' and associated elements of pen, paper, cheque book, envelope, post box, etc.
- Computers – desktop and iPad; software including cloud storage, email, internet telephony and office software.

He refers to two of the shared topics explicitly, 'the Twitter paper' and 'Deft', but actually three projects are being implicitly referred to – a *Journal of Early Childhood*-sponsored conference on early childhood literacy; the Digital Futures in Teacher Education project (Deft) and our Twitter paper (which became Gillen and Merchant, 2013b).

Guy does not need to explicitly refer to any of our roles, as the email is a dyadic communication and we were both aware of the following:

- In respect of the conference, I was the conference organiser who needed the cheque and Guy the co-editor of the journal and its treasurer.
- In respect of Deft, he was one of the key academics present at the project meeting in Sheffield that day and I the evaluator attending by Skype.

- In respect of the Twitter paper, we were co-authors; Guy was at this point checking that the final documents were ready for submission, which I was going to carry out the following day.

Guy's message shows different levels of attention to detail in accordance with how familiar or everyday the different technologies were in practice. As Wittgenstein (1953) argued, one chooses to draw attention to something when speaking to another person according to its salience for some functional reason. Writing cheques was a common act many years ago but has become relatively unusual in my experience; I write perhaps one every six months. I suspect Guy is relatively detailed in his description of the items needed to write the cheque (locate the chequebook, pen, etc., the explicit mention of going to the post box) precisely because these are not very common activities for him either. In contrast, the activity of accessing his email and reading it, although involving a combination of artefacts and procedures is so very common that it can be summarised as 'reading [latest] email'.

Guy mentions explicitly that he is a 'newbie to Dropbox'. This draws my attention to the fact that in a way it could be inferred that I had made a mistake. Guy and I have conferred via shared cloud folders in the past, but have used Box.com, a rival. I had forgotten that and just went to the service I use most often and which therefore has a kind of 'default' status in my mind – Dropbox. Of course, I had then put Guy to the trouble of registering and learning a slightly different interface, as is necessary with all platforms.

At the meeting on Digital Futures in Education Guy had expressed a certain impatience with the 'digital native/immigrant' metaphor (Prensky, 2006). I thought his disquiet might have stemmed from three sources. First, the terms are arguably ill-chosen, even somewhat distasteful. I would have to use corpus linguistics to prove this, but I suspect that both have negative connotations – indeed, might be found in what is at least arguably racist discourse. Second, empirical research studies that go beyond a simplistic survey approach capture far more complexity than the idea of a generation divide (Jones, 2010). Third, it is a dichotomy that fails utterly to capture the dynamic nature of digital literacies in action and the ways in which 'digital' literacies are necessarily interwoven with other literacies. Under my headphones lies a long bill, a receipt from a stationery shop. The print font is very close to the one I am using here, and of course I bring some of the same reading skills to reading this text that I do to reading the receipt. More fundamentally, the reflective email Guy sent that I discuss above is an illustrative example of the interwoven web, the densely layered communications between us on one day.

Digital literacies represent a rapid pace of change, as new technologies change fast and people adapt. On 26 February 2013, Karin Tusting and I noticed that more students than ever before in the MA class on learning and teaching in digitally mediated spaces were openly using a variety of communications technologies, as Diane Potts guided their critical engagement with

key concepts. The Lancaster University seminar was a buzz of lively discussion, backed up by instantaneous consultations of relevant materials as appropriate to each student or pair of students at any moment, the learning trajectory skilfully orchestrated by Diane. We observed that classes and programmes were evolving in different ways in their use of technology: where smartphones had been popular the previous term, tablets were now increasing in popularity.

There is more significance in these changes than the mere upgrading of consumer gadgets by a relatively prosperous learning community. As hardware, apps and all kinds of practices around them increase and diversify a number of challenges arise.

> [The] introduction of new technologies can rupture current practices in unpredictable ways. Their introduction and use creates the basis for tensions and break downs in any ordering of practice. The creation of new stabilities in practices using new technologies is dependent upon the re-orderings and emergence of new knowledge and competence.
>
> (Ludvigsen *et al.*, 2011: 105)

In one class, students and teachers can shift between personal and shared online spaces while also interacting in the physical room. For the university there are a host of demanding technical challenges to be surmounted, with IT management issues of security, server space, administration, compatibility and so on. As demanding as these are, a key challenge is not to allow practical issues to overwhelm dynamic movements in learning and teaching; our university has seen the implementation of a much-improved Moodle virtual learning environment over the last two years, the key driver being the facilitation of effective learning, teaching and assessment.

For each individual involved with digital literacies a constant inescapable quality is the pace of change. This is challenging to people in their everyday life; I wonder if the ubiquity of crowded mobile phone shops in every UK town can be put down purely to sales, or how much of the activity there can be accounted for by problem-solving. In schools, teachers have a huge challenge: while they want to concentrate on teaching, inevitably part of their attention has to be given to classroom technologies. Sometimes, however worthwhile the introduction of new equipment might turn out to be, in the short term at least its effective use demands considerable effort, which might include battling with technical issues beyond the realm of the individual's competence. One example of this was the relatively early and rapid introduction of the interactive whiteboard in UK classrooms, often without the needed commensurate training in effective use (Moss *et al.*, 2007).

That digital literacies pose a considerable challenge for education has long been recognised (Snyder, 1998, 2002; Cope and Kalantzis, 2000; Lankshear and

Knobel, 2003). As digital technologies permeate homes, at least some children come to the classroom with out-of-school literacy practices that lie beyond teachers' competences. I remember the very first time this struck me; my children's primary school had some new video equipment in 1998. The children told me with glee that there was only one person in the school who could operate it, a boy about eight years old; to the teachers' chagrin they had to bring him out of class when they were stuck.

Comprising multiple ways of engaging with technologies and deploying reading and writings skills in various environments, digital literacies always involve learning new skills. Tools constantly evolve and challenge us all, whether or not we choose to buy a new gadget or try out new software. While I have been writing this book I have had to switch from one version of Microsoft Word to another at work, enduring all the changes forced on me. I have had to learn new menu structures, increase the number of clicks needed to open a document, and cope with all this without the usefully proximate 'help' system of earlier versions that has become a distant memory. This is a demonstration of power at the software design level; pressures emanating from other levels also impact upon me – for example, as I strain to resist an institutional attempt to encourage the use of a particular typeface that I greatly dislike.

These examples might be thought relatively trivial. They are instantiations of everyday change that, through the perspective of time passing, become more than the incremental changes they seem to be as we live through them. I worked full-time as a secretary at the age of 16, when my skills in shorthand and typing made me employable. Since I was in central London I had the opportunity to earn a higher wage through learning how to use an IBM Mag Card machine, which after a while helped me go part-time and study. The Mag Card machine was a forerunner of a word processor and so useful that companies would outsource work to the few companies that had them. Then early purchasers of word processors began to replace typewriters, offering many opportunities to relatively highly paid 'temps' who could work with them.

Any sensible approach to conceptualising digital literacies must take account of rapidly changing environments, people's agency and developing skills. One standard and sensible way of defining and discussing a key term is to discuss precedents: look for the origins of a term, how it has developed and what might be a salient definition and approach that complements one's current purpose. David Barton and I adopted just such as a position when for a period we worked with the Technology Enhanced Learning programme (http://tel.ioe.ac.uk/) led by Richard Noss. The £12 million programme, the fifth phase of the UK Teaching and Learning Research Programme, was jointly funded by the Economic and Social Research Funding Council and the Engineering and Physical Sciences Research Council from 2007 to 2012. It aimed to bring about innovation in education, designing radically new technologies while recognising the need for teacher support and an understanding of surrounding communities' needs. For example, the hapTEL

(www.haptel.kcl.ac.uk) project developed haptic technologies to enhance dental students' education.

David Barton and I organised a workshop with representatives from many of the projects; in preparation we wrote a discussion document and then afterwards, weaving together contributions from several of the projects and other individuals, especially Gunther Kress and Fred Garnett, we produced a commentary. Our proposed definition of digital literacies was, 'the constantly changing practices through which people make traceable meanings using digital technologies' (Gillen and Barton, 2010: 9). The commentary on digital literacies written for the programme was not written to be an overly personal document; that would have been inappropriate for the genre we were operating with.

Looking back, I tend to think of that exercise as a midpoint, chronologically, in my own personal development in thinking about digital literacies. It was extremely useful to work with external projects in which I had little or no direct involvement and explore what digital literacies meant to them. In this book I take ownership of a more personal approach. In the remainder of this chapter I explore as an act of autoethnography two periods of researching digital literacies located in my own home. The first engagement dates from 2001; I now see it as significant as the first time I seriously researched practices of people far more skilled in digital literacies than myself. I raise issues about learning, teaching and digital literacies in and out of school. I also revisit my evolution of a research methodology, owing a great deal to Nigel Hall, when I felt as if I were working in an area without clear precedents. Second, in a study of 'situated action' (Suchman, 2007) I explore the intersection of three different kinds of texts in my personal experience on one day in 2012, to raise issues I perceive as salient to digital literacies.

This is an autoethnography, 'a form of self-narrative that places the self in a social context' (Reed-Danahay, 1997: 9) I aim to align with Chang's autoethnography methodology. Key features of this include a conception of the self as 'an extension of a community rather than … an independent, self-sufficient being' (Chang, 2008: 26). This is appropriate to my overall sociocultural conceptions of identity and, more specifically, the years in which I have examined issues relating to digital literacies among a host of others with overlapping concerns. A second key feature of Chang's understanding of autoethnography I adopt as central is the use of external data such as textual artefacts. Finally, she urges a focus on interpretation and analysis rather than overly concentrating on writing about the self.

Studying two eleven-year-old boys playing *Half Life* in 2001

By 2001 I was fascinated by the interactions of my children and their friends around our PC. I particularly wanted to explore how children played and interacted when they sat together. At the time the children were scathing about the use of computers in schools, describing the very limited time they had to

spend on a very limited number of computers with over-zealous censorship. Worse than those limitations was the apparent lack of knowledge of the teachers. Worst of all was the pedagogic strategy of holding back the more advanced pupils in order that all children cover the same basic topics. I realised that some of these complaints were the outcome of relatively privileged access to a computer at home, including some internet access. I certainly wanted to know what, if anything, lay behind their claims to relative expertise. I discussed some of the kinds of things I was hearing and seeing with Nigel Hall, with whom I was working on the children's telephone project discussed in Chapter 2.

We decided that, with the agreement of at least one pair of children, we would capture some data of spontaneous interaction with the computer. Without having a researcher present, which would hamper spontaneity, we needed to devise a way of capturing data in as rich a form as possible. The task of capturing an audio-visual record of the children was accomplished quite easily by placing a video camera behind them. Then, in order to capture the changing images on the computer monitor equipment, a mirroring device was used. This effectively intercepted the signal between the PC and the monitor and transferred it into a video signal that was then recorded. Two video tapes were recorded that could then be synchronised with a 'mixer' so that the children's behaviours and the screen image could be viewed simultaneously on the same screen and we could hear their speech.

Having made a body of recordings we decided to study intensively an extended episode from the school summer holidays when two boys were playing together in a continuous fashion. We had 45 minutes of synchronised data from both sources, with a continuation of 32 further minutes from the mirroring device only. The boys were my son, Daniel, and his friend Lincoln. Both came to the university for interviews led by Nigel and seemed to enjoy participating in the project. They preferred to use their own names rather than be pseudonymised for the original publications we wrote (Gillen and Hall, 2001b; Gillen, 2002b) and have recently confirmed their continuing agreement.

Nigel and I had expected challenges in working with multimodal data. At that time we were aware of few precedents but had some idea that we would be working at different levels of granularity in data organisation and transcription that would include a short detailed microgenetic analysis. We expected that to be challenging.

But when we began looking more seriously at the data, after the initial purview that had caused us to select this episode, we were faced by a far greater hurdle than we had expected: we could understand very, very little of what was happening. One significant reason for this was that the children were significantly more advanced than their researchers with gaming-related software. Understanding their conversation was difficult because of the lack of that general framework for sense-making that is necessary. Therefore we

decided to create an intermediate stage of data organisation and analysis, not originally envisaged. Our repeated viewings were supplemented by two viewings alongside the boys, conducted to improve the researchers' knowledge of what was going on and explore the boys' attitudes towards the activity.

In order to craft a description of the activity engaged in by the boys it is necessary to make reference to their activities before and after the episode focussed on, as it is only by coming to some understanding of this that sense can be made of any element of the activities. So, below is our outline of the episode.

But first we must stress the difficulty experienced in constructing this outline. This may be illustrated through introducing two questions: what were the boys playing? What were they doing?

First, then, what were the boys playing? One answer was, 'Playing *Half Life*'. During the interview this was probed further: 'What kind of a game is *Half Life*?' Our interview transcription yields the following:

> You're a scientist in their game working on an experiment and it goes wrong and aliens are there and try to cover it up and shoot you and stuff … there's a sequel to it where you got to come in and shoot the guy who won the first game … .

But at no point did this make any sense to us when aligned with what we could see. What were the boys doing? Observation of the full 80 minutes showed that not for one second was *Half Life* played. So what were the boys doing?

One broad explanation emerged in the interview:

> From the game you make your own levels in the game, and you can use the textures they use in the game, and you can use the entities they use which is people, doors, weapons, things that interact … .

This explanation, emphasising construction rather than conflict, appeared to align with and better focus our observations, enabling the gradual piecing together of the following outline. This is organised in 10-minute intervals to convey an overall sense of the trajectory of the activity. It is written to give a sense of our understanding as it emerged, authored as an attempt to try to give a reader a broadly comprehensible account – although we recognise there may be considerable difficulties with this, including with the vocabulary. The words of this outline are precisely what we produced in 2001, so necessarily refer to technologies as experienced at that time and reflect what we thought could be taken for granted in terms of addressivity comprehensible to our original audience at the British Educational Research Association Annual Conference.

Outline of the episode

0–10 minutes

The boys are working on Daniel's earlier, saved, attempt at constructing a 'level' i.e. a virtual environment, using software called Worldcraft 2.1. He has tried to construct a shop in which *Half Life* can be played. This entails manipulating such 'objects' as entities, triggers and textures.

However, at this point Worldcraft isn't showing up properly. The boys find that Daniel has set up the configuration wrong, including putting Worldcraft (accessed by CD-Rom) into the wrong directory. The software is now configured and the 'shop' can be loaded and examined.

The 'shop' can be viewed in two ways. In one, a relatively straightforward representational view fills the screen and appears as a moderately realistic 'virtual environment', i.e. the player can move around the room and look at it from the inside, from different angles. The players toggle between this and the design view. This is a much more abstract and schematic representation and appears as a grid of four squares. The top-left grid shows the room in the 3D-effect view while the other three offer plans and elevations. The top-right square shows the plan of the room and the bottom two squares two elevations.

10–20 minutes

Certain problems with the room as previously constructed are provisionally identified: stacks of food and vending machines are not touching the floor. Textures are wrong. The boys put the food and vending machines on the floor. They decide to 'run' the level in the game (*Half Life*) – that will aid their diagnostic of what is wrong with the room. Starting *Half Life*, they make use of a utility referred to as 'dev console'. This acts as a commentary on the load, so that if the programme crashes, the players know what is wrong.

Running the room reveals that the door to the shop is too big and slides rather than opens in a rotational manner. The textures are not in the right place. They decide to return to Worldcraft and try to fix the door and other problems.

There is a problem in the software (believed to be particular to this version) in that the furniture section – tables, crates, etc. – does not work. They make the door rotate. The room is too high and the textures are not fitted to the room/ceiling surfaces correctly. The texture of the vending machine is wrong. One boy inserts another CD.

20–30 minutes

The boys have decided to move to Worldcraft 3.3, a later version in which the problem identified with the furniture section should not apply and textures are

believed to be easier to fix. However, taking this decision means that the room constructed earlier has to be abandoned. Problems are encountered in loading Worldcraft 3.3, which are then solved. There is a need to configure it: set it up for *Half Life* and *Opposing Force* (a version of *Half Life*). The boys go on the internet in order to find a file to inform the configuration process. At this point two younger boys (Conor and Gregg) enter the room noisily, talking and beginning to interfere with the camera. From this point onwards for a few minutes Daniel at least is somewhat occupied with calling upon adult help to repel the younger boys.

30–40 minutes

The distraction over there is an instant return to deep involvement in their activity. The boys have called up the Yahoo search engine to seek for the Opposing Force FGD file (file with entities, etc). From the Project Mapping site they download the FGD file. (Lincoln had previously tried this at his house but it had not worked; he tries it here, looking for the help file.)

The boys look also for a 'pak explorer' – necessary for looking in 'pak' files – with sounds and so on – that are incorporated in some games. They go to the *Half Life* research centre. A pak explorer, PakScape, is found but considered big at 58kb. Scrolling down they find GenSurf – which Lincoln has visited once before (it makes surfaces, hills, etc). They decide to download Pak Explorer and GenSurf.

40–48 minutes

Downloading GenSurf results in them 'losing' the file in the hard drive's directories. they locate the file; unzip it and decide to aim to make a level using Worldcraft and Opposing Force. They produce very quickly a hill, move it into Worldcraft and build a wall around it. They put a sky texture in the appropriate position.

Period after dual filming

This is the end of this part of the episode. The continuation of the episode as recorded by the mirroring device shows the boys moving from Worldcraft 3.3 to Worldcraft 2.1 with Opposing Force. They succeed in making a terrain inside a room but by this point are also engaged in trying to incorporate a 'man' from Opposing Force. By the end of this tape (32 minutes) this goal had not been achieved but both boys remember they did succeed after the end of the tape.

Microgenetic analysis

The outline account above is a description, yet it involved considerable acts of analysis through collaboration between researchers and between researchers

and participants. We then moved to constructing a transcript of a short period of interaction, two minutes long, just over five minutes into the interaction, that we selected as likely to be fruitful for closer analytical attention and now comprehensible to us in the light of the overall outline. The transcript appears as Figure 3.1. Writing so many years later it seems highly regrettable that we did not capture screenshots and incorporate them into the transcription. Admittedly, a moment-by-moment exposition of the screen views as they changed would make a very long transcript and was relatively difficult given the technologies available to me at the time. It would have been far better than the use of descriptions of what was happening on the screen alone. The original transcript made use of colour, so that Daniel's speech and actions appeared in green and Lincoln's in blue, making it much easier to attribute these at a glance than in a monochrome presentation.

Through examinations of this transcript, understood with reference to the whole episode, three aspects appeared to us as particularly significant.

Roles of expert and novice

At the point of the beginning of the transcript the two boys are sitting side by side, Daniel is on the left and slightly more in front of the screen. Lincoln has possession of the mouse.

From the first rhetorical question Lincoln clearly manifests the role of expert: 'I think you got the textures a bit wrong here, ha'n't you?' The use of ironic understatement, together with the invitation for the novice to concur, sound rather 'teacherly' and certainly suggestive of an equation of authority with power that positions the learner into explicit recognition of his own shortcomings. Some demonstrations of Lincoln's authority are directly critical. At 5.52 he cuts across Daniel's quiet talk with a criticism, beginning with the same polite modifying word 'bit' and explanatory justification:

> Well there's just a bit of a problem you've never zoomed in on this level ha'en't you … well you need to 'cos all … them things are not touching the floor, they're flying.

On Daniel's side Lincoln's authority is recognised and acknowledged rather than contested, and is frequently signalled, with appropriately placed monosyllables of agreement and more explicit agreement/acknowledgement such as 'right then'.

However, there is more fluctuation in the episode than simple playing out of expert/authority and novice/learner roles. Although the major error of putting floor texture on the wall has clearly been acknowledged by Daniel, following Lincoln's drawing attention to the problem, Lincoln follows up that acknowledgement by the suggestion that such an action might, in some conceivable circumstance if not on this particular occasion, have been done on purpose.

Lincoln t.r. = top right; t.l. = top left
Daniel

Speech	Actions	Screen	Timing index
		dev console runs Half Life starts	
I think you got the textures a bit wrong here ha'nt you	**uses mouse** *looking around*	virtual environment is scrolled around – walls and floors etc	5.04
yeh [1] oh haha ha I made the wall the floor	*looks at monitor*		5.08
you could have made [1] a proper like freaky level you know so it's like [1]		zooms in towards objects (vending machines)	5.10
I did that once and made *yeh* **you know it were all on the wrong side**	**waves both hands** *nods* **returns hand to mouse**		5.15 5.16 5.17
that's wrong I think as well i'n't it		zooms in further on vending machines	5.21
well you're using um |2| what version were you using	**points at screen**	dev console runs	5.23
two point one			5.28
oh right 'cos there an easier way **that I just found out yesterday of um** *three point three* **yeh how to get textures you know so they fit the right size** *um* **so you don't have to you know going adjusting it** **and stuff** *um*	**returns hand to mouse**	Worldcraft 2.1 is loaded; front window removed; grid of 4 rectangles is maximised; cursor darts around t.r, briefly to t.l, then t.r. cursor clicks on shape in t.r; slight changes to lines and shapes there and in bottom rectangles	5.30 5.35 5.36 5.40 5.42
what's this here *(paks...)* **(^^) interlock**		cursor rests on shape	5.43 5.47
you never went up to it did yer			5.48
no {1] e'en though it were wrong	**relinquishes mouse**		5.49
oh I'll just |(get) these textures **|well there's** **just a bit of a problem you've never zoomed in on this level ha'en't you** *um right then* **well you need to | 'cos all** *| um* **them things are (not) touching the floor, they're flying**	*takes mouse* **gestures at monitor**	 click on icon next to t.l. rectangle that brings 'virtual' view click on icon to left of t.r. rectangle bringing new menu	5.51 5.52 5.56 5.58
(pause) *(* ^^)*		cursor moves around menu then click brings up new submenu	6.05
just leave it there | (*^^)* **| no we won't have it there 'cos *(*^^)* **I don't know, change 'em all 'cos it don't it don't look like in a shop**	 **shakes head**	 palette of textures appears	6.07 6.08 6.10 6.12
yeh (^^) add some walls to (a) shop			6.16
I know where to find 'em	**takes mouse**		6.18
*|(*^^) |* **|(and these)| fifties are absolutely what you |need**	 **manipulates mouse**		6.20
|um **[1] oh it's only going to be inside,** **mine I tried to pick it for | like wall** *| yeh* **[1] could be outside could be inside**		palette scrolls down	6.22 6.24
there [1] (^^) **er** **I | don't know** *| that one* *whatever*	*points at screen*	 scrolling stops cursor moves over palette squares	6.34 6.39
at least it look like er as good as you can [1] (it's only) the textures you know (then) *um* **I can't quite imagine what you want though. [1] are they just?**	 **lifts hands off mouse and gestures left**	scrolling continues	6.40 6.50 6.52
do they have white panels?	**returns hand to mouse**	scrolling stops at bottom of palette	6.58
around the side			7.01
yeah::: **you're after that aren't you**			7.02 7.03

Notes on transcription conventions:
* – low volume
(then) = uncertain transcription
(^^) – untranscribable
[1] pause of about one second
, slight pause
. falling intonation at end of phrase
? rising, questioning intonation
| denotes overlapping speech beginning from stroke until carriage return
::: elongated

Figure 3.1 Transcript made from interaction in June 2001.

His own claim to having done this could possibly be taken as offering a face-saving explanation – if not now, when such a move does not appear expected or needed, perhaps in the future. However, rather than take up the offer, if that is what it is, Daniel moves towards acknowledgement of the next problem manifest in the screen.

There is a point where Daniel offers criticism; when Lincoln puzzles over some graphics in plan view, he points out, 'you never went up to it did yer', alluding to Lincoln's incomplete examination of the virtual environment in *Half Life* before turning to the construction tool Worldcraft 2.1. This criticism meets with an interestingly dual response: Lincoln says, 'No e'en though it were wrong' (meaning that the plan view is clearly error-ridden and therefore could only have been indicative of imperfections in the level), yet he nevertheless hands over the mouse. As we all know when working at a PC with someone, it is the person who has control of the mouse who in a very real sense has power over what happens next, no matter how diverse the knowledge levels of participants.

When the two boys were asked about this teacher/pupil relationship, they discussed it seriously.

> D: He taught me everything I know. He's the teacher, the level fixer (upper) and the critic.
> L: You give me ideas though.
> J: Do you mean that or are you just being nice?
> L: No, he gives me ideas.
> D: I give some ideas and I'm the learner … we're a team.
> L: You used to give me ideas I couldn't do before, now I can do most of them.
> D: Can you do everything?
> L: I can do everything on *Half Life*.

Problematicity and persistence

There is a difficulty in discussing problematicity or difficulty, for these are relative terms. For the researchers, carrying out what these children were doing would have been a real problem and would have demanded considerable learning. While the children did not succeed in making the new scenario work until right at the end and clearly confronted technical problems that needed overcoming, there was very little sense of 'this is difficult' or of being unable to find a way through. The problems did not put the children off but were more an incentive to move on and resolve something. This is perhaps reminiscent of the hard sciences' approach to problematicity, as explained by Nobel prize-winning chemist Sir Harold Kroto: 'Nine out of ten of my experiments fail, and that is considered a pretty good record amongst scientists' (quoted by National Advisory Committee on Creative

and Cultural Education NACCCE, 2001: 32). This direction towards problematicity was manifested across the whole episode and in the responses of the children in the interviews, but is also visible within the transcript of the two-minute section.

Almost from the start Lincoln is posing problematicity as a possibility for Daniel:

> L: You could have made [1] a proper like freaky level you know.

But also signifying that moving to greater levels of difficulty is possible by operations that make some elements easier; in other words, that control over one aspect opens up rather than closes:

> L: that I just found out yesterday of um … yeh how to get textures you know so they fit right size … so you don't have to you know going adjusting it and stuff.

Lincoln is the one pushing for improvement, getting the textures right and rooting flying objects, but, far from being put off, Daniel joins in straightaway, seeking the textures, adding walls, etc.

Indeed, it seemed clear that the children far from avoiding difficulty deliberately sought it:

> Usually there's no-one else to play it, so we make a level and play it after and admire it or criticise it.
>
> I suggested, 'Why don't we go up to level four?' And he said, 'Why don't we try and make levels for it?', and we agreed that we'd go on the internet searching for an FDG file.

They switched between ideas, technical features and resources fairly effortlessly. It appeared second nature to them to turn to a new CD-rom to search for new information or, when that did not work, switch to searching the internet, followed by downloading programs to be incorporated within their overall work.

In all the two boys worked on their activity for over 75 minutes; after the two interruptions there was an immediate return to full engagement. Even during the time taken to get and access the CD and gain access to the internet, the on-task conversations continued. Theirs was a very adult way of 'working', with short interruptions and self-initiated breaks not detracting from the pursuit of the goals. Being on-task was a more complex process than simply sitting in one spot and doing something. Their persistence seems a function of the problems they set themselves; would they have spent as long on an externally directed school-based computer task if they were inhibited from making it more problematic and interesting for themselves?

How does the level of self-chosen cognitive challenge compare with the intellectual demands of using computers at school? When asked about this the children were clear in their responses.

> No we just paint and stuff. We learn how to type and use some different programs, make a line, turtle, to go forward tens.

> I asked if we could use a more complicated program and they said we could but there's other people who can't so we all have to do the same.

> It's quite pointless because you have to share three to a computer so people who know what they're doing … why don't they just do something so that the other people can have more space.

It seemed that certain processes initiated by schools actually inhibited the use of computers in a more active way:

> The security system's so good so like you can't do anything on it. You can't search for things … so search for some information about Queen Elizabeth, so you type it in and it says your security setting is too high to use the browsers.

And then the ultimate put down:

> Mainly what we're doing is practising for the SAT [Standardised Assessment] tests.

Visualisation and language

One of the boys' achievements evidenced across the whole episode is related to skills in visualisation and reading. The children were able to move, apparently effortlessly, from working on a semi-realistic representation of a room to a view dominated by schematic representation. With the Worldcraft software they were working with a grid divided into four areas. The top left could toggle between a schematic representation of the room boundaries and a 3D-effect virtual simulation of the room. The other three areas showed plan and elevation views. The boys showed themselves capable of operating with the different modes of representation, predicting how changes made, such as the application of textures or the insertion of entities, would take effect. Alongside this cognitive switching was the precise use of complex field language. They had a good grasp of and used easily terms like angles of rotation, degrees of rotation, flying, configuration, and so on.

As Kress (2010: 7) wrote: 'In effect reading the multimodal text makes readers into the designers of the texts they read'. Further, reading and writing become integrated into the same activity, so digital literacies should not be perceived as simply a carry-over of processes generally thought of as separate activities into a new, online domain.

We were confident at the time that learning of a high calibre was taking place, of a type that fitted well with some contemporary reconceptualisations of learning by Jewitt, Kress and colleagues in their investigations of multimodality and learning. They proposed (Jewitt, Kress, Ogborn and Tsatarelis, 2001: 5):

> Learning is realised through the interaction between visual, actional and linguistic communication (i.e. learning is multimodal) and involves the transformation of information across different communicative systems ('modes') e.g. from speaker to image.

The greater recognition of multimodality and its importance in learning was a significant driver of work in new literacies, 'changes [that] have occurred in the character and substance of literacies associated with changes in technology, institutions, media, the economy' (Lankshear and Knobel, 2003: 16). New literacies then are not limited to the digital, nor necessarily focussed only on activities with a computer or online. Understanding the boys' activities were not solely a problem for us of coming to understand what the boys were doing with the computer: the multimodal nature of their collaboration demanded an understanding of their practices.

Learning

An examination of the transcript of just two minutes out of the episode provides evidence of a great deal of thinking going on, by both boys, evidence which is fully supported by the data from the whole episode and the interviews. The evolution of the goals themselves, the complex strategies adopted as they pursued them, their adaptability in the face of obstacles and recourse to a range of different resources are all indicative of advanced cognitive processes. Their fine-tuned, co-operative activities involving sophisticated instruments, accompanied or achieved through specialist discourse, are evocative of high technology co-operative work environments (Engeström and Middleton, 1996). Hutchins (1995) proposed the notion of distributed cognition to capture this, entailing collaborative 'on the job' learning through adaptive reorganisation. This was supported through analysis of intensive learning during regattas in Schome (Gillen, Ferguson, Peachey and Twining, 2012).

In the interview, Nigel suggested to the boys that although their activity was self-initiated, it perhaps had the qualities of 'work'. Yet this was a characterisation the boys firmly resisted. They argued that it was not work because they had chosen to do it and because it was associated with a game.

'Work on computers at school is not associated with a game,' they said, going on to explain that their use of Information and Communications Technologies (ICT) in school was extremely limited in terms of time and was at a much lower level: mostly simple information retrieval from a very limited range of sources.

The boys considered that their activities should be completely differentiated from schoolwork because they were playing. Nigel pointed out to the boys that they were not actually playing the game (*Half Life*) and that their actions required great concentration and persistence in the face of difficulties. Indeed, the boys' actions reminded us most of the qualities of 'an active, strategic approach to learning' as asserted by Cullen (1991) in her identification of the learning strategies of young children that can most profitably be employed during schooling:

- task persistence
- use of (experimenting with) resources
- use of peer as a resource
- use of adult as a resource
- seeing self as a resource for others
- directing self
- directing others

These were all evident in the episode on the part of both boys (for example, even Lincoln the expert took up one suggestion made by a younger boy who interrupted at one point), although 'use of adult as a resource' was extremely peripheral.

At the time a UK policy paper (Department for Education and Employment (DfEE), 2001) had recently been issued, emphasising the importance of ICT and the need to transform the ways schools work. However, the authors seemed to find it much easier to visualise ICT being used in assessment and the management of financial and administration systems, and a lot more difficult to specify how it was going to be used – this was left vague – 'to change teaching and learning' (DfEE, 2001: 81). Street (2000) had pointed out that the multimodalities attended to in the Literacy Hour, a mandated programme of literacy teaching at the time, were relatively limited. He suggested that it could have been embarrassing for teachers to be so far behind children in the operationalisation of complex semiotic practices.

The overall irony revealed by this study was that when politicians called for children to be trained to be fully participating members of the information-age community, some of them already were. We speculated that it was unlikely that many members of the government or indeed many teachers could have engaged in such activities. Many decades ago when new technology meant pop music culture, video-recorders, TV and film, Postman (1970: 250) had asked:

> What would happen if our schools took the drastic political step of trying to make the new technology the keystone of education?

His own answer (p. 251) was:

> Even an elementary school might find itself in a situation where the faculty were at the bottom and its students at the top.

Education seemed to have chosen a different and much safer route by rejecting as worthwhile aspects of popular culture, even though in creating such a demarcation within schooling the complex physical and cognitive skills of children can be ignored.

> My teacher knows I'm quite good on computers but she doesn't know I do anything like this.

Yet there were dissenting policy voices. The NACCCE (2001) publication *All Our Futures*, chaired by Ken Robinson (now 'Sir' and widely appreciated by many educationalists) urged that it was time this attitude be left behind (p. 21):

> Young people now have direct access to more information than previous generations could guess at, and are often more expert than adults in finding their way to it. Schools will need to think through the implications of this for their own future roles.

Very many schools and teachers all over the world have since been thinking through these implications and working with children in ways that recognise the significance of these enormous changes. (Book-length collections of such studies includes Bliss, Säljö, and Light, 1999; Marsh and Millard, 2000; Coiro, Knobel, Lankshear and Leu, 2008; Carrington and Robinson, 2009; Lankshear and Knobel, 2013; Merchant, Gillen, Marsh and Davies, 2013; see also useful reviews by Tusting, 2008; Burnett, 2010; and Mills, 2010.) The degree to which such work is, or is not, taken up by policymakers varies. Whether or not policy makers enunciate a vision of change and whether they really want to raise fundamental questions as to the purpose and processes of education are issues of huge significance. Radical calls for change are rarely welcome, challenging as they do assumptions behind narrowly conceived but firmly established individualised assessment practices.

I now turn to the second part of my autoethnography, investigating encounters with, and ideas about, digital literacies. These are located ostensibly at one moment in time, although I do not seek to hide the multiple acts of revision involved in constructing such a text or the time and distance it must then traverse to connect with future readers, including myself – the

'practical process' of the 'reflection of reality', to return to Leontiev's (1978: 13) words. My aims here approach Suchman's (2008) investigation of situated action in what she terms human-machine reconfigurations:

> One objective in studying situated action is to consider just those fleeting circumstances that our interpretations of actions systematically rely on, but which our accounts of action routinely ignore. A second objective is to make the relation between interpretations of action and action's circumstance our subject matter.
>
> (Suchman, 2008: 118)

Three later encounters with digital literacies

As Bruner (1996) observed, narrative is a key human propensity, a way of making sense. In this section I craft a narrative of situated action around three statements about digital literacies that I found while thinking about digital literacies and more specifically Kress's (1998) characterisation of a 'new communications landscape'.

On 10 August 2012, sitting in my own house, I encountered three statements that I found a fascinating encapsulation of a variety of issues connected with digital literacies. Precise references will appear later as I wish first to trace something of the routes from the sources. One was a policy document I'd printed out at work and brought home with me, entitled 'Digital Literacy: Canada's productivity opportunity'. Second was a report in the *Guardian*, read online, quoting the US singer-songwriter, Ry Cooder: 'All this social media – they're hooked to transactions in some way and they're delivering this massive audience – to whom? So I don't like it and I don't trust it.' Third was a statement uttered by Joel Krajewski Lead Systems Engineer, Curiosity Mars Rover project, NASA, USA. The programme I watched was originally broadcast as 'Mission to Mars', a BBC Horizon TV programme, UK, 31 July 2012, watched on BBC iplayer, 10 August 2012. Krajewski said of the project, 'Different people understand different aspects of it, but nobody knows it all.'

It is possible to think of each as examples of the freeflowing crossing of international media, through digital means, outcomes of a process that is often termed globalisation. At first sight they are particularly common exemplars of this; I read, watch and listen to considerable amounts of media from North America, particularly the USA, almost every day. I access material in English, I use UK sites, yet a great deal of this has originated in the USA; sometimes I consciously notice that, probably a lot of the time I do not. It's valuable to me, feels 'free' of cost, and a clear example of immediate benefits of something I might call globalisation.

The everyday acceptance by myself of these flows could be questioned at many levels. The accessing of platforms I use daily, Facebook and Twitter or any media text, feels free to me at the point that I do it, in that I am not using

'pay-to-view' sites. I have actually paid a very considerable amount of money, beyond the reach of the great majority of people in the world, in order to be able to do this. I pay for equipment, internet access, electricity, a house, etc. The society I am in, to which I contribute through taxation, has created a sound infrastructure with virtually no outages. This is very different from the situation made available to even the rich minority of Facebook users in Nepal, who cannot rely on constant access to electricity through the day (Sharma, 2012).

All these issues, the ways I've accessed the material, the complex combination of media technologies that delivered each of these messages to me, the commercial and other flows of power relationships that are all too easy to gloss over in the currents of everyday experiences are interesting to consider in themselves, as well as the propositional content of the statements that at the time struck me so forcibly in connection with thinking about digital literacies.

One way of thinking about these communications is to consider their materiality. Each one I encountered while in a specific place, just an hour or two apart on the same day. I came across each of them while sitting in one room, accessing each as they lay on my table, two through my laptop and one as paper. The social anthropologist Clifford Geertz, known for his thoughtful studies of diverse communities since the early 1970s, wrote:

> No one lives in the world in general. Everybody, even the exiled, the drifting, the diasporic, or the perpetually moving, lives in some confined and limited stretch of it – 'the world around here'.
>
> (Geertz, 1996: 262)

Geertz's insight is as applicable as it has ever been. Throughout history human beings have had a variety of ways of devising experiences that take them out of the immediacy of the here and now, whether we think about participation in ceremonies with meaning beyond the immediately present, reading novels, listening to the radio, talking over the phone or participating in virtual worlds. At different times and in different places the range of such experience open to people varies enormously and depends on a variety of geographic, social and economic factors. But no human being has yet escaped the human body, and so at the heart of each experience is the location of the person in space and time. Locating this experience in time quickly proves problematic – as I revise this chapter countless questions arise. Do I mention my new tablet? Have I looked at netvibes.com since August 2012, however much I used it up to that period? Each piece of writing is crafted longitudinally and will be far back in the past by the time any reader encounters it. Mindful of this, I have tried to preserve the original sense of experience in one place, on one day, in this writing.

For the moment it is sufficient to recall that I experienced each of the media communications quoted from at the beginning of this section in one day in one place. One was encountered as a piece of paper I had printed out in another

Figure 3.2 Laptop on table, 14 August 2012.

place on another day that was now on the table. Two were accessed via my laptop (see Figure 3.2). The laptop uses a wireless connection; the laptop was around two metres away from a small piece of furniture that has sat upright in our living room, occasionally flickering a light or two, close to the wall but not touching it – rather like a miniature stranded lighthouse – the only small object permanently allowed to sit on the floor, although always associated with clusters of cables (see Figure 3.3). This Netgear router has been in our family home for a few years; at first access to it was open, i.e. unencrypted, then for at least a year it was password-protected. Changing the password became a way of instantiating occasional sibling disputes, so for some months now it has again been unencrypted. Its range does not seem far beyond the house these days, yet it is often very fully employed, with each of us having our own PC or laptop and some of us also connecting through smartphones. I connected then from the Sony laptop I've had for about five years, with a Windows Vista operating system, to my currently favourite browser, Google Chrome.

The piece of paper I had brought was downloaded from a website on a previous day, but I had not made any kind of note as to how it had come to my attention, so that route was already lost. The other websites were encountered on that day. My favourite website over the last few years has been

Figure 3.3 Wifi router on floor, 14 August 2012.

the BBC's, bbc.co.uk. Rather than have a single homepage set, I have ways of glimpsing several at once (one as facilitated by Google Chrome, the other, by this point used by me only occasionally, a portal delivered by Netvibes,[1] another free utility) and most days would use the BBC website for some purpose. The *Guardian* story I first saw on my husband's Kindle, an ebook viewer; just two weeks previously he had begun subscribing to the *Guardian/Observer* site thinking it would particularly suit holiday time. Finding an interesting interview with Ry Cooder there, I followed it up with a fuller reading via the free *Guardian* website on my computer.

These access details may seem to any reader unremarkable and everyday. As I later revise this chapter I perceive changes in my use of communications technologies since that time, who is living in the house, and other smaller details. None of the technologies I have referred to would currently be seen, in privileged 'Western' societies, as innovatory or even very recent. It is perhaps likely that the further removed the reader is in space and/or time, they will be of interest only because they include factual details of an experience distant to that reader. In a few years' time they might evoke forgotten details or nostalgia even for me; when first I worked at home with an Amstrad PC in 1990 I never thought to record any details of the experience. Indeed, it did not occur to me to take a photograph of it. But there is

another reason to think about these details – to suggest that 'unremarkable' and 'everyday' are not actually linked concepts even if for much of the time it suits many of us to treat them as such. As every social anthropologist knows, the everyday can be unremarkable to those inhabiting it, but it actually includes a myriad of interconnected pieces of taken-for-granted knowledge that in subtle ways are different from those prevalent in other societies and eras. It is in the everyday that cultures are woven, shaping and being shaped by the interactions of people with their environments – which include other people.

One way of reflecting on one's own everyday experiences as cultural is to seek out some external 'facts' about how common aspects of them may be in one's own society. I can now introduce some facts about the sources of the statements. However, as already mentioned, I am immediately hampered in that my route to the piece of paper was already forgotten; for some reason I had printed out the piece of paper rather than bookmarked the website, using any of the utilities I might have chosen for this purpose. Despite the fact I work mostly digitally, I still preserve the habit of privileging some documents by printing them out. I can see by the offices of those about me and the activity of our shared printers located in communal areas that many colleagues do the same.

Websites appear on the face of it to be more easily amenable to more systematic research, extending beyond immediate surroundings. The NASA video was accessed via the BBC. According to the international web analytics site I use, Alexa, the BBC website is currently the forty-eighth most popular in the world and the fifth most popular in the UK.[2] Here in the UK where I live, in August 2012 the BBC site's popularity is exceeded only by two versions of the search engine Google and the social networking site Facebook and video-sharing platform, YouTube (which is owned by Google). Search engines are primarily used as a tool for diverse purposes; after briefly landing on them, users will then almost always insert a term specific to their interest at that moment in time. Facebook's social networking site is personalised so that the opening page is configured to the specific user. YouTube can be used with a personalised log-on, thus configuring the immediate experience. But the BBC site is more like the model of a traditional broadcaster. Although always vast in size and offering some degree of personal configuration, it is essentially a repository of BBC-owned resources, with some clearly indicated external links to other parties. Unlike the other top five UK sites it is essentially national rather than international, UK- rather than US-based. That is, the BBC is a UK organisation, and a high proportion of its website users (41 per cent currently)[3] originate in the UK. Rather than being a purely commercial enterprise, the BBC gains substantial funds from licence fee revenue and thus has strong if complex connections to the UK government.

I had accessed the Ry Cooder article via the *Guardian* website. This is part of the Guardian Media Group, centred on a UK print newspaper founded in

the nineteenth century. The *Guardian* is independent of large global media conglomerations such as News International. In common with many newspapers, the print version is struggling in an environment of declining sales; the web version I accessed on my laptop is free to view and thus has to attract advertising or other sources of revenue to be financially viable. The Kindle version my husband had paid to subscribe to (£9.99 or US$9.99 per month). The website guardian.co.uk is considerably successful for an online newspaper site in terms of audience, being 183 in the world and 17 in the UK, again according to Alexa.[4]

I now turn to examining aspects of the propositional content of the three items in respect of digital literacies, beginning with the piece of paper. Figure 3.4 shows the beginning of an 11-page 'White Paper' or policy discussion paper. The logo at the top left and a note at the end of the paper explains that it was produced by the Information and Communications Technology Council, described as a 'not-for-profit sector council dedicated to creating a diverse, prepared and highly educated Canadian ICT industry and workforce'. The very final note in the document explains that it is part of a project funded by the Government of Canada's Sector Council Programme. The document is not dated but the website of the Information Technology Association of Canada, http://itac.ca/site/media_details/1739, asserted that it was published on 23 September 2010 (accessed 12 May 2013).

According to *The Oxford English Dictionary*, a White Paper is a government document presented to a parliament, but the term has been broadened in use. Sometimes losing its capitals, the term is appropriated by people who are not associated with such institutions but wish to address policy issues; one of the best-known and most exciting of such papers in the area of digital literacies being written by Jenkins *et al.* (2006). This White Paper offers a policy suggestion, that Canada should 'become the most Digitally Skilful country in the world, with a no-one-left-behind approach' (ICTC, 2010: 3). This front page is part of a preamble, prior to the executive summary, endeavouring to contribute persuasively to the overall argument.

The way I have chosen to read the ICTC paper is to consider it in the light of van Leeuwen's (2007) framework for the construction of legitimation. The idea of legitimation aligns particularly to the Bakhtinian idea of heteroglossia, discussed in the next chapter. Legitimation in discourse provides a way of tying heteroglossia to specific discourses and relations of power. Van Leeuwen (2007: 91) cites the assertion of Berger and Luckmann (1966) that legitimation '"explains" the institutional order by ascribing cognitive validity to its objectivated meanings and … justifies the institutional order by giving a normative dignity to its practical imperatives'.

Categories of legitimation are proposed and defined by van Leeuwen (2007). I will draw on my understandings of these to discuss some features of this extract and construct my own argument as to what, thereby, is excluded.


Developing Tomorrow's Workforce Today

ICTC CTIC

Information and Communications Technology Council / Conseil des technologies de l'information et des communications

DIGITAL LITERACY:
CANADA'S PRODUCTIVITY OPPORTUNITY
A WHITE PAPER FROM THE INFORMATION AND COMMUNICATIONS TECHNOLOGY COUNCIL (ICTC)

Canada today is at an inflection point.

For the first time since its founding, Canada's prosperity can be challenged *by any nation.*

Historically, prosperity comes from having an advantage in a sector that dominates commerce in a particular era. Commercial advantage changes with the times; in 1867, Canada and a handful of western nations had material resources which gave them an edge in the 'age of manufacturing'. In the past 150 years, these countries have enjoyed a global trade superiority based on raw materials and the technology to manufacture goods: iron ships, steam power, mass manufacturing. This gave them an edge in trading around the world.

Today by contrast two-thirds of global GDP is created in the service sector.[1] To take India as an example, 62.6% of its GDP comes from its service sector[2]—a sector in which it *creates* a "constructed advantage" not from raw materials but from the skill of its workforce in developing value based on brain-power.

Given that people around the world have the same human potential, commercial advantage in this borderless resource is bestowed by training and education. A nation with adequate focus on education will rise dramatically. India's huge investments in education are paying off, as digital commerce allows it to compete for outsourcing work in other knowledge-based economies. In fact, to accelerate this process, one-third of India's service economy is directly employed in the digital sector itself, by the Information Technology sector.

The rise of this digital era has allowed all nations to compete against each other based on knowledge and mental skill. Digital is pervasive; today, five out of every six people in the world own a mobile communications device—a device that can also serve as a bank, an information-access portal, an employment station, an entertainment player, and a means of self-expression.

Digital Literacy drives commerce in all successful countries in a borderless digital world. It underlies the 70+ per cent of the Canadian economy that is in the services sector.[3] *Digital Literacy* is the fundamental requirement for effective participation in the world's economy; it is the aquifer giving life to the knowledge-age work force. It can be acquired, polished, and wielded as a competitive weapon.

"Digital technologies are ubiquitous, enabling all sectors across the economy to be innovative, productive and competitive. The Internet and the proliferation of digital information and communications technologies ICT) have given rise to new products and services—changing the way we live. The way our children learn and study, how we communicate with each other, how medical professionals keep us healthy, how we conduct research and how we conduct business across all sectors—all have been fundamentally transformed by digital technologies."

—*Improving Canada's Digital Advantage, Strategies for Sustainable Prosperity*

"Digital technology is the single biggest lever for productivity and competitiveness across every sector of the economy. It will underpin the majority of future job creation in Western economies, and the export of global technology services and world-class content offers substantive opportunities for wealth generation."

—*Digital Britain: Skills Assessment for the Digital Economy*

1. Tilburg University, European Research Institute in Services Science (ERISS) http://www.tilburguniversity/nl/eriss/research/publications/rede.
2. http://en.wikipedia.org/wiki/Economy_of_India.
3. http://www.ic.gc.ca/eie/site/si-is/eng/home.

1

Figure 3.4 Digital Literacy White Paper, first page. Information and Communications Technology Council (2010), reprinted with permission from ICTC.

It must be noted that this text is not intended to be read alone; rather, it is the major part of the initial preamble that leads up to a brief table of contents and appears considerably before the executive summary. It has been written to

attract attention and present some background argument before the main substance of this paper. So by pointing to possible gaps or absences in the argument, I acknowledge both that this is a front page rather than a stand-alone text and, more importantly, that any argument must feature selectivity. It is the nature of this selectivity, and how legitimation is constructed, that I am interested in here.

Mythopoesis, a term I will return to below, is defined by van Leeuwen (2007: 92) as 'legitimation conveyed through narratives whose outcomes reward legitimate actions and punish non-legitimate actions'. This text constructs a skilfully wrought historical narrative, brought to a newsworthy climax in the present moment. Canada, along with an unnamed 'handful' of other countries is portrayed as having 'enjoyed a global trade superiority' based on having the resources that belong to the most valuable sector of the era. It is asserted that the most valuable sector has changed to being the 'service sector'. The 'service sector' is construed as separate from access to raw materials and manufacturing, rather floating independent of these. Therefore, 'For the first time since its founding, Canada's prosperity can be challenged *by any nation*'. Digital literacies and the service sector as such are not the same thing (and the relationship between the two is explored further in the paper), but the narrative seeks to persuade readers that high levels of digital literacy are essential to the prosperity of the service sector. Although Canada's economy is portrayed as being '70+ per cent … in the service sector', there is a threat here 'from any nation'. Bolstered by the facticity of news values (Bell, 1991), conveyed through numbers, the threat is made urgent, as exemplified in the first line. A key contrast in the narrative is that between digital literacies 'based on knowledge and mental skill' and the 'raw materials' and 'goods' of the historicised sectors of the economy. Yet the digital is also instantiated in the 'mobile communications device' portrayed here as multifunctional. Clearly these are material goods; the issues of where the raw materials to make them have come from, and the manufacturing processes involved, are occluded. In the more 'developed' countries it is inconvenient ever to be reminded of the conditions in which are gadgets are made and the metals involved hewn from the earth by human beings in less fortunate 'sectors'.

Legitimation through 'moral evaluation' is explained by van Leeuwen (2007: 92) as occurring through reference to value systems, possibly obliquely. Moral evaluation is present here through positive representations of national prosperity: 'A nation with adequate focus on education will rise dramatically.' Here we see the notion of 'seamless transfer' from education to the workplace that Lea (2013) critiques in respect of similar policy calls in the UK, questioning whose interests are being served:

> as the digital becomes increasingly associated with broad capability agendas, consumerist models of learners … and attempts to recast HE

> institutions as little more than digital spaces, ultimately serving the needs of the knowledge economy.
>
> (Lea, 2013: 113)

The proposition here links education and rising national prosperity unproblematically, in a common instantiation of Street's (1995) suggestion that such 'autonomous' views of literacy, focussing on individual acquisition of skills, mask the ideological functioning of such statements. Any idea of criticality as to how digital literacies might actually benefit people in their existing situations, or how the university or other such institutions might question such assumptions, is absent (Goodfellow, 2011). Following the proposition in this document is more information about India, previously described approvingly as having 'constructed advantage' and through proximity taken to be rising dramatically in an approved way. National prosperity is obliquely rather than directly alleged to be advantageous to a country's citizens.

Perhaps the most interesting expression of van Leeuwen's categories of 'moral evaluation' is present in this text's examples of analogies (see van Leeuwen 2007: 99–100). The bottom of the page features two metaphors. The first is an 'aquifer', an analogy that is continued in the remainder of the document, so it seemed worthwhile to try to understand something of the connotations of the word. Trying out a Google search restricting the word to Canadian sites gave me as the top 30 results findings all connected with underground water, most clearly explained by the Alberta Water Portal (2013):

> An aquifer is an underground formation of permeable rock or loose material which can produce useful quantities of water when accessed by a well.

I turned to linguistic corpora, huge datasets of authentic language data, compiled to allow analysis of words in context. Words can be investigated for frequency and also for the collocations – that is, words or phrases a specific target is associated with, in its surrounding text. I wanted to find out if there were other instances of aquifer being used as a metaphor.

The Strathy corpus of Canadian English of 50 million words from the 1970s to 2000s (freely available online at Brigham Young University, http://corpus.byu.edu/) yielded 56 instances; all were related to ground water. The Corpus of Contemporary American English and the The British National Corpus, accessible again from Brigham Young, gave me too many instances to search each one, but I examined collocates, choosing to search for words that appeared up to four places to the left and four places to the right of 'aquifer'. Most frequent by far was 'water' in both corpora and all these collocations referred to the meaning as defined by the Alberta Water Portal. So, as far as I can find out, the use of aquifer was a novel metaphor constructed for this specific text. I hypothesise that this relatively technical word may be more

commonly used in North America than the UK, where I think it might be considered too obscure to operate well as a metaphor in a persuasive text. In the ICTC paper I think it suggests the idea of digital literacies as an underlying, rich and yet not easily exhaustible resource for the service sector, an essential element of national wellbeing.

The second analogy is a 'competitive weapon' that 'can be acquired, polished, and wielded'. This somewhat easier to grasp as a metaphor. The possession of digital literacies is reified, as if something that can be possessed. It can be upgraded, honed or polished. It is characterised as competitive rather than collaborative and as a weapon that is associated with actual or potential conflict. Both these latter characteristics, competition and conflict, play into the discourse of competing national economies, as 'all nations compete against each other based on knowledge and mental skill'. Yet access to digital literacies is also described as 'borderless', again apparently floating free of materialities. Canada is free, if it wishes, to take up as much of it as possible but then wield it in a competitive environment.

Legitimation is also constructed through what van Leeuwen terms 'authorization'. Although there are many ways in which 'authorization' is constructed within the text, I here mention three semiotic features. One is the appropriation of an authoritative status. This includes the official branding at the top left of the document, with its institutional naming (its bilingual element indicating its association with the national Canadian state), its badge and logo, which I return to below. Two sections of the text on the right-hand side are prominently attributed to other agencies, positioned as 'impersonal authorization' (van Leeuwen, 2007: 96) in acts of transposition, marked as external voices through the use of red, a different colour from the ICTC's authored text. The very bottom of the page displays hyperlinks to sources, a display of academic respectability.

'Multimodal authorization' (van Leeuwen, 2007: 107–8) is striven for through the inclusion of the image at the top. This shows very strong parallels with a news release produced by the Minerals Management Service, US Department of the Interior discussed by Scollon (2008: 58, 140–1) in his multimodal analysis of public discourse. He pointed out high design values, the eschewing of naturalism in the production of a collage and a modified version of the national flag 'not … as we ever see it in the day-to-day world' (Scollon, 2008: 141). In his US news release the flag is at a curious angle and partly cut off. Here is a partial version of the Canadian maple leaf blended with a figure that appears part human, part suggestive of the initial letters of ICTC. This logo, in the privileged top-left position, flows through curves and dots to a more photographic image. At the top right are two formally dressed, young and healthy-looking people apparently engaging in the knowledge economy, requiring nothing but access to the PC. To me, the asserted free-floating nature of this knowledge is suggested by the rays that flow through the top banner, its curves fluidly extending through the gap between their bodies. Against a background of increasingly

intense red hues as it follows the direction of the rays, the dots may be suggestive of the binary digital. Just as in Scollon's (2008: 141) example, the overall effect is that the collage 'suggests rather than states the ideal world of US national politics'; here the same effect is created for Canada.

Van Leeuwen describes 'rationalization' as 'legitimation by reference to the goals and uses of institutionalised social action, and to the knowledge society has constructed to endow them with cognitive validity' (van Leeuwen, 2007: 92). The Canadian White Paper features several such arguments, strengthening them by essentially parallel cases. India is characterised as having made an 'investment' – an intentional pursuit of a goal – in education that is 'paying off'. This is an implication of profitability rather than, say, health or well-being. Workers in the service sector are increasingly being employed in IT, which is implied to be a better sector to work in than any other. In the top right extract, digital technologies are deemed to have 'fundamentally transformed' 'the way we live' in an optimistic if technologically deterministic vision of Canada. A quotation from Britain similarly claims credit for economic growth and 'wealth creation'.

These three cases are presented closely together in a preamble to the main document, to reinforce the argument of each and cement an association of national 'competitiveness' with a presumption of something positive for all citizens. But if all these nations can be competitive, what of those left behind? Is this an example of Street's (2010: 299) 'hidden ideology', an example which 'hides its local and cultural positioning'? (See p. 21 above.) And are the interests of all people, defined it seems by an association with a nation state, necessarily the same as that of the state?

As has been argued so powerfully by Street, the acquisition of literacy skills does not lead to an automatic conferral of social benefits. Neo-liberal discourses of recent and contemporary governments in the UK at least have underpinned a 'pervasive feeling that we all live and are judged in terms of a corporate environment, with its goals of profit-making, competition, unequal, low-trust relationships and consumer choice' (Hamilton, 2012: 81). The argument presented in the ICTC text is an instantiation of Hamilton's findings about public representation of literacy in texts. Aided by close analysis of policy, promotional and other kinds of texts about literacy and, more specifically, those adults regarded as deficit in literacy skills, Hamilton traces how the 'government appealed to these people to assume their responsibilities as citizens by improving their skills, in order to contribute to national prosperity in a global marketplace' (Hamilton, 2012: 81).

Before leaving this document, I turn back to van Leeuwen's term of mythopoesis. In *The Oxford English Dictionary* I found a direction that the word equates to mythopoeia, 'the creation of a myth or myths'. Myths are powerful narratives, a society's discourses. They are not complete accounts of a society, and nor are they intended to be. But I do think the Canadian document is a skilfully wrought narrative that nonetheless contains many assumptions that

can be critiqued. I now turn to my second text, which contrasts with the Canadian document in its overt hostility towards digital literacies.

Ry Cooder

I quoted Ry Cooder above as saying, 'All this social media – they're hooked to transactions in some way and they're delivering this massive audience – to whom? So I don't like it and I don't trust it' (Smith, 2012). His argument was ostensibly related to a site of digital literacies, online social networking. It might be imagined that I have chosen to quote him as exemplifying a position I oppose, a media trope that appears in various forms quite often. The position that quite frequently (still) appears in mass media is a particular form of the age-old complaint that younger generations waste their time in pointless, or worse, leisure pursuits. Often connected with 'new' technologies, whether video games or phones, it is suggested that young people's engagements are trivial and that they lead to a decrease in personal contact and sociability (Thurlow, 2007). Actually I found Cooder's views worthy of serious consideration, but also worth critiquing, again through putting such questions as, what is being left out? What might be his less apparent motivations or influences?

It is helpful to read more of Ry Cooder's views as expressed in the newspaper. Here, I've quoted part of the article, written by the journalist Caspar Llewellyn Smith, part of a series '30 minutes with … ' in the *Guardian* (Thursday 9 August 2012) features supplement, specifically G2's film and music section.

> I don't trust social media – I think it's all a bunch of bullshit. I think it's a manoeuvre. It's Orwellian. This small screen is going to hypnotise you. You're going to do what it wants you to do. What does it want you to do? It wants you to text your friend. What are you saying to your friend? You're going to say, 'I'm on the corner!' – and your friend says 'I'm on the other corner!' is that what you're saying … is that what you're thinking? Wait a minute. You don't even know what you think and what you feel if that's what you're doing all day and night.
>
> Besides, all this social media – they're hooked to transactions in some way and they're delivering this massive audience – to whom? So I don't like it and I don't trust it.
>
> They say, 'Oh, the Arab Spring!' Well, the goddam military took over Egypt in the end. Who says they got a revolution? What revolution? The fucking military went in there like they always have done.
>
> To me, the point is you turn the screen off and listen to yourself and maybe you'll have an idea. Maybe it might be a good idea, something you can do to help out.
>
> (Smith, 2012)

To me there is substantial appeal in Cooder's arguments, although I think there is also room to counter them. His first argument is that people can be taken over, 'hypnotised' by technology, implying that their free, conscious will is thereby impeded. It is difficult to see how this might not be argued as strongly in relation to any desirable object or practice. People get interested in gambling, philately, checking their stock market holdings – really any pursuit can become a habit and arguably from some external judgemental positions overdone, but it does seem perverse to blame the object of appeal rather than the human agent.

Cooder's second argument seems to instantiate a common theme, that young people's use of social media is intrinsically trivial. Leaving aside the issue of generational attitudes in this respect, the example Cooder gives is somewhat interesting. Being able to communicate over a distance and share details of one's location as efficiently as possible is one of the strongest associations, if not motives, for communications technology advances, from the invention of the telegraph to the Edwardian postcard, from the mobile telephone to Foursquare and location-based gaming. In 1825 Samuel Morse could not attend his wife's funeral as he did not know of her death until too late; this occasioned his involvement in the invention of the telegraph. The early twentieth-century postcard acted as a rapid method of communication owing to the copious number of deliveries in towns, so that people could share their locations and plan meetings for later the same day (Gillen and Hall, 2010). After decades of landline hegemony in the UK, the great innovatory quality of the mobile phone was the probability that on receiving a call you might very likely know the identity of the caller through technical means but could not know where they were until they told you. Location-based games and 'checking in' on Facebook and Foursquare can all be means of sharing information about 'what corner' you are on in order to connect with other people. But this, like Cooder's own unfinished example, conceals a myriad of possible reasons why taking the trouble to mutually share locations could be worth the trouble, from planning a face-to-face meeting to trying to enhance one's status through displaying a prestigious location. Cooder captures something of the link between technology and certain kinds of statements, in that 'I'm on the corner', if said in a face-to-face conversation, would almost certainly involve some kind of emphasis or specialised context; but to be comprehended more fully whatever the channel we would need to understand something of the speaker's purpose.

Cooder's third point is a vital one. He points out that the goal of commercial companies, which include social networking sites, is to make a profit. As he puts it, 'they're hooked to transactions in some way and they're delivering this massive audience … '. Against Cooder it could be pointed out that there can be a win-win situation here. Facebook might be cited as a prime example. For several years Facebook grew hugely because people have enjoyed using it. Like MySpace, with its overlapping period of great popularity, people found

new ways of expressing themselves, connecting with others and pursuing interests through social networking. Free at the point of use, these sites were so popular that Facebook could control and balance commercial interests in such a way – with targeted advertisements, piggy-backed applications and games and so forth – that profits rose as more people joined. As the *New York Times* wrote in May 2012,

> In the eight years since it sprang out of a Harvard dorm room, Facebook has signed up users at breakneck speed, kept them glued to the site for longer stretches of time and turned a profit by using their personal information to customize the ads they see.[5]

But from the social networking companies' point of view, popularity brings its own problems. If access is free and more and more people join, a company has to invest massively in infrastructure to host. As that same *New York Times* article, written shortly before Facebook's stock market floatation, concluded, the pressures would increase to leverage 'more information about more people than anyone else in history' to profitable advantage in order to enrich stockholders.

Concern about having personal details, connections, likes and dislikes about oneself commodified is surely legitimate. As I send this book off to press the fate of Edmund Snowden, who revealed details of the enormous scale of hitherto secret US datamining at home and abroad, remains uncertain. Disclosures apparently associated with him will continue to have global repercussions. Cooder's suggestion that claims that social networking has encouraged democratic, even revolutionary, movements have been widely overblown certainly merits some attention. I cannot resist pointing out that a few days after Cooder's interview was published, the status of the military in the top ranks of Egyptian power was seemingly reduced. Mass media credited the activities of the president and the large supporting crowds (which continued to use social networking as the means of communication) for this. Reasons, levers and facilitators for social revolutions are difficult to disentangle, but surely it would be as unwise to discount the part played by people's means of communication as it would be to attribute all credit to it. Zeynep Tufekci has been researching social protest movements in Turkey in the summer of 2013. Fascinated as she is by the uses of social networking platforms, she is quick to criticise inflated claims, tweeting pithily on 3 July 2013: 'I don't even get the thinking. In Turkey, govt mentioned "20 twitter accounts" that supposedly created the protests. How? Mind Control?'

Where Cooder's notes of fierce scepticism – about both social networking sites and involvement in radical movements – are most worthwhile is in the important tone of criticality they inject. Any engagement with Facebook can lead to one's data being used in ways that one might not know about or expect, in the interests of market research. To give just one example, the

marketing research company comScore (2012) claims that through its partnership with Facebook in May 2011 it was able to trace the links in the US between Facebook fans of the coffee brand Starbucks and debit/credit card transactions in stores. In a further step, they could measure what kinds of websites those fans had visited, for example to compare their interest in automobile sites with other users. This research was not limited to fans but extended to those who had merely read a newsfeed and friends of fans.[6] In such a situation, any engagement with Facebook needs to be understood as a transaction with implications for privacy and that potentially any information can go beyond Facebook. Under the US Patriot Act 1995 the US government was enabled to access online data not only of their own citizens but also of other users of US services, for example in Europe, without their consent.[7] The European Commission in 2012 proposed to strengthen and make far more transparent the right to privacy, including the 'right to be forgotten'. Part of the justification for the proposal reads,

> Three quarters of Europeans think that the disclosure of personal data is an increasing part of modern life. At the same time, 72 per cent of internet users are worried that they give away too much personal data online. They feel they do not have complete control of their data.[8]

I take Cooder's point as being most saliently that each of us should endeavour to think about the power of vested interests as they affect our own, in order to recognise and perhaps challenge limits to our own agency. As we become more sophisticated users of any medium, we may come to understand better the trade-offs between what we are being offered in a communication and what underlying aims are also being pursued. This is surely a continuous process in any use of media and a reason why criticality is a crucial aspect of literacies, particularly perhaps digital literacies. I can briefly illustrate this importance by turning back briefly to both Cooder's text and one element in my own above. As I've already suggested, as with any statement, Cooder's can be better understood the more effort is put into understanding context.

Let's look at the immediate, textual context for this. The article is generally set out as an interview, with the journalist's questions and the interviewee's responses. The article is headed:

> Ry Cooder: 'Mitt Romney is a dangerous man, a cruel man'

The strapline immediately below reads:

> The veteran guitarist on his new album of protest songs, Election Special, and how the Republican party is out to destroy America and Barack Obama's presidency

As a long-standing reader of broadsheet feature articles, I understand immediately that one aim of this writer (who may be a journalist, a sub-editor or a combination of the two) is to write a line with sufficiently dramatic appeal and as aligned as possible to the political interests of *Guardian* readers to entice me to read the article. I also understand, even before I begin reading a word of Ry Cooder's, that part of his purpose is to promote his new work. I am not at all surprised to find a video extract from his work in the middle of the story and, after the political discussion, a further audio clip with a link that makes it easy to immediately buy the album.

Owners of information control the distribution of information they have paid to receive. Sources of information therefore need to be scrutinised in order to examine where the vested interests lie. We build up relations of trust over time. Understanding the *Guardian* newspaper media group as I do, and the nature of their underpinning by the Scott Trust, personally I am likely to use anything they report without further investigation, while realising that occasionally mistakes will be made. But in conducting research for this book in the area of statistics about internet use, I have realised how limited the sources are, at least those freely available. Above I quoted statistics about the popularity of the BBC website: currently the forty-eighth most popular in the world and the fifth most popular in the UK. As I mentioned, these come from the website Alexa. I do not mean to impugne this useful site, but looking more carefully at it quickly reveals the limited basis for these statistics. Alexa is an Amazon.com company and collects information from the users of its own toolbar. If I surmise, as seems reasonable, that the users of this toolbar might be disproportionately more likely to be based in the US than in India, for example, then it would be immediately apparent that the statistics about relative use of the BBC site, applying as they do to users of the Alexa toolbar, inadequately justify my claim as to the global popularity of the BBC website and I have to admit I have really no idea about it. Who holds data on digital communications, how they are stored and what might come of them are issues that should engage us as democratic citizens, as the Snowden affair of 2013 has highlighted.

Krajewski

Joel Krajewski was recorded in a TV documentary in an established series, *Horizon*, described by the BBC as 'exploring topical scientific issues and their effects for the future'.[9] This programme, 'Mission to Mars', followed the preparations of the Curiosity rover, a NASA project, and was aired before the rover actually landed. While watching it I had in the back of my mind questions about digital literacies, including the one that perhaps interests me most of all – what is distinctive about digital literacies? In what ways has the world changed to make human interactions different from how they were in the past? What might be the implications of these changes for the education and out-of-school

lives of young people? In this light, one statement by Krajewski particularly resonated: 'Different people understand different aspects of it, but nobody knows it all.'

I want to take a balanced position. I am excited by the possibilities offered by new innovations. As Sir Humphrey Davy, the chemist and inventor active at the beginning of the nineteenth century, said, 'Nothing tends so much to the advancement of knowledge as the application of a new instrument' (cited in Hager, 1995: 86). Yet at the same time it is necessary to be sceptical about claims that new technologies have propelled radical changes in society, not least because it is especially the purpose of those with the potential for making the largest profits to make these. Engagement with the history of technologies can help one resist untenable claims related to novelty while perceiving how it is sometimes unheralded, even little noticed, subtle changes that are eventually significant.

Is perhaps the major change to be associated with digital literacies in the twenty-first century a new potential, indeed necessity, for greater teamwork? The US Partnership for Twenty-First Century Skills emphasises 'collaboration' together with 'communication',[10] prompting thoughts about whether collaboration is actually more vital today than ever before, and if it is, in what way.

As I watched extracts from the BBC *Horizon* programme, I thought it is not really anything new that to realise a substantial project, a large team of people with very different skills need to work together. If we think of building a nineteenth-century tea clipper ship or an early twentieth-century steam-powered weaving mill then we must be aware of the amalgam of skills involved. But nevertheless there is something new in the great complexity of interwoven technologies that digital networks have made possible. My father, born in 1925, was trained in the methods and principles of mechanical and marine engineering, including those of the steam age that preceded his own. He understood how technologies around him, such as televisions, cars and radios, worked and so could undertake minor repairs. Yet eventually cars and TVs were built with parts that could not be taken apart and put together again by non-specialists; this change was associated with the rise of computers in society. So perhaps the need to collaborate in technological work has permeated down into all areas of life, rather than being obvious only in the workplace.

I do not want to overplay the temporal contrast or seem to imply that earlier skillsets were necessarily more accessible. Whether I consider the specialist skills of the cotton weaving shed of the industrial revolution[11] or the fine jewellery-making skills of the Anglo-Saxons as revealed by the discovery of the Staffordshire Hoard,[12] it seems that individual craft skillsets may not be any more complex now, taken in isolation, than in any other historical time. And of course, many industrial processes demand a division of labour that can mean the de-skilling of individuals as well as the growth of new, often complex skills. But Joel Krajewski's statement was thought-provoking in its suggestion of the new impossibility of taking a technological, rather than

managerial, overview: 'Different people understand different aspects of it, but nobody knows it all.' The nature of collaboration between complex machines and people has moved beyond an understanding of 'individual plus tool' to far more complex configurations.

Krajewski was talking about a project that was commonly agreed to be at the forefront of cutting-edge technological developments: a car-sized Mars rover. The technique of personifying the rover, issuing communications expressed in the first person, was an effective way of attracting attention via Twitter:

> 'I'm safely on the surface of Mars. GALE CRATER I AM IN YOU!!!'[13]

This for me captures something of the essence of a well-disseminated, highly technologised twenty-first century digital literacies project. NASA has imagination and is careful to engage with education and different kinds of lay users at diverse levels. NASA is one scientific institution among many that have developed citizen science initiatives that enable people to participate in some way in authentic scientific endeavours.[14]

As digital technologies have spread, matured and developed, more people are participating in the creation and collaboration that have become characteristic of the Web 2.0 wave. Approaches to digital literacies have developed alongside the application of technologies (Coiro *et al.*, 2008) and cannot and should not be analytically divorced from them, even if it is crucially important to avoid technological determinism. In Chapter 5 I turn again to the Schome project, of which Krajewski's statement could also function as an encapsulation. But first, in Chapter 4, I develop the idea of dialogicality in the context of researching learners' engagements with new communications technologies.

Notes

1 www.netvibes.com (accessed 14 August 2012).
2 www.alexa.com (accessed 14 August 2012).
3 www.alexa.com/siteinfo/bbc.co.uk (accessed 14 August 2012).
4 www.alexa.com/siteinfo/guardian.co.uk (accessed 14 August 2012).
5 Sengupta, S. (2012) Facebook's prospects may rest on trove of data. New York Times May 14. www.nytimes.com/2012/05/15/technology/facebook-needs-to-turn-data-trove-into-investor-gold.html?_r=1 (accessed 15 August 2012).
6 www.comscore.com/Insights/Presentations_and_Whitepapers/2011/The_Power_of_Like_How_Brands_Reach_and_Influence_Fans_Through_Social_Media_Marketing (accessed 3 July 2013).
7 www.zdnet.com/blog/london/updated-european-law-will-close-patriot-act-data-access-loophole/742 (accessed 2 July 2013).
8 http://ec.europa.eu/justice/data-protection/document/review2012/factsheets/3_en.pdf (accessed 15 August 2012).

9 www.bbc.co.uk/iplayer/episode/b01llnb2/Horizon_20122013_Mission_to_Mars/ Broadcast 31st July 2012 (accessed 14 August 2012).
10 www.p21.org/overview/skills-framework/261 (accessed 3 July 2013).
11 See for example Queen Street Mill in Burnley, the world's only surviving nineteenth-century steam-powered textile mill. www.lancashire.gov.uk/acs/sites/museums/venues/qsm/?siteid=3771&pageid=12932&e=e (accessed 2 July 2013).
12 www.staffordshirehoard.org.uk/ (accessed 2 July 2013).
13 As reported on the BBC website 6 August 2012.
14 See for example the zooniverse portal www.zooniverse.org/ (accessed 2 July 2013).

4

'HELLO'

A dialogical approach to researching learning by new users of communications technologies

In this chapter I re-examine, distanced in time and place, three empirical studies. I use these to extend a dialogical approach to researching literacies, technologies and learning. In Chapter 3 I demonstrated dialogicality in the sense of adopting a very participatory approach to a context where I needed the full participation of those I was studying to begin to acquire an understanding of what was going on. Here I bring in another layer of dialogicality, making use of Bakhtinian theoretical terms as a heuristic to approach learning by users of communication technologies new to them. In this chapter I draw on work with technologies broader than 'digital'. This is for three reasons:

- Interactions with digital technologies are different and varied, but the quality of being 'digital' is not the only, or necessarily the most salient, characteristic to a person.
- People make sense of experiences with technologies new to them in the light of other experiences and understandings; again, there is not necessarily an online/offline or digital/analogue distinction to be assumed as primary here.
- Theoretical frameworks need to be tested against more than a single communicative domain or environment, however understood, in order to avoid justifiable criticisms that they are very local 'explanations' or models.

In this chapter then I combine an emphasis on mode or materiality in the empirical study of communication with an exploration of the dialogical approach to language, learning and discourse associated with the work of Bakhtin and related scholars.

I worked with Angela Goddard on a paper bridging our two empirical research agendas we called *Mediated discourse as learnable social interaction* (Goddard and Gillen [2004] 2013). With Angela's kind permission I draw heavily on that work here, as the collaboration was very influential in my engagement with dialogical approaches to language. I particularly focus on language but with the awareness traced out in previous chapters, that language is always part of multimodal practice, that it is situated, and 'that nothing

happens in a social and political vacuum' (Scollon and Scollon, 2004: viii). As Gee (1996: viii) wrote: 'Language makes no sense outside of Discourses, and the same is true for literacy.'

A dialogical approach to language

As I argued in Chapter 2, a workable theory of language must account for language in use in all circumstances. Communicative interactions contain all sorts of blends of activities in practice; literacy practices often involve talk (Heath, 1983; Barton and Hamilton, 2012). Linguistic theory must embrace language in all channels, including speech in face-to-face interactions and writing in digital spaces. Although language is used in interactions that generally involve two or more people, it must also account for the production of language in solitude. In this chapter I work with language in a variety of modes.

Bakhtinian theories about the dialogicality of language were formulated in the twentieth century, not in the context of linguistic interactions involving new technologies.

> The stunning theoretical brilliance of their work was unfortunately matched by very limited empirical means. Although Voloshinov and Bakhtin argued for a theory of concrete, historical utterance, their methods were limited to close reading of literary texts, anecdotal reflection on everyday experience, and the invented-example tradition of linguistics.
>
> (Prior, Hengst, Roozen and Shipka, 2006: 735)

However, their work resonates with ideas that all communications are mediated. Goffman (1981) had drawn attention to the materiality of all communication, including spoken discourse:

> We can, then, draw our basic framework for face-to-face talk from what would appear to be the sheer physical requirements and constraints of any communication system, and progress from there to a sort of microfunctional analysis of various interaction signals and practices
>
> (Goffman, 1981: 15)

This insight, focussing on the significance of mode, can be brought together with three elements of Bakhtinian theory to analyse the interactions of people with technologies (Goddard and Gillen [2004] 2013). I use as illustration material from the two datasets we drew on in that paper and another small dataset collected by me in 2005. Using historical material brings out the evolution of texts and practices. They illustrate change, in that no practices described here could reoccur in quite the same way today, and the need to attend to temporality.

My endeavour here connects with other scholars' recent work, drawing together Bakhtinian theory with highly technologised contexts, such as Mahiri (2004), Androutsopoulos (2011), Lund and Hauge (2011), Wegerif and De Laat (2011) and Gordon and Luke (2013).

Three datasets

The first dataset was collected by Angela Goddard in the late 1990s, from young adults who were novice users of Internet Relay Chat (IRC), a feature of the virtual learning environment that they were just beginning to use. It would almost certainly be impossible to find young adults today in societies I am familiar with just starting to use IRC, or Chat (in 2001 we tried to cleave to the term IRC, as emphasising that these young adults were writing, but it would seem pedantic now to avoid Chat – or chat – so normalised has the term become). These were first-year undergraduate students in the UK using a Virtual Learning Environment. The online module involved working with Swedish students; the UK students began trying out the IRC tool before beginning the collaboration. So looking again at the data presents a good opportunity to see how young adults, with a wealth of cultural understandings and experiences behind them, acted as new users of a communications technology that has since become familiar in many areas of the globe. Angela was studying the linguistic and cultural practices of these online communications, including their intercultural dimensions (Goddard, 2003).

The second set of data was collected by myself from a communication channel that again could not be adopted in the same way today. This was a child-size phone box, a simplified phone system set up in a nursery (kindergarten) for young children, before the advent of cellphones, or mobile phones as they have been generally called in the UK. The late 1990s' system therefore relied on children's cultural recognition of a landline and, furthermore, as an expected location for one. Neither assumption could be made in the same locale today.

At the time then this was an appealing toy, a feature of their everyday local environment scaled down. The example I draw upon here was collected during the first phase of my research, when the phone was not actually connected to anything apart from recording equipment. I recorded spontaneous pretend phone calls by three- and four-year-olds by means of an audio recorder linked to the handset and a video camera to capture activities in and around the box. The overall purpose of the research was to investigate the development of children's telephone discourse (Gillen, 2000, 2002a; Gillen and Hall, 2001a).

The third dataset was collected by me in 2005, when I collected samples of data from my eleven-year-old daughter's writing in three different domains for an exploratory discussion paper. I studied the extent of divergence from standard written English in the various genres and asked, 'What long-term effects might young people's playful practices using digital technologies have upon the language?' (Gillen, 2005).

The framework with which I approach the discourse of new users of communication channels emphasises three key constituents of linguistic communication. These related notions are addressivity, heteroglossia and transposition. All these may be regarded as aspects of a central tenet of dialogicality or polyvocality. Polyvocality, according to Bakhtin (1986), is integral to all human communication: our understanding of any text is informed by our knowledge of its history of use. We appropriate our understanding of the meanings of words through previous interactions with others. Then, in re-use, we further shape meaning through responsivity to what has immediately come before, and contribute to interactants' own understandings in turn (Mercer, 2000).

Addressivity

A key quality then of linguistic communication is addressivity. For Bakhtin (1986: 99), 'addressivity, the quality of turning to someone, is a constitutive feature of the utterance'. Addressivity may appear to be an obvious quality to focus upon in dialogues, but as discussed above, Saussurean linguistics had preferred to focus on the word and sentence rather than utterance and genre. The influence of Bakhtin and related theorists was to assert the dialogic nature of utterances, the space of intersubjectivity that has to exist between interlocutors that necessarily makes processes of interpretation more salient than any 'objective' notion of a fixed lexicon. As Rommetveit (1992) argued, two ostensibly entirely opposite linguistic formulations may yet be used to truthfully describe precisely the same set of affairs, owing to what is appropriate to the circumstances. His (imaginary) Mr Smith was described by his wife in one phone call as 'working' because he was mowing the lawn, and in the next as 'not working' because he had not gone to his place of employment.

The essential point that Rommetveit made is that there is no lexical item that might not be employed in a variety of functions, with a diversity of what Kristeva (1986: 111) terms 'enunciative and denotative positionality'. Mrs Smith expressed opposite meanings if we take a mainstream approach to lexical meaning, but actually the same set of affairs are reported appropriately. Key to approaching an understanding of meaning must then be a sense of the audience to which it is addressed. No meaning floats untethered from those involved in communications interactions and the time and place of its situation.

Participants co-construct or, perhaps more precisely, negotiate meanings. Rommetveit (1992: 22) suggests meanings proffered in interactions are 'culturally transmitted drafts of contracts'. These may become *relatively* fixed in, for example, the discourse of specialists making use of a closely shared vocabulary and set of assumptions – working together in what Kuhn (1970) identified as a shared paradigm. Nevertheless, meaning in language always possessing associations with past usages is shaped in turn by current

environments of use – and therefore ultimately impossible to pin down perfectly. This idea begins to articulate Bakhtin's concept of heteroglossia, but before I put this forward I discuss another significant aspect of addressivity: that it is a quality of *all* utterances, not just those that are most readily seen as interactive.

In dataset 1, we noticed how the representation of the 'chatroom' influenced the writings of the students. The very word chatroom implies a space, and this idea was reinforced by the appearance of the writing online that appeared in a bounded box (Goddard, 2011). If one person entered the space – that is, logged into the chatroom – their name appeared on screen in a boxed space, which would appear the same to any other participant who logged into the same space, however distant in place. That is, the second person would see the same box, now with two names into it. Further, the logging on was accompanied by a chiming sound, reinforcing the idea that the participant was 'entering' a 'room', an act marked by something like a 'doorbell'. Remember that these were novice users and so alert to the way the environment was presented to them; familiarity had not yet rendered the materiality of the communicative practice easy to overlook. With this in mind, I will continue to write using what I might call the spatialised frame, i.e. 'entering the room' rather than 'logging into the forum' in order to index this way of perceiving the situation – although I do not imply that anybody was the least confused and actually thought they were entering a room.

Texts 1–5

Texts 1–5 are samples of texts that students typed when entering the chatroom. All these texts were written, unnecessarily, as there was nobody yet there to read them and they could not be sure anybody would be arriving. Of course, the fact they have persisted is owing to the recording technology that they understood was part of the research project, but nonetheless we do not think they were orientating to the future gaze of the researcher here and nor did the researcher expect to find this kind of data.

Text 1: IRC: UK student (waiting for other UK students)
Tiggy: hello hello hello

Text 2: IRC: UK student (waiting for other UK students)
Philip: morning campers

Text 3: IRC: UK student (waiting for Swedish partners)
Dave: England calling

Text 4: IRC: used by both Swedish and UK students (waiting for foreign partners) is there anybody out there?

Text 5: IRC: UK student (waiting for Swedish partners)
Helen: anybody home?

Note on transcription
This was originally interactive writing, written on a scrolling screen and now transferred to static print. The writing appears as it was written in terms of capitalisation, punctuation and spelling.

So the first interesting point about these is that the young people responded to the new environment by issuing a kind of greeting despite its redundancy. The more efficient and usual approach to communicating with somebody is to wait until there is someone to communicate with. Of course, as with all lone talk and writing, there are plenty of reasons to produce utterances and texts. In an example new to me, Baron and Campbell (2012) report a practice of talking into one's cellphone when nobody is on the other end in order to repel unwanted interlocutors physically present. Goffman (1981) discusses how lone talk can be deployed in a public space without attracting negative imputations of insanity.

We found the playful texts, 1–5, fascinating in their addressive qualities. They are dialogic in establishing, for however brief a time, a 'frame' in Goffman's (1974) sense, enacting particular scenes with their attendant relationships and associations. These turns are dialogic in being strongly addressive in their assumptions of shared cultural knowledge and in demonstrating strong adjacency qualities – that is, calling out for a reply even when they know none may be forthcoming. The students' texts are interestingly apposite to the apprehension of new channels. Remember that the chatroom was a novel experience of the potentiality of synchronous, distanced, written communication. This seemed to evoke a sense of disembodiment, or invisibility of the body. So for example, 'is there anybody out there?' and 'anybody home?' seem attuned to the idea of calling out in a situation where embodiment or visibility is in doubt.

I will return to these texts below but first move on to Text 6, a transcription of the telephone box play by a child called Mark, part of dataset 2.

Text 6

Pretend phone call by Mark

1 Mark: hello mum
2 Mark: hello mummy
3 Mark: yeh
4 Mark: fine fine
5 Mark: I'm at school
6 Mark: yeh yeh yeh fine fine
((Robert is meanwhile in the doorway; someone is banging on the box side))

7 Mark: you can't come in ((not into the handset))
8 Mark: yeh yeh fine mum ((back into the handset))
((Mark keeps looking around, distracted by the other children talking, walking and swinging on the doorway))
9 Mark: wait a second mum ((into handset))
((Mark puts down phone, stands in doorway, blocking it with his body. Altercation with other children but later returns to phone and continues call))
10 Mark: yes yes ((into handset))
11 Mark: where's you been down t'market today
12 Mark: no, no I've been very good
13 Mark: ok?
14 Mark: bye ((hands over to Robert))

Note on transcription
This broadly follows standard linguistic conventions of transcribing talk, for example in avoiding capitalisation at the beginning of turns. Since in young children's telephone discourse turntaking practices are not the same as adults' in that pauses are both regularly produced and heard as unmarked (Veach, 1981; Gillen, 2002a), only pauses that are four seconds or over in telephone talk are shown.
, = short pause
? = rising tone
(()) = information on activities

Note how effectively Mark, only four years old, differentiates his pretend talk to his mother from the communications with his peers. His pretend telephone talk demonstrates understanding of the salient features of telephone discourse (see Hopper, 1992 for a distillation of earlier conversation analysts' work identifying the structure of telephone discourse in the era restricted to landlines). A full analysis of the pretend calls from this study demonstrated that as pretend calls increased in length and complexity they tended to include, in order of prevalence, openings, backchannels, closings, mutual identification and preclosings (Gillen and Hall, 2001a).

Interested at this point in addressivity, the quality of turning to others, I suggest that Mark's pretend talk shows clear responsiveness to the imagined participation of his mother. Volosinov's comment is timely here:

> Utterance, as we know, is constructed between two socially organized persons, and in the absence of a real addressee, an addressee is presupposed … there can be no such thing as an abstract addressee.
> (Volosinov, 1995: 129)

It is almost impossible to read the transcript as monologue without supplying the imagined enquiries as to his welfare, whereabouts and whether he is being good at school. Particularly delightful is the well-chosen piece of telephone etiquette, when, interrupted by other children, he says 'wait a second mum', before temporarily leaving the handset aside to repel intruders.

I now turn to transcriptions from the third dataset, texts written by my daughter Kathleen in three domains when she was 11 years old.

Text 7

An excerpt from Kathleen's Religious Education (RE) exercise book:

Birth ceremony
19th August
name: Paradise of the genera
place: front beach for the service, Cave for the party
time: Sunset
Activities: Ceromy, we will sing and dance to drums. The baby will have a crown of leaves and a red silk dress. It will be dipped in the water and be given presents. In the party we will all be in the cave with candles all around and we will each either sing do a play or dance or perform anything, for the baby.
Clothing: colours of the sunset.
Naming of the baby: The parents will announce the babies name, suggestions are welcome.
food: fresh fruit, mango, bannas, organges, pomogranites, dishes are welcome
presents: each person will give a picture from octopus ink, or things from the day.

Note on transcription
I have typed out the original handwriting. Spelling and punctuation are as shown. Deletions or other orthographic irregularities (few of these) are not shown. The layout preserves the beginnings of lines but not all wrapping.

At the time, I particularly considered Text 7 in relation to texts 8 and 9 shown below, considering its closeness to standard English. Of the three texts, produced very closely together in time, this is the closest to standard written English. There are a few errors in spellings, most notably in the list of fruit and the long word 'ceremony'. 'Babies' should be written as 'baby's'; apostrophes are notoriously difficult and struggled with by many older L1 English speakers when writing. There is some inconsistency in use of capitals; however, where the text includes a run of sentences as opposed to a list format, i.e. after 'Activities', correct use of capitalisation at the beginning of sentences is displayed. Overall, the text displays a particular structure, very probably a template imposed as part of the school task. I believe this was orientated to as a school task and expect that this was received by her teacher as a serious engagement with it. With no further information around the text after this lapse of time, that interpretation does rely on some background understanding, for example my recollection that my daughter was enjoying her RE lessons at this time, finding the teacher particularly imaginative. The text is surely

crafted towards the teacher, expecting her to be at least the first reader, if not possibly the only reader. Addressivity is thus firmly embedded in interpreting the genre of school task understood here.

Text 8 is a collection of SMS text messages, here presented as one text.

Text 8

Selection of Kathleen's SMS messages to me in August 2005:

05.08.2005 16:36 Yup
12.08.2005 21:24 Kk
12.08.2005 21:28 Sittin
12.08.2005 21.34 Gd
12.08.2005 21:58 Mummy
21.08.2005 12:15 Chelseas
21.08.2005 12:19 Jessica invitede me 2 go bowling
21.08.2005 12:22 1.00
21.08.2005 12:28 I walkin
21.08.2005 12:29 I had 2 borrow a £5
21.08.2005 12:31 Kk

Note on transcription
The automatic identification of my daughter's name has been removed: this appeared between the date/time stamp and her authored message.

The most immediate striking point about Kathleen's SMS message output here is that generally the turns are very short. Several appear to be minimal responses to questions. On the other hand, the message 'Jessica invitede me 2 go bowling' reads as the initiation of a new topic and therefore needs more salient information including and thus a longer length. In this turn, one word is misspelt: 'invitede' and '2' is used for 'to', a common feature of informal digital writing (Werry, 1996; Crystal, 2006). To my mind, even the short minimal responses are of some interest, such as the selections of 'Kk' and 'Yup'. K made great use of two- and three-letter messages to convey agreement and compliance. With 'yup', 'yay', 'yeh' and many other variants she used the maximum economy to communicate a range of affect, while signalling some measure of agreement or acknowledgement to her mother. Thus even the shortest of turns displays a sense of addressivity, an orientation to the understanding of the addressee, conveying essential information while creatively crafting evaluative diversity.

Text 9

This was a script for a history play, worked on outside school to be performed in class. It was the performance that was made visible to the teacher and classmates; the script was for the use of the performers only. It was

produced at about the same time as Texts 7 and 8. Written down by Kathleen, it was authored collaboratively.

KG: That's a good idea but I thick we should leave her there for the time being the area is closed off
RD: Whats this (walks off to Katy's missing shoe)
KG: It's a shoe kind of obvious
RD: I no that but why is it over here
JN: And why has she got bruises all over her
KG: It seems to me like a 422
RD: oh you mean when someone has been killed by the murderer using one of her own objects
RD: I'm sorry but I must be getting home bye (starts to walk away)
JN: (Walks After her) Stop you are our number one suspect. I'm taking you downtown Is that clear.
RF: (crys)
RD: (softly) now where do u live?
RF: (sobs) 3 thursden ave

Note on transcription
Original spaces between lines have not been retained – the original displays considerable gaps between lines.

This script of Text 9 occupies something of a 'third space' domain (Moje *et al.*, 2004; Marsh, 2010). It was orientated to school in that it was the script for a performance required at school; yet I noted that the writers/performers had the understanding that the written version would not be shared beyond their circle. Therefore there was no need to abide by the conventions of standard English, although of course the script had to be adequately close to that in order to be comprehensible by all members of the group. The script demonstrates clear understanding of the convention to differentiate words for the actors from stage directions, as all the latter are placed in parentheses. The layout is even more appropriate to the genre for functional reasons than is shown on the transcription: each turn is on one line only rather than being wrapped and there are spaces between the lines, making it very easy to glance at the script and locate a particular turn or direction.

Bakhtin (1986: 60) wrote that speech genres display patterned 'thematic content, style, and compositional structure – [which] are inseparably linked to the *whole* of the utterance and are equally determined by the specific nature of the particular sphere of communication'. When performed as spoken dialogue, the script shows some understanding of a dramatised crime scene investigation genre, with the discusson of evidence, use of jargon, confrontation with the suspect and so on. As a written document, this was clearly designed for a specific audience and for a specific purpose. All these texts then are profoundly dialogic.

Heteroglossia

Volosinov asserted the dialogic quality of all utterances termed monologic, whether spoken or written:

> Any monologic utterance, the written monument included, is an inseverable element of verbal communication. Any utterance – the finished, written utterance not excepted – makes response to something and is calculated to be responded to in turn. It is but one link in a continuous chain of speech performances. Each monument carries on the work of its predecessors, polemicizing with them, expecting active, responsive understanding, and anticipating such understanding in return.
>
> (Volosinov, 1995: 115)

Texts, then, whatever the mode, are orientated to an audience whether actual or imagined, close or distant. It is impossible to write without a sense of previous writings and it is impossible to read or speak without in some way placing the specific text to hand in relation to previous texts. We would make no sense of any communicative practice in an ahistorical vacuum without cultural understandings.

Addressivity implies the second of the principles in this framework, the 'living, tension-filled interaction' (Bakhtin, 1981: 279) in which words meet: *heteroglossia*. Suffused with previous uses in space and time, each utterance contains internal tensions. They simultaneously strive for coherence and contain contradictions that splinter any possibility of a unitary, permanently fixed meaning. Bakhtin used the metaphor of weaving, itself the basis of the English term 'text' and its variant forms (texture, textile), to describe relationships between utterances:

> The living utterance, having taken meaning and shape at a particular historical moment in a socially specific environment, cannot fail to brush up against thousands of living dialogic threads, woven by socio-ideological consciousness around the given object of an utterance.
>
> (Bakhtin, 1981: 276)

Kristeva (1986: 37) describes Bakhtin's model as that of 'a mosaic of quotation', so capable of multiple readings. Heteroglossia accounts for the possibilities we are given as purposeful readers to analyse texts. Addressivity and heteroglossia are related terms; neither can exist without the other. Addressivity particularly explains the temporal positioning of the text, its relation to earlier texts and anticipation of future. Heteroglossia emphasises the complexity of contested meanings within any text, any word even, the tensions of voices meeting in one place, that to poststructuralist understandings in particular demand constant yet unfinalisable deconstruction (Sperling, 2004).

As with addressivity, the concept of dialogism, or dual-languagedness, is seen by Bakhtin as the property of all language. This is because he sees language itself as not unified but composed of diverse languages or voices – heteroglossia – which interact in any text by dint of the fact that texts are themselves sites where meanings are contested and positions brokered. In terms of applying Bakhtin's concept of dialogism, at least two distinct areas appear to feature, in the form of *intra-* and *inter*textual relationships (see Vice, 1997). While intra-textual dialogism refers to the ways in which participants anticipate and incorporate the position of the interlocutor – what Rommetveit (1992) terms 'a constant attunement to the attunement of the other', inter-textual dialogism refers to the echoes set up between texts across a culture and through time, producing, according to Todorov (1984: 10), 'discourses in relation to which every uttering subject must situate himself or herself'.

To return to texts 1 to 5, it is possible to read them in terms of a variety of cultural connotations. Angela Goddard and I were able to bring to bear our understandings of popular culture references to our interpretations, while being aware these were not necessarily identifical to those the students had in mind. For example, 'hello hello hello' is a well-known phrase supposedly used by the stereotypical English policeman of former times, the implication being that the addressee is getting up to mischief (the full version of this would be 'hello hello hello, what's going on here then?'). The sentiment here fits notions of invisibility associated with being online: if people cannot be seen, then they could be getting up to no good. The same concept of invisibility, played with in terms of dis/embodiment, seems to be at the core of 'is there anybody out there?' and 'anybody home?'. The term 'any/body' is interesting in itself from this point of view. 'Is there anybody out there' could also be an intertextual reference to the US-originated TV series *The X Files* and its search for extra-terrestrial life; or a reference to the Pink Floyd song, 'Dark Side of the Moon'. Two other phrases – 'morning campers' and 'England calling' – have, for UK speakers, very strong connotations of twentieth-century broadcast communication, the first with associations of holiday camp pa systems, the second with World War II radio messages or, more recently, the annual Eurovision song contest. A quality of broadcast communication is that the audience cannot be seen.

The theme of disembodiment was a recurrent one in many discussions of the new technologies of the era (for example, Stone, 1995). Perhaps these texts demonstrate something of the widely shared perceptions that influenced scholarly work.

Returning to Text 6, as Mark is acquiring 'telephone language' he is in effect learning that the world is heteroglossic and acting on that knowledge. Note how he already shows how different sorts of dialogue, in Bakhtin's terms, brush up against each other. Mark weaves the dialogic threads of face-to-face discourse very skilfully with those demanded by the pretend caller, even bringing into play the polite piece of phone etiquette 'wait a second,

mum'. The conversational themes of his elders and how theories are couched in the local community are beautifully revoiced in the query, 'where's you been down t'market today'.

Text 7, from the school exercise book, displays considerable coherence, with its links around the 'present' and 'sunset' themes, for example. As I have already remarked, the structure of the text with its use of name, place, time, etc. strongly suggests a template, perhaps a way of classifying or categorising actual and invented rituals. The specific content of what I take to be the invented fictional elements display a coherent rendition of a fictional trope, an idealised tropical island paradise.

Transposition

Kristeva's work on intertextuality is, by her own account, highly indebted to Bakhtin. However, she laments the fact that the term has come to mean a simple tracing of connections, when her intention in her own writings was to stress the notion of transformation in every intertextual event:

> The term intertextuality denotes the transposition of one (or several) signsystem(s) into another; but since this term has often been understood in the banal sense of 'study of sources', we prefer the term transposition because it specifies that the passage from one signifying system to another demands a new articulation of the thetic – of enunciative and denotative positionality.
>
> (Kristeva, 1986: 111)

So according to Kristeva, transposition must involve modifications in the expressive force of, for example, a word as it appears in talk in one context and then in print in another, and even more than this a change in how that word points to the world beyond the text. Kristeva's notion of transposition can be readily related to similar notions, such as that of semiotic remediation proposed by Prior *et al.* (2006). While springing from concerns over recontextualisation in reported speech, Prior *et al.* attend to the multiply semiotic performances involved in specific practices, including even pretend play. In their interpretations of the complex inter-weavings of a young child's impersonations and collaboratively created pretend characterisations of fantasy human and animal form, they draw on Goffman's assertion that even the young child 'learns just as early to embed the statements and mannerisms of a zoo-full of beings in its own verbal behavior' (Goffman, 1981, cited in Prior *et al.*, 2006: 749). Semiotic remediation then is also a concept that traces communication as they are recontextualised over both short and long time frames, paying attention also to the affordances of modes.

The degree to which telephone dialogues entail transposition in Kristeva's sense of a new positionality should not be underestimated. Mark's call shows

strongly that he has grasped the quality of telephone talk in that it extends occasions for speaking across distances. There would be little point in describing his current or immediately preceding actions to a physically present interlocutor unless trying to involve them in a relevant way, such as trying to describe the immediate past in such a way that it might become the foundation for a jointly projected plan. But Mark's intention is otherwise, and a perfectly common function of telephone talk: to reassure one's relations about one's wellbeing while demonstrating thoughtfulness towards the notion they may be concerned about oneself – engaging in a circle of mutual affirmation of support and reassurance.

The notion of semiotic remediation, as Kristeva's notion of transposition, highlights that analysis of texts can not only encompass intertextuality in the sense of studying earlier sources of a particular linguistic occurrence but also examine the affordances of the mode of communication itself. Recall how texts 3 and 5 involved the broadcaster's sense of issuing a communication to unknown or invisible addressees.

I suggest Text 9 is also particularly interesting in terms of transposition. This is a text of (planned) talk written down. It is associated with the school environment but will not be presented to the teacher. There are signs that the writer is drawing on a repertoire of spoken language, couching the script in turns that demonstrate coherence across turns and reactions to events. In writing, obviously K has also drawn on earlier experiences of writing. There are features here that deviate from standard written English and that I surmise could be drawn from other writing practices: particularly prominent at that time for her was the writing of SMS text messages.

Understanding this third space setting, the use of the apostrophe is an interesting feature. Apostrophes to indicate contractions have evidently been assimilated in some very common uses, such as 'That's' and 'I'm' – the latter is rendered correctly twice. Yet in line 2 there is 'Whats', omitting the apostrophe as one might informally. It is interesting that in turn 9 there is no full stop after 'downtown', as conventionally there ought to be, but the next sentence is initiated with a capital letter. The question 'Is that clear.' is finished with a full stop rather than a question mark; perhaps it is understood as what is commonly termed a 'rhetorical question' rather than one truly expecting an answer, so that the non-verbal response of crying is appropriate. On the other hand, 'now where do u live?' with its question mark elicits an appropriate answer.

Apostrophes may be relatively less easy to produce in texting than in word processing, in that in the former a writer would have to move from the alphabetic keypad; but I do not have access to the phone specification K was using at the time to be sure. I believe I can see instances of usage pulled over from texting practices: the 'no' of line 4 and the 'u' of line 11. Capitalisation is mostly standard but not invariably and punctuation is mostly not used, presumably as rarely necessary for understanding.

Angela's IRC data exhibit an extraordinary range of interjections that take their expressive force from their history of use in speech. These are termed 'response cries' by Goffman and defined as 'exclamatory interjections that are not full-fledged words' (1981: 99). Examples in the IRC data include 'oops' (Goffman describes this as a 'spill cry') and 'aargh' (a 'threat startle'). But there is also dramatised embarrassment ('ahem') and stupidity ('durr', 'nur'). Goffman, in referring to all such interjections as 'conventionalised blurtings', highlights two aspects that many of these items share: they dramatise feelings escaping from the control of the speaker; and the spelling of them is often conventionalised. Goffman does not use the term intertextuality, but this is clearly what he had in mind when he points to cartoons and comics as the source of the spelling of such items as 'aargh' and 'eek', and to the comic strip convention of using these items to represent the inner thoughts and feelings of the characters from whom such 'blurtings' escape.

The use of words and symbols to describe non-verbal behaviour and paralinguistic effects, such as *laugh*, is well known (Werry, 1996), but the IRC data also feature animal impersonations (such as 'WEEEEWo' for a 'skweeling piglett') and onomatopoeic terms ('entry clank, clank a lank' to mimic the chatroom door chime). There is also an exhortation to be quiet – an interesting term to use in a writing-only environment – couched in an intertextual reference to wartime propaganda: one UK student warns another: 'shshshshshshshshsh … walls have ears, you never know who is listening!'

Goffman also refers to the fact that, as well as writing taking its cue from sound, the opposite can occur: we may have written 'tut-tut' because of the fact that we made that noise, but the fact that we have written 'tut-tut' means that we now also *say* 'tut-tut' as words (1981: 113–14). Something of the complex inter-relationship between speech and writing can be seen in the onomatopoeic example given above: 'entry clank, clank a lank'. The student writer starts with the conventionalised piece of onomatopoeia, 'clank', to indicate the noise of the door chime, then extends the onomatopoeic base of this item by playing with its form, not just as sound but as a form of graphical representation too. Like Goffman's example of 'pant pant', the student's utterance, along with many others in our data (for example, 'burble burble'), shows the human ability to play with notions of reality and artifice, this being, according to Goffman, 'a route to ritualisation unavailable to animal animals' (1981: 113). Such examples highlight the nature of human language as dramatic social action and the fact of participants' metalinguistic awareness.

Conclusions

In approaching these data from a Bakhtinian perspective, I have been able to begin to consider the way those 'drafts of contracts' are put into practice by new users of communication channels. A dialogic approach allows for the

conceptualisation of participants not only as active and co-productive but also as creatively drawing on their linguistic repertoires as cultural resources. They inherit texts but also renew and reshape them according to the needs of the time and the moment.

The Bakhtinian diaogical approach to language highlighted the importance both of diachronic and of synchronic textual relationships in understanding language in use. Those theorists were not specifically concerned with practices with manifestations of language brought about in conjunction with evolving technologies. Concepts such as addressivity, heteroglossia and transposition can be extended to embrace new practices with language that to some degree are shaped by the affordances of specific technologies (Goddard and Gillen, 2013 [2001]).

Bakhtin wrote about speech genres, but it seemed to Angela Goddard and me that his argument, beautifully enunciative and denotative of face-to-face spoken communication, can also be applied to other channels, necessarily taking into account the idea of transposition. Bakhtin (1986: 60) wrote: 'Language is realized in the form of individual concrete utterances (oral and written) by participants in the various areas of human activity.' Human activity is profoundly cultural; we make sense of new experiences in the light of values and practices we have been socialised to take positions towards. In the words of Hammel cited above, culture is an 'evaluative conversation'. We make sense of texts through their relation to other texts and, as in all human cognition, determine patterns and anomalies. Whether 'genre' is always the most appropriate word to denote such patterns can certainly be disputed, as the word is employed in very diverse ways even in linguistics alone (see Swann, Deumart, Lillis and Mesthrie, 2004), but it seems useful in trying to distinguish text types, even if boundaries are always fuzzy and any specific genre can be regarded as hybrid.

Cultural psychology (Bruner, 1990; Cole, 1996) drew upon Vygotskyan and Bakhtinian theory in asserting the essentially cultural foundations of cognition and language. Again, considerations of overlap and difference between cultural psychology, cultural-historical activity theory (CHAT), sociocultural theory and other related terms are beyond my scope here. In these perspectives, language cannot be approached as if decontextualised, divorced from activity, and thus some understanding of discourse is essential. Further, significant also to any language analysis is the identification of the influence of the particular mediating channel. Scollon's concept of mediated discourse captures beautifully the quality of language's polyvocality:

> Communication … must make use of the language, the texts, of others and because of that, those other voices provide both amplification and limitations of our own voices. A text which is appropriated for use in mediated action brings with it the conventionalisations of the social practices of its history of use. We say not only what we want to say but also what the text must inevitably say for us. At the same time,

> our use of texts in mediated actions changes those texts and in turn alters the discursive practices.
>
> (Scollon, 1998: 15)

In the emergent present of any act of communication, the generally unconscious but still shaping memories of history of use are entwined with the configuring effects of the nature of the communication channel. Just as the model of language as a conduit for ideas has long been quizzed and found seriously wanting (Reddy, 1979), so 'context' cannot work as a container metaphor to identify what lies around the linguistic code, whether offline or online (Leander, 2002). The study of language as social interaction demands examination of attempts at intersubjectivity. Active engagement with the spatial and temporal characteristics of texts as shaping and shaped by interactions is required. The heteroglossia of language is not an optional extra, to be pointed out occasionally as an ornamental, 'literary' device; it is intrinsic to the language we use every day.

I have argued that these ideas are applicable across digital and other kinds of communications, and so set up a something of a framework for understanding. In the following chapter I turn back to an online project, arguably an epitome of digital literacies practices, Schome Park.

5

'SPbT WHISPERS: UNSQUISHING ROWAN SPARKER'

Approaches to the discourses of Schome Park

Exploratory aims

In this chapter I return to the Schome Park project, introduced at the beginning of Chapter 1. I explore the range of literacy practices taking place in Schome Park, a simulated 3D island world, during a fifteen-month period, February 2007 to May 2008. I consider the challenges and rewards of ethnography when applied to a complex media ecology. Schome Park was an online environment and a direct investigation of the connections between online interaction and the physical world, such as that in Chapter 3, was not possible. I term my approach a virtual literacy ethnography, tracing how in practice I have tried to develop an appropriate synthesis of methods to a longitudinal online project. These methods include corpus linguistics, possibly a relatively unusual component of an ethnographic approach.

Engagement with literacy practices in virtual worlds remains exploratory, not least because virtual worlds, in some guises at least, appear to be less prominent as a topic of popular media discourse and scholarship at the time of writing than they were for several years until 2010. Each researcher driven by a different blend of backgrounds and goals needs to lay out their own trajectory. I seek to analyse some dimensions of these contexts that are novel in terms of new blends of semiotic resources, overlapping sets of purposes by those involved and particular aspects of identity that are shaped and reshaped as learning takes place. In this research I was untrammelled by a single target, such as evaluation according to the aims of a single external funder, and it was indeed our openness, enthusiasm and sense of treading new ground that made it such an enjoyable and thought-provoking project for many of us. Key publications about the project include Gillen *et al.* (2009); Twining (2009); Twining and Footring (2010); Clough and Ferguson (2010); Ferguson (2011).

I include in my data selection exemplars of playful work that draw on recognisably persistent and valued genres transposed to new channels. This demonstrates some continuities with the practices of other enthusiastic users of new technologies explored in Chapter 4. One aim in this respect is to build

bridges to those interested in digital literacies who have not yet engaged with cutting-edge technology innovations, perhaps do not see any need to do so or who are experiencing challenges. This is not because I want to add to the social pressures to jump on the latest innovations that so bombard us as consumers, but because I wish to challenge the highly dichotomised media discourses that sometimes characterise writings about children in virtual worlds. To take one example contemporaneous with the project, the BBC journalist John Humphrys, writing in the *Daily Mail*, posed the following questions under a subheading, '"virtual reality" websites – a disturbing world stripped of humanity and moral values':

> What the hell is it? What's the point of it apart from allowing a few people with nothing better to do to play out their fantasies? And above all, if it is really going to change anything, at what point does fantasy merge into reality? The answer to that last question is that it is already happening and with potentially disturbing results.
>
> (*Daily Mail*, 5 January 2008: 40)

In this chapter I present evidence to suggest that more constructive questions to ask of the environment might include: what was new here? What was going on in terms of digital literacy practices or indeed development of skills? How do certain new technologies provide specific new opportunities, if they do, and if so, how worthwhile are these, including from the perspectives of those engaged? This is truly exploratory work in the sense that I also endeavour, in an anthropological spirit, to 'make strange' the already familiar to others engaged in virtual world technologies, not least in specifically examining the potential of methods for their study. Uncertainties around the appropriateness of existing research methods to new combinations of communications technology can be productive (Hine, 2000).

First I outline a general introduction to the project in order to enable situated understanding of its literacy practices, including brief adumbration of my own involvement. I then introduce an explanation of virtual literacy ethnography, engaging with the multimodalities of the project. I can then pass on to working with specific illustrations of sites of engagement, moving through methodological approaches that I consider salient in having a particular interest in learning. This includes an introduction to corpus linguistics, assuming no previous knowledge of this methodology.

The Schome Park programme

In February 2007 I joined the Schome project shortly after it opened its first island for teenagers on the *Teen Second Life* sector of the virtual world *Second Life*.[1] The project ran in three phases between February 2007 and May 2008, with some pauses for technical changes – especially building developments,

expansion of the island/s and new waves of participant recruitment. As will be described, some communicative domains of the project, including the forum and wiki, ran throughout.

The Schome community, led by Peter Twining of the Open University, was already active as an essentially voluntary organisation under university auspices, comprising a wide range of people interested in what might loosely be termed alternative models of education. Including academics, parents, young people, policy makers, educators and other interested parties, the Schome community was established with the consciously highly ambitious aim of creating, according to the Schome Homepage, 'a new form of educational system designed to overcome the problems associated with current education systems in order to meet the needs of society and individuals in the 21st century' (Schome, 2007).

Seeing itself as a virtual community (Barab, Kling and Gray, 2004), Schome, sometimes calling itself the Schommunity, sought and engaged with a wide variety of perspectives on educational practices and potential educational futures, consistently enacting a view that genuine participation by learners must be instantiated at all stages of planning and operationalising education. Within the Schome community technology was seen not only as a tool to support and extend existing practices but also as having the potential to transform ways of representing the world and supporting learning. Having a particular interest in what were then termed 'new literacies' (Lankshear and Knobel, 2006; Tusting, 2008 and see discussion below), I was attracted by the Schome community's decision to explore the potential of virtual worlds. We wanted to investigate in practice their capacity to act as spaces in which visions of future practices and pedagogies can be built and experienced, making it 'possible to construct, investigate and interrogate hypothetical worlds' (Squire, 2006: 19).

At the time the fast-growing virtual world *Second Life* was split into two distinct areas designed to be mutually inaccessible. *Second Life* was aimed at adults aged 18 and over, while *Teen Second Life,* later closed, was restricted to young people aged between 13 and 17 and credentialised adults. In October 2006, supported by funding from sources including the National Endowment for Science Technology and the Arts, the Schome community purchased an island in *Teen Second Life* called Schome Park. Schome Park, or more properly the Schome-NAGTY Teen Second Life Pilot,[2] was the first European enclosed island on *Teen Second Life*. 'Enclosed' here means that use is restricted to children invited to join the project, usually via their schools, with the written informed consent of their parents and schools as well as themselves, plus adult staff members of the project who are individually recruited and have had their credentials checked through the Criminal Records Bureau (enhanced disclosure) or equivalent for foreign nationals. Once joined, avatars could not leave the island to visit other areas of *Teen Second Life*, nor of course *Second Life*.

With child safety uppermost, it was essential to ensure that interactions were restricted to members of the project, and also to clearly distinguish the project from *Second Life*. At the time of the project the adult arena *Second Life* was receiving considerable negative media attention, for instance with regard to its burgeoning actual economy and its enormously diverse range of activities, including gambling (later banned) and sexual simulations, still prevalent in 2013. As an ethical educational project with external funding, the Schome community was vigilant in ensuring that participation in the project was restricted to credentialised individuals, both students and staff, and that conduct was appropriately overseen. Anonymity of students was preserved within the project, although a securely held database with real contact details was held by a few members of core staff in the event that any concern should be raised online as to a 'real world' emergency necessitating contact with an actual individual and his/her parents/guardians. To my knowledge such an emergency only occurred a few times, for example when one volatile individual claimed he was seriously ill and alone. The project director phoned his parents and found fortunately that this was not the case. I had potential access to the database during much of the project, but never used it. During the project I did not know the students outside their pseudonyms, avatar representations and writings. In view of the later popularity of voice (i.e. the enabling of speech) in *Second Life* it is salient to note that during most of the project voice was not enabled. Even when it was technically possible in the latter stages the community preferred not to use it, so I heard a tiny amount of speech in-world on only a handful of visits.

My identity then was that of a member of staff with certain responsibilities and commensurate powers, but that characterisation is inadequate to express the identity I felt I performed in the environment. This experience felt indeed like a new way of performing an identity in Goffman's (1959) sense, a synthesised way of projecting aspects of appearance and actions as a novel self. For through my avatar, Rowan, while I was indeed a researcher taking a lively interest in many aspects of the project, an equally strong if not stronger aspect of my identity was as a learner. I was conscious of being slower to learn how to manipulate the avatar and environment than many students, in part perhaps because I was simultaneously acting as a researcher, endeavouring simultaneously to record and reflect while gaining new skills and knowledge.

Digital literacies, ethnography and virtual worlds

I sketch out why 'virtual literacy ethnography' may be an appropriate term to delineate the mixed methods I employ to study these and related phenomena.

As mentioned above, it is probably useful to characterise a notion of 'new literacy practices' or 'new literacies' as a concept mostly but not entirely mappable onto contemporary digital technologies and the methodologies with which these are studied. As Lankshear and Knobel (2006) discuss,

contemporary digital technologies are associated with new blends of semiotic resources, especially presented online. There may be new opportunities for collaborative meaning-making, rapid dialogues in diverse formats and potentialities for communicating across what might previously have acted as obstacles to access, such as those related to time, space and aspects of embodiment, including dis/abilities in the real world. Concepts such as Web 2.0 and digital literacy capture aspects of these relationships between social practices and involved technologies (Anderson, 2007; Merchant, 2007, 2012). Lankshear and Knobel (2006) put their theoretical emphasis above all on the practices involved – and therefore bring to their understanding of new literacies certain practices that are not centrally focussed on the use of new technologies such as print format manga comics, scenario-building in institutions and sophisticated card games like Pokemon and Yu-Gi-Oh (Lankshear and Knobel, 2006: 22–7).

This sensitivity dovetails with the perspective known as 'New Literacy Studies', later 'Literacy Studies', that has developed since the 1980s (e.g. Heath, 1983; Street, 1984; Barton, 1994, 2007; Gee, 1996; Barton and Hamilton, 1998; Pahl and Rowsell, 2006; forthcoming; Papen, 2007; Baynham and Prinsloo, 2009). Literacy studies remains relevant as a springboard to understandings of literacy in a shared focus on the situated character of functions of literacy, recognising the diverse purposes and understandings with which people deploy their own expertise in the production and uses of texts (Barton, Hamilton and Ivanic, 2000; Baynham, 2004). Regarding literacy in terms of skills and levels, to be tested in inauthentic exercises, undervalues the vernacular literacies and ways of learning of people's everyday lives (Tusting, 2013). People's multiple literacy practices are shaped by a constellation of factors, including their previous experiences and access to social and cultural resources (Williams, 2009).

Any characterisation of a 'school of thought' such as is communicated through the term literacy studies is at risk of over-simplifying the rich diversity of work that is imbued with strands of thinking from different disciplines; however, the adjective 'ethnographic' characterises a certain commonality of interest in capturing the manifold dimensions of (new) literacy practices relevant to my interests here. By ethnographic I mean to signal a commitment to use mixed methods to explore the research participants' own perspectives on events, to recognise the complexity of influences on practices and events and to seek to reflexively consider the researcher's development of interpretive understandings. The concept of ethnography has moved away from its original social anthropological characterisation as being associated with endeavours to follow its human subjects through every aspect of their existence, recognising that this was always limited in some way. So, for example, the ethnography of education analyses the everyday life of the classroom, seeking to interpet its culture, or how people make meanings, using participant observation and interviews as key methods (Anderson-Levitt, 2006).

Virtual ethnography or cyberethnographies are clearly a comparable development, through which researchers use interpretive methods to explore the

dynamic culture of online communities or virtual worlds (e.g. Hine, 2000; Carter, 2005; Crowe and Bradford, 2006; Thomas, 2007). Naturally, the particular aspects of culture most sensitively explored by researchers reflect their particular disciplinary backgrounds, so in the examples just cited the emphases are on social science methodology, geographies of virtual environments, social relations and identity, respectively.

Conducting and writing any kind of ethnography requires careful thinking as to scope, methods and structure. Many notable online ethnographic researchers claim that the range and depth of engagement permits the claim of a fully ethnographic approach (Hine, 2000). Lysloff (2003) vividly compares the mental and physical exhaustion of his online ethnography in musicology to the previous also extreme demands of his more conventional fieldwork in Java. He made a radical disjunct between the physical world of his earlier project and the online engagement of the latter, whereas some ethnographies may focus on the online but use elements of face-to-face engagement. Carter's ethnography of a global virtual community, *Cybercity*, makes use of multiple methods online but supplements these with a few face-to-face interviews towards the end of engagement, 'providing useful backup when discussing authenticity and truthfulness' (Carter, 2005: 150).

Some online research of considerable depth and scope claims to be using ethnographic approaches rather than being a full ethnography, making use of Bloome and Green's (1992) distinction; for example, Barton and Lee (2013) conducted a longitudinal study of Flickr sites involving linguistic and multilingual textual analyses plus online surveys and interviews. Androutsopoulos (2008) terms his combination of systematic observations of activities and interviews with textual analysis discourse centred online ethnography.

Leander and McKim (2003) develop a spatial perspective on ethnography to examine the flows of adolescents between online and offline spaces, critiquing notions of the internet as somehow a world apart. Beneito-Montagut (2011) sets out a user-centred ethnographic methodology, which allows the participant to specify their salient domains, working online and offline. A team led by Ito (Ito *et al*., 2009) carried out a large-scale multi-site ethnography over three years of youths' digital literacy practices. Working on a very different scale, Martin *et al*. (2013) took on the challenge of approaching microethnographic understandings of activities through the dense analysis of online and offline interactions together, investigating expertise in the Massively Multiplayer Online Game (MMOG) *World of Warcraft*.

I can appreciate Beneito-Montagut's (2011) argument that research methods that can take account of activities offline and online may be preferable, since online interactions are engaged in by people embodied with material connections to data through screen, keyboard and other mediating tools (Gillen and Merchant, 2013a). People do not bring a wholly new consciousness to online activities but participate even in the most strikingly novel interactions with dispositions grounded in the range of their previous experiences (Beavis, 2013).

But different research projects, like most life experiences, permit one range of responses while preventing others. Ultimately I find the stance on ethnography in virtual worlds proposed by Boellstorff, Nardi, Pearce and Taylor (2012: 4) justified, that ethnography can be deployed wholly within virtual worlds 'because ethnographic approaches are always modified for each fieldsite, and in real time as the research progresses'.

Communicative domains

It is important to distinguish between modes, spaces and domains, while at the same time being careful to see links between them. To take one example, studying the discourse of Twitter very quickly brings to the fore the salience of links, i.e. URLs directing the reader to other websites (Gillen and Merchant, 2013b). Of course, a resesarcher may choose to analyse tweets without taking these links into account, but this would be unlikely if an ethnographic approach is followed, since clearly the direction to another online space is part of the meaning-making practice.

My immersion in the Schome Park programme was unique in my personal experience in offering prolonged engagement, over 15 months, with people interacting online together in a complex range of online modes. Much of my object here is to convey to the reader something of the sense of the world as lived experience, necessarily and always restricted to the scope of my lens. I think that the most helpful way of doing this is to move in and out of various approaches, taking my data as artefacts with which to work. This necessitates a recognition of the multimodality of all texts. Thus, it is important not to attend to the language of texts as if their channel is transparent and has no effect on practices of reading and writing. On the contrary, 'the meaning work we do at all times exploits various semiotics' (Iedema, 2003: 39). This does not mean that at all times when dealing with a text I aim to deal adequately with all its semiotics. I can make use of illustrations; although as I shall show below, Figure 5.1 is not an illustration in the sense of a picture used to explicate the text or somehow make it more pleasant to look at. The interaction between detailed examinations of some particular textual artefacts, with some emergent general knowledge of the project as participant, can as I will show generate a desire to investigate some matters that may require some measure of systematicity in acknowledging the challenge of working with the enormous datasets such a project generates. Therefore I move on to demonstrating some use of tools that have been developed within corpus linguistics, showing their potential fruitfulness under an ethnographic umbrella. In this way I try to temper what could be an overly personal angle.

Engaging in such a large project I have never thought it adequate to only work with data that directly concerned my own experience. An auto-ethnography of Schome Park would be a highly justifiable and potentially interesting account – and perhaps a useful complement to Boellstorff's (2008)

justly celebrated pioneering ethnography of *Second Life*. But that is not what I set out to do and it would not be appropriate to my aims now. In previously published Schome research, one approach to remedying the limitations of my own personal experiences and understandings has been to write with others, invoking a group ethnography (Gillen, Ferguson, Peachey and Twining, 2012; Ferguson, Gillen, Peachey and Twining, 2013). This has also helped me to reflect on the ethical dimensions of writing with and about online participants, considering them individually and in terms of responsibility to a community (see McKee and Porter, 2008, for a richly thought-provoking discussion of ethics in digital writing research).

In this chapter I feel the appropriate approach is to engage explicitly with my different levels of participation and to move beyond personal experience. I include data relating to events Rowan participated in at the time while being conscious of my research role (for example through chat logs, accompanying fieldnotes and illustrations) through to events where I was in some sense on the periphery. Further, I include interactions I became aware of after their inception and finally move towards a systematic (albeit still very limited) approach enabled through corpus linguistics. Before moving on, I must mention again that I could never acknowledge sufficiently the debt I owe in all my understandings to those I interacted with, and those I have continued to work with later, in the Schome Park programme.

The forms of interactions across different channels were complexly patterned, exhibiting 'immensely different CMC formats' (Kytölä, 2012: 106). I was particularly conscious of three principal communicative modes I usually term project domains. The central focus for shared attention was the virtual island – which later became two islands. But while the islands were open (as well as when they were closed for respite, technical problems or redevelopment), communication continued via two associated domains. The most commonly used domain was a forum multiply threaded for asynchronous discussions. Also highly active was an evolving project wiki, a compilation of webpages that could then be edited by other project members. Furthermore, there was a wealth of other project communication tools – though probably each was engaged in by a relatively small number of participants – such as external blogs, dynamic profiles and so on, which I did not study. My principal sources of data then are:

- chat logs of near-synchronous dialogues and instant messages;
- forum postings;
- wiki postings (including images captured in-world);
- in-world sensor measurements (of how many people are in-world, and where, every minute);
- my field notes and captured images.

The three major domains of activity were almost always potentially available 24/7; that is, available if the participants wished and had the capacity to access

them. So in terms of temporality and persistence it felt like a 'world', a field-work site that no single researcher could gain a thorough understanding of. Equally, nobody could have interacted with all the other participants; one reason for this is that the project had an extremely long tail of very short or slight participation. But it is also true that in looking back over records I can find names (I will use this designation although they are always avatar names, so pseudonyms) that I could not later remember having encountered. This too lends depth to the sense of immersion in a world of its own that to me makes ethnography the only appropriate umbrella for the recruitment of diverse methods.

Since I seek to practise virtual ethnography with particular attention to the materiality of specific literacy practices, it seems to me that there is an opening for making a distinct delineation of a virtual literacy ethnography, as a term and practice. In this I am applying diverse interpretive methods and reflexive understandings to the meaning-making practices of a virtual community, attending particularly to the practices of authoring and reading written multi-modal texts. Sources of project data include: wiki postings (including images captured in-world to record events); forum postings; in-world sensor measurements (of how many people are in-world and where, every minute); chat logs of near-synchronous dialogues and instant messages; and field notes. A number of tools of discourse analysis (taking this term in its broadest sense; see Gillen and Petersen, 2005) are then available.

Rowan in the virtual world: a snapshot

Figure 5.1 is a screenshot, i.e. a copy of my PC screen, taken to show some features of the sort of view I typically saw when 'in-world', to use the prevailing word describing immersion into the environment. I have reproduced this screenshot in order to establish the the environment's complexity of reading and writing demands even before interaction with others is considered. It is important to note immediately that this image is already highly falsified, being black and white rather than full colour; many of the tones have been flattened, and the sounds have been removed. I am not going to describe all the functionality hidden behind the tabs that surround the scene; these can best be encountered through learning to use *Second Life* and/or reading a popular guide. But it should be noted that these have menus and submenus and thus entail considerable reading work, not least in deciding what is relevant or might be helpful at any given time. Engaging with *(Teen) Second Life* is a literacy activity, as are massively multiplayer online games (Steinkuehler, 2007). At the centre of the image is the avatar through which I was represented in-world, Rowan. At this point she was a punky-looking, fairly young woman with blue hair and wings, but during the project she had various quite different appearances – for example, a balding man in a labcoat, a young black man modelled on the footballer Emanuel Adebayor and a dowdy middle-aged

Figure 5.1 Rowan the avatar in Schome Park, 13 April 2008.

woman. *(Teen) Second Life* gives the illusion of three-dimensional space; Rowan could move around by walking, flying or running. It is often more useful to engage with the world through the avatar's eyes, but in order to present the avatar in the image for this purpose I have utilised the 'camera controls', which are the two superimposed wheels towards the bottom right. Rowan is standing in a corner of the steam museum which has been built very recently and is about to be associated with a 'murder mystery' event. Environmental print features commonly; here posters on the wall show photographic images of the 'real' steam engines and provide historical information about them. Steam Schomer made the two artificial steam engines visible as 3-D objects in-world; one emits authentic steaming sounds. At the top right of the image I have opened a map that indicates where my avatar is located on the island and where others are. At the bottom right I have opened my inventory which includes notecards – written texts that I have been given and decided to keep about events, instructions and so forth. They are authored by other community members. At the bottom left is an open white box with text inside; this is the main 'chat window' through which I could communicate synchronously with anybody close enough to see. I can also open up a further box for private conversations and leaving messages for those not in-world at

present. There are many links in-world to webpages and the other communication tools of the project.

This image has been kept simple in that Rowan is alone; if there were another avatar present and visible, the whole scene would appear to the second person from their avatar's/camera's perspective and their screen would also differ according to which tools and functionalities they were dealing with at that particular moment. So the screens we would be reading would look very different, even if we were interacting together. I fully realised the impact of this some months into the project when for the first time I sat next to another member of staff and saw her screen. For the first time I realised how this experience was radically different, not only from that of face-to-face engagements but also from online environments I had previously known. In the chatroom described in Chapter 4, for example, texts appear approximately the same from the different viewpoints. Viewers' different screens or browser interfaces may cause minor differences, but essentially the view of the bounded room and the text that lies within is identical for each logged-in participant. In face-to-face interactions we are familiar with different perspectives, but I will not be surprised to learn that somebody standing next to me can see the same sign just over the road, or at that somebody facing me is not at that point aware of a sign behind them. But in the virtual world not only will perspectives be quite different, but I cannot tell how many features of my environment are potentially visible to the other participant or just how different are the features of the setting we do share. This is partly a matter of familiarisation; as with any technology, familiarity with use renders the medium apparently more transparent, which really means we become better at grasping what is 'content' – figure as opposed to ground – as perceived through our own cultural lenses. But on the occasion when I first sat next to somebody else I was also interacting with in *Second Life* and was able to see their screen, I realised just how radically different a reading and writing practice this was from any of my previous experiences. It was not just the angles on artefacts, perspectives on people, that varied, but so many of the semiotic features were differentially present or absent or modified, in each view. This experience was an instantiation of the strongest claims for novelty in new media, such as Kress's description of 'radically changing forms and functions of texts, which go beyond traditional conceptions of what literacy is and has been' (Kress, 2005: 1). 'New literacies' are increasingly multimodal: 'meaning and knowledge are build up through various modalities (images, texts, symbols, interactions, abstract design, sound, etc.) not just words' (Gee, 2003: 210).

To return briefly to Figure 5.1, I mention that as a researcher Rowan displays a message saying 'logging chat' above her head, combating 'the illusion of privacy in cyberspace' (Frankel and Siang, 1999). I intend to remind Rowan's interactants that at all times she is preserving written records of any interactions she is involved with or reads in her immediate vicinity. Avatars

present in her environment may have private conversations through the messaging system she is not privy to, and all communications made when staff are not present, i.e. the majority, are not recorded.

First sample of chat log data

In order to present a glimpse of in-world interaction I discuss an extract from a chat log preserved from 22 January 2008. This data record is extremely impoverished in comparison with the original interaction situated in the 3D virtual environment, presented uniquely according to the vantage point and combination of potential semiotic resources utilised at the time by each participant. Nevertheless, it is useful for its preservation of the written text that has appeared in my chat window.

I have selected this extract as in some senses relatively accessible to the reader. One can recognise canonical conversational features from spoken talk such as openings and greetings (Sacks, Schegloff and Jefferson, 1974) that have been imported from participants' spoken linguistic repertoires and thus made their way into this genre. There is just one distinct narrative and fewer interactants than in logs of multi-party events such as meetings and other large social gatherings.

I first reread this extract six months after the event, using my field notes to bolster my recollection of the events. Beta island had recently opened for the third phase of the project. While exploring it I met baso, who several times during the project assisted my learning about the environment and how to explore it.

A brief explanation of some features should assist with reading the chat log.

It is organised by turn, each timed by the information provided within the initial square brackets. As discussed in Chapter 1, Garcia and Jacobs (1999) identified the different turn-taking system that operates in such quasi-synchronous dialogues, whereby each message is made available to other participants after it has been composed, rather than during, as in face-to-face talk. So overlaps in production are effectively hidden from view since turns are always organised sequentially. In a specific post a writer might be responding to an earlier turn than the one that appears in the log immediately above that entry. After the time entry is an identification of the writer of the turn; in this transcript 'You' is Rowan SParker; students are identified as '(name) Schomer'. All other entries are scripts, i.e. automated turns produced by in-world objects (that have been programmed to do this, in the instances evident here by students).

'The Transporter' extract from chat log:

1. [2008/01/22 10:59] baso Schomer: hey
2. [2008/01/22 10:59] You: hi baso
3. [2008/01/22 10:59] You: how are things?

4. [2008/01/22 11:00] Object: baso Schomer this option isnt finished just yet, please conact Baso 'spb'.
5. [2008/01/22 11:00] SPbTP whispers: Destination data loaded. Transporter is ready.
6. [2008/01/22 11:00] baso Schomer: good
7. [2008/01/22 11:00] baso Schomer: just set up the teleport network for everyone
8. [2008/01/22 11:00] baso Schomer: to help the get round
9. [2008/01/22 11:00] You: would it be possible for me to have a copy of the schome logo you have on your tee shirt
10. [2008/01/22 11:00] baso Schomer: i didnt make it
11. [2008/01/22 11:00] You: I thought it was you as I heard the star trek fizzing noise I like
12. [2008/01/22 11:00] baso Schomer: otherwise sure
13. [2008/01/22 11:00] baso Schomer: :P
14. [2008/01/22 11:01] baso Schomer: wel i configured it to be a cross between stargate and startrek now :D
15. [2008/01/22 11:01] baso Schomer: the beam is so last century :p
16. [2008/01/22 11:01] You: OK fine though I never could get on with stargate
17. [2008/01/22 11:01] baso Schomer: wear that
18. [2008/01/22 11:01] baso Schomer: wel its sort of a portal
19. [2008/01/22 11:01] You: yes it's funny how scifi dates!
20. [2008/01/22 11:01] baso Schomer: that you click
21. [2008/01/22 11:01] baso Schomer gave you SPTC iHUD.
22. [2008/01/22 11:01] baso Schomer: ok.im off to some remote location ot eat my dinner
23. [2008/01/22 11:01] You: thanks
24. [2008/01/22 11:01] Object: baso Schomer this option isnt finished just yet, please conact Baso 'spb'.
25. [2008/01/22 11:01] SPbTP whispers: Destination data loaded. Transporter is ready.
26. [2008/01/22 11:01] SPbTP whispers: Destination data loaded. Transporter is ready.
27. [2008/01/22 11:02] baso Schomer: ok
28. [2008/01/22 11:02] marsbar9 Schomer is Online
29. [2008/01/22 11:02] baso Schomer: i need to reconsifiger mine
30. [2008/01/22 11:02] baso Schomer: go ahead
31. [2008/01/22 11:02] baso Schomer: take the teleporter out for a spin.btw the compass is the teleport rezzer :D
32. [2008/01/22 11:02] baso Schomer: enjoy the iHUD
33. [2008/01/22 11:02] SPbTP whispers: You are not authorized to use this teleporter.
34. [2008/01/22 11:02] Animus Schomer: hey

35. [2008/01/22 11:02] Animus Schomer: baso
36. [2008/01/22 11:02] baso Schomer: /afk
37. [2008/01/22 11:02] Animus Schomer: could you add me as an sptc manager?
38. [2008/01/22 11:02] SPbTP whispers: Transporter destinations:
39. [2008/01/22 11:02] SPbTP whispers: Sandbox+Maze: < 61,177,41 >
40. [2008/01/22 11:02] SPbTP whispers: Lyceum: < 141,214,48 >
41. [2008/01/22 11:02] SPbTP whispers: Jap Garden: < 123,124,22 >
42. [2008/01/22 11:02] SPbTP whispers: Caves-Room: < 136,164,25 >
43. [2008/01/22 11:02] SPbTP whispers: Caves-Entrance: < 87,170,41 >
44. [2008/01/22 11:02] SPbTP whispers: SchomeCentral: < 138,163,40 >
45. [2008/01/22 11:02] SPbTP whispers: Entrance(in SPb): < 137,36,49 >
46. [2008/01/22 11:02] SPbTP whispers: Entrance(in SPa): < 137,16,49 >
47. [2008/01/22 11:02] SPbTP whispers: :
48. [2008/01/22 11:02] SPbTP whispers: :
49. [2008/01/22 11:02] SPbTP whispers: Total destinations = 10
50. [2008/01/22 11:02] SPbTP whispers: Initializing pattern buffer.
51. [2008/01/22 11:02] SPbTP whispers: Energizing transport beam.
52. [2008/01/22 11:03] SPbTP whispers: Squishing Rowan SParker into ball.
53. [2008/01/22 11:03] SPbTP whispers: Transporting.
54. [2008/01/22 11:03] SPbTP whispers: Unsquishing Rowan SParker.

NB The line numberings have been inserted subsequently by myself for ease of reference and do not appear on the original logs.

I can attempt a purposeful and necessarily limited discourse analysis (Gillen and Petersen, 2005), drawing attention to features of the exchange of particular relevance to investigating issues introduced above.

As already mentioned, I selected this extract partly because it was particularly comprehensible to me as encapsulating a memorable event and therefore lending itself to a situated approach within an ethnographic stance. This extract is structurally relatively simple in comparison with many chat log extracts of similar length in that there is actually just one dialogue: between baso and myself between turns 1 and 32. The dialogue between baso and myself contains one point of obvious difficulty in terms of the attainment of intersubjectivity, probably owing to the constraint of the quasi-synchronous channel; we have to 'coordinate turn exchange without the opportunity to monitor each other's utterances-in-progress' (Garcia and Jacobs, 1999: 339). So at turn 9 I ask baso for a copy of a logo (a 'texture' in-world); baso responds at turn 10 'i didn't make it'. This denial might be perceived as having been understood by me as relating to the 'transporter' (rather than the t-shirt or logo), since I explain that the sound effect associated with the object has caused me to identify it as baso's creation

(as I remember him having used it before). Baso seems to recognise the direction of the conversation as being ambiguously balanced with his contributions of 12 and then 13 (an emoticon sometimes glossed as 'tongue-in-cheek') but at 14 selects as a topic salient to both interactants, the popular culture origins of the sound effect, making a joke at line 15 I still find delightful. With hindsight I regret that I do not seem to have communicated appreciation of his play with the cliché 'x is so last year' in this environment of twenty-first century technologies and creativity, against the time-shifting of science fiction references.

My level of understanding of the programming and scripting of the object and its functioning is limited to my analogy with the 'transporter' in the TV series *Star Trek*; baso is willing to communicate about it at this popular culture level. Through our shared heteroglossic understandings I can overlap with his more precise knowledge of the SPbT to achieve sufficient intersubjectivity. On other occasions with different interactants his dialogues about it have a higher technical content. Baso's levels of witty communication and instruction are carefully crafted to be appropriate to the environment and his interactants' capacities of understanding. For example, at line 17 he displays conscious addressivity to me through his use of the word 'wear'. This denotes one option among a choice of simple menu options available in connection with the object. He guesses that if thus explicitly directed to the appropriate word I will understand that I need to select this option, even though I am using the 'teleporter' to move, almost instantly, from one spot in the virtual world to another, as opposed to clothing myself in it. Baso has given me a 'teleporter' I have succeeded in using 'without quite understanding what was going on', as I noted contemporaneously (with understatement). The movement of the avatar through this 'teleporter' was made more gratifying with the scripted additions of sound effects, slight delay and personalised commentary (at lines 52 and 54) than it would have been if baso had designed it in a less complex form.

At turns 34, 35 and 37 Animus attempts to engage baso as he wants to interact with the scripted object named SPbTP (which I assume stands for 'Schome Park beta teleporter'), but baso responds somewhat indirectly through using the abbreviation 'afk' (away from keyboard), possibly as a politeness strategy to mitigate a potentially face-threatening act (Brown and Levinson, 1987).

The field notes confirm my memory of delight at several aspects of this interaction. I was frequently hugely impressed by students' technical abilities and the imagination with which they deployed their ideas. As Joseph (2007) observed of another project using *Teen Second Life*, students were working creatively with the unique affordances of the environment. They flourished as their teachers abandoned claims to necessarily superior knowledge and expertise and instead focussed on facilitating processes of knowledge exchange and constructive interactional strategies.

Asynchronous forum

The Schome Park forum is the most constantly used means of communication in the project. Access to it is simpler and quicker than going in-world since it can be accessed through any internet browser. Areas of the site are accessible to the public (for general discussions about education, introductions to Schome, etc.) but most of it is accessed by members through logging on. Postings are persistent, although some threads are archived periodically, and the forum is monitored by staff.

The forum is frequently used to collaboratively plan events, discuss happenings within the project and its interactions with the wider world, and so on. There are also self-contained forum games and discussions on diverse topics such as archaeology, video production, consciousness and school dinners (to mention just a few of the topics I have been involved with). Some topics are related to the community life of Schome Park, but without any intention to directly link to in-world events. Figure 5.2 shows a posting by a student who initiated a new thread, i.e. topic, a subset of the forum. It was responded to by a staff member (and forum moderator) four minutes later and then about half an hour later by another student. I was wholly uninvolved in

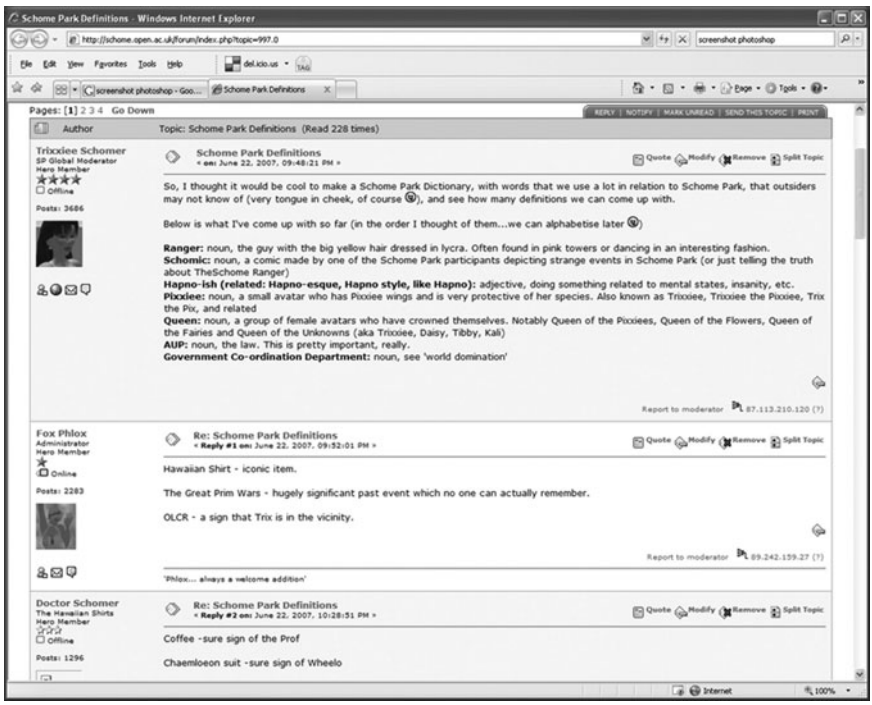


Figure 5.2 A thread on the Schome Park forum, 22 June 2007.

this thread, failing to notice it in the stream of communications. I turn to it now as, in contrast to Figure 5.1, it evidences use of a more inter-generationally valued literacy genre, the dictionary.

Looking at Figure 5.2 it can be seen that, as part of the everyday activity of the Schome Park project, Trixxiee is proposing the idea of a Schome Park dictionary, a kind of glossary. From the outset this is designed to be possibly the source of genuinely useful information (for newcomers, for example) but also to function as a space for in-group humour. Trixxiee has worked carefully on the format of her dictionary, reflecting knowledge of appropriate generic conventions. Every headword is distinguished by emphasis, followed by an indication of its grammatical status and then a definition. One entry has related words, almost as the lemmas of a lexicographer, in brackets; another, also in similar style, gently caricatured perhaps, has a cross reference. Trixxiee's work here is on the boundary of Schome Park activity, not directly related to in-world activity. It is, to me, a fascinating, yet not untypical, instance of a new playful genre taking advantage of the affordances and constraints of the domains of Schome Park. The forum is the most appropriate communicative domain for making such a proposal, being less ephemeral than a suggestion made in-world; yet the suggestion is immediately inserted into the community's discussions. Trixxiee is here, a 'cognitive bricoleur … [one of] the opportunistic assemblers of functional systems composed of internal and external structures' (Hutchins, 1995: 172). The external structure she uses so effectively here is the forum, in part through her internalised sense of the structure of a dictionary.

Wiki

Almost exactly twenty-four hours after the first posting, both Trixxiee the originator and another student, Marsbar9, started simultaneously creating and authoring a new page on the wiki where the dictionary could reside. Figure 5.3 shows an initial wiki page as it stood, after considerable collaborative activity, as captured several months later. I will return to some analysis of the central content of this page below, but here point out central aspects of functional design.

This and every wiki page of the project can be divided into two distinct areas. The top and left-hand areas of the page are (for most users) relatively fixed; indicative of available menus, automatic and generalised design features across the wiki. Without entering into overly detailed discussion: the top-right list relates to personalisable filters, as well as logging in and out. The tabs at the top left allow various functions e.g. if you click 'edit' at the top and are a member of the project you will have the opportunity to edit any part of this page, preview your amendment and then save it so that anyone visiting the webpage will see the new version. The left-hand border of the page gives navigational choices and a search facility; those who get involved with

Figure 5.3 An excerpt from a wiki page, captured 20 February 2008.

designing the overall wiki structure make design choices here, but most wiki users develop their own pathways through these.

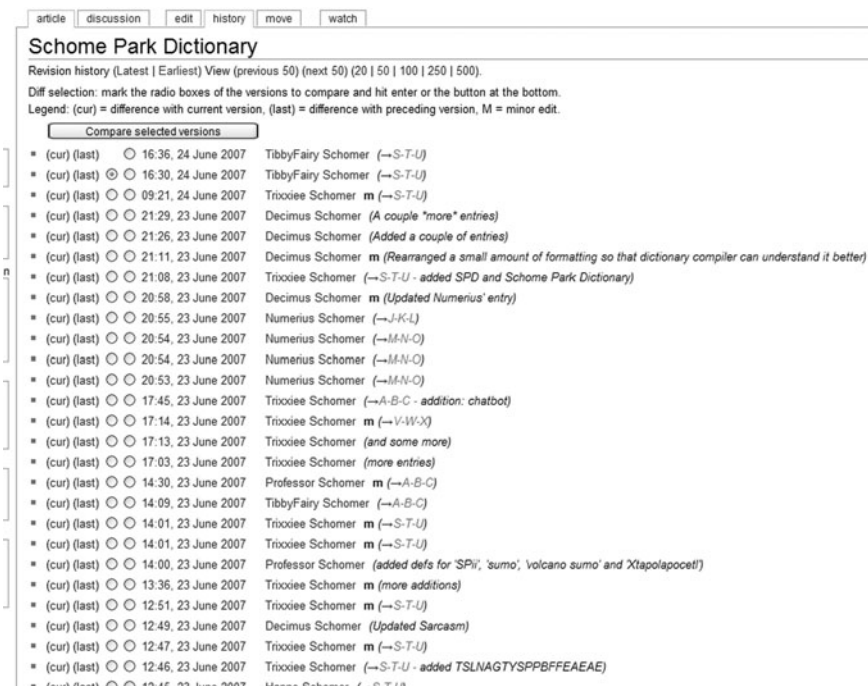
So, as already mentioned, Figure 5.3 shows the dynamically produced wiki that Trixxiee and Marsbar9 began. The wiki is a relatively persistent document in comparison with a forum posting and, although most in the project are authored by one or two persons with perhaps some additions by others, it is a channel that lends itself well to collaborative authoring. This page was publicly available for viewing; on 16 July 2008 it was one of 828 such content pages. A full analysis would include attention to its multimodality (including colour, reduced here), but here I focus on this page as a collaborative authoring activity. In a 'textual ethnography' (Swales, 1998; Papen, 2007) I first investigate the history of the development of the page; second check my interpretive response to this against comparative pages; and third consider the content of the page in more detail.

First then, the 'history' tab at the top of the page was opened to display an automatically recorded account of who has made changes to which section and when. It has elaborate functionality so that if, say, someone with moderating responsibilities has any concerns about a particular new element of text or formatting decision, they can compare versions and work out exactly what somebody has done and how. I expect it to be relatively seldom that anyone would click on the 'history' tab of any page. A total of 114 edits to the dictionary were made by 15 participants, 13 students and two staff; a high level of

collaboration. Patterns of contribution were diverse. The mean number of edits was 7.4 (STD 10.12); even more varied was the range of time period over which people worked, the mean being a spread of 33.8 days between first and last edit (STD 61.20) and the maximum 203.

Despite this evidence of highly motivated engagement, from my experience of the project and knowledge of its now vast resources, I had not expected previous accessing of one of these automatically generated pages (4793 on 16 July 2008) to occur unless someone had a very strong proprietorial sense or, in their role of moderator, had something brought to their attention, perhaps by someone else, as a matter of concern. However, Figure 5.4 shows an extract of one of the history pages relating to the construction of the 'Schome Park dictionary' from the period 23–24 June (captured 17 April 2008). The entries relating to the activities for 'Numerius Schomer', for example, have been recorded wholly automatically. However, it is clear that many other entries have had comments appended. These are wholly 'backstage' to the public face of the project

I was pleasantly surprised to find that several participants had taken the trouble to add comments to their edits, which had the effect of personally crafted annotations to the automatic record. This enhanced the quality of


article | discussion | edit | history | move | watch

Schome Park Dictionary

Revision history (Latest | Earliest) View (previous 50) (next 50) (20 | 50 | 100 | 250 | 500).

Diff selection: mark the radio boxes of the versions to compare and hit enter or the button at the bottom.

Legend: (cur) = difference with current version, (last) = difference with preceding version, M = minor edit.

Compare selected versions

- (cur) (last) 16:36, 24 June 2007 TibbyFairy Schomer (→S-T-U)
- (cur) (last) 16:30, 24 June 2007 TibbyFairy Schomer (→S-T-U)
- (cur) (last) 09:21, 24 June 2007 Trixxiee Schomer **m** (→S-T-U)
- (cur) (last) 21:29, 23 June 2007 Decimus Schomer *(A couple "more" entries)*
- (cur) (last) 21:26, 23 June 2007 Decimus Schomer *(Added a couple of entries)*
- (cur) (last) 21:11, 23 June 2007 Decimus Schomer **m** *(Rearranged a small amount of formatting so that dictionary compiler can understand it better)*
- (cur) (last) 21:08, 23 June 2007 Trixxiee Schomer (→S-T-U - added SPD and Schome Park Dictionary)
- (cur) (last) 20:58, 23 June 2007 Decimus Schomer **m** *(Updated Numerius' entry)*
- (cur) (last) 20:55, 23 June 2007 Numerius Schomer (→J-K-L)
- (cur) (last) 20:54, 23 June 2007 Numerius Schomer (→M-N-O)
- (cur) (last) 20:54, 23 June 2007 Numerius Schomer (→M-N-O)
- (cur) (last) 20:53, 23 June 2007 Numerius Schomer (→M-N-O)
- (cur) (last) 17:45, 23 June 2007 Trixxiee Schomer (→A-B-C - addition: chatbot)
- (cur) (last) 17:14, 23 June 2007 Trixxiee Schomer **m** (→V-W-X)
- (cur) (last) 17:13, 23 June 2007 Trixxiee Schomer *(and some more)*
- (cur) (last) 17:03, 23 June 2007 Trixxiee Schomer *(more entries)*
- (cur) (last) 14:30, 23 June 2007 Professor Schomer **m** (→A-B-C)
- (cur) (last) 14:09, 23 June 2007 TibbyFairy Schomer (→A-B-C)
- (cur) (last) 14:01, 23 June 2007 Trixxiee Schomer **m** (→S-T-U)
- (cur) (last) 14:01, 23 June 2007 Trixxiee Schomer **m** (→S-T-U)
- (cur) (last) 14:00, 23 June 2007 Professor Schomer *(added defs for 'SPii', 'sumo', 'volcano sumo' and 'Xtapolapocetl')*
- (cur) (last) 13:36, 23 June 2007 Trixxiee Schomer **m** *(more additions)*
- (cur) (last) 12:51, 23 June 2007 Trixxiee Schomer **m** (→S-T-U)
- (cur) (last) 12:49, 23 June 2007 Decimus Schomer *(Updated Sarcasm)*
- (cur) (last) 12:47, 23 June 2007 Trixxiee Schomer **m** (→S-T-U)
- (cur) (last) 12:46, 23 June 2007 Trixxiee Schomer (→S-T-U - added TSLNAGTYSPPBFFEAEAE)

Figure 5.4 An excerpt from a wiki history page, captured 21 April 2008.

information available to anyone who did wish to trace the changes. When some have improved formatting or in some small way improved others' entries, they have chosen to explain this to some degree. Such a practice may possibly be drawn from the collaborative editing of Wikipedia that enables conflicts and consensuses alike to be traceable. Myers (2010) has argued that the mass media diatribes against Wikipedia as not necessarily 'accurate' are missing the point of its usefulness; that its particular innovatory value as a reference work lies in its preservation of the traces of its dialogic disputation of contested realities.

In order to check my intuition that this finely detailed attention to the collaborating editing process was exceptional, I carried out an analysis of every fiftieth wiki page (since the Schome wiki both pre-existed and continued after the Schome Park project, if the fiftieth page did not include any student participation between February 2007 and May 2008 then I made use of the next following page that did). This analysis confirmed my intuition that one or two changes at most are common and annotations rare except where accounted for by one Schomer, who systematically went through the wiki at one stage, 'tidying up' and often briefly explaining her actions.

I now return to consider aspects of the design and content of the dictionary wiki page, as shown in Figure 5.3. The page has a clear header, an initial description that would be accessible to all (i.e. whether seeing this page for the first time or more familiar with it) and a brief sentence proclaiming its collaborative authorship through the means of welcoming more contributions. The second paragraph relates to the constantly developing convergence of technologies in the project and requires some knowledge of *(Teen) Second Life* to understand. The references to *in-world* and *scripts* indicate that there is an endeavour to make this into an accessible resource that one can view through one's avatar (i.e. rather than also having to open a webpage); apparently this (ambitious) endeavour has met with partial success. However, again, this is clearly part of a collaborative activity, with an implied invitation to join in if your motivation and skills are appropriate.

The contents box makes use of the hypermedia functionality or multiple routes of navigation possible on the world wide web; one can use this 'window' to quickly find the word you seek, or alternatively close it if you wish to browse down the whole list. The dictionary entries would probably be rarely actually helpful to new entrants to the project and I would suggest that the evidence of the forum thread initiation confirms that they were not designed with this as the real priority. *AUP* is the 'acceptable use policy' which is drawn to the attention of all newcomers so actually the entry is more a comment on its status (somewhat tongue in cheek) rather than a 'definition'. Similarly, the other entries feature in-group humour, with only *chatbot* beginning with an actual definition. The dictionary then is part of the Schome community's discourse; as Lankshear and Knobel (2006: 71–2) write, drawing on work by Gee:

> literacies are always about much more, and involve much more, than just the production of texts. They are (also) contexts or pretexts for enacting and refining memberships of Discourses that include such dimensions as feeding back, providing support, sharing knowledge and expertise, explaining rules, sharing jokes … enacting an affinity.

The dictionary 'project' seems to me a superb exemplar of this. As Grenon-Nyenhuis (2000: 159) found, a dictionary is a fascinating way of looking into the ideology of a society, for it 'passes judgements on values and behaviors, and reflects the way society itself feels about certain issues'.

Learning in Schome Park

Learning in Schome Park became a great focus of interest for me for a number of reasons. It is beyond my scope to systematically investigate learning across the project. A book-length study would be needed to bring together all the possible evidence; but probably the best concise summary is by Twining (2009). Furthermore, another reason for the difficulty of investigating learning in SPP lies in the manifold ways and depth of learning if a sociocultural approach is taken. Therefore, in this section I introduce some illustrative approaches by others and myself to the consideration of learning in Schome Park and then move on to introducing one specific approach that uses corpus linguistics. I begin by considering the multiple ways in which learning may be understood.

In engaging with new literacies we were all learning, most if not all of the time, in that Schome Park was a 'new world' to us all. Some of us had some previous experience of *Second Life*, but for various reasons, including the impermeability of Schome Park's borders once set up, the nature of the participating body and the norms and values that evolved, it was a new place for all of us. As well as learning to use the environment we were simultaneously learning to participate in new activities, necessarily in the form they took in *Second Life*. For example, I joined in the making of machinima, the crafting of cinematic productions in 3D-simulation environments such as *Second Life* or online gaming. This activity was led by Britta Pollmuller. Participating as an extra, I learnt about cinematographic techniques, how various genre effects are created, the organisation of episodes and much else that her work drew on from mainstream cinema. So learning in Schome Park was far, far more than learning how to use the environment as if limited to the skills of a new technology, or indeed a new literacy, regarded as a set of autonomous skills. Learning was purposeful; it was fun and interesting to work on one's *Second Life* skills when these were part of working towards a goal, generally specified collaboratively.

Scardamalia and Bereiter (2006: 101) make a well-known distinction between knowledge *about* and knowledge *of*. Drawing on this the project

director Peter Twining (2009) proposed a fourfold 'Pedagogy Dimension' to the SPP: learning about, learn by doing, learn by playing a role and learning by becoming. He argued that the project provided a radically different mode of education, facilitating people to try out things that are impossible in the physical world and challenge boundaries in playful ways. Interacting with each other and the environment by means of an avatar increased reflectiveness, 'directly addressing the need to make tacit knowledge explicit and enabling learners to reflect critically on their experiences and understandings' (Twining, 2009: 512). Learning can then be regarded as transformations in the patterns of participation in joint activity (Rogoff, 2003).

As already mentioned, SPP was specifically designed to be creative, innovative and ambitious in its range and scope of learning. Another project staff member and colleague, Rebecca Ferguson (2011: 170), draws on Craft's (2005) work in identifying the characteristics of creative learning as flourishing 'in environments that foster innovation, ownership, control and relevance for both learners and teachers'. Ferguson analysed a thread of discussion called 'Schome Park 2.0 – what do we need?', in which community members enthusiastically debated the shape of a complete redevelopment of the project. As Ferguson (2011: 172) pointed out,

> None of those who posted appeared to be daunted by the idea of remodelling their entire learning environment to suit their needs, even though this is a task that in the physical world would be conventionally reserved for local authority officials or for a school's senior management team.

Ferguson's analysis of the debate does not seek to hide the difficulties and challenges that are always involved in a collaborative new venture in which passions run high. But she demonstrates how important the Schome Park ethos was. Essential features were treating staff and students as equals, encouraging the questioning and challenging of others yet in a supportive fashion, and a readiness to try things out. It was the Schome Park ethos, not the technical features of the world, that underlay the creative learning she found so much evidence for. See for example this extract from a posting by Explo Schomer:

> Rather than individuals working for individual gain we ought to be working as a community for the benefit of everyone in the community. This will doubtless sound reminiscent of communism and it is. One of my aims, at least, is to try and work towards a collective society; to show that such a thing is possible; to show that we can do it as well, or even better, than the current working generation. Schome is already breaking down many of the barriers that exist between 'teachers' and 'learners' and I believe that we can go further than that. Rather than replicating real life, with shops, offices, and

> living spaces that only seek to support themselves, we can build a community which progresses, which ends up doing things, and enjoying doing them.
>
> (Explo Schomer, 12 May 12 2007, www.schome.ac.uk/forum/index.php?topic=628.45 (accessed 10 May 2013))

In the next section I turn to another aspect of learning and Schome Park and bring in another different methodology, corpus linguistics. This particular investigation is motivated by the circumstance that, in looking back at my data from the project, I was often struck by how students would discuss things they were doing at school. Here for example is a short extract from a chat log from 6 May 2008. Topper has been complaining about Maths standardised assessment tests and specifically discussing the functions of certain kinds of calculators and how he experienced difficulties with them in the midst of tests. Tigerkitty has made various kinds of brief supportive responses but becomes more expansive when Topper mentions that he is studying Shakespeare's *The Tempest*.

Excerpt from Schome chat log 6 May 2008:

> Tigerkitty Schomer: i think shakesphere is soo boring and a waste of my time lol
>
> Tigerkitty Schomer: i never finshed the tempast i got bored
>
> Tigerkitty Schomer: lol
>
> topper Schomer: a deil a born devil that natue or nurture cannot alter lost all lost propero a4s1 about Caliband and his plot to murder hm woith the fellow conspriters tricalo and stephano it shows his iner conflict about how to punish them as he has the suituation under control, he also feels let down.
>
> Tigerkitty Schomer: i have to finsh it soon tho
>
> topper Schomer: tempast is a good play just not a funnyt comedy
>
> Tigerkitty Schomer: indeed

I decided to examine in a more systematic way the connections participants in the SPP made with their experiences of schooling. I realised that since all participants had ongoing involvement in other forms of education, they were likely to make sense of an innovative learning environment in part through drawing on their experience of practices in other domains (Barron, 2006).

It is a characteristic of human learning that we make connections between activities in our different domains. Children are very adaptable, and may well embody, as they have throughout history, very different practices of behaviour and activity in school from those outside. But success in such learning requires as a prerequisite the ability to recognise, however unconsciously or consciously, the differences in those cultural environments, made up as they are of distinct material features and practices characteristic to each.

One learns, as a social human being, the appropriate ways of interacting in each environment. Learning can be regarded then as transformations in the patterns of participation in joint activity (Rogoff, 1997). Although participation in the Schome Park programme was diverse according to any of the possible measurements, a quality that everybody shared was that it was a new experience, innovative in terms of environment, community and aims, thus demanding new practices and positioning everybody, in at least some aspects of their practice, as learners.

A corpus linguistic examination

Such a large-scale project has the capacity to generate enormous datasets. Before explaining the approach illustrated here, I think it is important to mention that corpus linguistics has not yet been taken up to any great degree in the analysis of discourses around learning, as these understandably tend to reside in the discipline of education. The tools of corpus linguistics have not yet been taken up in education research to the degree they merit owing to two inter-related factors.

One of these is concerned with the history of corpus linguistics – which has, understandably enough, shaped the concerns, aims and thus of course the practices and results typical of its practitioners. The majority of work in corpus linguistics has been concerned with large-scale investigations of patterns in language in order to find out more about language use at the macro scale, away from immediate consideration of specific features of context. Therefore it is contributing usefully to the study of linguistics. As valuable as this work and its applications are, they are not likely to be central to the interests of literacy educationalists except for those concerned with second language learning, who can make use of its consequent pedagogical resources (O'Sullivan, 2007).

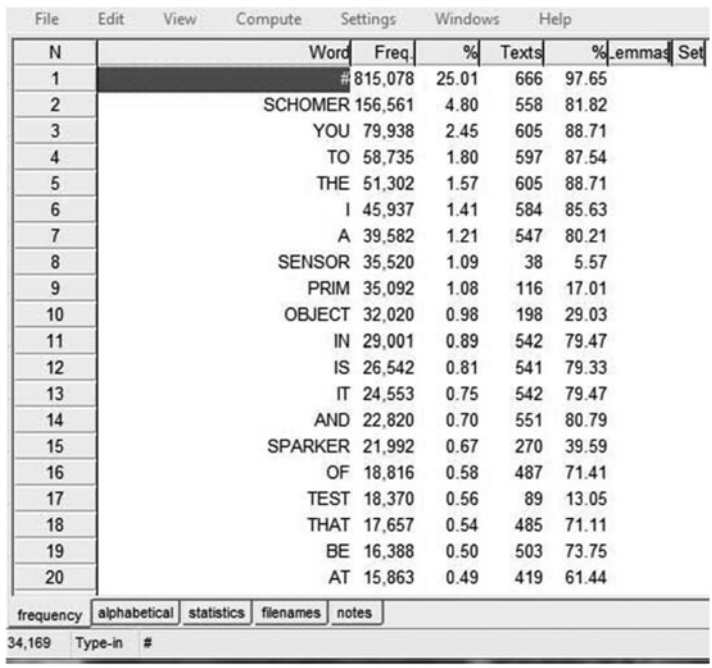
The second factor as to why the potential contribution of corpus linguistics may be overlooked lies in the way it is sometimes presented in contrast with discourse analysis through its deployment of quantitative methods (e.g. Tognini Bonelli, 2010: 19). If a literacy educationalist employs qualitative methods they are likely to recognise the worth of discourse analysis – that is, the value of taking a sustained detailed look at a small amount of text and perhaps have immediate doubts as to what value quantitative methods could have in interpretive work.

Nevertheless, the potential of corpus linguistics methods to assist in discourse analysis is being increasingly advocated (Baker, 2006: McCarthy and O'Keefe, 2010). So, if the heartland of corpus linguistics is based on definitions such as 'the study of language based on examples of real language use' (McEnery and Wilson, 1996), thus putting the focus on 'the study of language', it is nevertheless made clear that there are opportunities for those whose aims are associated with the exploration of specific discourses, or specific

phenomena that generate large textual datasets, to make use of its methods. In this section I offer my own introduction to techniques of corpus linguistics, or perhaps more properly termed corpus-assisted discourse analysis (Baker, 2006), through demonstration of my response to the substantive question.

As already mentioned, during the project staff members periodically archived some of the chat logs they had collected during the project. These represented a small part of the records of the interactions in-world, being mostly quasi-synchronous with some instant messages. With the exception of the resources collected by one staff member (for ethical reasons), I collated these into a corpus. This entailed converting them into a shared format (txt), naming files in a consistent fashion and generally organising them in order to be useable by WordSmith Tools (Scott, 2008).

I first demonstrate one or two of the simplest corpus tools before moving on to explore more specific aims. The corpus was found to consist of 682 files contributed by 22 people. It constituted a total of 2,443,495 tokens, i.e. running words in the texts, which can then be used for word lists and other operations. A starting point is to produce a list of the most common words appearing in the corpus – see Figure 5.5 below.


File Edit View Compute Settings Windows Help

N	Word	Freq.	%	Texts	%	Lemmas	Set
1	#	815,078	25.01	666	97.65		
2	SCHOMER	156,561	4.80	558	81.82		
3	YOU	79,938	2.45	605	88.71		
4	TO	58,735	1.80	597	87.54		
5	THE	51,302	1.57	605	88.71		
6	I	45,937	1.41	584	85.63		
7	A	39,582	1.21	547	80.21		
8	SENSOR	35,520	1.09	38	5.57		
9	PRIM	35,092	1.08	116	17.01		
10	OBJECT	32,020	0.98	198	29.03		
11	IN	29,001	0.89	542	79.47		
12	IS	26,542	0.81	541	79.33		
13	IT	24,553	0.75	542	79.47		
14	AND	22,820	0.70	551	80.79		
15	SPARKER	21,992	0.67	270	39.59		
16	OF	18,816	0.58	487	71.41		
17	TEST	18,370	0.56	89	13.05		
18	THAT	17,657	0.54	485	71.11		
19	BE	16,388	0.50	503	73.75		
20	AT	15,863	0.49	419	61.44		

frequency | alphabetical | statistics | filenames | notes

34,169 Type-in #

Figure 5.5 The top 20 words in the Schome Park chat log corpus, presented in order of frequency.

The frequency column indicates the total number of times the word occurs in the texts and is the only information relevant at this point, although I will return to 'lemmas' below. A few comments on these common words can be made in order to point out some distinctive features of the SPP discourses:

- # means a number or a word that includes a number;
- SCHOMER and SPARKER are both words that denote project participants, appear automatically on the log as the avatars' surnames and thus have not been generated each time by participants (in the way that words they personally type are generated);
- SENSOR, PRIM, OBJECT are all words that have specific meanings in the environment. For example a prim is a basic building block. Objects, such as the SPbTP discussed above (pp. 99–102) are often programmed ('scripted' in *Second Life* terms) to emit a message when 'touched' by an avatar. So, if one encounters in a log, 'Object: you aren't the owner' – this is the result of scripting prior to the interaction.

With so many automatically generated words it is clear that the corpus is unlike most existing corpora, which are made up of utterances and texts crafted individually by humans. This must be hedged, though; for example, I realise that some frequently occurring texts such as newspaper articles are the work of more than one author. However, the SPP corpus is clearly distinctive, featuring an element of language that is not generated spontaneously and a great deal of repetition. In order to look at this I can make use of the type/token ratio (TTR) calculation with 34,169 types (distinct words) in the corpus the TTR is 1.40. In order to try to compare this with other corpora it is sensible to use a measure known as the standardised TTR. This takes account of the fact that the larger a corpus gets, the more highly frequent grammatical words like *the* will dominate; for this corpus it is 23.30. In comparison a standardised TTR of informal spoken conversations from the British National Corpus, completely without bots (objects scripted to interact with avatars) or indeed avatars was 32.96 (Baker, 2006: 52). So the standardised TTR of the SPP shows the influence of the high proportion of automatically generated words.

Corpus linguistic studies often re-examine such a frequency list by excluding grammatical words – all the generally short conjunctions, pronouns, prepositions, etc. that make language work. I have constructed a 'top ten' of lexical words in Table 5.1.

Here I can bring in my ethnographic perspective as a community member to further emphasise the large part preprogrammed language is contributing to the flow of interaction as recorded here. For example, I remember that many bots were programmed to *whisper* their turns, neatly downplaying the quality of their interruptions. On the other hand, as far as I know *P* only formed part of emoticons, generated by human participants in the flow of communications.

Table 5.1 Top lexical words, excepting proper nouns, in the Schome corpus

	Word	*Frequency*	%	*texts*	%
1	sensor	35,520	1.09	38	5.57
2	prim	35,092	1.08	116	17.01
3	object	32,020	0.98	198	29.03
4	test	18,370	0.56	89	13.05
5	do	11,009	0.34	467	68.48
6	IM	10,439	0.32	325	47.65
7	can	10,206	0.31	475	69.65
8	P	9,907	0.30	297	43.55
9	sense	9,067	0.28	125	18.33
10	whispers	8,478	0.26	186	27.27

For the rest of this chapter I have screened proper nouns, other than the shared surnames, in part for ethical reasons. Although clearance to use such data from contributing participants was obtained, I have preferred to anonymise details that would convey both general levels of activity and specific details of turns in ways that would be meaningful to project participants.

After these initial steps I began to think about, and experiment with, ways of using the corpus in order to try to examine connections made between schooling and learning in the Schome Park environment. One way to do this is the investigations of collocations: for example, with which words does *school*, for example, most often occur? Such occurrences could be investigated within texts in order to ascertain more of the immediate textual context. However, experimental investigations along these lines drew my attention to some difficulties with this – indeed, that affect the utility of the information presented in Figures 5.1 and 5.2 above.

Since members of staff were often in-world together, their deposited logs often overlapped to some extent. This was never a precise overlap for a number of reasons, including the duration of stay, proximity to other avatars, etc. Nevertheless, it did strike me as somewhat problematic since it could mean that potentially too much weight was attached to certain discourses (although there is an alternative reading: if an interaction did feature high participation – for example, at a well-attended meeting – then its relatively high impact would be reflected in multiple deposits). Further investigating overlaps, I found that people had occasionally submitted chat logs that contained overlaps with previously submitted files.

I decided to deploy a sampling strategy, a common practice in corpus linguistics (Biber, Conrad and Reppen, 1998; Baker, 2006). In this case after some experimentation I decided to sample the largest files collected by four individuals – two male and two female. Through an iterative process, I eventually decided to search the files for instances of four lemmas. Lemmas are related words: for example, if a search of the files was only centred on *school* and not

schools it is clearly possible that a great deal of relevant information might be lost. Many lemmas can be captured through a Boolean strategy of *school**, but not all. For example, I searched for *teach** but also included *taught*. *Class* often featured but *class** cannot be used since it picks up *classed*, *classify*, etc. So I used *class, classes*, *classroom* and *classrooms*, but then examined all instances of *class* to ensure it was not used in another sense, i.e. to exclude homonyms. The extremely rapid typing common when in-world brought about many misspellings, for example *schoool*, and of course as far as possible these also needed picking up.

Analysing the largest file first, I discovered some basic quantitative measurements, compiled the four lemmas, conducted searches for them, recording ranks and frequencies. I then searched all the concordances (as explained below) to further investigate the texts in all four files where these lemmas occurred. Working qualitatively I grouped these according to themes I identified. Here I present findings from one of the four investigations to illustrate some themes found, occasionally referring to one of the other investigations, SB_154, where results contrasted maximally.

Staff member GB_009 has 917.782 tokens; 406,603 used for word list. The standardised TTR is 5.29, which is extremely low. A brief look at this log revealed an extremely technical orientation, with # at 55.70 per cent and sensor the most common word. Table 5.2 summarises the results for investigated terms. By convention, in corpus linguistics lemmas are shown in small caps.

In considerable contrast, SB_154 has 98,015 tokens, of which 96,068 were used for the word list. His standardised TTR was 33.34, which, since it includes scripted words, can be judged to be indicative of a very broad vocabulary. it is therefore immediately apparent that this member of staff had few technical responsibilities and a wide diversity of interests. Comparing the ranking in this file of the target words (see Table 5.3) with those of Table 5.2 reveals this staff member's interest in discussing these topics. The constitution of lemmas demonstrates some linguistic creativity; for example TEACH includes *teacher teachers teachery teacheryness teachinf teaching teachrs*.

The next part of the exercise is to locate these terms in context; this can be done through the software's concordance function. Figure 5.6 shows an extract from a sample concordance view, in which names that would be identifiable to

Table 5.2 GB_009: results for investigated terms

lemma	*rank*	*freq*
SCHOOL	416	36
TEACH	2315	33
LEARN	651	24
CLASS	1822	4

Table 5.3 SB_154: results for investigated terms

lemma	*rank*	*freq*
SCHOOL	194	88
TEACH	1079	85
LEARN	499	55
CLASS	526	32

project participants have been erased. Although as mentioned we had full permission to use avatar names and in general I do so, in common with other project researchers I have sometimes, as here, decided to obscure identities further. Within the project we developed a rich sense of each other's identities. So, where something occurs that might potentially embarrass somebody, such as 'having a bad day at school', I have decided to obscure the avatar name. This aligns with McKee and Porter's (2008) exhortation to be thoughtful yet flexible in ethical matters.

The data in Figure 5.6 has been alphabetically sorted, first one place to the left and then second place to the left. The next step involved clicking through to locate each of these samples in the surroundings of its immediate text in order to enable interpretation. I was then able to inductively derive themes with which to categorise all findings in the file. With examples of varying length I present these below.

SCHOOL

Schools are sometimes described in terms of their associations with regimes and rules, places where you have to do something, e.g. 'LB Schomer: but, in school, we had to stand when … ' or 'I admit I found the whole school regime uneducational'. In the course of a complex discussion of the rules the Schome community created to govern themselves is found: ' … rules might revert to "normal school conduct"?'.

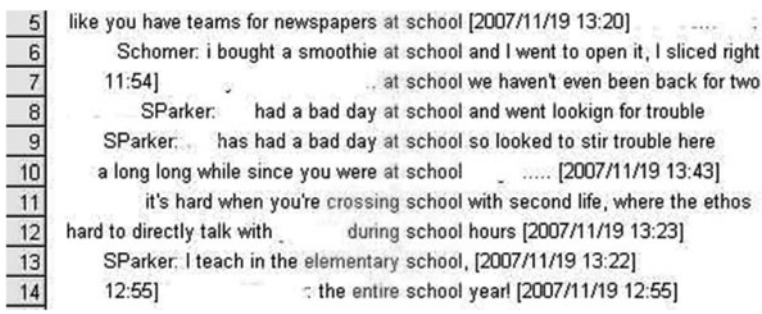


Figure 5.6 Extract from concordance file for GB_009 for SCHOOL.

School time and temporal organisation sometimes feature, for example in reference to a group of participants: 'the UK who will be using it in school time.' One student suddenly interjected in the course of a communication about another topic, 'school tomorrow'. EF Schomer manipulated the usual convention of producing a turn as if uttered by an avatar into a third person statement about himself: 'EF Schomer has to get up for school at around 7. The evilness!' A variety of RL (real life) school experiences were alluded to, such as 'I did that at secondry school.' Although all student participants were teenagers, mentions were made of other kinds of school including elementary and summer school. In this dataset praying at school was occasionally referred to: 'we dont pray at school … unkess you go to C … ' and 'we have prayers at school ever day'. I devoted more detailed attention to explicit connections and contrasts between school and the SPP as first evidenced in three turns:

'FE had a bad day at school and went lookign for trouble.' This was staff member TJ explaining that a student had come inworld with a bad temper and decided to take over some land, build, swear and insult others, especially one other. This led to a lengthy discussion in which it was clearly understood by all participating that although you are represented by a distinct avatar you cannot necessarily act as a *tabula rasa*, immune to events outside.

'it's hard when you're crossing school with second life, where the ethos of both is completely different.' Here student US is explaining a perceived difficulty caused by one group of students joining the project and coming in with their teacher, whom they actually see every day – and that this seems odd to the main body of students for whom the project has nothing to do with their RL school staff. A staff member SB offers various suggestions, such as providing areas where staff cannot go, an idea immediately resisted by student LB. SB questions, 'whether we can change the way in which teachers view their role … or is that only possible where they are working with students who they don't have to work with face to face?' US responds: 'i think it would be much harder where the teachers see the students in RL as well', claiming there are unwritten rules about the way students act around teachers in school. The discussion moves to whether new students could be supervised by other staff – LB suggests other experienced students could do this.

' … like you have teams for newspapers at school …' SB, trying to improve SPP communications, suggests a newsletter and proposes the role of a newsletter coordinator. A student immediately makes a connection to a similar kind of activity organisation experienced at school.

TEACH

As already mentioned, there are references to RL teachers in the corpus, sometimes it seems just as part of a small narrative whereby students bring in RL events, e.g. 'my cornet teacher shes scary at times', and elsewhere, 'but I have a more relaxed time with my teachers now that i'm at college'.

Teaching activities within the project, such as scripting, are announced. 'Activities teaching real life physics and chemistry' meant (perhaps slightly confusingly at this distance) that within SPP actual physics and chemistry were going to be taught.

Pertinent are reflections on the SPP ethos, whereby everybody was seen as a learner and teacher at various times. Student US: 'i like the way that everyone has different skills, and can teach everyone else things, even the adults, who would be seen as teachers in RL and therefore the person whom people go to for help and things.' Yet with the staff role came some responsibilities and an accompanying occasional explicit recognition of power relations. During the discussion about dilemmas perceived as relating to a group of students who were accompanied in-world by a RL teacher, one student appeared to turn a little impatient with TB's attempt to bring about a consensual solution. EB: 'well u are our teacher ys'.

LEARN

Working inductively, I categorised the 24 instances in this file into three themes. First were references to *Second Life* skills, such as: 'now all I need to learn is how to put it in a loop and not … ' and 'i think that one of the easiest scripts you can learn is the prim shape and colour change script … '. Second, there were positive statements about learning in the SPP: 'we probably learn as much from you as you learn from us.' In a contrast made with patterns of learning in RL, a student suggested there is 'a better feeling that everyone is a learner together' [in the SPP]. Finally, 'learn' was also used in a very broad way referring to learning from life experience. GB: 'you will soon learn that EVERY SINGLE government comp scheme is crap.'

CLASS

References were made to environments where instructional events were held in the SPP, such as 'what brings you to our classroom-turned-cemetary?'. Connections were also made with learning elsewhere: 'reminds me of a class I did on MG on animations and incorporating gestures … ' [MG was a way of referring to Main Grid, or *Second Life*, so this was a staff member referring to a learning event there].

As explained above, I add to findings in indicative new ways with respect of SB_154. Regarding SCHOOL, there was a substantial range of topics concerning the organisation of school in RL. For example, how schools are organised, including grouping classes according to 'ability'; how different learning styles were catered for, and so on. A further new topic was bullying – for example, NJ: 'yes true but it's mainly you're bullied (at my school) for being smart or looking like a goth. i'm smart, a black sheep and i like black clothing.'

A final and extremely important function of corpus linguistics is that through sampling it can lead you to find stretches of discourse that suit your aims for more detailed presentation and investigation. Thus, this approach

may be known as corpus-assisted discourse analysis. The following passage I found through reading the instances of LEARN in file SB_154. It exemplifies both 'learning on the go' as it proceeded in this collaborative community and reflections on learning. I have numbered turns for ease of reference. The passage begins where BD Schomer has just been asked by a member of staff about what characterises learning in SPP.

1. BD Schomer: lassiez-faire realy, theres no formality most of the time
2. EF Schomer: Indeedie.
3. UP Schomer: I were the cloack of a lord now peasent viba:P
4. FN Schomer: cool cape UP
5. EF Schomer remembers when he learnt how to not splat on the floor when he stopped flying :p
6. EF Schomer: That was quite random :p
7. WJ Schomer: that took me ages i kept having to click pgdown
8. [Turn omitted for ethical reasons]
9. FN Schomer: how do u stop splatting when u stop flying
10. FN Schomer: ?
11. EF Schomer: One thing about the way of learning stuff here is that, unlike in school, you can mess around a lot more
12. WJ Schomer: and i couldn't go up or down … i cant remeber who told me about the pgscroll thing
13. BD Schomer: a lot more experimentation
14. EF Schomer: So if you want to test something, you can; in school, you have to stick to what you're told to do.
15. WJ Schomer: FN just press pg dn
16. WJ Schomer: i agree dec … its not rigid here
17. EV Schomer: I'm afraid i have to leave now
18. EV Schomer: a music lesson awaits!
19. EF Schomer: bye then
20. UP Schomer has to go to finish th final copy of history
21. EV Schomer: goodbye!
22. WJ Schomer: okee byee
23. BD Schomer: bye

A distinctive feature of the SPP chat discourse, as revealed in previously discussed extracts, is its fast pace and multiple weaving of topic threads. The thread shown initially in turn 1 is constituted by reflections on learning in the SPP; BD remarks upon its informality, this is picked up in turn 11 by EF, who mentions 'messing around'. That such a term is perhaps used approvingly is suggested by BD's more specific response, 'a lot more experimentation' in turn 13. This is taken up immediately by EF, who refers to SPP as somewhere where 'if you want to test something, you can' and contrasts this with school.

I find it fascinating that this dialogue is interwoven with indications of a specific learning event. It becomes apparent through reading the transcript that EF's recollection of learning a skill, 'EF Schomer remembers when he learnt how to not splat on the floor when he stopped flying : p', is, it seems, a tactful suggestion to FN who has presumably just committed this 'newbie' action. Given the time it takes to produce a turn, FN probably immediately types out his request for the relevant knowledge at turn 9 with a direct question. WJ, again with some tact, has actually already imparted the answer, but in case FN has not picked this up later responds directly in turn 15. Her use of his name also attends to his needs; it took time for a newcomer to adjust to the fast-flowing multiply threaded dialogues and in such a situation to be addressed directly can help.

Finally, RL learning events and tasks are drawn upon to bring about a polite end to the discussion, indicative of participants' sense that they belong to multiple learning worlds and are committed to the constructive of collaborative social ties in this one, even with associates they will never meet face to face.

This extract is particularly illustrative of how participants made links with their school-based identities, contrasted or compared their experiences across domains and demonstrated through their interactive written communications their 'learning as you go' participatory online culture (Lankshear and Knobel, 2006).

Conclusions

This work has shown in practice that when dealing with an enormous dataset it can be productive to utilise tools belonging to corpus linguistics, considering this as part of a larger umbrella of discourse analysis activity (Gillen and Petersen, 2005). This approach seems more fruitful than either dichotomising corpus linguistics and discourse analysis along an outworn quantitative/qualitative dichotomy or trying to construct some sort of artificial barrier based on the size of texts under consideration (an approach effectively dismissed by Baker, 2006). At the same time, the use of any tools from linguistics always demand thinking through as to their appropriateness to the 'logic of inquiry' (Green, Dixon and Zaharlick, 2003).

This chapter and the experience of the project more generally assist in meeting Barron's (2006) suggestion that reaching understandings of how learning takes place across settings, and of the possible synergies and obstacles involved, may be useful to educators interested in finding ways to supplement or extend school-based opportunities (see also Hull and Schultz, 2001; Beavis, 2013).

Barron (2006: 221) argues that educational experiences should be evaluated according to their potential for providing students with the opportunities to learn, in a highly social setting with plenty of feedback to generate what she

terms 'self-sustaining learning ecologies'. Considering learning in an ecological perspective entails a broadening out of an investigation into a specific activity beyond its boundaries. The SPP was an exemplification of a digital literacies educational project, taking place wholly online, but nonetheless it is still vital to maintain a holistic sensitivity, in terms both of trying to understand the learning experiences of participants and of a generally ethnographic orientation to research.

> By focusing on schools and labs as primary research sites we miss opportunities to investigate learning when it flows from the initiatives of the learning and his or her companions across time and settings.
> (Barron, 2006: 193)

I discussed evidence from three central domains of the Schome Park media ecology while recognising the necessary selectivity involved in this. In the next chapter I discuss the notion of a media ecology further. In the meantime, the notion of ecology provides a useful metaphor in a sociocultural perspective to assist in thinking about

> how the activity – literacy in this case – is part of the environment and at the same time influences and is influenced by the environment.
> (Barton, 2007: 29)

Unpicking the notion of environment in this case is, as ever, a complex matter. My interest in the project lies in Schome Park as a learning community; the Schome Programme – deriving its name originally from a slogan: 'Schome – not school not home' – has over some years been involved with rethinking aims and methods of learning appropriate to the twenty-first century. The project sought explicitly to challenge certain deep-seated practices and assumptions related to school-based learning. In the vision of some participants, the project aimed to offer a model of how traditional schooling could be overthrown, even. However, at the very same time the project constantly engaged with schools and school-based students. My own outlook was perhaps initially to consider the project as a brave endeavour to bridge the widely recognised 'gap' between school and out-of-school literacy practices. However, I have come to think that a learning ecology perspective may well provide a more useful way of thinking about a challenge that certainly exists than the dichotomy inherent in the notion of a 'gap' or 'divide'.

This sociocultural orientation to learning, through activity undertaken with others in spaces imbued with the traces of earlier human cultural activities, is enunciated by Stetsenko (2009: 126):

> According to this vision, human development is rooted in, derivative of, instrumental in, and constituted by the material collaborative

> social practices of people (i.e., human goal-directed, purposeful, collaborative activities) aimed at transforming their world.

For me, this is exemplified through some of my own memories of SPP and evidenced in so many ways; see for example the quotation from Explo Schomer (pp. 109–110). The notion of a world transformed was experienced as more than a metaphor as I, like many others, learned so much in our immersive new environment. Changes in our social identities permeate more broadly than through the online community in which they are expressed (Merchant, 2006). Finally, this chapter has not been an exercise in objective evaluation but rather investigates what were to me and some other participants some of the most interesting aspects of SPP, an experience of digital literacies enhancing learning and life.

Notes

1 *Second Life* and *Teen Second Life* are trademarks of Linden Lab, a commercial software organisation based in San Francisco.
2 This pilot phase of the project was supported by the National Association for Gifted and Talented Youth and the National Endowment for Science Technology and the Arts. Funding for the project also came from the Aspire Pilot and the British Educational Communications and Technology Agency. Very considerable support came from the Open University and a number of other organisations. It was always clear that the enthusiasm of some of the people who joined, staff and students, was the main driver.

6

'I FALL IN AND OUT OF LOVE WITH TWITTER'

A case study of the development of Twitter in a professional, public media ecology: Jonathan Agnew and cricket

In this chapter I carry out a case study of a professional person developing Web 2.0 literacies in a very public and, I seek to show, particularly fascinating context, being relatively unlikely ground for the sprouting of an internet 'change agent' (Mullins, Kozlowski, Schmitt and Howell, 2008). The subject of my research is a journalist who specialises in the sport of cricket, Jonathan Agnew. He is the BBC's cricket correspondent, so the most prominent person covering the sport for the national broadcaster, although he is not an employee. I add hurriedly for any reader who might feel either ignorant of or uninterested in cricket that it is not necessary to have any knowledge of that sport to make sense of this chapter. I aim to show why this case study may be of interest, both in content and methodology, quite apart from its grounding in the sport of cricket.

Many people, whether early, mainstream or late adopters of specific technologies and applications, experiment in some limited degree of openness, typically within their professional or personal societies. For people with strong public personae, such steps are taken against the backcloth of substantial visibility and no degree of anonymity. Developing digital literacies is not a practice restricted to young people or to realms that are founded in leisure time or educational contexts. Furthermore, for some, developing digital literacies is part of professional practice: their successes and failures resonate as part of their public identity. Moreover, this public identity, some degree of media celebrity, involves managing the projection of overlap between public and more private or backstage realms (Goode, 2008).

All adoption of new communications technology involves fitting it somehow into one's already existing practices. Sometimes, using a new app, software or piece of hardware entails a complete and simple abandonment of something else. But sometimes we find that if we do adopt a new practice, existing practices are modified rather than wholly abandoned. Or, of course, it may be that

the new practice is only temporarily of interest and, perhaps because of its lack of fit with existing practices or for other reasons, is abandoned. Considering these matters at the level of an individual enables a richer understanding of people's media practices: see for example Barton and Lee's (2013) work with technobiographies. At a broader social level, the notion of media ecology, already referred to in connection with Schome Park, becomes helpful. So I begin with a fuller exploration of the term.

Media ecology

By the early 1970s the term 'media ecology' was sufficiently known to be used in the title of a new journal, but nonetheless the term still seems for many to be under the radar. Although the Oxford English Dictionary accessed online in 2013 offered 36 phrases, including the word media (media education; media personality even media mix, etc.), media ecology did not appear. The term is often credited to Postman (1970); the website of the multidisciplinary Media Ecology Association (MEA) includes three founding definitions. Postman's begins:

> Media ecology looks into the matter of how media of communication affect human perception, understanding, feeling, and value; and how our interaction with media facilitates or impedes our chances of survival.
>
> (Postman, 1970, cited by Media Ecology Association, 2013)

Perhaps the jump to the very idea of survival appears a little surprising as an argument; the definition then becomes overtly technologically deterministic, including, for example, 'what roles media force us to play'. The MEA also presents two other definitions. One, already referred to in Chapter 1 where I suggest Schome Park had a complex media ecology, includes the following:

> media ecology—the study of complex communication systems as environments … . Media ecologists know, generally, what it is they are interested in—the interactions of communications media, technology, technique, and processes with human feeling, thought, value, and behaviour … .
>
> (Nystrom, 1973, cited by Media Ecology Association, 2013)

Finally, the MEA site features a later overview of media ecology by Strate, beginning:

> It is the study of media environments, the idea that technology and techniques, modes of information and codes of communication play a leading role in human affairs.
>
> (Strate, 1999, cited by Media Ecology Association, 2013)

Strate continues by invoking a rich and disparate background to such studies, placing technological determinism as one significant trend but also invoking other perspectives and timeframes as diverse as 'postindustrial' and 'prehistoric'.

In any event, the term media ecology can be connected with a sociocultural approach to communication. Ito *et al*. (2009: 31) refer to media ecology 'to emphasize the characteristics of an overall technical, social, cultural and place-based system in which components are not decomposable or separable'. As explored in previous chapters, people's activities are shaped by the communications technologies available to them in that these limit meaning-making possibilities, but people can also select from what is available and adapt it for their own purposes, sometimes in very creative ways. If these people are influential in the settings, communities and audiences they engage with, they then affect the media ecology open to others. Rather than indicate a definite ontological boundary around any particular social practice or particular tool, the idea of media ecology encourages a focussed study on a particular phenomenon, one that combines that focus (without which investigation becomes impossible) with a holistic sensibility that tries to embrace connections that are important to the phenomena at the centre of interest. Thus, it becomes possible to think about cricket's media ecology, even if such a notion is necessarily unfixable and indeed extremely partial. For example, in using the term I implicitly think about cricket media as accessible to participants, other interactants and passive audience members in England and Wales, even if much of this material emanates from and/or is shared with sources elsewhere.

Approaching cricket as media ecology

In this section I combine some description of the cricket media ecology with an unfolding of how my approach to this study developed as I increased my understanding. This is necessarily a somewhat personal view, although I do not mean to imply that what I discuss is unique to my perspective. But it is important to emphasise that the experience of a cricket fan who accesses the game through subscription television, via Sky TV, will have a completely different cricket media landscape. Central to the cricket media ecology I am investigating is the role of the BBC, and so I turn to this first.

The BBC, a public service broadcaster, is expected to provide media outputs around cricket, generally viewed as the nation's second sport, after football (soccer). There are two factors that need to be emphasised as strongly characterising and indeed constraining the BBC's coverage of cricket that pertained in 2010 and the immediately following years.

The first is that the BBC did not have the rights to televise cricket, nor seemed likely to in the foreseeable future, despite parliamentary intent that the sport they described as 'squarely at the forefront of the nation's sporting affection' should be shown on a free-to-air channel (House of Commons

Culture, Media and Sport Committee, 2006: 5). On the contrary, the global power of the Sky empire proved stronger than the national government. Therefore, the BBC was restricted to other channels, the most obvious of which in terms of synchronous coverage is radio.

The second factor relates to qualities of the media ecology around cricket. Media coverage of cricket has a strong, self-conscious tradition unique to this sport in England. The tradition could be described as literary, for in style and content many relatively 'highbrow' writers have been concerned with cricket over the centuries. This quality is not restricted to England; great writers on the game have emerged from the mostly ex-colonial countries where cricket has been popular, with even the occasional foray elsewhere, such as Joseph O'Neill's (2008) novel *Netherland*, set in New York. Reams of books, specialist magazines, annual publications and broadsheet newspapers continue to appear and literary influences have in the past at least permeated the BBC's radio commentary. A former BBC cricket correspondent (the term given to the leading commentator in any period), Christopher Martin-Jenkins, who died in 2013, authored over 20 books. Although linguistic analysis of his commentary is beyond my scope here, I often noted biblical and Shakespearian references in his talk, seemingly unconsciously imbuing his speech rather than deployed as explicit citations. With these literary qualities he was carrying on the tradition of former colleagues, such as John Arlott, who besides being a consummate cricket journalist was also a poet and wrote about wine.

The leading cricket commentators, once established at the top, continue for many years, developing their knowledge and expertise about the history of the game, and sometimes forming bonds with players as well as wide audiences as they do so. When John Arlott handed over to Christopher Martin-Jenkins in his final 1980 commentary, the game was paused as all players, Australian and English, gave him an ovation (Wooldridge, 1980). For more than a decade Martin-Jenkins' work overlapped with Agnew, the current BBC cricket correspondent at the time of writing. The list of commentators Agnew worked with also included Brian Johnston, and my collection of cricket media includes a recording of the latter in dialogue with a playwright who had seen WG Grace, the most famous player of the nineteenth century. Bolstered by the kind of detailed fascination with statistics that I understand is associated with the great sense of history that characterises baseball journalism in the USA, the top commentators can always set out any contemporary action against similar feats in the past. The cricket media tradition then includes historical and literary influences, crafted in continuities between writers and commentators over decades and eventually centuries.

The sport of cricket stretches back at least to the sixteenth century (Lee, 1997). In England it is played at various tiers, including international, county (regional) and club – and even the club level can be subdivided into leagues. Some universities and schools have teams. Vividly a legacy of British colonialism, the sport is played mostly by countries that belong to the

Commonwealth. Around the world, major international Test match teams include Australia, India, New Zealand, Pakistan, South Africa and the West Indies; a lower tier of international participation exists, with members such as Afghanistan, Canada, the Netherlands and Scotland. In the more progressive forms of the game, such as one-day and even shorter formats, there is an increasing tendency towards transnational teams associated with commercial franchises, especially in competitions based in India, and every year sees new developments. The international Test match teams' constitutions, format and schedules are relatively stable in comparison.

The sport of cricket in its traditional Test match format and its associated radio programme, *Test Match Special* (*TMS*), are often perceived as old-fashioned. On 15 August 2011 David Thomson, a journalist then based in San Francisco, wrote a contribution to Prospero, an online blog produced by *The Economist*, the London-based periodical which targets an international business audience with print and online media products. Thomson relates how astonished he was to find he could listen to *Test Match Special* online while in the USA. He recalls first listening to the radio programme in 1957: 'It was as if a single radio drama had been allowed to run for 30 hours. And cricket turned up a classic for the occasion.' Thomson suggests that already in that era, '*Test Match Special* was sports reporting all right, but it was also a BBC attempt to hold on to a version of the nation that was fading away.' Accompanying his writing with a 2011 photograph of *TMS* journalists in old-fashioned British attire – one with a bow tie and cap, the other sporting a blazer and panama, Thomson multimodally conveys his view that a radio anachronism had surprisingly survived into the twenty-first century.

Yet at the time Thomson was questioning the old-fashioned values of *TMS* translating to new contents, I had become aware of rapid changes in this and related cricket media through an incorporation of Web 2.0 literacies. So from March 2010 to January 2013 I collected cricket media data, centring on the professional media output of the BBC cricket correspondent, Jonathan Agnew, a central figure of *TMS* who identifies himself as enthusiastic about new technologies. I also included a consideration of related channels, such as the BBC Sports website, effectively a complementary channel to *TMS* in that it can be accessed by those who want to read occasional near-synchronous commentary to keep up with the day's play but cannot listen to the radio. Following this, I listened to a BBC Radio 4 programme where Agnew was the featured guest – an edition of *Desert Island Discs* first broadcast on 17 February 2013. The format of this programme has been unchanged over several decades: a regular host allows a guest to choose his or her favourite music while interviewing them about their life. He introduced his use of new media, particularly Twitter, into the interview. Finally, in April 2013 I sent a draft of this chapter to Agnew, which he was kind enough to comment on.

At this point I must provide some minimum details concerning cricket in order to explain the key challenges facing *TMS*. Although *TMS* also covers

international one-day matches and a few other games in various formats, its main function is seen as commentating throughout international Test matches. These take place between two international teams and last a number of days, up to a maximum of five. A playing day lasts about eight hours. Understandably therefore, in practice the game is actually in play for much less than the total duration. The rest of the time is taken up by breaks of various lengths, regulated according to many complex rules. These intervals may be as short as the length of time it takes the players to get back into position after the last episode of action, or as long as a regulated meal break or even a break of indefinite length occasioned by bad weather. Of course, the essence of radio is to proceed without silence. Therefore, it is incumbent on the radio commentary not only to describe all the play there is – known as 'ball-by-ball' commentary – but also to keep talking, entertainingly, throughout the breaks. Thus, a considerable number of strategies have been devised by the team to keep talking. There are almost always two commentators on the microphone, with somewhat different roles, to enable a kind of semi-structured conversation; these are rotated. Topics while the game is in progress include contextualising the current action through reference to players' personal records, historical statistics, the field or stadium, audience behaviour, and so on. During longer breaks guest speakers assist to further broaden topics around cricket-related themes, such as their personal experiences, opinions on rule changes, policies, international cricket affairs, and so on.

As in so many other domains of life, cricket commentary and more extended reporting and analysis has spread across far more channels than those offering synchronous coverage. It has a media ecology of its own, with books, magazines, newspapers and websites as well as considerable social media presence. Agnew has always been interested in new technologies; his gadgets, practices and interest in the communications technologies of others has long been a presence in his output.

The main aim of this study was to investigate how Agnew uses Twitter and how this changes over time. Table 6.1 details the selection of data drawn upon for this chapter. Having begun my data collection in March 2010 I decided to continue until January 2013, an arbitrary end-date setting but making the study period long enough, I expected, to show some changes and continuities. This sample can be described as a convenience sample but also as purposive (Morgan, 2008: 800–1). It is a convenience sample in that I collected data when it was practically possible for me to do so. It does not constitute an objective representation of Jonathan Agnew's tweets, a systematically collected corpus. More quantitative designs entail defining the parameters of a corpus and harvesting it systematically, for example through using tools from computer science such as NodeXL (Hansen, Shneiderman and Smith, 2011). My approach is more than just a convenience sample in that it was purposive. The aims of my research led me to seek diverse sources of data and different samples of data. This is appropriate to my interest as not just in the tweets

themselves but rather the relationship of them to other communications and purposes and the place of Twitter in cricket's media ecology.

As discussed in previous chapters, an ethnographic stance requires flexibility, the capacity to 'trace and interpret the complex currents' (Boellstorff *et al.*, 2012: 3) of the domains studied. So, for example, my fieldnotes for 4 March 2010 record:

> 2.56 saw Tweet Jon Agnew
> Aggerscricket 15 mins to live chat: http://www.testmatchextra.com
> first time I have heard of/seen the site but it is just my cup of tea
> signed up
> 3pm activated email
> 3.02 in chat window

This fieldnote extract shows how I first became involved in an interactive web chat with Agnew following his promotion of it on Twitter, leading to my participation on a site I had not considered before. And even after I thought I had finished collecting data, the opportunity to listen to an interview of him on *Desert Island Discs* in February 2013 presented itself and I found that he spontaneously brought up the topic of Twitter.

Table 6.1 then outlines all data drawn on in this chapter; I then expand further on my rationale for data collection and subsequent decisions as to its organisation and initial stages of analysis.

Early data collection was broad and exploratory. I then decided it would be advisable to undertake a more systematic and intensive period approach to data collection, i.e. over three days, most intensively on one of those, during a Test match played at Edgbaston, Birmingham, UK during August 2011. This included harvesting all Jonathan Agnew's tweets on 10 August 2011.

I also decided to systematically work through the book of his that was most revealing about his attitudes to Twitter and general interest in digital technologies and new media. The book *Aggers' Ashes: The Inside Story of England's 2011 Ashes Triumph*, completed in 2011, was the best extended treatment. At the other end of the data collection period, the episode of *Desert Island Discs* was effectively an interview of him; he chose unprompted to bring up the subject of his interest in Twitter.

As already mentioned, I thought it useful to examine related Web 2.0 activities through studying his participation on a website he was then strongly associated with. This, along with interacting on Twitter, offered a means of participant as well as passive observation.

Listening to all commentators' work on *TMS* on one day gave me a richer understanding of how Agnew's interest in technologies could be considered in the context of the radio programme. For this I recorded one day's commentary, enabling systematic note-taking and selective transcription of all mentions of communications technologies.

Table 6.1 Description of the cricket dataset drawn upon in this chapter

Date	*Media type*	*Details*	*Methods of data collection and selection*
3 Mar 10 15 Dec 10 20 Jul 11 28 Jul 11 9 Aug 11	Interactive website	www.testmatchextra.com synchronous chat between Agnew and public (effectively 30-minute q & a)	Participation; screenshots; fieldnotes; texts copied to Word documents.
May–Dec 2010	Twitter	Sample tweets from 6 days	Occasional screenshots; copying of some text to Word documents.
2011	Book	Agnew, J. (2011) *Aggers' Ashes: the inside story of England's 2011 Ashes Triumph*. London: Blue Door (HarperCollins)	All mentions of media throughout sections of the text written by Agnew (the book also contains some writing by others, reproduced from other sources, which I excluded, and quotations from *Test Match Special*). All these were copied to an Access database and then coded according to types/technologies of media in the terms he employed.
10 Aug 2011	Twitter, radio	Collection of all tweets by Agnew and some related tweets; others; TMS and communications technologies	All tweets by Agnew collected in real time, also the most immediately relevant tweets interacting with his, including anything replied to and immediate responses. Preserved by copying into Word file; some sample screen shots; sample related tweets by other cricket commentators; fieldnotes through day on all mentions of communications technologies.
11 Aug 2011	Twitter, radio	1-hour sample of Twitter and radio	Notes; copying of texts of selected tweets; screenshot (in order to ascertain if there was any distinctive difference from the previous day).

12 Aug 2011	BBC sports website	1 day's live coverage, compiled by Tom Fordyce	Collection of all 213 postings copied to Word. Sources of contributions by channel and role of contributor categorised through spreadsheet.
1 Dec 2011	Twitter	Moussaka narrative	A story co-constructed with wife; captured through screenshots.
26 Mar 2012	Photo site linked to from Twitter, Twitter, radio	Geoffrey Boycott and the power cut narrative	A story told in commentary and through social media – captured through notes, an image by Agnew linked to from Twitter and texts of relevant tweets.
5 Dec 2012	Twitter and radio commentary	1-day sample of tweets and radio output	Collection of all Agnew's tweets, listened to his commentary over one day and made notes on mentions of new media.
May 2012–Jan 2013	Online newspaper and cricket forums	Occasional examples	Purposive sampling undertaken to explore subjects related to Agnew, Twitter and the cricket media ecology.
Aug 2010–Dec 2013	Twitter interactions	Occasional examples	Occasional sampling of Agnew's tweets and related tweets by others.
17th Feb 2013	Radio programme (*Desert Island Discs*)	available for download via bbc.co.uk (in UK)	Transcribed talk relating to Twitter.
Apr 2013	email	personal communication	Response by Agnew to draft version of this chapter.

Throughout the main period of data collection, i.e. up to January 2013, I collected sample tweets; trying to identify in each case whether a topic was confined to a single tweet or extended over several; if the latter, to collect the set of related tweets, i.e. by people who interacted with Jonathan Agnew, as far as was possible. This has definitely been occasional and unsystematic in that I could only do this when convenient, although my growing understanding of cricket events likely to elicit activity helped.

I developed my participation in other ways, for example attending an international cricket match (albeit a one-day competition rather than a Test match) and engaging in tweeting while there; one of my tweets was retweeted by the official ground account and therefore widely distributed. I did not collect other data that day, most of which was spent waiting for the rain to stop. And once the match was underway, my experience was marred by witnessing violence among English fans close by; most of these were evicted.

As I collected the data summarised in Table 6.1, I refined the general aim into three research questions:

- What attitudes does Agnew display towards Twitter, including in relation to other communication technologies he uses?
- How does Agnew deploy linguistic and other semiotic resources on Twitter?
- What roles are played by others in his Twitter interactions?

Findings were not wholly separable, but this offered a framework for analysis.

What attitudes does Agnew display towards Twitter, including in relation to other communication technologies he uses?

After reviewing all the data, I find that the best way of exemplifying these attitudes is to consider different sources. The prime way of accessing his expressed opinions is through an analysis of his book about the English cricket team's tour of Australia from November 2010 to January 2011 but there is significant evidence before and after this.

Since 2009 I had been aware of Jonathan Agnew as a relatively early adopter of Twitter, and as an enthusiast for it in the *TMS* commentary team not generally known for enthusiasm for new media. In the interactive web chat I participated in on 4 March 2010 Agnew was online, responding to questions and comments about cricket for precisely 30 minutes. He was in control of which of the questions he received to display and respond to. In the last minute he chose to go 'off-topic' for the first time – although I cannot know if earlier questions and comments raised such an opportunity and whether he would have taken it if they had. Thinking through ethical considerations (McKee and Porter, 2008), I have decided to reproduce the 'real' web identities

of public figures like Agnew but obscure the (Twitter) identities of those I take to be 'members of the public'. In the penultimate question displayed by Agnew of this web chat, R.C. asked,

> Has Twitter changed your life at all?

Agnew answered as follows:

> Well … I can now get a taxi to pick me up right outside a theatre door … actually, there are some very funny and quick-witted people out there and I have been given lots of good lines that I have used in commentary – so thanks!
>
> (Agnew, 4 March 2010 www.testmatchextra.com [website later removed] 15.28pm)

This generally enthusiastic attitude was notable for its intertextual connections with his Twitter interactions. On the previous evening Agnew had tweeted about the usefulness of Twitter in the taxi incident. He also closed this interactive web chat by connecting to his Twitter persona overtly, as follows, again responding to a question from R.C. about the England Cricket Board (ECB) scheduling one-day international (ODI) matches:

> What you think about England playing the ODI's against Australia this summer. Surely its just another way for the ECB to get even more money out us paying fans!?

Agnew replied:

> Awful – pure greed. It's up to the fans to vote with their feet. If the grounds are full, the ECB has won its argument.
>
> That's it folks – a little spaniel is standing here, lead in mouth. We will do this again – and Simon Mann is sorted to some from Bangladesh too, so check this homepage and I will Twitter timings etc … . Cheerio

An interesting aspect of these positive mentions of Twitter is the dual layer of intertextuality. Anybody who reads the final contribution will grasp that the promise, 'I will Twitter timings' refers to Twitter, whether or not they use Twitter or understand it at all (by March 2010 it was virtually certain that anybody who practised interactive web chat would have heard of Twitter). But, just as with the earlier taxi reference, there is another layer of referring to Twitter that different members of the audience, i.e all those participating in or just observing the web chat, may or may not understand. Agnew has crafted his farewell with a polite pre-closing, mentioning as pretext for having to close

the chat that he has to take his dog for a walk. In British society this is conventional behaviour; I was once told by a fellow academic that she would like to come to a seminar I was going to lead but was prevented from doing so by having to walk her dogs at that time. Agnew makes the excuse all the more vivid with the added detail of the dog's breed, its apparent eagerness and so on. But there is another aspect to the addressivity present here, directed at Agnew's Twitter followers. These are likely to know that another Twitter persona, @aggersbracken, presents itself as Jonathan Agnew's dog. @aggersbracken relates his tweets to Agnew's; the latter displays appreciation by occasionally retweeting them.

Agnew's (2011) book, *Aggers' Ashes: The Inside Story of England's 2011 Ashes Triumph,* rushed out within the year, is the best source of his reflections on his early enthusiastic adoption of Twitter (the 'Ashes' is the symbolic prize for any Test series between those two national teams). From the very beginning of the acknowledgements, on page 3, Agnew makes it apparent that the special angle of this book is its reflections on his media use, especially Twitter:

> Every time I have toured with England, the broadcasting technology has improved, as have the means by which people back at home, in the depths of winter and often through the night, can follow the cricket. This Ashes tour broke all manner of new ground in the way we were able to establish a surprisingly close level of contact and rapport with our listeners. Email and text messages seem old hat now when compared to Twitter, which has taken the cricket world by storm. Players tweet, journalists tweet and so do the fans – in their tens of thousands.
>
> This was undoubtedly the 'Twitter tour'.
>
> (Agnew, 2011)

Thus he establishes immediately that Twitter is not only an innovation that distinguished media interactions around this tour but also a factor that influences, perhaps even threatens, the place of other communications technologies. This exemplifies consciousness of the place of Twitter in a media ecology.

I investigated this media ecology, grounding findings in Agnew's own usages and understandings. I thus went through the book, coding all mentions of communications technologies in whatever form they appeared. In a subordinate layer of coding, drawn upon below, I picked out themes within each mention, enabling me to trace connections between mentions. Again, the selection of these themes was grounded in and arrived at through iteration.

The database then enabled me to return back to all mentions, grouped according to each communication technology. I now synthesise these in a concise descriptive account, endeavouring to place each communications technology in relation to Twitter, within the overall media ecology, as interpreted by Agnew.

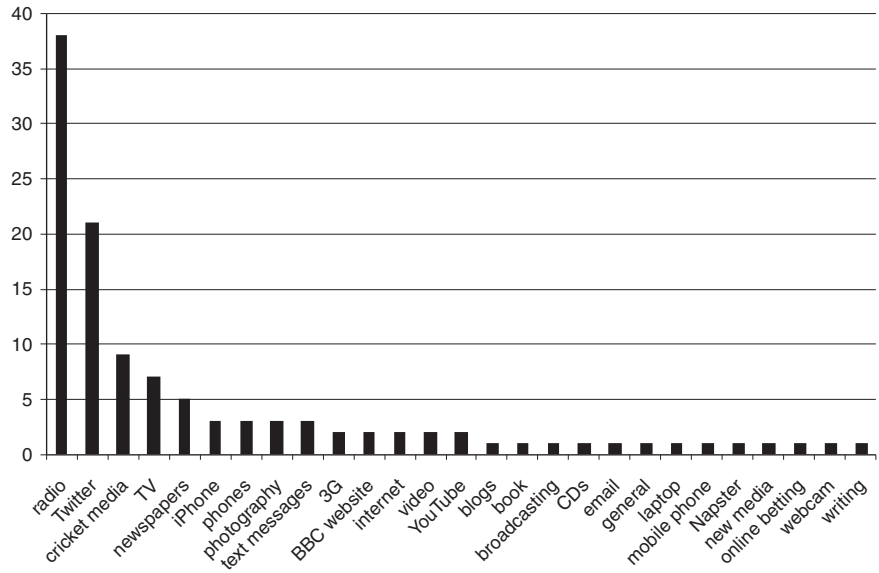


Figure 6.1 Agnew's (2011) mentions of communications technologies, presented in order of frequency.

Radio

As already explained, the central professional channel used by Agnew is radio, so unsurprisingly it receives the most mentions. Prominent themes coded within the radio topic were *Test Match Special*; the names of relevant national channels; interviews; and then Twitter. More specifically, within this theme was a specific Twitter story (regarding @theashes), explored further below. Then there were a number of stories crafted to convey insight into his work as a radio commentator, including references to interweaving professional and backstage concerns, such as using days off in part to think up new material.

Twitter

As mentioned above, Agnew dubbed this the 'Twitter tour' and interwoven through his text are two specific Twitter-centred narratives and many other brief references. The narrative which receives the most attention is the story of an American girl with the Twitter username @theashes, who, initially ignorant of cricket, is drawn into series-related Twitter exchanges. Ashley Kerekes, the person behind the Twitter name, seemed at first irritated, then puzzled; as her following grew she came to see ways of utilising the connection to her advantage, for example by selling t-shirts. Eventually she was sponsored to fly

to Sydney to watch the final Test. So the narrative interweaves the virtual interplay on Twitter with the actions of people in the physical world, including a meeting with Agnew. There is no disjunct between media in this account; see for example:

> I have confirmed the appearance on Test Match Special of @theashes who now has more than 10,000 followers on Twitter and has been offered a free trip to Australia by Qantas.
>
> (Agnew, 2011: 87)

A secondary Twitter story centres on @EllaW638, a young female cricket aficionado, who listens to the cricket all night and constantly updates scores and comments. Introducing this character is deftly used as a vehicle to explain how Twitter works, its platforms, functionality, interactional asymmetry, etc. Interestingly, this story is used to suggest that this Twitter contact provides a way for Agnew to disentangle his Twitter role from his professional, radio-centred sphere of activities:

> I encourage my loyal followers … to follow @EllaW638 instead … . By the end of the match Ella has more than two thousand people following her updates, which are apparently being typed out on an iPhone – not even anything as comfortable as a computer keyboard. It is a fantastic performance, which is hugely appreciated by everyone – not least because I can now concentrate on my radio work and leave Twitter to her.
>
> (Agnew, 2011: 16)

The remainder of the book makes it clear that however useful somebody else's service, he certainly does anything but abandon Twitter. The tour's culmination is marked by him posting video footage on Twitter (which cannot be directly true; he must have posted the footage elsewhere and then tweeted a link). This receives over 100,000 hits within a matter of hours, a popularity modestly ascribed to a mention by Stephen Fry, one of the most popular UK celebrity Twitter users.

Cricket media

The third most popular coded term is 'cricket media', a collective name for journalists and photographers surrounding the sport. Of course these have more particular affiliations, and the specific channels of TV and newspapers are indeed the next most popular mentions. Themes that emerge range from comments on specific stories to connections which cross several, stemming from cricket-related incidents – not always from this tour, sometimes associated with past events.

Others

As Figure 6.1 displays, the media ecology underpinning the book (which, it must not be forgotten, is actually centred on retelling a series of sports events) is revealed to be rich and complex; a considerable variety of communications technologies are referred to, often indicating a preference for innovation:

> an iPhone and a Napster account means I no longer need to pack a selection of carefully chosen compact discs.
>
> (Agnew, 2011: 7)

This rich media ecology underpins his presentation of self as, if not one of the first users of Twitter, a relatively early adopter in the cricket media world, who has seemingly comfortably integrated it into his media ecology. However, as shall be shown, this was at times disturbed.

10 August 2011

As previously explained, more than seven months after the end of the Ashes tour I captured all Agnew's tweets on one Test match day, 10 August 2011. He began at approximately 7.15 a.m. and finished at approximately 8 p.m., giving me more of a challenge in data collection than I had envisaged. Although I captured most tweets with precise timings, he began earlier than I expected and continued later than an apparent valediction, so that I had some catching up to do at both ends of the day and slightly less precise timings.

The main characteristic of his tweets on this day is that the majority are very interactive, asking questions of people, mentioning people and responding to queries made to him. An early tweet, about 7.15, was as follows:

> @LucyWeather Edgbaston? Bit brighter?

@LucyWeather is a professional meteorologist and TV presenter. Just previous to Agnew's tweet she had posted:

> rain in Manchester/Livepool today could hamper the clean up effort. brollies and well as brooms needed, #riotcleanup.

This would have been understood by just about any follower located in the UK, if not internationally, as referring to the wave of riots that was then affecting many English urban centres (including Birmingham). The reference to 'brooms' alludes to media stories about the efforts of citizens to clean streets in the days after riots, demonstrating their disapproval of the the lawbreaking.

Agnew's tweet demonstrates an orientation to her weather news rather than the more politically loaded topic of the riots. Presumably she is attuned to the

requirements of the BBC-associated professional to adopt a cautious stance, for her response only concerns the weather, providing reassurance that the worst expected is the possibility of some 'light rain'.

In the light of this news, which would be understood by any cricket follower as not posing any threat to the game, it is clear that the next topic implicitly addresses a different potential threat to the match:

> For anyone concerned, I have spoken to the ECB. Edgbaston Test goes ahead as planned.

This is a clear claim to expertise and authority – not everyone can speak to the English Cricket Board. Given that the Twitter audience will already know that the weather is not a cause of possible cancellation, the implied topic here is the riots; in Birmingham the previous night, over 130 arrests for rioting and looting had been reported.[1] Some of the tweets directed at Agnew took on the topic of the riots more explicitly, and once he addressed the topic explicitly, disagreeing with a suggestion that if roles had been reversed, i.e. if riots had occurred in India, the English team would have left, by referring to a relevant occasion in the past.

His talk on the radio, like that of the other commentators, made implicit or oblique reference to the riots. One older commentator said, 'It's tremendous that in spite of all that is going on, the Test Match is being played,' without being explicit about what 'all that is going on' might be. I surmise there may have been a policy instruction given to the broadcasters not to mention the riots explicitly, presumably in the daft belief that mentioning them in the context of a cricket broadcast might provoke more. I think it possible that the commentators' oblique references to the riots might be interpreted as gentle resistance to this, as otherwise such unexplained references as the one quoted above would seem improbably unprofessional. Christopher Martin-Jenkins mentioned 'smoke from a burning warehouse' at 11.20 a.m., again without further explication.

Most of Agnew's tweets during the day dealt with the progress of the game, others referred to *TMS* – apologising for a temporary sound problem, encouraging Twitter followers to contribute to the lunchtime feature, and so on. He retweeted many comments, sometimes when asked, such as at 8 p.m. when he retweeted someone's request to try to sell a ticket for the following day. Comments directed at him, some of which he responded to, either directly or through a generalised thank you at the end, involved considerable diversity of tone, including supportive or humorous on the one hand and negative or hostile on the other. Most negative comments directed to him were ignored, but he reacted to some, such as the following from Z:

> @Aggerscricket fucking coward England went bk after the Mumbai attacks India didn do samething.showed who are real men.vaseline Vaughn

Agnew did not simply block Z, an act which would not have been displayed to others, but chose to respond:

> [@Twittername] thank you and good bye. I don't tolerate language like that. I would not dream of talking to you like that.

Much later, on *Desert Islands Discs* in February 2013, he brought up the topic of Twitter in the context of a discussion of serious matters around cricket:

> When you work for the BBC you do have to be fair. I mean, if you are a Twitter follower of mine and you ever say or suggest that I'm anything but fair, you're gone, you're blocked. Because again that was rammed home by my dad all those years ago. You are fair, that's the most important thing about life. Even if it's going against England or someone who I know and like, you've just got to say it.

In an earlier draft of this chapter I had thought not to include Z's tweet, owing to my feelings of revulsion for what I perceived as hate speech; I saw the juxtaposition of 'real men' (Indians) with 'vaseline Vaughn' as a homophobic insult directed at the *TMS* commentary team member and former England captain, Michael Vaughan. I could not see the worth of quoting this posting. But Bourdieu (1999: 3) writes about 'difficult' spots: physical places and institutions that bring people with very different points of view together. Recognising that these are '*difficult to describe and think about*' [italics in original], he urges that we should not adopt an over-simplified, dismissive stance, the product of a single point of view:

> We must work instead with the multiple perspectives that correspond to the multiplicity of coexisting, and sometimes directly competing, points of view.

Here my multiple methods helped. During his live web chat on 9 August the following interaction had taken place:

> SENDER: R.G. (15:17:15)
> Hi Jonathan
> What chance snicko back soon in live time rather than 5 mins later when we all know a mistake has been made
> And what about testing for Vaselin?
> Aggers: Snicko has never been in live time - it always takes a long time to 'line up' and some believe it is therefore open to manipulation. Like all the techno, it is not 100% - which is why I am currently opposed to it. Make it all work, and I will change my mind

Further, I read through the detailed fieldnotes I had made throughout the day of 10 August on the *TMS* output as a whole and, again to my surprise as I had not remembered Vaseline being mentioned in a cricket context, came across the following, written between 14.52 and 14.54 (MV refers to Vaughan):

> MV discussing making an advert for Vaseline (refs to vaselinegate) hopes they will 'give a donation to my charity'

I have no idea whether Michael Vaughan really was making an advert for Vaseline (it does not seem very likely), but Google helped elucidate what 'vaselinegate' referred to. Sources as diverse as *The Guardian* newspaper online and PakPassion, a Pakistan-based cricket forum, explained that in July Michael Vaughan had tweeted about an incident in a match when Hotspot, a thermal imaging technology, had not reacted when a ball came very close to a player's bat, so that the batsman, the Indian veteran, VVS Laxman, was deemed not out after an English team appeal. (In simpler terms, the England team had claimed they had defeated an Indian batsman but the results of a technical instrument test were applied to a ruling in favour of the batsman.) Vaughan was reported to have tweeted, 'Has Vaseline on the outside edge saved the day for Laxman?'.[2] The suggestion here was that the Indian batsman had cheated, obviously a very serious accusation, understandably reacted to by many with outrage directed at Vaughan. As a former England captain, his question appeared particularly unsportsmanlike in the eyes of many. According to PakPassion, the England team, including even the bowler involved, were quick to explicitly disassociate themselves from the accusation. Vaughan later defended himself by suggesting he had only been joking. In the circumstances though, his radio mention of Vaseline referred to in the fieldnote made in the following month does seem provocative, likely to rile those angered by his previous accusation – who, of course, are not likely to have the powerful reach of his voice afforded by his *TMS* role and celebrity standing. To go further into Michael Vaughan's radio and Twitter output is beyond my scope here, but it does seem to me that on the whole when meeting abuse and opposition on Twitter, Vaughan is more likely than his colleagues to react in ways that might be read as combative, even confrontational, while also being capable of being read as 'humorous'. In the light of reading about other Twitter-mediated disputes, another episode from his radio output of 10 August 2011 concerning jelly babies also seemed possibly less innocent than it had at the time, potentially referring to another previous dispute.

On this day, then, that I examined in considerable detail, Agnew was continuing to display considerable enthusiasm for Twitter, interweaving tweets with his commentary periods and using his postings to extend the range of information shared with cricket media enthusiasts beyond the duration of his radio programme. His style was highly responsive, taking up interactants' points on a range of agendas, as well as showing himself willing to initiate

topics, especially where his expertise or status were salient. He shows himself to be cognisant of a wide range of purposes for which Twitter could be used. Further, he demonstrates a sense of integration between Twitter and *TMS* activities, as shared between himself and those who were participants or audience members of both, as in this tweet of about 6 p.m.:

> Many nice comments here re TMS today. Thanks all. We simply aimed to put a smile on faces. Glad it helped

At the time I wrongly thought that this tweet, made about the time he was finishing work on *TMS* while probably preparing for brief spots on other BBC radio stations as well as a podcast, was probably designed as a closure on Twitter.

Sometimes his switches between tweeting and radio commentary were extremely rapid, as I noted during the day while writing fieldnotes, reading Twitter and listening to the radio. On Twitter, he was able to advance opinions extraordinarily quickly; for example, at 11.06 he tweeted:

> Sehwag will be given ct behind on review for 0 …

This was a prediction which he finished typing and posted before the umpires gave this decision on the field.

In terms of the media ecology demonstrated directly through mentions on his radio output, Agnew drew particularly on email, describing interactions with audience members, especially during a discussion session in the lunch interval but also at other times. The time I was most startled by a mention of a communications technology came less than two minutes after he had posted a tweet. On air he said, 'I've lost my pen', probably an unremarkable mention for many of his radio listeners but provoking amazement in me, wondering just how he could combine such a mixture of communications technologies. He very rarely referred to Twitter on air, and then only as an additional source of comment on an umpire's decision, ' … in fact people did say on Twitter … ', rather than a reference to his own direct interactions. Perhaps it was not coincidental, however, that just before and after that mention he delivered a short narrative about his dog.

At this point I will turn to the two other research questions, before returning to a more chronological treatment of how his attitude to Twitter can be seen to have changed in the concluding section.

How does Agnew deploy linguistic and other semiotic resources on Twitter?

Agnew is as adept at crafting short tweets as he is in 'filling air' when talking on the radio, presumably experienced as a very different challenge. Tweets can

be as short as the concise weather query posed to @lucyweather quoted above, or even shorter, like the following:

> [@twittername] :-)

Virtually the full character allowance can be used in, for example, announcements of team lists, but it is rare that Agnew ever needs to continue a single message over more than one tweet, although he is adept at crafting the 'small stories' that Page (2010) researched in Facebook status updates, through this medium of Twitter.

In the period studied, Agnew used images, almost always photographs he took himself, as occasional accompaniments to his messages. Often they carry much of the sense. On 9 August 2011, the eve of the Test match in Edgbaston featured above, his tweets included team listings, responses to others' questions and a photograph of the new media centre, with the accompanying image hosted by Twitpic effectively functioning as a caption, 'Our new home at Edgbaston. We are 3rd floor with excellent view.'

Images became integrated with Twitter, so that the picture and message mentioned above could be seen together, at least on some devices. Earlier, it was always necessary to click through to an image to see it and Agnew's messages were sometimes seemingly crafted to encourage that extra effort. For example, while in the West Indies on 4 May 2010, he tweeted a few hours before a match was about to begin: 'Don't know what forecast is but this is view from my window', followed by a link to an image, hosted by Twitpic. Any interested follower would surely have found it irresistible to click through. One then found a photograph of grey clouds, unremarkable in itself but of course full of portent. Four minutes later, Agnew tweeted, 'Now raining (groan).' Through Twitter he had already responded to a question about what would be the consequences to the team in the competiton if the match were to be rained off and so these two ostensibly simple postings were resonant with shared understanding between himself and followers.

My research questions overlap rather than play out as distinct; I now turn to a different angle on considering his Twitter interactions, more specifically to considering the role of other people.

What roles are played by other people in Agnew's Twitter interactions?

The involvement of other people has diverse functions and qualities, many of which have already been mentioned.

First, there are the people with whom Agnew interacts directly on Twitter. He responds directly to people's comments and questions, sometimes indicating the addressivity of the response through using the @ convention. He retweets posts that have been directed to him, sometimes by people asking him

to do this, for example to garner publicity for a good cause or charitable enterprise. He retweets some posts that have not been directed to him, but which he decides to share in any case. Sometimes he retweets a post just as it has been made; at other times he will append a comment.

Such interactions may develop into a conversation, sometimes a dialogue between two people played out in public, sometimes a multiparty interaction. Some people involved are themselves public celebrities, such as Lucy Verasamy or Michael Vaughan, as mentioned above. A very few will garner more Twitter followers through interactions with Agnew. Of the two main Twitter characters mentioned in the so-called Twitter tour, by the end of 2012 Ashley Kerekes (@theashes, strapline, 'I'm not a freakin' cricket match') maintained over 7,000 followers (including Agnew), whereas @EllaW638 had disappeared from Twitter.

I now turn to a second way in which other people are involved in Twitter activities: when they are brought into his narratives, either through his referring to them or when they take an active part in co-constructing an account or story. 'That side of it I really enjoy', he confirmed (personal communication, 18 April 2013). Frequently humorous tales involve his wife, Emma Agnew, who has a background as a media professional herself. Sometimes she is cast as a character in Agnew's stories, sometimes implicitly as in Figure 6.2.

In the following more complex example she is a more active participant. This story dates from 1 December 2011. My retelling here involves very considerable editing work for the sake of simplification, although I recognise this has a distorting effect in three ways. First, I have stripped out most of Agnew's tweets, many of which were addressed to other people. Most do not seem to have a direct bearing on the story but rather concern other matters, although I cannot be sure of that as I did not harvest all the interactions. So, for example, I do not know if one of his intermediate tweets – '@twittername ha!! I'll

Figure 6.2 Screenshot extract from 11 May 2011.

remember that for the winter' – concerned cricket, the dinner narrative or another topic entirely. So I am probably curtailing some elements of the story that would have made sense to some readers. Second, I distort the story by reversing its order chronologically. This would match the narrative as experienced by anyone following it in real time but has the reverse effect in terms of its eventual presentation and thus how it appears in my archive. Finally, I label the posts JA and EA, insert numbers and omit timings.

1. JA: Treating the wife to Moussaka Surprise. Theory being devastation in the kitchen means I won't be asked to cook again for at least 6 months.
2. JA: I'm sorry but aubergines: discuss. Flabby, oil soaked pieces of rubber …
3. JA: @[twittername] more of a charred brown daggers
4. JA: Cunning plan nailed on. Looks ghastly. And the aubergines will be the clincher.
5. JA: Tension mounting. She's due back in 5. It smells most unappealing, frankly. *muttleysnigger*
6. EA: Arrive home to delicious smell from the oven (yes, turned on!) I'm smelling a rat – or a husband in disgrace … .
7. EA: Crikey – edible! On third helping- he's a rubbish groom but gets the job as chef! Not much left- pic to follow!!!!!

This short co-constructed narrative can be examined in terms of the addressivity and heteroglossia discussed in Chapter 2. Posts 1 and 2 appear to be addressed by JA to his broad audience; the omission of '@' suggests the initiation of a new topic. As already mentioned, they are distinguishable from most of the other tweets he was posting that evening in that they were not marked by inclusion of '@', which picks out a salient person or more specifically a twitter account, in addition to being publicly addressed to all who are following him and reading these tweets.

It is typical of Agnew that he crafts a short Twitter story that can be made sense of by readers who are new to his output but which also has layers of meaning that will resonate with longstanding readers. At the very beginning of the story, the use of the term 'the wife' places this post in a traditional genre of British humour; this element of the 'mosaic of quotations' points squarely to a well-established comedic repertoire of narratives which position husband and wife in stereotyped roles that will be heavily emphasised to set the foundations for a story and then in some way twisted, undermined or made incongruous for comic effect. So here the phrase 'the wife' sets the stage for the main thrust of the narrative: the juxtaposition of intentions that seem to be in conflict with one another but which can be understood through drawing on comedy archetypes. Here then is the plan to cook for the implicitly absent spouse, which might be understood as a 'good' thing to do, in parallel with the suggestion that it will

not turn out well, thus the opposite of 'good' – possibly, indeed, a 'devastation'. The act of cooking the meal is marked as an unusual event by being deemed worthy of mention; by the inclusion of the word 'surprise'; and finally by the proposition that the hapless husband will do it so badly he will not be expected to do it again for a very long time. Further, the word 'surprise' being appended to the recipe underlines the idea that in some way it is not going to be a standard turn-out of a moussaka but likely to be unexpected in some way.

A layer of heteroglossia, the 'mosaic of quotations', arises in the references to popular culture, apart from the comedic stereotypes of marital relations indexed through the reference to his spouse as 'his wife'. '*muttleysnigger' (posting 4) is an innovative combination, according to my search via Google, but others have used 'muttley snigger' to index the peculiar laugh of a specific canine cartoon character in a Hanna Barbera cartoon. This originated in the USA in the 1960s, was a staple of children's afternoon television in the UK for Agnew's generation and indeed has continued to be reissued and spawn spin-offs such as a video game into the first decade of the twenty-first century. 'Cunning plan' of posting 6 is the well-known catchphrase of a character in another UK comedy popular with his generation, and indeed likely to be familiar to at least some younger readers. Agnew combines these intertextual references with what appear to be novel, even ingenious, descriptions such as 'charred brown daggers' in posting 3, which I take to be referring to the aubergines.

Through incorporating references to television entertainment programmes he has invoked the medium of mass broadcast crafted for an audience to enjoy but not to participate in, a mediated quasi-interaction in Thompson's (1995) terms; so some kind of satisfactory ending would be expected. He also more specifically leads his audience to expect a climax, through 'tension mounting' and the reference to '5 minutes' in posting 6. But these expectations will best be satisfied if a reader is also following his wife's account.

For there come not one but two comedic twists in the climax of the story. The first twist is that Emma, the wife, enters the frame and participates in the story through her own voice, and the second is that one may infer the moussaka to be delicious, as implied by her taking a 'third helping'. Emma, too, indexes the genre of marital stereotype/comic skits through, 'I'm smelling a rat – or a husband in disgrace … ', invoking the comedy staple of spouses' strategising and positioning of one another.

One of Emma's references addresses the more knowledgeable reader of Agnew's tweets, as opposed to a newcomer. This is perhaps to be expected, since it can be presumed that only a reader particularly interested in and familiar with Agnew's output (as opposed to a more casual follower centred solely on cricket-related aspects), will through previous interactions have chosen to follow his wife's account too. Her reference to Agnew's prowess as a 'groom' – suggesting that if not hapless with the moussaka or even the oven, as expected, he was in another area – would be understood by experienced readers as relating to her horses.

This story was wholly unconnected to his radio output, at least as far as I know. Certainly it was constructed at a time he was not involved in *Test Match Special* but rather choosing to spend part of his leisure time at home still engaging with his audience. I do not think it is a stretch to propose that the sense of fun was mutual, not restricted to the passively reading audience but shared by the chief proponents, the Agnews, as well as those who responded through Twitter. This separation from radio activity (if indeed the story was not drawn upon as a later radio resource) is not the only occasion for his crafting of stories. I followed the unfolding of one story that I will not discuss here, which I term the 'Geoffrey Boycott and the power cut' narrative, through Twitter, Twitpic, radio commentary – indeed interwoven with ball-by-ball – through to subsequent inclusion into a regular 'end of the day's play' dialogue between Agnew and Boycott.

I turn again to contrasting interactions with people through Twitter that are marked by indicators of negative affect, as already mentioned above. Some of his postings imply blocking somebody, i.e. ensuring that he can no longer see their tweets, as with this valediction of 9 August 2011:

> [@twitter name] what a revolting individual. Goodbye.

This was then followed up by an explanation, directed at someone who had addressed both Agnew and the blocked individual, suggesting that there was no point in the latter following 'aggers'. Agnew responded to this latter person:

> [@twitter name] He's joined the ranks of the blocked. Amazing how abusive and disrespectful people can be. Or is it from what we are witnessing.

Much later Agnew wrote:

> I still do have an issue with how to deal with hostility. I now block first, due to the premise that you should not tweet something you would not say to the recipient's face, and that rudeness is intolerable.
>
> (Agnew, personal communication, 18 April 2013)

During the period of data collection it becames apparent that abuse had become too much. In May 2012 Agnew was reported as having quit Twitter after a 'vile tirade' from a professional writer during one day of a Test match, regarding *TMS*. I did not witness Agnew's 'farewell' tweets at the time. The *Daily Mirror*[3] reported him as writing:

> Sorry but I now retire from Twitter. Been fun and met nice people. But too much abuse

The *Daily Mirror* did not make it quite clear if this statement was itself tweeted, but was plain about the identity of the writer Agnew had reacted to. In turn that person was unrepentant, reported as tweeting,

> Dear TMS fans: massive thank you for your advice but I'll continue to love TMS and take the f***ing p***m cheers.

I suspect the asterisks were inserted by the newspaper but have no way of checking.

At that point I was unaware of Agnew's 'retirement'; by the time I learnt of it he had returned to Twitter. By 21 August he had recorded 18,708 tweets, had 180,976 followers and was following 108. By the end of January 2013 he had recorded 22,267 twitters, had 200,002 followers and was following 111. He was still occasionally expressing impatience with 'garbage' and 'pillocks' and at some point in late 2012 added to his profile, 'This is a private account and all views expressed are mine alone', along with a link to the BBC cricket website.

Brake's (2012: 1072) study of bloggers found that the 'benevolence' of an audience is often assumed and that when mistaken a consequent tendency can be to 'expose social media users to unanticipated interpersonal and professional risks'. Clearly something happened to disturb Agnew's presumed assumption of benevolence. It seemed to me perhaps salient that abuse had emanated not just from disgruntled individuals, including aggressive partisan fans, but also from another professional writer, from whom a more polite and respectful attitude would perhaps be expected. This interpretation was bolstered to some degree by his email reaction to a draft of this chapter, when he mentioned another journalist who 'had performed a real hatchet job on me' (Agnew, personal communication, 18 April 2013). Apparently his followers, 'my Twitter army', took to the platform to retaliate with 'a negative Twitter bombardment'.

Conclusions

The main aim of this research was to investigate how Agnew uses Twitter and how this changed over time. Agnew has been at the forefront of bringing established cricket media in touch with Web 2.0 literacies. On 5 December 2012 I carried out a final observation of his Twitter output and elements of the related cricket media ecology. I read his Twitter output, listened to his *TMS* radio commentary and made a rapid survey of the other BBC cricket-related online spaces. Agnew tweeted 13 times during the day and did not mention Twitter in his radio commentary. He did display continuing interest in new communications technologies while talking on air, engaging in a lengthy discussion about new datalogging and analysis techniques designed to assist the English team. On the BBC site, although there were news stories, the *TMS* site

had not been updated since May, referring to the summer (of 2012) in the future tense. The cricket website on which he used to engage in interactive chats had long since closed. But the synchronous 'official', i.e. BBC, text commentary, where journalists interspersed their descriptions of events with people's tweets was still going very strong, distinguished by witty combinations of topics and themes. Its Web 2.0 practices were clearly understood by its participants, at least those of them expert enough to have their tweets selected.

There are certainly limits to his enthusiasm for Web 2.0 literacies and the new possibilities it brings. In 2013 he was reported as evincing hostility to a new online commentary 'Test Match Sofa' attempting exhaustive coverage on Twitter with a collaborative and humorous ethos, a kind of amateur parallel to *Test Match Special*. Christopher Martin-Jenkins had expressed some hostility (*The Times*, 2012[4]) in the context of uncertainty as to whether *Test Match Special* was going to be covering a forthcoming tour of India, owing to a rights dispute. When *The Cricketer* magazine announced sponsorship of 'Test Match Sofa', Agnew was reported to have reacted negatively (Mail Online[5]) via Twitter. Arguably, both objections could be seen to evince a lack of understanding of the participatory nature of Web 2.0 literacies, whereby as popularity of any topic grows, so does the number of people contributing creative works of their own. Although on the other hand, even if this was the meaning read into Martin-Jenkins' and Agnew's comments by some, their views could also have been read in context as critiques of what they saw as inappropriate commercial interests that threatened the traditional *TMS* coverage of overseas cricket tours.

I perceive Agnew's use of Twitter as innovatory in content and often intrinsically interesting as a demonstration of his craft of journalism. He can use the platform to be informative, in a timely fashion, to extend his communications beyond broadcasts. The spontaneity of many of his tweets, including responses to others, attests to a willingness to project an identity at once professional and personal. A part of his professional persona, as with so many people in the public eye, is constructed with an interweaving of apparently personal information. His professional presentation of self through a Twitter persona involves stories featuring ostensibly backstage characters. As Page (2012: 1) found in her study of stories across digital media, these can be seen as:

> important discursive and social resources that create identities for their tellers and audiences. Storytelling is an interactive process, traces of which can be seen in the conversational formats of social media and are interwoven between online and offline contexts.

Such interweavings are often part of the construction of a media personality, appearing to add depth to a professional persona beyond that which is conferred by solely professional activities. There are many limitations in the

selectivity of my data collection procedures but at the same time I would claim that the range of data gathered, using an essentially ethnographic sensitivity, provides rigour in the research process. This rigour, I would argue, cannot be present in any analysis that takes into account as evidence texts generated in one domain alone.

I had not expected that he would agree to comment on a draft version of this chapter and so was very pleased when he did so. I did not expect him to comment on *Test Match Special* and the influence of his Web 2.0 literacies, since to do so might have implied a degree of criticism of past if not present colleagues, and he did not. But the comments he volunteered about his own attitude to Twitter, such as 'I fall in and out of love with Twitter' (Agnew, personal communication, 18 April 2013), did provide support for my interpretations and further vouch for the effectiveness of the methodology. Agnew's construction of professional identity takes place through several channels, and through investigating at least some of these the developing performance of expertise can better be approached.

Agnew's output can be appreciated as witty in that he makes clever use of the brevity of Twitter, which clearly appeals to him. Jones and Hafner (2012) explain how the success of Twitter is in large measure owing to the very nature of the constraint. The fact that one can only post in a very limited character set means that the user cannot feel obliged to put any effort into openings and closings, for example. Jones and Hafner refer to transaction costs, suggesting that in comparison with, for example, face-to-face talk, there is less need to attend to a multiplicity of modes – eye contact, gestures, etc. So Agnew can very rapidly produce a performance. His performances are multilayered, offering a satisfyingly deeper sense of heteroglossia to those who, for example, recognise the canine theme.

Writing about her research on Twitter hashtags, Papacharissi (2012: 1989) summarises:

> Presentations of the self thus become networked performances that must convey polysemic content to audiences, actual and imagined, without compromising one's own sense of self.

Finally, the limitations of this study do not permit me to offer systematic evidence that Agnew influenced others in the cricket media ecology, although my sense from participant observation is that this would be a reasonable claim. Agnew can be seen to have acted within the cricket world as an ideas champion or change agent – two equivalent terms used in researching the internet in the mid 1990s by Mullinset *et al*. (2008). Their research suggested that the influence of specific individuals could be powerful, and that this depended on some level of dissatisfaction with how work was being accomplished previously and an overall supportive environment. This pattern seems to fit Agnew's activities. The notion of dissatisfaction with existing work practices

is not possible to locate with any certainty, but presumably Agnew's early delight in making more connections with audience members suggests some level of dissatisfaction with the traditional broadcasting model, even though phone-ins and email had brought some increase in interactivity. While being unable and very likely unwilling to criticise any attitudes by *TMS* colleagues, he certainly enacted a stance that paralleled what he and many other commentators put forward relating to the sport of cricket itself – that it needed to change and evolve in order to continue to attract new audiences in physical cricket grounds and for related media. Elements of the environment as supportive must have been present to some extent in that some of his Web 2.0 literacy practices were at least permitted, whatever the level of (in)congruity with the literary and historical traditions of cricket. Further, this support can be perceived as extending far beyond the cricket media world, being located with the rise of digital literacies and the phenomenal growth of Twitter in particular.

The very essence of social media platforms is interactions with other people. Yet his embrace of Twitter does not imply a flattening out of hierarchy, an equality of communication between a celebrity practitioner of digital literacies and those he interacts with. Nobody else can see, let alone control, what proportion of tweets directed at him through the use of '@aggerscricket' are taken up by him. The asymmetry between his followers and those he follows is apparent. Nevertheless, in Agnew's work, Twitter seems to some degree emblematic of the shift from traditional broadcast media, the one-to-many model, to the more interactive embrace of Web 2.0 literacies. This appears particularly true of his early engagements. Still, it is a move of degree rather than a radical overhaul. As Brake (2012: 1057) cautions:

> newspaper columnists or celebrities [,] cannot but be aware of a large audience, so their ostensibly personal communications may be self-consciously crafted to achieve a particular reputational or aesthetic end and may therefore be analogous to mass-mediated communication.

In this light it is reasonable to perceive Agnew's continuing professionalism in his use of microblogging combined with other media as indicating not a rejection of mass-mediated communication but rather as elements of taking a change agent role in the evolution of an incorporation of Web 2.0 literacies in the cricket media ecology.

Notes

1 www.bbc.co.uk/news/uk-england-birmingham-14452468 (accessed 31 January 2013).
2 www.pakpassion.net/ppforum/showthread.php?t=133610 PakPassion, Pakistan Cricket Forum, 31 July 2011 (accessed 3 February 2013).

3 www.mirror.co.uk/news/uk-news/jonathan-agnew-quits-twitter-over-839776 It's not cricket: 'Aggers quits Twitter over The Thick of It writer's "vile tirade"', *Daily Mirror*, 19 May 2012 (accessed 31 January 2013).
4 www.thetimes.co.uk/tto/sport/cricket/article3584722.ece, *The Times*, 31 October 2012 (accessed 27 January 2013).
5 www.dailymail.co.uk/sport/cricket/article-2226174/Test-Match-Special-row-Jonathan-Agnew-hits-The-Cricketer-defends-Test-Match-Sofa.html, Mail Online, 1 November 2012 (accessed 27 January 2013).

7

'KNOWLEDGE IS LIMITED, WHEREAS IMAGINATION EMBRACES THE WHOLE WORLD'

Conclusions

Dialogism

Although Kristeva (1986: 59) predicted that 'dialogism may well become the basis of our time's intellectual structure', Rommetveit (1992: 19) considered that we are still too often presented with 'representational-computational models [that are] monologically based and converge in an image of Man as an essentially asocial, but highly complex information-processing device'. He set out a 'dialogically based approach to language and mind' as 'a much-needed constructive alternative' (Rommetveit, 1992: 19).

The monologic view of language that Rommetveit (1988) had in his sights in writing of 'the myth of literal meaning' is shared by many approaches to linguistics and the cognitive sciences (Wertsch, 2003). However, appeals to construct sociocultural or dialogic alternatives come from many sources. For example, conversation analysts have criticised traditional pragmatics (speech act theory and so on) as being overly concerned with the individual utterance, and uncovered patterns in speech of orientation towards others (Schegloff, 1988; Hopper, 1992). This conception of constant negotiation between speakers can be linked with the Bakhtinian tenets of fluidity of meaning and addressivity (Holt, 2003).

Pragmatics-based European linguistic theories, such as Sperber and Wilson's Relevance Theory (1986, 1987) and Levinson's presumptive meanings (2000), draw directly on speech act theory (Grice, 1975; Searle, 1976), in foregrounding the negotiation of meaning in specific contexts by specific interlocutors. Operating within an essentially positivist epistemology, they struggle to build a new language level between truth-conditional semantics and pragmatics understood as implicatures: 'a new strange level populated by semantic wraiths – a level of fragmentary structures, underspecification and half-information' (Levinson, 2000: 241).

Language theorists such as Bakhtin and Kristeva turned away from attempts to delineate separations and relations between language levels and look rather

at their connectivity and interplay at the level of utterance. Their focus is not on decontextualising utterances or mapping them to specific, separable features of speaker and/or context – understood as a containing, objectively describable environment. Rather, Bakhtin envisions language as contributing to shaping the environment in which it may be interpreted, interwoven, as it were, with its own 'context' as the words and phrases – themselves never wholly inextricable from genre – bring their complex histories along with them. As others have recognised, there are strong links between Bakhtinian theory and the language philosophy of the late Wittgenstein (1953), who looked for the explanation as to what language *is* in what *people do* with it.

Sociocultural perspectives on language as dialogic can be associated with a further panoply of theories. Actor-network theory deals with complex assemblages and representations, tracing semiotic and material relations while simultaneously troubling any notion of theory (Latour, 2005). The approach known as *anthropologie de l'écriture* (anthropology of writing) is centrally concerned with examining processes of production and the use of written texts (Fraenkel, 2002; Barton and Papen, 2010). Iedema (2003) examines processes of resemiotisation. Hutchins (1995) showed that expertise does not only consist of the knowledge and skills of humans within these groups but also encompasses the organisation of tools within their environment and the representations of information by mediating technologies. I believe these approaches are consonant with literacy studies, complementing the ideas I have sketched in previous chapters. Working with colleagues' multiple perspectives, Hutchins' idea of distributed cognition provided an appropriate way to research interactions within the Schome Park programme (Gillen *et al.*, 2012).

The Bakhtinian approach to language, if I may artificially reify and so term such a rich constellation of ideas, is associated with the twentieth century. As discussed on p. 72 above, a key additional contribution, by Goffman (1981), was to identify the mechanics of talk-in-interaction as a proper object of study, rather than to take for granted dyadic talk as canonical, a kind of default position as in much traditional communications and linguistic theory. This opened up the way for recognising all communication as being constrained through the specific material qualities of its channel.

A further key contribution from taking a sociocultural approach to the study of language in interaction has been a recognition that data from children's discourse need not be separated off as at best a specialist area, at worst an irrelevance to mainstream theorising appertaining to issues of linguistics, language and the real world. Engagements with new communication channels entail learning, language development and hence modification to social identity for all. Consideration of such changes should be at the heart of theorising discourse. I will return to the challenges taking dialogism on board presents for linguistics in the context of digital literacies, but first focus on learning and implications for education.

Digital literacies, learning and implications for pedagogy

I have endeavoured to show that digital literacy practices are intrinsically dynamic, related as they are to fast-changing technologies in a world characterised by complex networks and translocal communications. People can shift rapidly in their use of technologies, their attitudes and practices. Comparing geographic areas globally, pathways can be very different depending on the particular background of economic, political and social forces, as well as the agency of remarkable individuals. See, for example, how fast Estonia was to embrace the internet compared with many European nations (Farivar, 2011). India essentially failed to bring landline telecommunications to the mass of its population but was extraordinarily rapid in cellphone penetration (Jeffrey and Doron, 2013).

The complexities of such developments present great challenges to those concerned with designing 'frameworks' and qualifications that aspire to be more broadly educational than highly specific certification of narrow skills that are likely to change frequently in content detail. I am not denigrating the latter, recognising that different kinds of qualifications exist for different reasons. However, if the aim is to think of digital literacies in a more educational frame, I propose that of central importance is the right learning disposition. This is likely to include:

- flexibility – including recognition of change as constant;
- resilience in the face of setbacks;
- critical questioning of products, services, technologies and policies;
- the capacity to communicate effectively and work with others across sociodemographic and geographic boundaries;
- access to resources and a willingness to adapt in the face of difficulties.

All these points work against the possibility of construing digital literacies as an individual skill or skillset. Long before the advent of digital environments it was argued that recognising literacy as social practice entails the rejection of a unified conception of literacy as a single, autonomous skill. Levine (1986: 43) urged,

> The first step is to discard an albatross of an idea – that literacy is a single, unified competence – and to begin to think wherever possible in terms of a multiplicity or hierarchy of literacies.

The idea of 'hierarchy' here is to recognise the ideological facets of any literacy practice – how valued or ignored they may be at a particular time in a particular society. Furthermore, Levine, a sociologist based in England in the 1980s, recognised the need to acknowledge multilingualism, in a multiplicity of channels and genres, long before twenty-first century recognition of super- or hyper-diversity (Cantle, 2012).

Formal education has many drivers that in general find the challenges associated with a multiplicity of literacies and flexibility inherently inconvenient. There is a great tension in educational institutions today between the pressures of accountability that drive endeavours towards success in well-defined, measurable tasks and the possibilities of a more creative and critical vision of engagement in the world. The latter must include digital literacies to be authentic. Measurable tasks are limited in so many ways; their great advantage to a narrow conception of education is that they embody, in fossilised form, a view of the world in which teachers hold all significant knowledge. They atomise the individual, seeking evidence of things achieved while alone. Many have commented on the gap between this and what is expected in areas of life subsequent to formal education. For example:

> when today's students enter their post-education professional lives, odds are pretty good that they will be asked to work with others collaboratively to create content for diverse and wide-ranging audiences. Compare that to an education system that, by and large, asks those same students to work independently for a very narrow audience … and the disconnect becomes painfully clear.
>
> (Richardson, 2006: 126)

There are many teachers, educationalists and other commentators striving in many ways to work against this disconnect. See for example Davies and Merchant (2009) and contributors to Coiro *et al*. (2008), Lankshear and Knobel (2013) and Merchant *et al*. (2013). In these and other works, Jenkins *et al*.'s (2006) notion of participatory culture focussing on people's collaborative, purposeful endeavours employing technologies has been very influential. For example, in the Queensland University of Technology, the concept of produsage, fundamentally rethinking the relationships of producing and engaging with information and knowledge, has been brought to bear on tertiary education. Bruns and Humphreys (2007) reported on a wiki-based learning approach used with a course on New Media Technologies. Building on this and much other related work, including in the USA, Bruns (2008: 341) connects with Jenkins *et al*. (2006) with his proposal that education might be centred on developing five capacities in learners: to be creative, collaborative, critical, combinatory and communicative.

Jenkins *et al*. (2006) had followed Gee (2004) in arguing that the most exciting learning opportunities for young people in the twenty-first century occur in online collaborative environments he called affinity spaces. They present powerful arguments that, far removed from the classroom, these offer learning opportunities that can: dissolve age/stage demarcations; offer differential experiences according to levels of expertise; develop competencies through peer–peer contingent sharing; and, most of all, be extremely motivating. They stress the differences from formal education, therefore laying down a

tremendous challenge for those who try to bring the principles of new literacies into the classroom.

Even when there is some recognition that formal education needs to change and that new technologies can be part of a solution, alarmingly simplistic and ultimately backward rhetoric often prevails. As I was finishing this book, the *Economist* magazine published a leader that for me encapsulated muddled thinking around technologically deterministic policy discussions of education (*Economist*, 2013: 15). I should have been warned by the headline, 'E-ducation', with its strapline, 'A long-overdue technological revolution is at last under way'. This leading article trotted out some of the persistent fallacies, including perhaps the most insulting to the teaching profession, the idea that teaching is the performance of a 'sage on a stage' (all quotations in this paragraph are from this article). In the classroom the teacher as 'orator' transmits knowledge to students, undifferentiated stuff to all students simultaneously. If this is accepted as a current reality, it is then relatively easy to suggest, as the *Economist* leader writer does, that 'gizmos' might bring in more personalisation. The classroom might be 'flipped' so that individualised reading and acquisition of knowledge happens at home and the teacher at school then works more interactively, aided by devices with 'built-in continuous performance assessment'.

The biggest problem here is that underlying these depictions of both what might be problematic now and what might be improved in future is a deeply impoverished understanding of pedagogy.

For young children and older students, access to resources is vital but so are the pedagogic interactions of skilled professional teachers that enable children to not only learn skills but extend their own capacities to engage meaningfully and critically with what is made available to them (Mercer and Littleton, 2007; Wolfe and Flewitt, 2010). In an ever-changing world, this should mean prizing flexibility, or adaptability, on the part of both students and teachers. Almost nothing can be more vital than fostering a learning disposition on the part of all involved in the education process, whether they be learners equipped to tackle challenges with enthusiasm and resilience in the face of obstacles, or teachers learning about new developments in their topics and new ways of engaging with their subject matter (Carr, 2001; Merchant, 2007). The nature of productive challenges varies enormously, in part according to time and place.

I move into a final vignette, a narrative from an educational project that encapsulates some fine qualities of digital literacies embedded in a purposeful activity.

The BBC News School Report project

The BBC News School Report project involves young people from the UK in producing news programmes to a real deadline and then broadcasting to authentic audiences. Launched in 2007, the project has connected annually with tens of thousands of students, usually in schools. It offers a structured

support system of online resources for preparation, trains teachers and provides the assistance of BBC personnel on the day itself. Many of the final products are in the form of edited video in the genre of TV news bulletins, although other formats are possible. Participants are encouraged by the BBC to feature a mixture of international, national, local and school-based stories. Presenting and editing to near-professional standards is valued. The nature of participating groups and which curricular or extra-curricular themes vary. Schools can adapt the format to local needs and interests. For example, I visited a school for students with multiple disabilities; one which ignored the BBC preparatory lessons in favour of their own ideas about journalism, and another which focussed on maths … all felt the project to have been of enormous benefit. With Don Passey I conducted the national evaluation (Passey and Gillen, 2009), analysing the project's achievements in terms of, for instance, learning gains of various kinds. We subsequently continued to research the project, especially working with the body of data from schools I visited (Gillen and Passey, 2011). We considered the project an exemplar of multiliteracies (New London Group, 1996; Cope and Kalantzis, 2000).

Here I return to the project at an even more fine-grained level, considering the flow of production of one specific news story during one News Day. My interests and perspective here are encapsulated by Black and Reich (2013: 38) in their observation of children's practices (within the virtual world, Webkinz World):

> The sociocultural lens can provide insights into the intertwined elements of scaffolded learning, mediated communication, and culture and community that shape the explicit and implicit lessons that children are learning in these online spaces.

These four intertwined elements and the idea of both explicit and implicit learning adumbrate my interests while allowing a flexible shift of view according to what seemed of particular interest in the moment. Further, since this project crossed online and offline domains, I wanted to see how these intersections worked.

I need first to explain a few things about my methodology, including the attention paid to ethical issues. I had spent a day at Abbey Grange school in Leeds the previous year under the aegis of the evaluation. The school preferred to be credited with its real name rather than pseudonymised. The practice in the BBC project was to refer to students by their first names (only), but since I was writing rapid fieldnotes I allocated the students simple number codes. I also took photographs of events and artefacts and occasionally talked to people about what they were doing. In practice my photography became constrained as I decided not to make images when it seemed possible someone might feel embarrassment or discomfort at being apparently singled out.

The following is edited slightly from my fieldnotes, for clarity; forming a present-tense narrative of what I came to call the hug story.

Boys 3, 4 and 5 are laughing about a BBC News (2010) story they have come across; when I ask about it they explain that the world record for hugging has been broken by students in the north of England. They decide to propose the story as an item, to be accompanied by hugs filmed here. Teacher M draws their attention to the verbal element of the story, prompting them to think about what to ask the huggers during or after the filming. Three members of the group begin writing and then typing a script; I note at one point that some of what they are typing is 'nonsense'. Girl 9 begins recruiting people to take part in a filmed hug.

The hug idea is discussed, along with others, as the plan for the development of stories and final news items is agreed. The hug story is accepted as a penultimate lighthearted story, before the short final slot for sport and weather.

The hugging recruits move outside with an A-level student of media studies who is assisting with the project (A1). G9 brings two girls out from their soldering class, explaining, 'They're best friends.' These two take their soldering tunics off, run towards each other and embrace for the camera.

A1 had been involved the previous year. He readily and efficiently gives everyone instructions as to where to stand, when to move, etc. – they respond very well. He says he likes working to a deadline.

G9, increasingly the leader, organises two boys to ask questions of the two (soldering class) girls. The girls ask if they can practise answering the questions, so the questions – and who is going to ask and answer them – are briefly rehearsed and then performed. Fluency is assisted by A1, who says, 'Remember never to laugh.'

More filming is done, of a 'giant group hug'. After filming is finished I accompany the group back to base.

The script must include an introduction to be spoken by the studio lead presenters, which leads into but does not exactly duplicate the item presenter's introduction. Some drafts were handwritten; these versions have been left aside as an agreed draft is word-processed and shared. This is then shared with the BBC journalist, C.

C amends the script 'to make it a bit more friendly – it doesn't need to be so serious. It's a bit of fun.' She rewrites; the changes are not major. One student counters one of C's changes: 'Miss [teacher M] doesn't like the word "nice".' C takes this seriously and they work together to settle on an alternative. C sums up what she's done: 'I've made it a little bit longer and a little bit more fun.'

A1 explains to the group how the sequence will work; how the voice-over will go over the images. He records G9 reading the voice-over; she performs very well but on the first take there is an interruption caused by the malfunction of teacher B's editing equipment. They cope with this very well and carry on again, but there is a mismatch between the visuals, as edited, and the script, which is longer. One suggestion is that G9 could read a little quicker. To my surprise this is accepted and works well. But at this point teacher B says he

doesn't like the end, that the giant group hug is not enthusiastic enough and asks the group to film it again. His recommendation is immediately accepted. I go back to the yard with the group, realising that G9 has the somewhat unenviable task of getting seven boys to hug more enthusiastically. One in particular complains and says he doesn't want to be seen. Concerned that my presence might be a factor in his embarrassment, I try to be as unobtrusive as possible and watch without seeming to.

A1 instructs: 'Spread the love – and hug.' The action and words are performed without much show of enthusiasm. Then they are done with more feeling, and the third time is even better, when everyone looks comfortable. Back at base these three versions are immediately shown to B; he and A1 decide the last one is fine. At this point I lose track of the hugging group, partly because I am trying to keep up with the general flow of decisions. My fieldnotes record that although there is always a 'hive of activity', it never feels chaotic; on the contrary, everything is purposeful.

So the hugging story becomes part of a news bulletin, produced to reasonably high and certainly well-informed standards, accepted by the BBC News School Report project team and disseminated via the project website. The school makes some CD versions. Audiences the students are aware of include their teachers, parents and other friends and family; many of these are local but some are dispersed globally. Through the BBC website their audience reach is potentially worldwide. I now briefly draw attention to several ways in which this vignette exemplifies a valuable learning opportunity involving digital literacies.

The day's practice demonstrated moving and transferring linguistic resources across appropriate registers and modes; an element Street (2009) recognises as vital in successful academic writing and indeed classroom talk. Through writing and participating in performing the script students have been involved in discourses of broadcast media. An important element of this is the effective drawing on other texts and indeed multiple voices, such as the heteroglossic relation with the original BBC website hug story. As they rework texts between modes the students engage in activities of purposeful transposition.

New patterns of collaboration are necessitated by challenging and complex digital literacies projects. Like the Schome project at its best, this day's observation exemplified for me fluid leadership (Peachey, Gillen and Ferguson, 2008). The traditional hierarchy of the classroom is inappropriate in a situation where it would be extremely difficult and certainly undesirable for the teacher to keep control over everything that is going on. Instead, it is understood that decision-making is most effective when a degree of flexibility is retained. This does not mean that there are not clear areas of responsibility, or that the overall direction of teachers is not valued. The teachers intervened at some key moments, and their pedagogic influence was also apparent when not immediately present, as in the student's correction of the journalist's proposal to use the word 'nice'. But it was also noticeable that others took up leadership roles at certain times and that the atmosphere of cooperation and mutual respect in an authentic

enterprise was striking. It had more the atmosphere of a dynamic and effective workplace, such as the UK Television Channel 4 Press Office where I worked briefly, than most school activities. One salient factor in this was the shared pressure of a real deadline. Of course, I realise that the BBC News School Report project is exceptional and requires very considerable resources.

The project structure provided a clear, shared aim for activities. The trajectory of activities shifted between online and offline domains as appropriate. The hug story was first found on a website, brought into play for oral discussion and the writing of drafts; versions of handwritten and word-processed scripts emerged. These were modified both before and after filming, as hugs became embodied and words were delivered, including by people uninvolved in authoring them. To mention that the finished product of the hug story was multimodal would seem superfluous, but it is perhaps useful to point out again that the video produced was very different from a simple point-and-shoot that might be made by almost anyone with a mobile phone, but rather invoked the multiple modes and constraints of a specific genre. Finally, the online dissemination of the bulletin, via the BBC website, increased potential audience access; it is simultaneously locally valuable and potentially global.

The aims of education and digital literacies

The BBC News School Report project, although so different from the normal course of school life, has been successful in part owing to the weight of resources and support for it; members of parliament, for example, are routinely involved. It is an exception in the course of school education and, although it has grown, can only ever involve a minority of school students, despite its proven benefits. Despite its exceptionality, thinking about this and other successful projects concerned with digital literacies, can assist us in rethinking educational purposes and practices.

> If we started by thinking 'what is education for?' …
>
> if we realised the limitations of too much, too simplistic, individualised assessment on redundant types of tasks …
>
> if we dismissed the idea that for all students to do the same things at the same time in the same ways is a good thing …
>
> if we saw teachers as neither the holders of all knowledge, nor as 'digital immigrants' who should catch up with the students in the gadget race …
>
> if we saw teachers as people who are free, indeed encouraged, to model learning themselves, and to organise, and, yes, assess the learning of students in productive ways …

> if we perceived students, and their families behind them, as already possessing areas of expertise and interest …
>
> if we accepted humour as the ultimate social networking glue, spoiler of metrics, the semantic web, and many other notions of large-scale aggregates and saw it instead as essential to getting things done, especially in the most intensive learning situations …
>
> if we valued creativity – giving opportunities to solve open-ended problems and work collaboratively without being sure where we are all going to end up …
>
> then we would be following the advice of Albert Einstein ([1931] 2009: 97) as inspiring Boellstorff *et al*. in their work on ethnographic methodologies in virtual spaces (2012: 43):
>
> > knowledge is limited, whereas imagination embraces the entire world, stimulating progress … . It is, strictly speaking, a real factor in scientific research.

From the beginnings of psychology there have some who have spoken up for such connections. Huey (1908), a considerable influence on Sylvia Scribner, emphasised the need to make connections between activities at home – including play – and literacy learning at school. For a powerfully theorised and empirically based version of this argument for the twenty-first century, see Larson and Marsh (2005). Writing in the 1930s, Vygotsky (1998) argued that an essential element of creativity is imagination. In childhood play, this is an essential part of coming to understand the world, of playing with difference and projecting oneself into different kinds of situation. In adolescence and adulthood, if material and social conditions are supportive, imagination is needed for a 'more profound penetration of reality' (Vygotsky, 1987: 349). We need an increasingly complex understanding of how things might be in order to perceive how things are and imagine how we might bring about any kind of improvement in our worlds.

At their best, projects such as the BBC News School Report and Schome Park give children the opportunity to reflect critically on their own world and create online spaces where they can expand their identities in new roles and new areas for effective action. Essential here are interactions with others, which is why focussing on supporting effective educational dialogues is such an important aspect of pedagogy connected with digital literacies, as all areas of education (Mercer and Littleton, 2007).

A dialogic approach to pedagogy is crucially different from a view of education as the transmission of knowledge, with its concommittant attempts to erase diversity as far as possible. Quoting Georges Davy, Bourdieu described the

> function of the schoolmaster, a *maître à parler* (teacher of speaking) who is thereby also a *maître à penser* (teacher of thinking): 'He [the primary school teacher], by virtue of his function, works daily on the faculty of expression of every idea and every emotion: on language. In teaching the same clear, fixed language to children who know it only very vaguely or who even speak various dialects or patois, he is already inclining them quite naturally to see and feel things in the same way; and he works to build the common consciousness of the nation.'
>
> (Bourdieu, 1991: 48–9)

This may seem old-fashioned, but it does seem to encapsulate the values of some contemporary policy makers. As Street and Lefstein (2007: 42) warn:

> Literacy … is always contested … they [particular views of literacy] are always rooted in a particular world-view and a desire for that view of literacy to dominate and to marginalise others.

In the UK, a new set of English language GCSE subject content and assessment objectives document was issued in June 2013 (Department for Education, 2013a). This was ostensibly for consultation until August, but, given that examination boards had to use it to produce their qualifications by the end of the year, it has to be regarded as close to diktat. Students must demonstrate skills in spoken standard English, although this is not assessed, and varieties of English are not mentioned. Although 'students should have read high-quality, challenging texts from the 19th, 20th and 21st centuries', there is one extraordinary ban, repeated in the companion specification for English literature (Department for Education, 2013b): 'Digital texts must not be included.' How extraordinary to roll back the years during which teachers, schools, colleges and exam boards have worked hard with English language courses to apply analysis to a wide variety of contemporary texts. Young students of English language and literature are supposed to stick to print, a disconnect from the rich multimodality of their everyday lives that does anything but help the teachers who work with them to make comprehensible and engaging meanings (Marsh, 2004, 2009). How strange and actually unworkable to associate 'digital' with an inferior quality of content, with texts to be eschewed.

Finally, I return to where I started, the inter-relationship between digital literacies and linguistics. Is this another area where change will be resisted? There are many signs of impending change in the heartland of linguistics, not merely on the fringes.

Linguistics and linguistic ethnography

Levinson and Evans (2010) called for a 'sea change' in linguistics:

> The goal of linguistics, the textbooks endlessly repeat, is to explain language universals … . We would rather say: the goal is to explain

> why languages have the properties they do, including properties that they may tend to share.
>
> (Levinson and Evans, 2010: 2740)

Emphasising the great diversity of human languages, they call for linguists to be willing to engage with empirical data, arguing that the day of 'armchair linguistics', the centrality of linguistic intuitions, is over; that kind of data is just one kind of performance data, not to be elevated above all others. Drawing on the work of Karlsson, they argue that corpus linguistics demonstrates that centre-embedded clauses, a key focus of much generative work, are 'vanishingly rare' (Levinson and Evans, 2010: 2735). Interestingly, Levinson and Evans relegated that comment to a footnote; but if corpus linguistics was brought to the forefront of work in linguistics, then the implications for redrawing the territory of linguistic theory would be immense. Surely acknowledging corpus linguistics as a key element of the linguistics endeavour is a vital part of the tie between theorising and empirical explorations of authentic language use.

Levinson and Evans (2010) argue that for linguistics to survive as a discipline it must engage with other disciplines. For example, advances in neuroscience shed light on the workings of the brain, self-evidently crucial in understanding language. Archaeology has a role to play if language evolution is considered a significant focus of enquiry, and so on, for:

> language bridges the mental and the social, the psychological and the historical, the ideational and the behavioural.
>
> (Levinson and Evans, 2010: 2746)

In this paper Levinson and Evans are principally engaged in trying to convince generative theorists, so it may seem churlish to criticise what they omit. But the implications of their ideas stretch a lot further. They hardly mention multilingualism and certainly do not begin to encompass the complexities of language in use, code-switching, hybridities and so forth. Their treatment of the 'diversity of languages' retains a primary sense of languages as separable codes, although of course related to one another. But the idea of language as code is part of a historical period characterised by the dominance of the nation state (Bourdieu, 1991: 48; Blommaert and Rampton, 2011).

Writing much earlier, while co-editing a collection of papers on the ethnography of communication with Gumperz, Hymes argued that their work:

> approaches language neither as abstracted form nor as an abstract correlate of a community, but as situated in the flux and pattern of communicative events, and as in integral relation to them.
>
> (Hymes, 1964: 4)

Rampton elegantly expresses a debt to Hymes in his delineation of linguistic ethnography in the UK as comprising scholars who saw linguistics and ethnography as potentially complementary, '*humanising* language study' (Rampton, 2007: 596, emphasis in original). Since 2007 linguistic ethnography has become much more international; personally, I fully subscribe to what Rampton lays out in that key paper as principles shared by 'associates in linguistic ethnography':

> 1. that the contexts for communication should be investigated rather than assumed. Meaning takes shape within specific social relations, interactional histories and institutional regimes, produced and construed by agents with expectations and repertoires that have to be grasped ethnographically; and
> 2. that analysis of the internal organisation of verbal (and other kinds of) semiotic data is essential to understanding its significance and position in the world. Meaning is far more than just the 'expression of ideas' and biography, identifications, stance and nuance are extensively signalled in the linguistic and textual fine-grain.
>
> (Rampton, 2007: 585)

Nevertheless, I am sure there is far more work needed in thinking about the interrelationships between human activities, however conceptualised, and the study of language and what this might bring to a discipline we may wish to continue to call linguistics. Writing on language and superdiversity, Blommaert and Rampton (2011: 5) contest nation-state, language-as-single-code ideologies yet still accept the existence of 'literal meaning'. They posit indexicality as a kind of add-on to meaning:

> So for example, when someone switches in speaking and/or writing into a different style or register, it is essential to consider more than the literal meaning of what they are saying.
>
> (Blommeart and Rampton, 2011: 5)

I would argue, following Rommetveit (1988), that this notion of 'literal meaning' is a myth. As Bakhtin (1986: 88) wrote,

> Neutral dictionary meanings of the words of a language ensure their common features and guarantee that all speakers of a given language will understand one another, but the use of words in live speech communication is always individual and contextual in nature.

So meaning can only be negotiated intersubjectively. There is no objective authority enabling us to decide how to interpret any linguistic or other semiotic interaction; we need to appreciate the role of interactants and indeed the analyst in constructing interpretations. This is why ethnography offers

such a useful approach: this is its explicit aim – it never pretends to comprehensivity or universality. Indeed, it perfectly complements linguistics, but needs to be situated in a dialogic framework for understanding discourse.

If the definition of linguistics were recast as the study of language, this would not prevent continuing work towards the goal of explaining why languages have the properties they do, studying patterns, commonalities and differences. It would not prevent theorising about language – questioning whether the search for linguistic universals, diversity in social functions or understanding phylogenesis should be primary (Everett, 2012). The study of language could include 'understanding language within the context of the interactions between culture and human biology' that Levinson and Evans (2010: 2742) advocate as central.

I have argued that an essential element of all analysis of language in use – discourse – is consideration of mode. If mode were properly taken on board as central, this would recast linguistics away from the absolute ideological primacy of face-to-face speech. For Levinson and Evans, as for so many linguists, writing is unimportant, implied to be no more than speech written down (see especially Levinson and Evans, 2010: 2744). If language as it is used, in specific modes, was to be accepted as of central interest, then linguistics would be more generally perceived as including digital literacies. Little could be more relevant and interesting than the complexity of people drawing on multilingual repertoires while communicating online, for example. Further, the increasingly odd distinction between 'applied linguistics' and 'linguistics' would be overthrown for good. One of the professional organisations I belong to, the British Association of Applied Linguistics, could change its name – and shed the devilish connotation of its acronym.

Lea (2013) suggests that a danger of the term digital literacies is that it appears to align the concept of literacy or literacies with channel, so implying technological determinism rather than a holistic understanding of social practice. Furthermore, she argues that the term literacies is preferable to literacy in signalling a multiplicity of practices, but that the term has been appropriated by some commentators to indicate a definable skillset. That is an orientation more easily aligned with an autonomous view of literacy (Street, 1984) or Graff's (1979) 'literacy myth' than an ideological recognition of diversity. So the plural becomes, in some hands, just about meaningless.

While appreciating this critique, digital literacies is still, I think, a helpful term to focus a field of study. In a public engagement area of the Oxford English Dictionary, Richard Holden (n.d.) presents an overview of the fluctuating functions of the word 'digital'. He suggests that as it becomes less salient it tends to disappear. Now that analogue computers are rare, it would seem rather ridiculous to preface the word 'computer' with 'digital'. In the longer term, if attention to mode and materiality are accepted as being of significant importance, to be taken into consideration in the analysis of any interaction, 'digital literacies' may be allowed to wither.

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