The Mobile Literacy Practices of Adolescents

An Ethnographic Study

The Mobile Literacy Practices of Adolescents: An Ethnographic Study

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Abstract

This study investigates how adolescents aged 15-16 negotiate their use of mobile technologies in and across school contexts, in terms of a social theory of literacy. It is located within the debate concerning the relevance of out-of-school literacy practices and technology use for educational and learning purposes. In doing so, it contributes to an important and enduring debate, but takes a focus on mobile technologies particularly, that has been previously under-examined.

Two significant fields of research and scholarship are drawn together in this study: sociological studies of mobile technologies and studies of emerging literacy practices. Mobile technologies are treated in a general fashion, in order to integrate the wide range of different devices and convergences between different technologies. However, the mobile phone - ubiquitous and pervasive amongst adolescents – provides a particularly generative focus. Contemporary theories of literacy, and what this means in ages of 'new media', are examined as they relate to skills, competencies and practices associated with effective everyday and educational interactions. The ideologically-based and multimodal nature of literacy, as it relates to social practice, is the perspective adopted throughout this study. This research brings these two fields of scholarship into critical dialogue, drawing on the voices of adolescents to create a profile of current mobile literacy practices. The significance of educational approaches to understanding literacy and young people is also critically considered.

A critical ethnographic perspective and methodology is employed throughout this study, which seeks to understand the particular culture of practices that accompany social interactions. The interpretative framework used has an

ethnographic basis, drawn from the work of Pierre Bourdieu. This provides a framework for integrating understandings of literacy and social practice as they relate to new devices. The site for this study, a rural secondary school, provides the empirical groundwork for the study.

In emphasising the importance of social interactions for a model of mobile literacy, the practices of the participants are examined in terms of the economic, social, cultural and symbolic dimensions of social practice. Whilst drawing on the voices of individual participants, patterns of behaviour, attitudes and beliefs, as they relate to mobile technologies are drawn out. Relationships are explored between social factors and literacy practices, considering both individual agency and structural concerns. The structural impact of economic and social factors, are examined in terms of a dialogic relationship between device capabilities and usage patterns. The varied interpretative frameworks that dominate students' lives, are typified in the way cultural resources are interpreted as having different symbolic values at the peer and school levels. How individual students negotiate the different value systems concerning mobile technology use across school and home spaces emerges as a necessary element of focus for a mobile literacy theory.

This study develops a theoretical framework for understanding literacy related to mobile technologies, particularly at the interface of social practice. This model develops a series of concepts – the 'mobile field', the 'monopoly-membership dynamic' and 'digital travellers' – that will be useful for understanding and discussing emerging educational and literacy trends.

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Glossary of Terms

ACMA   Australian Communications and Media Authority

AMTA   Australian Mobile Telecommunications Association

ASIC   Australian Securities & Investments Commission

CDMA   Code Division Multiple Access (digital transmission system)

CMC   Computer Mediated Communication (Moran & Hawisher, 1997)

2G   second generation (digital cellular mobile system)

3G   third generation (digital cellular mobile system)

GSP   Global Positioning System

GSM   Global System for Mobiles (originally Groupe Spécial Mobile – digital transmission system)

HTML   Hypertext Markup Language

ICT   Information and Communication Technology

IM   Instant Messaging (Oblinger & Oblinger, 2005)

ITU   International Telecommunications Union

MCEETYA   Ministerial Council on Education, Employment, Training and Youth Affairs (Australia and New Zealand).

MMS	Multimedia Message Service
NLS	New Literacy Studies – literacy scholarship applying a multiliteracies or 'new' literacies perspective
PC	Personal Computer (generally refers to a desktop computer, unless otherwise stated)
PDA	Personal Digital Assistant *or* Portable Digital Assistant
PS2	PlayStation 2
PSP	PlayStation Portable
RSI	Repetitive Strain Injury
SAC	School Assessed Coursework
SIM	Subscriber Information Module (card)
SMS	Short Message Service (Carrington, 2004; Carrington, 2005)
SPERA	Society for the Provision of Education in Rural Australia
TeLCU	Technology-conditioned approach to Language Change and Use (Bodomo & Lee, 2002)
Txt	communication via SMS (txtng) (Carrington, 2005; Crystal, 2008)
VCAA	Victorian Curriculum and Assessment Authority.
VCAL	Victorian Certificate of Applied Learning
VCE	Victorian Certificate of Education
VELS	Victorian Essential Learning Standards

Declaration

This thesis contains no material which has been accepted for the award of any other degree of diploma in any university or other institution and to the best of my knowledge contains no material previously published or written by another person, except where due reference is made in the text of the thesis.

Calvin Taylor

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1

Introduction

Mobile technologies have had a remarkable and pervasive impact on the lives of contemporary homo-sapiens on a global scale. Consider for just a moment, what mobile technologies impact your life currently. What mobile devices do you have and/or use? What devices are used in your community? What do you use these devices for, even if reluctantly? What opinions do you hold towards them? To what degree have they changed the way you go about doing the business of everyday life?

These questions, and others, emerging and evolving continuously from human interaction with new technologies, are in their infancy where research is concerned. Medicine, philosophy, mathematics, languages, law, and education generally, have millennial histories of debate and scholarship. However, the rapid rate at which modern Information and Communication Technologies (ICTs) have interwoven themselves into the fabrics of contemporary societies, is such a new and dramatic transformation, that researchers find themselves in a game of never-ending catch-up. Mobile technologies in particular, present such a dramatic alteration to the human condition, changing the potential of social interactions and social structures, that questions and challenges seem to present themselves on a daily basis. After only

a decade of mobile take-up frenzy, education in particular is a field where practice, research and their intersections are still in their youth.

The impact of mobile phones as the archetypal example, has been so pervasive and ubiquitous on a global scale – having a society-wide impact in countries as diverse as India, Jamaica, South Africa, Finland, Japan, Australia, Germany, Israel, etc. – that their impact on what it means to be a modern human is still emerging. They feature in movies and television shows as a natural part of contemporary life. Daily, new reports appear in the mainstream media, in some way related not just to emerging technologies, but to mobile technologies in particular; be it communicating with miners trapped underground or hikers lost in bushland, to the hype surrounding the release of the newest iPhone model or latest must-have gadget. The impact of these devices on our lives and communities – both at a micro and macro level – provides fertile ground from which opportunities for research perpetually spring. For as long as technological developments continue to expand the potential for the use of mobile devices in different facets of our everyday lives, how individuals adopt and weave these technologies into the web of their lives, will continue to produce a harvest of possibilities.

1.1   The Warrant for Research

Scholarship around the impact of mobile technologies on various aspects of the human condition is an area continually enriched and enriching with possibilities. As a field of research and academia, investigations into mobile technologies and their effects straddle a wide range of disciplines. The impact of these devices on human biology is considered in medicine: including debate about a possible relationship between extended use and brain tumours; neurological changes resulting from engagement with new technologies; the treatment of disabilities and illness using specialized or ubiquitous devices; RSI thumb injuries resulting from high-volume SMS-ing; and hearing loss from listening to loud portable music devices. In the field of law, a whole plethora of issues and debates continue to emerge, generative of research potential: the illicit use of mobile phone cameras; communication between criminals using mobile devices; use of mobile devices by

emergency services; the interception and tapping of mobile phone conversations; ownership of shared digital content copied between mobile devices; how mobile phones can aide individual safety; how mobile phones can threaten children's safety; the use of mobile phone footage for investigating and prosecuting crimes; and identity theft, or just the theft of devices. Of course the sciences, including engineering and computing sciences, are the wellspring from which the new potentials of these devices emerge: developing improved device memory, processing speeds, battery life, device design and construction, materials for devices, increasing miniaturisation, bio-implanted technologies, specialised devices, innovations in interface design, durability and ergonomics. It is in the social sciences – including, no doubt to the chagrin of some scientists and researchers in psychology – that the most fertile research potential emerges: it is here that the study of how these technologies impact on the lives of the people who use them, is studied. Demographics demonstrate the extent and depth of mobile technology penetration across a range of countries, cultures and sociocultural groups; studies look at mobile phone addiction, the recording of violence on mobile devices, 'sexting', and parenting issues around youth use of mobile technologies; patterns of use around different mobile technology features by different groups and communities; studies around consumer culture concerning mobile technologies; the use of devices in different environments and social situations; mobile etiquette; and the impact of mobile technologies on different groups: the elderly, the disabled, celebrities, subcultures, families and young people. Youth in particular – being early adopters of these technologies (seeing them as a natural part of their world) – offer a particularly generative focus for research potential, and it is here where education as a research field is confronted with a necessity to act, to understand and to innovate.

For the field of education, mobile technologies have proven particularly problematic, in part due to the disruption they cause to power relationships traditionally central to curriculum and pedagogy. Mobile phones for instance, offer the potential of removing limitations on conversation and communication in traditionally-structured classroom settings. Students listening to iPods, likewise undermine the established approach to learning, with its preferred modes and methods of delivery, and a requirement that attention be focused on one form of text

at a time. Computer games disrupt and blur distinctions between text types, and between entertainment and learning. This is aside from the fact that most people involved in the education profession are themselves having to adapt to the emergence of new technologies, whilst our students develop and grow alongside them. As a secondary school English teacher, this is the position in which I found myself, and which provided the impetus and momentum for this research.

I have always had a fascination for new, emerging and possible technologies, and the potential futures they present us with. Don't get me wrong, I am no 'tech-head'; I know very little about the technical side of technologies. But the potential for various aspects of how one lives one's life has always intrigued me. My other great passion has always been literature, reading and story-telling, and it is this passion which I have been so privileged to be able to pursue and share as an educator. However, what lay behind all of my fascination, was a deep personal unease concerning the system of distinction and privilege that pervades social discourse, particularly as it concerns the 'value' of texts. I saw a value in different or alternative text types and communication practices, which have often been positioned as out of place or worthless in traditional English classrooms. I am talking here of popular cultural texts: popular fiction, electronic texts, conversational texts. All of these are regularly positioned as lesser than the literature of the canon, institutionalised media productions, and 'official documents'. The processes of hegemony have always fascinated me with regard to how they influence our approaches to texts and the values we ascribe to them. Despite this, as a literary and literacy educator of adolescents, I have also experienced the challenges that mobile technologies, and their associated 'texts', have presented for Australian schooling, specifically in the English classroom.

I remember reading many essays produced by senior secondary students, that featured "u" and "c" and "r" and "8" as phonetic equivalents of words or parts of words; sometimes I even encountered the odd acronym ("lol" or "omg"), contractions like "gd" or "thanx", even the odd smilie :) . Clearly, in formal assessment tasks – typically essays – where 'formal' language was required, such abbreviations were inappropriate and resulted in a loss of marks; a loss of literacy prestige. I listened in the English staffroom, to colleagues bemoaning the slipping of

literacy standards when such instances came up (every time there was an assessment task). As a new teacher I nodded my head, and kept my own council. For me, this was simply an issue of language use appropriate to context: had my colleagues discussed with their students the language requirements of essays? Had they discussed the correct context for SMS and IM language with their students? Had I? It was this initial thorn about the negative literacy impact of mobile technologies – specifically SMS use – that prodded my research imagination. The question dogged me: isn't there a better way to deal with mobile technologies in the literacy classroom? This question continues to shadow me.

However, in 2006 when I went to investigate the literacy potential of mobile technologies, the work I found was scant and peripherally related. Studies of contemporary literacy practices placed mobile technologies (such as phones and iPods) in a collective context with other emerging ICTs. But from my experience, the very 'mobility' of these devices, was what made them a particular challenge for pedagogy and literacy education; it's what singled these devices out as a potential seismic shift in literate practice. There was also an emerging field of research examining the literacy potential and value of SMS-language: an approach I saw as conservative and restrictive of the potentials of mobile technologies for future communication practices. Within a short amount of time, we had gone from mobile phone handsets which could make phone calls and send SMS-messages, to phones that had cameras, calendars, games, music, MMS, Bluetooth, Wi-Fi, internet, email, and other downloadable applications (consider the 'iPhone Apps Store' for instance). Additionally, because these devices were used at the everyday level, across a wide range of social situations, I felt that the role of context in the meaning of any mobile-related text, needed to be considered. Was the sender walking a tight-rope or lounging on a couch when they sent a message 'so hi!'? because the situation makes all the difference to the meaning of the message. So too does the relationship to the audience (presenting a clear link with traditional literacy theory). However, there was essentially, no direct, detailed and methodological study of literacy as it pertained to mobile technologies.

It is this gap in research which this investigation seeks to fill. Just what is going on with literacy where mobile technologies are concerned? What challenges

and potentials does our engagement with these devices at a daily level, present for understanding modern literate practice? The emerging fields of New Literacy Studies (NLS) and multiliteracies, offer a pathway into understanding literacy as social practice. This approach understands literacy as something that we humans engage in throughout every day, not simply the ability to read and write; it theorizes the multi-modal and increasingly electronically-mediated nature of communication and meaning-making practices. It is an approach to understanding literacy that stresses the functionality and effectiveness of meaning-making practices at the level of individual experience and more broadly, to group and community meaning-making: from whether a television advertisement is persuasive, to the global phenomenon around *Star Wars* or *Harry Potter*. Mobile technologies increase the socialization options, as well as the modal preferences available for an increasing array of interactions, be it looking up the phone number of an acquaintance, taking photos of family events or augmenting one's perception of reality by listening to up-beat (or down-beat) music on an iPod. The fact that each literacy practice needs to be considered with regard to its context in fine-grained detail at times, provides a complication for literacy; we find ourselves increasingly needing to consider our mobile technology use as a kind of social performance. Mobiles have non-verbal, visual and contextual meanings, which can be just as, if not more important than the verbal communication mode. The field of 'augmented reality' offers even more complex patterns of textual-landscapes, which we don't yet have the scholastic language to discuss: do we call it visual literacy, situational literacy, synchronic literacy, etiquette, or some combination of these and others? In order to provide a focus for research, this investigation will seek a stable background for understanding literate practice around mobile technologies, specifically a secondary school.

The very broad concern of this research is to make literacy education appropriate and relevant for contemporary students, the citizens of tomorrow. Twenty years ago, understanding technical language was purely the domain of computer scientists and professionals. Today, with the increasing popularisation of digital technologies, technical terminology, along with the ability to use that knowledge, such language has become part of contemporary literacy: knowing for instance that "name@domain.country" refers to an email address, and that

"http://www" refers to a website. What new knowledge and practices are mobile technologies and their descendents not only going to make possible, but perhaps inevitable, natural, or even indispensible? My concern in thinking about the literacy practices associated with mobile technologies is not just to engage young, technologically-capable students more effectively in education, but to suggest a shift for education around what it means to be educated to be a literate citizen. What part will mobile technologies play?

In seeking to understand the nature and importance of mobile literacy practices, this research will seek to build connections with formal education, in order to contribute to an approach to education and research that is responsive and relevant to the constantly changing world that lies beyond the school yard for contemporary students. The output of this research will be theory, offering a perspective from which future research and scholarship can be developed. Particularly important in the future will be action research, and pedagogies that seek to experiment and understand the productive potential of these technologies for enhancing learning. This is not about promoting mobile technologies – they don't need any encouragement to be in our classrooms, as in many cases, they already are (especially in upper-secondary) – rather, it is about developing educational approaches that will prepare our students with the appropriate critical literacy skills to function effectively in a world saturated with technology, and increasingly, with mobile technologies.

1.2   Central Questions

This research is orientated around answering four interrelated questions, which seek to uncover emerging practices and to theorise them in an appropriate and flexible way. This will involve identifying a relevant literacy approach, and applying it to the use of mobile technologies at the social level (where these devices are used). These questions seek to bring together understandings of literacy with sociological theory, and work towards a resolution between out-of-school (illegitimate) literacies and formalised, institutional, 'legitimate' understandings of literacy as practiced in schools.

1.2.1 What is effective mobile technology use?

This central question is the big question: asking just what it means to be literate in one's use of mobile technologies. What then is mobile literacy? Media debates have evolved around the financial stress of mobile phones, etiquette around phone use, the dangers to youth, advertising practices, and yes, the impact on literacy. These debates all concern effective use of mobile technologies, so that they are a productive and beneficial component in our daily lives: they concern knowing a body of knowledge (phone plan details, rules of etiquette, etc.) and applying those rules effectively in one's use of mobile technologies. In recent years, with research emerging pointing to the benefit of SMS for literacy standards (due no doubt to a revision of what those standards actually mean in the modern world), mobile phones and the SMS-language that accompanies them, have become less of a dramatic threat to education.

This question is also clearly a political one: in asking what effective mobile technology use is. I am placing a positive value on the use of these technologies, as part of social practice; I am associating their effective use with productive and beneficial outcomes. The increasing use of mobile technologies for increasingly formal purposes, suggests that their effective and productive use will be a feature of the future world of work; at a base level, the increasing expectations of many employers that employees are connected via mobile, places new demands on the relationship between employers and their workers. Already productive uses of mobile technologies are appearing in some Australian schools: some send SMS-messages to parents about student absences, or individual teachers may supplement learning with podcasts/vodcasts that students can watch in their own time. At the social level, we are increasingly moving from a situation where mobiles were novelty items, to one where the expectation is that one has a mobile phone, and the lack thereof is cause for curious looks of puzzlement.

At its base level, the effective use of mobile technologies requires two interrelated elements: knowledge of relevant factors, and the ability to apply that knowledge correctly and effectively. This broad understanding of literacy traverses

different theoretical paradigms of literacy (from traditional modes to NLS), and has been appropriated for the purposes of policy development. Whilst this is a simplification, it provides a structure through which different theories of literacy can be interwoven with sociological scholarship. What specifically concerns literacy, is how different semiotic resources – modes and mediums – are used to articulate and interpret meanings around and using mobile technologies.

1.2.2 How are we to understand literacy as it pertains to mobile technology use?

As mobile technologies are interwoven with the everyday lives of people, a traditional understanding of literacy – as the ability to simply code and decode text – is only partially helpful. While this traditional perspective is related when we consider written texts associated with mobile technologies (primarily SMS), it does not provide a framework for understanding the vast array of meaning-making possibilities associated with mobile device use. In particular, a traditional perspective of literacy is based on authoritative, top-down perspective about what constitutes 'good literacy'. The practices around mobile technologies have emerged in a more democratic, bottom-up method, with norms and principles of good communication emerging from a miasma of SMS clouds.

Because mobile devices take us so intimately into the nooks and crannies of people's private lives, into the actions of their bodies and the tickings of their minds, what we understand as literacy must encompass an increasing array of personal and minute human behaviours. I will demonstrate that not only should we consider traditional and semi-traditional ideas of literacy – print text, spoken word, active listening, formal writing, visual literacy – but also technological-based theories of literacy – digital literacy, technological competence, dexterity – and emerging aspects of literacy – financial issues, social networks, cultural expectations, gesture and performance, environmental demands. In essence, in offering an increased potential for modes of both 'reading' and 'writing' across almost any situation, mobile technologies invite us to write and read the world; and rewrite and reread the world.

As such, this research will take a flexible approach to understanding literacy, grounded in a multimodal understanding of texts. It will draw heavily from theories concerning 'new' or 'emerging' literacies – digital, technological and electronic – but also from other perspectives related to wider social competencies: financial, emotional, cultural, financial, social and synchronic literacies for instance. However, this research will also seek out the wider dimensions of literacy due to the communicational potentials offered by mobile technologies: how do we 'read' mobile use as performance, as a hypertext pathway, as a contextually-dependent series of brief SMS-messages? The diffusion of electronically-mediated meaning-making into the fine-grained level of everyday life, expands the potential for incorrect writings or readings, which often reveal themselves as breaches of etiquette, or private issues becoming public. Therefore, this research, in understanding literacy at such a diverse level, within the scope of everyday lived experience, is located in the investigative outskirts of contemporary literacy research and scholarship.

1.2.3 How is Pierre Bourdieu useful in understanding the relationship between schooling and mobile literacy practices?

Understanding literacy as social practice (the NLS perspective) takes us some way to constructing a theory of mobile literacy. However, such theories retain a basis which is primarily dependent upon fixed and known contexts where ICTs are concerned. Studies into the literacy practices around computer games, the internet, email, computers in schools, are still based upon known spaces, and upon finding relationships with educational/school spaces. The point with mobile technologies is that the only stable feature associated with a particular device is its user or owner; the social situations of use are highly changeable. It is this instability and unpredictability of the context of use that presents such a challenge for educational institutions. It is the intricate and pervasive penetration of such devices into the intimate and private corners of social life that complicates attempts to define mobile technology use in a stable fashion. The same concerns the literacy practices involved.

By using Bourdieu's theoretical framework, I seek to explicitly link literate practice to the dynamics of social practice. Since mobile technologies are carried and exist at the bodily level – evoking ghosts of cyborgs – they are intimately involved in a variety of personal social practices. Therefore, in order to fully understand their dynamics, a sociological theory is useful. Bourdieu offers such a theory, which allows us to trace and understand the dynamic relationship between individual agency and social structures. This very idea bears empathy for mobile technology use: a mobile phone user is bound by the structures inherent in the device, but their use is typically highly individualistic in order to achieve situationally-based goals.

Bourdieu's framework also encourages a focus on power relationships when it comes to defining what we mean by 'literacy' in educational institutions. The acknowledgement of systems of distinction around the symbolic value of literacy practice, has been an approach employed by previous literacy theories, however I will seek to take this further. Through an ethnographic perspective, I examine the multimodal literacy practices that circumscribe mobile use, and consider the relationship to educational definitions of 'legitimate' literacy (defined once again, as social practice, not so much curriculum-based). This research seeks to help form a bridge between 'informal' and 'formal' literacy practices, or rather, to examine the tensions and intersections between mobile literacy and school literacy – youth culture and student culture.

In using Bourdieu's theoretical principles, I am not seeking to rewrite his theories, but rather work with them, through the articulation of some of his central concepts as a 'theoretical toolbox'. Bourdieu's central concepts function as a useful guiding heuristic, rather than a formulaic set of rules which need to be followed systematically. The use of this sociological theory has two important functions: it encourages a focus at the level of social practice when considering literacy (as opposed to discrete or isolated texts), and it provides a framework for the discussion of systems of distinction around literacy (both at the school-institution level, and at the level of the adolescent peer-group). It is intended that in this way, the relationship between individual (and group) agency and social structures might be understood. Additionally, the different systems of symbolic value that young people traverse (from the cool of the peer-group, to the rules of the classroom), and how

these structure or are structured by mobile technologies, is examined and used to explore emerging approaches to literacy scholarship and education.

In building a connection between literacy and Bourdieu's sociological theory, the literate practice around mobile technologies will be analysed in terms of their role in a system of exchange – call it communication at the most base level. The analysis chapters of this thesis are organised around the four main types of capital – namely economic, social, cultural and symbolic – exploring how they structure and influence just what counts as literate practice when using mobile technologies (see chapters 5-8). The economic capital chapter will explore the role of financial concerns, and how it influences modal preferences and interactions. The chapter focusing on social capital will examine the networks of associations connected with individual technology use, and its role in structuring meaning-making practices. The final two chapters will concern the articulation and interpretation of meanings, in connection to cultural and symbolic capital respectively. In exploring how adolescent mobile technology use can be understood in terms of cultural capital, I will be examining how meanings are articulated, preferred modes and how cultural values around these technologies are in a constant state of negotiation. When looking in the next chapter at symbolic capital, I will then consider how mobile use is interpreted at the level of the school as an educational institution. Whilst cultural demands may influence the articulation of meanings, it is how these are 'read' by schools and teachers, that is of vital importance for investigating the place of mobile literacy in education. Across this structure, the role of individual habitus will be traced, in terms of individual student trajectories. This will demonstrate the individual level of variation that is important when examining the emergent literacy practices around mobile technologies.

Through articulating connections with Bourdieu's theoretical framework, the nature of the literacy taught in schools and with relation to mobile technology use, can be understood as a system of symbolic value and distinction, from which everyday literacies still seem to be largely excluded. However, by understanding the nature of these relationships of power, I hope to uncover and suggest ways forward, primarily in terms of what we think of as 'literacy', but also in relation to issues such as pedagogy, curriculum, policy, and more.

1.2.4 How is an understanding of mobile literacy relevant for educational purposes?

At its very base, this research is generated by my personal concern for improving the literacy of young people. Working predominantly in upper, or senior secondary school, has moved me beyond teaching simply reading and writing, and even thinking about literacy in this way. The lives of contemporary adolescents in Australia are rich with different types of literate activities, not all of which schools value or approve of. Subsequently, the world beyond school for our current students, is one that is characterised by increasing instability and technological development: the literacy skills that they will need for this world are still being understood. I suggest that mobile literacy – or using mobile technologies effectively for meaning-making using a range of semiotic resources – should be an important concern for the world beyond school, and therefore, of concern to school understandings of literacy.

This research is centred on not just examining the literacy practices associated with mobile technology use, but considering their alignment with the literacy taught in schools. Already, curriculum and syllabus takes account of emerging and ICT-based literacies, and places importance upon them. But mobile technologies even further disturb the distinction between school and out-of-school literacy, purely on the bases that they transcend places and spaces by their very nature. Their use for meaning-making in both a synchronous and asynchronous fashion, in communication using multiple modes to multiple audiences for varieties of purposes, takes a consideration of literacy into the fine-grained detail of everyday life. It is the intention of this research to develop a theory of mobile literacy, as demonstrated in the practices of a group of adolescents, and theorise connections with literacy teaching. The primary aim behind this study is to inform future research, so that more detailed study of literacy practices associated with mobile technologies can be developed. But the relevance of everyday literacies for school literacies is already an area of fierce debate, which this research will contribute to.

In undertaking this ethnographic research, I am seeking to inform advancements in school-based literacy. A concern for ensuring that the literacy

taught in schools is reflective of the literacy needs beyond school, is central to a curriculum that is both engaging and relevant for our students. In positioning myself as a researcher who believes in the importance of everyday and emerging literacies, I find myself involved in a deeply political debate about just what it means to be literate in twenty-first century Australia and beyond.

1.3   The Approach

Being concerned with literacy practices at the fine-grained level of everyday practice means this research needs to get into the lives of young people. Whilst my own autobiographical reflections and musing may go part of the way to understanding literate use of mobile technologies, the concern of this research is specifically on adolescents within an educational context. An ethnographic approach that aims to uncover the lived experiences of a group of students will be used, in order that qualitative details around mobile technology use can be examined.

As this research is concerned with schools, schooling and education, this provides a framework for the examination of mobile use. Using the school grounds as a focus site for the examination of behaviours also mitigates some pragmatic and ethical limitations around researching the individual use of such devices. The school, whilst a pragmatic site for research, is appropriate in that it provides a framework whereby mobile literate practice is structured in certain ways by institutional rules. School rules and teacher instruction seek to influence mobile technology use in certain ways: the very nature of schools as institutions is to teach particular ways of behaving and learning. That mobile phones in particular, challenge and disturb these aims is part of their uneasy relationship with education; because how to use these devices appropriately is still emergent, still in a process of becoming, still developing, being realised and negotiated. Schools require stable rules dictated from above.   This same ideology pervades approaches to literacy curriculum and education. Therefore, in examining mobile literacy practices within a school, I am examining them within a context which does not approve of them as legitimate, but rather, positions them as 'other', irrelevant or, at worst, destructive.

As a researcher, I place high importance upon the value of empirical study, in that to research real life, it is necessary to go out into the field. To develop accurate understandings of mobile technology use, it is vital to examine actual activities, and actual cases of individual human use. The relevance of investigating lived experiences for understanding educational situations, play a central role in my own practice as a practitioner-researcher. In entering the field of this study, I bring with me my identity as a literacy educator and researcher, including a requirement to uphold the requirements of 'school' literacy, whilst searching out connections with wider possibilities for understanding this.

1.4   Outline of the Study

In order to explore the nature of mobile literacy, this study makes an explicit connection between literacy and sociological theory. I will first survey the fields of research and literature concerning mobile technologies and youth, seeking specifically studies which examine use as part of social practice, as opposed to specialised fields (see chapter 2). The second substantial field of research I examine concerns theories of literacy and educational futures (see chapter 3). The methodological discussion concerns three main topics: the critical mobile ethnographic basis, the Bourdieu-based interpretative framework (see 1.2.3), and an outline of the study design (the site, participants and instruments; see chapter 4). Chapters 5 through 8 concern the analysis and interpretation of data. Here I draw on the voices of participants to examine the culture around mobile technologies and their use, as part of social practice. This examination occurs through exploring how different forms of capital are utilised or realised through literacy practices: economic capital (see chapter 5), social capital (see chapter 6), cultural capital (see chapter 7) and symbolic capital (see chapter 8). The concluding chapter will draw together the findings and suggest implications for future research and practice.

Through drawing on the voices of adolescents, this study will develop a theoretical approach to understanding literacy related to mobile technologies and their use. This perspective draws from contemporary literacy theory and sociological studies of mobile technologies, in the ethnographic investigation of a particular

culture of adolescents. In this way, I hope this research contributes to a concern for the experiences of our students in developing educational futures.

2

Mobile Technologies & Youth

Technological advancements over the past twenty years, including mobile ones, have fuelled an expanding field of research and scholarship on the impact in various sectors of society. The field of literature concerning mobile technologies generally, is not just enormously vast, but features a horizon that is constantly being explored, widened and discovered. The impact of these devices on social lives has been a particularly intense field of sociological research.

This chapter will outline general trends in research associated with emerging mobile technologies, as well as other ICTs. It does not claim to be exhaustive with regard to such a rapidly and continually expanding area of human experience, but rather, traces suggestive trends through scholarship relevant for understanding literacy practices. Mobile technologies are defined very generally, in order to permit flexibility of perspective. The next section outlines global, national and Australian research into the impact of various devices and social impacts, revealing a relationship between global trends and local adoptions patterns. The significance for how people go about living their daily lives is an important area of work that is then explored, specifically with regard to communication practices, the maintenance of social bonds and the expression of personal identity. The significance and challenge

of mobile technologies for education are outlined – a topic important for this study –
but missing a specific focus on literacy. The final sections of this chapter examine
the ways in which young people are typically understood and discussed concerning
their relationship to technologies. Moving beyond binaries or generational concepts,
this study draws on more flexible and dynamic theories to develop the concept of the
'digital traveller'. This research finds itself located in an expanding and evolving
field of study, featuring challenges for many areas of society, education included.
The need for a related understanding of literacy that is inclusive of technological
development and change emerges as important.

2.1   Defining Mobile Technologies

I have intentionally engaged with 'mobile technologies' as a generalised
term, free from a restrictive focus on specific devices. Whilst focusing on mobile
phones, iPods, iPhones, PDA's may be useful for specific studies, such as action
research or case studies, the intention of this work to speak to wider trends, requires
a broader perspective. Such approaches, whilst intentionally artificial, do not account
for the wide variety of devices and brands, or the plethora of increasingly diverse
functionalities that similar devices may have due to installed software or variation in
hardware. Indeed, the fact that most 'mobile phones' nowadays have more than just
the ability to make a verbal call, means we need a more general term for these
'devices-previously-known-as-mobile-phones' (Hartnell-Young, 2005). Thus, while
I take mobile phones as the archetypal – most ubiquitous and pervasive – mobile
device, this is certainly not to imply that it is the only device under consideration.
Rather, mobile technologies generally are understood in terms of the work that they
enable people to do, their impact and qualities, rather than specific devices.

Regarding mobile phones specifically, there are a range of other terms used
to describe them, from 'cell phones' (Goggin, 2006; Horst and Miller, 2006;
Levinson, 2004), 'smartphones' (Metcalf, 2006), 'webphones' (Miyate, Wellman &
Boase, 2005, 446) to '*keitai*' (Japan: Ito, Okabe and Matsuda, 2006; Thompson,
2005). Whilst the term 'mobile phones' will be used in this research, this is inclusive
of synonyms such as those mentioned; it is also inclusive of 'smartphones' (Metcalf,

2006), which are phones that feature increased computing capability and functionality. PDA's are referred to generally, designating hand-held computers. The term 'handhelds' also refers to mobile technologies overall, though typically refers to PDAs or smartphones. Whilst MP3 players covers a diverse range of different devices, its most obvious manifestation is the iPod; where this device is meant specifically it will be referred to as such, otherwise, I mean MP3 players in the generic sense. The term 'mobile technologies' is an overarching general and inclusive term for these technologies, and others in the same vein yet to be developed.

2.2   Mobile Technologies, Society & Culture

Across the vast swathe of research and literature addressing the impact of mobile technologies, a central assertion underpins the drive to understand: the unprecedented rapidity with which mobile technologies have disseminated widely throughout the world (see Katz & Aakhus, 2002b; Ling & Pedersen, 2005). The significance for research and scholarship is the way that this globally-popular behaviour is manifested at the local level. As Castells, Fernández-Ardèvol, Qui and Sey point out in their global survey of wireless communication: 'Wireless communication has diffused faster than any other communication technology in history. But it has done so differentially' (2007, p. 7). Whilst it is clear that globally, mobile communication technologies have had a pervasive impact – across societies as diverse as Europe, Africa and Oceania – variation at the local level paints a slightly different approach to adoption and domestication in each case.

This is not to imply that the effects of these technologies are adopted in a simplistic pattern of top-down consumption, for the dialectical manner in which mobile technologies have been adopted, has resulted in adoption practices at the local level fuelling changes at the society meta-level. The quintessential example of this has been the (problematic) rise of SMS as a distinct genre. It was initially established 'buried in the GSM specifications as little more than an afterthought' (Agar, 2003, 62), to be used for the communication of technical information (Goggin, 2006, 67-72). However, almost universally across cultures, SMS has

become a popular medium for communication of various kinds – from commercial to personal – so much so, that it has resulted in new 'articulations' (Kress, 2003) of written languages as diverse as English, Chinese and Portuguese (Crystal, 2008).

> Faced with a new kind of communication problem, presented by mobile phone technology, people all over the world have set about solving it in the same kind of way. They have done so, not by inventing a new language, but by adapting old language to suit the new medium. It is not the first time people have adapted language to meet the needs of new technological circumstances. The arrival of printing, wireless telegraphy, telephony, broadcasting, and the internet all pulled language and languages in fresh directions, introducing new standards and styles. (Crystal, 2008, 147)

Their use in social organisation has also resulted in political changes, as was illustrated in the Philippines in 2000, where text messaging played a key role in popular protests and organisation that resulted in the ousting of the corrupt Estrada government (Agar, 2003, 106-109; see also Rheingold, 2002). The popular rise of this language form associated with mobile phones, has resulted in debates over its relevance for education and literacy (Carrington, 2004; Carrington, 2005; Crystal, 2008; Haddon, 2005b; Leech, 2006c; Markett, Sánchez, Weber & Tangney, 2006).

Another mobile technology that has had a global impact – though more in terms of branding and its connection to identity – is Apple's mobile MP3/MP4 player, the iPod (Jones, 2005; Kahney, 2005; Levy, 2006). The literature around iPods and their sociocultural impact is an area of particular significance, vast and continuing to expand: because this is a single branded device, with the same features and operating systems, meaning there are common themes to discuss. This has resulted in a great body of popular and self-help literate about these devices, related to additional information and guides (Breen, 2007; Miller, 2007), effective use (Biersdofer, 2007; Blake & Sahlin, 2005; Bove & Rhodes, 2006; Ihnatko, 2007; Kelby, 2007; Miser, 2006; Sadun, 2008), programming (Hart-Davis, 2007; Wagner, 2008), repair (Jones & Campbell, 2007), hacking (Knaster, 2004; Stern, 2004) and even becoming a 'guru' (Ying, 2006). Papers have also been released investigating the educational potential (*iPods in Education: Review*, 2005; Thomas, 2006). The

prevailing market popularity of this device, gave a common language for global discussion. The use of iPods at the local level is a simplistic exemplar of mobile technology use generally: whilst at the global level everyone has the same device (using the same program, physical features), at the local level, the actual music listened to, the contexts of use, the feelings and reasons behind use are highly individualised and difficult to predict. This is why research based on empirical investigations is so necessary.

The much more diverse range of devices and capabilities associated with mobile phones is not a barrier to discussion, rather the opposite. Thompson (2005) presents a history of the mobile phone in a highly multimodal book, including a catalogue of some of the most significant phone models. This almost fetishisation of the mobile phone as device and cultural artefact, is also something seen around iPod culture (Jones, 2005; Kahney, 2005). Thompson (2005) traces the mobile phone, examining the global and cultural impact of these devices, but remains tightly focused on mobile phones as physical artefacts, whose designs can influence their use and identity: the 'IDEO Kiss Communicator' is a example of a niche product, designed for couples to send mobile 'kisses' to each other in the form of a short light display on this squeezable device (Thompson, 2005, 134-135). This is all the device does: articulate a basic emotional connection between two intimate people. Thompson also examines other significant devices with far more detailed and sophisticated functionality, but her aim is to catalogue ideas rather than interrogate the impact of these devices.

For this discussion, it is the impact of these devices at the social level that is of interest. It is at the level of social practice that the greatest and most significant variations occur.

2.2.1 A Global Impact

A number of studies have aimed to present an overall survey of the impact of mobile technologies and mobile communication generally, with varying degrees of focus and detail. I do not intend here to go into detail about the merits of each of these studies, but rather, indicate overall trends within their focus.

The global impact of mobile technologies is not uniform, but rather, varies significantly at the local level. As with any technology or cultural artefact, adoption and domestication patterns on the ground are highly heterogeneous, resulting in individualized manifestations of global patterns influenced by device capability and design, culture, social structures, political ideologies, and of course, individual dispositions (Castells, Fernández-Ardèvol, Qui and Sey, 2007). Agar (2003) and Levinston (2004) both explore the global history of mobile phones specifically, and their impact on a range of societies and global-level practices. What they share is an emphasis that the influence of these technologies has been significant, and unparalleled, although Agar does offer an insightful comparison with the development of automobiles, and their impact on social organisation and daily life (2003, pp. 129-142).

Broadly, Agar (2003) considers the history of mobile phone uptake across different cultures and countries, concerns over threats to health, connections to crime and their appearance in film. Levinson (2004), likewise examines 'cellphones' in terms of their global history, but rather than considering individual countries, has a more holistic approach, examining: their connection to youth culture, expansion of the notion of the hearth as home, the mobile phone as a social intruder, its rapid up-take compared to landlines, as well as the disadvantages of being constantly contactable, the role that mobile phones have come to play as part of journalism in war zones, with entrenched journalists, as well as possible future developments. Both Levinson (2004) and Agar (2003) draw particular attention to the emergence of SMS or texting culture, based on the unpredicted popularity of this communication medium, and its early adoption by youth in particular.

Aside from history, studies have also traced the impact of mobile technologies at the global level in a number of ways, seeking to sketch an overall profile of their impact. The International Telecommunications Union (ITU) regularly releases papers, with a particular research intitative focusing on 'Future Mobile: Shaping the future mobile information society' (Future Mobile, 2007).[1]   These

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[1] International Telecommunications Union: Future Mobile Page:
http://www.itu.int/osg/spu/ni/futuremobile/ Retrieved on 27 December 2010.

papers consider the future possibilities of mobile technology use from an industry perspective, but a perspective necessarily imbued with considerations for the individual humans who use them so intimately (see Srivastava, 2004). No doubt, these considerations are under continuous revision in the light of technological advancements and the adoption practices as they emerge.

Kushchu (2007) conducted a study of the role of mobile phones in six countries: Brazil, China, India, Korea, United Kingdom and Lithuania. Across all countries, mobile phones have resulted in significant changes to communication practices, altering the nature of family relations and close friendships, the co-ordination of personal and work activities, business practices and creating a new level of consumer and economic activity.

> But the most profound effects of applying mobile technology have been made on the social level. Not only has it become the way of expressing one's freedom, but it has also helped to introduce new concepts. (Kushchu, 2007, p. 61)

Similarly, in their study of *Mobile Communication*, Ling and Donner (2009), draw on vignettes from a variety of countries, as diverse as India, China, the USA and Chile. These short narratives are used to indicate how global trends are appropriated at the level of individual experience, informed by a particular cultural or national context. Put simply, this is reflective of the broad trend and adoption patterns associated with the ways in which this technology has spread throughout the world.

But essentialist notions of mobile phone (and other devices) uptake at a global level, present the danger of obscuring difference and diversity, especially down to the level of individual experience of individual devices. We must always be sensitive to this:

> With many countries now exceeding a hundred per cent market saturation, you would think that the question of who is most likely to own a phone would be easy. Everyone. It is not quite the case yet. Although global markets are developing fast, and mobile networks are bringing telephony to more people in developing countries than was ever possible with fixed-line phones alone, for every person who owns more than one phone there are groups of people sharing one between them. / Meanwhile, there are still

> people who don't have any need for phones – just not very many
> of them – and not being able to get hold of them, of course, we
> don't know who they are. There are also pockets of the world,
> such as North Korea, where phones are banned. (Thompson,
> 2005, 77)

Aspects of mobile uptake practices are therefore not just influenced by technological capabilities, and individual preferences and personalities, but also by infrastructure, geography, economics and politics: a heavy miasma of influences. Marshall (2007) reports for instance, that basic mobile phones have been of benefit in some rural communities in developing countries, where the benefit is from real time communication, in areas where there have previously not been landline phones. This positive change in terms of communication practices is undermined by the fact that in some countries that have both mobile and landline networks, communication can still be a problem, such as in rural Australia (ACMA, 2008b; Agar, 2003). For more detailed perspectives on local manifestations of global trends, particularly around social organisation and social practice, national, and even local, studies are vital.

2.2.2 National Studies

National studies have been conducted in many countries, analysing the social and cultural impact of mobile technologies in specific cultures and situations, though mobile phones are often a focal technology, being the most pervasively adopted across different cultures.   There is a common human desire for increased communication that seems to be tapped into by these technologies. Here I do not aim to give a complete description of the many national studies that focus on mobile technologies or other emerging technological trends, but rather, sketch an outline of research going on across many different cultures, indicating the way global trends have resulted in opportunities for learning at the local level.

Studies into the Japanese adoption of mobile technologies have been particularly rich and extensive. (Scott, 2002; Hjorth, 2005a; Ito, 2005; Ito, Okabe & Matsuda, 2006; Katz & Sugiyama, 2006; Miyata, Wellman & Boase, 2005; Thornton & Houser, 2005). The mobile phone, or *keitai*, has quickly become an integrated part of young people's lives in particular, so much so, that there is a need to rethink the

notion that social contact is necessarily associated with physical co-presence (Ito, 2005). Miyata, Wellman and Boase (2005) trace the impact of internet-capable phones on browsing habits in Japanese society, finding differential usage patterns with regard to using these two technologies to engage in social networks. 'Those less technically skilled use webphones rather than PCs' (Miyate, Wellman & Boase, 2005, p. 446). The fact that accessing the internet via a mobile phone – where capable – is positioned as having to do with a lack of technical competency, has a lot to do with the popularised and commodified place that mobile phones have come to take in society: they are tools of convenience and fashion, not technical speciality. Studies have also been conducted into the use of mobile technologies as part of educational practice and content delivery in Japan (Scott, 2002; Thornton & Houser, 2005). These studies of course relate to a highly technologically imbued society and culture, yet the dramatic effects, do not simply translate cleanly across to other post-industrial cultures, such as the USA for instance.

The adoption of mobile technologies in the USA, particularly mobiles phones or 'cellphones' as they prefer, has not been as pervasive as many other countries, but still presents a significant local narrative. A University of Michigan Department of Communication Studies investigation studied the impact of cell phone uptake on 'American Life.' Whilst it was found that uptake of mobile technologies was differential across generational and socioeconomic groups, what came through was the pervasive extent to which cellular telephony 'has woven its way into the fabric or our daily existence' (*On The Move*, 2006, p. 7). Cellphones were categorised as a 'Business and Communication Technology of Service' (p. 12), compared to 'Entertainment Technology and Services', and of significance for this research revealed that: 'A higher proportion of respondents in the younger generations had a cell phone [66%] than the older generations [62% and 44%]' (p. 13). These uptake rates must be placed further in the National context, and the fact that: 'The U.S. has generally lagged behind other industrialised countries when it comes to its adoption and use of the cellphone' (*On The Move*, 2006, p. 7). So whilst cellular telephony may have emerged in the USA, the particular manner in which the infrastructure was rolled out (with such situations as the owner of a phone being charged for incoming calls), resulted in disjointed and uneven uptake patterns (Robbins & Turner, 2002;

Agar, 2003, pp. 31-43; Thompson, 2005, p. 22). Baron and Ling (2007) also trace out usage patterns of American mobile use. Still, the trajectory traced across the globe remains, with the rapid diffusion of these technologies into daily life, and the intimate impact they have there, so much so that the authors observe that: 'Cell phone ownership, however, was not related to how the respondents felt about cell phone usage in public areas' (*On The Move*, 2006, p. 51).

In Chinese culture, whilst the government has managed to largely tame internet access, the private nature of mobile technologies has resulted in SMS specifically enabling a 'discursive discourse universe'. He's study into the role of SMS communication in China demonstrated:

> In the fight to maintain or challenge discursive dominance in China, SMS has served as one of the few mass communication platforms for the nonofficial discourse universe because of its unique technological features. (He, 2008, p. 188)

The role of SMS in opening up channels of communication in Chinese newspaper groups was further examined by Cheng and Bruns (2007). The political role of mobile communication within China then is a highly contentious issue, and one where issues will no doubt continue to emerge, such as concerns about designing devices specifically for the Chinese user (Yu & Tng, 2003).

The impact of a range of economic and pragmatic factors, including micro-finance for customers, has seen the rapid expansion of mobile phones into many lower socioeconomic and industrialised countries. Horst and Miller (2006) offer a particular anthropological study of cell phone use in Jamaica. Batson-Savage (2007) also looks at the particularity of Jamaican adoption patterns, specifically with regard to the role of mobile phones in the discourses of masculinity and femininity. Despite poverty and poor infrastructure, this country has a rich culture of mobile phone use.

Research into the 'Sociology of Mobile Phones' throughout Europe (and globally) is tracked by the University of Zurich through a dedicated webpage (Roth, Geser & Zapata, 2010). Other countries that have been examined (this is not exhaustive as research emerges and develops on a continuous basis) on both a meta- and micro-level include: Singapore (2004), Finland (Kasesniemi & Rautiainen,

2002; Puro, 2002;), Norway (Johnsen, 2003; Lie, 2004; Ling & Yttri, 2002), Israel (Cohen & Lemish, 2003; Lemish & Cohen, 2005; Schejter & Cohen, 2002), Sweden (Westlund, 2007), Italy (Fortunati, 2002), Korea (Hjorth, 2007b; Kim, 2002; Yoon, 2006), France (de Gournay, 2002; Licoppe & Heurtin, 2001; Licoppe & Heurtin, 2002), The Netherlands (Beckers, Mante & Schmidt, 2003; Mante, 2002; Mante & Heres, 2003), Bulgaria (Varbanov, 2002), UK (Nafus & Tracey, 2002), The Philippines (Strøm, 2002; Uy-Tioco, 2007), Indonesia (Barendregt, 2008), India (Donner, 2007), Rwanda (Donner, 2005), India (Donner, 2007) and Hong Kong (Lin & Tong, 2007). These studies trace the local adoption patterns of mobile technologies across a range of issues and phenomena (see also Berry, Martin & Yue). What is significant is that there doesn't seem to be a country or area of human habitation where mobile technologies have not appeared, and subsequent research potential into the impact emerged.

2.2.3 *Australian Studies*

As with the rest of the world, the uptake of mobile technologies in Australia has been significant, demonstrating substantial growth, to the point where mobile technologies have become ubiquitous throughout many aspects of human life (cf. Goggin, 2006). In 2003:

> 14.9 million Australians used a mobile phone and this figure is projected to increase to 17.2 million by 2007. ... The Australian mobile phone market is approaching saturation. (Australian Psychological Society, 2004, 1)

The most recent data available shows that there are almost 26 million mobile services in Australia, more than the population of the country (ACMA, 2010, 34). What is perhaps more significant, is the indispensible role that these devices play in individual lives: a study by Wajcman, Bittman, Jones, Johnstone & Brown (2007) revealing that 90 per cent of respondents felt that they would not be able to continue with their life as normal, if they did not have their mobile phone (p. 2).

The Australian Communications and Media Authority (ACMA) – an Australian government authority regulating media and telecommunications –

regularly conducts studies into various aspects of society. During the course of this study, research was released into: consumer attitudes (2007b), consumer satisfaction (2008c) and consumer choice and preference (2008d), small and medium enterprise use (2008a), farming sector usage (2008b), telecommunications in remote and indigenous communities (2008e), even tracing the 'top six trends in communication and media technologies' (2008f). Rapid adolescent uptake of new technologies has seen a particular focus on research directed at young people and families, considering young people and social networking on the internet (2008g), youth media use by gender (2008h) and access issues in family households (2008i). In a major report in Australian adoption of emerging technologies, the Australian Communication and Media Authority examined *Media and Communications in Australian Families 2007* (2007a). This substantial report drew from:

> A national survey of 751 Australian families, including time-use diaries for 1,003 children aged 8-17 years; and a review of the academic research literature about the influences of electronic media and communication. (p. 1).

Specific for mobile phones it found:

> Mobile phones are found in most Australian households (97 per cent). This figure includes 56 per cent of homes that have a mobile phone with advanced features such as internet access and video content. (p. 30)

This was a much higher penetration rate than the next post popular mobile item, 'Portable MP3/MP4 Players' in 76 per cent of Australian households, being used by 62 per cent of children and young people (p. 34). However, it was interesting to note that: 'The average family household in 2007 has two portable MP3/MP4 players' (p. 34). Compare this to the situation with mobile phones, where statistically penetration rates are almost universal.

Aside from their pervasive presence in the lives of Australians, research has also revealed aspects of youth culture around such devices that align with studies in other countries. There was a high degree of parental involvement for instance, and general approval for children's use of mobile phones specifically, related to their role in mobile parenting and concerns over security and safety (ACMA, 2007a; Geser,

2006b; Ling and Haddon, 2008; Rizzo, 2008). However, this was an issue plagued with a concern over the private nature of such devices.

> The main challenge in managing mobile phone use stems from the mobile and personal nature of the device—that is, it can be taken and used anywhere without supervision and control. (*Media and Communications in Australian Families 2007*, 2007a, p. 32)

Parental involvement in technology ownership and use was not limited to Australia (Ling & Haddon, 2008; Geser, 2006b; Lim & Tan, 2004), but rather, where mobile phones in a particular are concerned, they form an important part of contemporary family life. Indeed, preliminary research released by the Australian National University revealed that in Australia the 'highest levels of mobile phone use are found among those aged 18-39 years' (Wajcman, et.al., 2007, p. 9). This writes against perceptions that it is only our students who are 'constantly connected' via mobile phone.

Gerard Goggin has completed studies specific to the Australian adoption of mobile technologies. (Goggin, 2006; Goggin, 2008; Goggin and Hjorth, 2007). His study of the mobile phone as a cultural artefact, through a 'circuit of culture framework' (Goggin, 2006, p. 6) where he traces its biography throughout a number of cultural discourses, is a significant examination of how these devices have been adopted in the Australian context. He considers the impact on identity, the rise of SMS-messaging, the impact for disability access, panics over mobile phones, their connection to sex and celebrity, photography, the internet and television. He links adoption patterns with the device's position as a commodity:

> Consumers, through the accretion of their accidental, everyday innovations, do have considerable power to shape technologies. Further, new media technologies, forms, and cultures rely on the consumer in ways that were not possible, or required before; quite a number of the convergent mobile media technologies, such as smart phones, moblogging, or mobile Internet, rely on very active, informed, and knowledgeable consumers. (Goggin, 2006, p. 209)

This discussion is useful in tracing connections between global trends regarding mobile phone communication and local practices, and he uses various examples to illustrate how this has manifested in the Australian context, for both good and ill.

The Shane Warne texting controversy (2006, pp. 136-138), the Cronulla riots (pp. 123-125), and a moblogging taxi driver in Sydney (pp. 157-158) are experiences that resonate for the Australian context, but are interwoven with international examples, such as 'happy slapping' in the UK (pp. 117-123), *keitai* popularity in Japan (80-83), and the hacking of Paris Hilton's phone address book (pp. 138-140), which trace prevailing patterns throughout and across cultures. For Goggin (2008), mobile phones are intimately involved in the process of 'everyday multiculturalism', where they enable 'the most prosaic exchanges ... and forms of identity mediated through the deployment of mobiles' (p. 180). Mobiles technologies are not just spread throughout Australian society, but have become integrated within the culture as well.

In 2007 the University of Sydney held The *Mobile Media 2007* Conference (Goggin & Hjorth, 2007). The focus of this conference was wide, covering 'mobile cultures, spaces, identities, emerging mobile visualities, textualities, convergences, and divergences' (pp. v-vi). These widely diverse topics and issues suggest the emergent nature of the impact of mobile technologies, and the studies that seek to understand them. However, there is a word of caution from the research literature:

> But the mobile phone is far too much of a newborn creature to have a storied history, or even much of a reputation in social science research. Its advent and rapid evolution have bypassed most researchers who are deeply engaged in their own research pursuits, but few if any social scientists would fail to recognize the impact this technology has had on all of us and on aspects of our behavior. Similarly, the little phone has outpaced the capacity of businesses and whole industries to fully accommodate it and to exploit its capacities. For both private concerns and public ones, there have been a few notable growing pains, some due perhaps to the inability of society and industry to read each other correctly.
> (Beaton & Wajcman, 2004, p. 2)

Even with subsequent research, mobile devices continue to generate new possibilities. The impact of mobile phones and other devices throughout Australian society has been significant, as with countries globally; but like them, the picture is not yet complete. As these technologies enter ever more diverse aspects of our lives, with increased functionality and dialogic alterations to social practices, effects will continue to unfurl. This research aims to address the Australian perspective in

particular, examining a specific and contextualised manifestation of how these technologies have entered into and play a part in the lives of contemporary adolescents.

2.3   Mobile Technologies & Everyday Life

The true impact of mobile technologies is not on the meta-structures of societies in general, though this is an important point to understand, but in the impact on the everyday lives of individuals. Because these are diffuse and individualised technologies, how they are integrated into the lives of people, how they are used, how they connect with identity and community, comprise the vital groundwork for developing understandings about the true impact of these technologies.

The field of research in this respect is vast, ever-expanding, and evolving in unexpected directions: because it follows trends that are emerging from social practice, unforseen events can open up new possibilities for understanding. The quintessential example of this phenomenon can be seen in the unpredicted popularity and pervasiveness of SMS or txt, and the changes to written language encouraged by the technically-enforced character limit (Agar, 2003; Levinson, 2004; Crystal, 2008). New fields of research into linguistics opened up around this new genre. The release of the iPod and the unprecedented enthusiasm of its uptake, also opened up a different focus for research, as have the subsequent release of the iPhone and iPod (Jones, 2005; Levy, 2006). Even the very suffix "i" seems imbued with research potential. No doubt, the release of Kinetic (a controller-free games console), Microsoft's Surface, and other emergent technologies will generate further possibilities.

A key component in understanding how these particularly ubiquitous technologies have become so pervasive, relates to the productive ways in which they have been domesticated by users: the ongoing process where 'ICTs are acquired from the domain but then made personal' (Haddon, 2003, p. 46; see also Hjorth, 2007a). Individuals don't simply adopt devices and use them in pre-destined ways, particularly such personal devices as mobile technologies, but apply them to their lives in ways that fit with their social structures.

> The meaning and role of ICTs both help shape and are shaped by the remainder of the users' life. That is, how one experiences ICTs is not completely predetermined by technological functionality of public representations; it is also structured by the social context into which it is received. (Haddon, 2003, p. 47)

Family attitudes to mobile technologies have contributed to their popularity, particularly the mobile phone, and we have already seen the role that parents play in encouraging mobile phone use by adolescents (ACMA, 2007a; Geser, 2006b; Rizzo, 2008). Family attitudes towards mobile technologies can help to structure behaviour patterns, such as contributing to the rise of SMS amongst youth, as a quiet and cheap way of communicating with others beyond the family sphere, such as peers (Levinson, 2004; Geser, 2004; Geser, 2006b; Ling & Haddon, 2008).

More significant for theories of domestication: 'The arrival of the mobile phone prompted an interest in further extending the domestication approach outside of the home' (Haddon, 2003, 49). Palen and Hughes explain this idea when tracing the impact of phones on family dynamics:

> Mobile phones, then, help extend the bounds of home beyond the house, and are an important means by which "home" is articulated. Home base becomes embodied in the parent who is supplemented or enhanced by the mobile phone. This parallels the idea of "cognitive artifacts" – tools and external representations that help enhance a person's cognitive capacity. (2007, p. 347)

In enabling family communication beyond the walls of a particular place, enabling relationships to transcend spaces, mobile phones engender the notion that home is not about a place, but a connection (Palen & Hughes, 2007).

Pale and Hughes (2007) discuss how the concept of 'home' has shifted from a reliance on a particular place, as a result of parental use of mobile telephones to maintain contact with their children. This notion of a mobile, digital parenting is an influential contributing factor for parents' participation in adolescent up-take of mobile phones (ACMA, 2007a; Geser, 2006b; Ling and Haddon, 2008). Indeed, the idea of a digital umbilical cord is involved in the renegotiation of family life and family connections (Grivas, 2006; Lim & Tan, 2004; Palen & Hughes, 2007; Rizzo, 2008), and is an emotional attachment played off by marketing forces with such

products as children's phones, such as the Gecko (Kenway & Bullen, 2008). Still there is variation in access to these ubiquitous technologies.

The concept of the 'digital divide' – meaning unequal access to a range of ICTs – has required some reworking for such ubiquitous commodities as mobile phones, where many cultures have near one hundred per cent penetration rates. In problematising the notion of a clear 'digital divide' where access to 21st century ICTs are concerned, Selwyn and Facer (2007) indicate that '"Plugging in" to the digital landscape is now contingent upon a range of types and levels of connectivity' (2007, p. 10). This is supported by Crang, Crosbie and Graham's study (2006), which found a strong connection between socioeconomic status, affecting access to technologies, and usage patterns of ICTs: with pervasive ICT users (predominantly of affluent status), demonstrating different attitudes towards and practices around ICTs than instrumental or episodic users (p. 2567). Therefore, it is not just about having a phone or mobile technology, but having the supporting infrastructure and capabilities associated with one's socioeconomic and cultural context.

Mobile technologies have also become the subject of research and investigation for their use in a range of workplaces. Metcalf investigates the potential of mobile technologies for workplace learning and productivity in *mLearning: Mobile Learning and Performance in the Palm of Your Hand* (2006). This is based on the principle of delivering smaller amounts of learning content, to be consumed quickly and in multiple locations. Weinstein (2006) also offers a perspective, with a particular emphasis on the use of iPods for content delivery, whilst Levinson (2004) considers the advantages of mobile devices for journalists embedded in war zones, Kenny, Van Neste-Kenny, Burton and Meiers (2009) examine the advantages for nursing education and Sawyer and Tapia (2006), their importance for emergency services workers. Ubiquitous in social lives, mobile technologies are also making in-roads into professional lives too.

Perhaps one of the most theoretically useful ways of thinking about mobile technologies generally, and mobile phones in particular, was developed by Katz and Aakhus, with their concept of the 'Apparatgeist' (2002c, pp. 301-318; Katz, 2003b, pp. 313-315). This concept is derived from 'apparatus' (devices; mechanical or social system to achieve human ends) and 'Geist' (mind; consciousness; spirit), to

suggest the 'spirit of the machine' that influences both technological designs, and 'the initial and subsequent significance accorded them by users, non-users and anti-users' (Katz & Aakhus, 2002c, p. 305).

> The *Apparatgeist* refers to the common set of strategies or principles of reasoning about technology evident in the identifiable, consistent and generalized patterns of technological advancement throughout history. (Katz & Aakhus, 2002c, p. 307)

This theory then concerns tracing the impact of mobile communication technologies as an interactive, but also semi-autonomous social agent, in a constant state of interrelationship with users. As such, the concept traces a relationship, because mobile communication cannot be considered in a vacuum, separate from social interactions and relationships:

> Apparatgeist describes a consistent, observable interplay between people and personal communication technologies, observable across contexts, cultures and life states. (Ling & Donner, 2009, 26).

This 'spirit' of the mobile apparatus extends across multiple spaces in our everyday lives, and there is a degree of consistency to this pattern, traced through the presence of these devices – either physically or ideologically. In terms of communication practices, these interactions can occur at a number of levels, using a range of modes for meaning-making. The intimacy of the interrelationship between users and devices in the 'apparatgeist' theory is illustrated in the development of location-aware applications, and how these can augment not just how we live our lives, but how we perceive our reality. This is one way in which mobiles offer the potential of 'reality augmentation'.

A significant developing area of research and scholarship centres around the concept of 'reality augmentation'. This essentially relates to using mobile technologies to access additional information on the spaces we inhabit and pass through, in order to understand them better. The most salient example of current times is the use of location-based services on a smartphone: Global Positioning Systems (GPS) to access real-time maps of a current (or other) locations. In this way,

the use of mobile technologies can enhance and *augment* our understanding of our current reality. As Levinson predicts with regard to internet-enabled cellphones:

> The cellphone with its Internet connections will smarten the world. This represents an interesting extension, even reversal, of the previous situation in which we, the visitors, might get smarter by walking through a given part of the world. Now that part of the world itself gets smarter, by virtue of our visit, since we bring to that place access to all other information via the cellphone, and make ourselves reachable in that place by others not in that place, besides. (Levinson, 2004, p. 61)

In this way, mobile technologies are used throughout everyday life, by the user, to add information and value to their experienced reality. The increasing use of GPS and other location aware mobile technologies, further suggests possibilities for ways in which additional layers of information and meaning can be laid over reality. iPods (and other MP3) players also contribute to a form of reality augmentation, where individuals can create soundtracks to their life and experiences, using their favourite music, or a random selection (Jones, 2005). Experiments with more immersive forms of reality augmentation are still predominately within institutions, and for specific purposes, as demonstrated by the work of Kölsch, Bane, Höllerer and Turk (2006). Here they developed a wearable headpiece which added a graphic overlay over the real environment. Importantly, Goggin (2006) indicates that 'reality augmentation' is not just a one-way street, bur rather, enables third parties to offer location-specific information to users. He uses the example of marketing to consumers:

> The commercial perspective on locational services stems from the possibilities that flow from being able to locate the customer in space, but also, by virtue of this, better to map and understand what they are doing in a particular place and at a particular time, and so articulate and enmesh product and service offerings into this context. (Goggin, 2006, 197)

The ways in which mobile technologies – especially the mobile phone – have come to change the nature of lived experience in increasing numbers of societies, cause us to rethink how we engage with the locations of our everyday reality (see Arminen, 2006; Jones, Williams & Fleuriot, 2003). The impact of this for literacy – as multi-sensory and enmeshed within social practices – how we use them to 'read' and

'write' the world, is tied up with the changes their adoption has had on communication practices.

2.3.1 Communication Practices

As a specific form of mobile technology, mobile phones have been implicated in significant changes to human communication practices, freeing individuals from a dependence upon place, and locating a locus for individual contact to the level of the individual body, even at vast distances (see Höflich, 2005; Katz, 2003b; Katz, 2005; Rule, 2002). The capacity to be constantly contactable (at least ideally) has resulted in increased negotiation and feelings of security: a softening of time and space (Castell, et al, 2007).

Castells, et al (2007) provide a strong overview of the prevailing communication changes as a result of related technological developments: perpetual availability, a blurring of the boundaries of space/time, blurring of boundaries between work and private spheres, private and public spaces (see Humphreys, 2005), the 'micro-coordination' (Ling and Yttri, 2003) of families and their activities, with personal safety and security being a concern, changes to socialisation processes, and the notion of a 'full-time intimate community' (p. 92), concerns over etiquette around mobile devices, the role of these devices in consumer culture, and their role in personal identity and habits, the use of camera phones, and the potential for these devices to be tools of surveillance, concerns over health, spam, scams and viruses, and the use of mobile phones for illicit of hidden activities (Castells, Fernández-Ardèvol, Qui, & Sey, 2007, 77-126). We can take a breath now. Put bluntly: mobile phones have changed how we communicate, across the many different domains of our every lives, at both a meta-level, and down to the level of individual experiences. But:

> It is adopted, adapted, and modified by people to fit their own
> practices, according to their needs, values, interests, and desires....
> Yet, the specificity of the technology reflects into the ways people
> conduct their lives. (Castells, et al, 2007, 125)

This dialogic relationship between technology and user results in both patterns and distinct experiences, based on the demands of social circumstances for communication.

The relative values of synchronous and asynchronous forms of communication can be understood as the difference between phone calls and sending an SMS (Ling & Yttri, 2002). The difference is between instant and interactive discussion versus delayed and considered conversation. The form that a message takes – the mode and medium – has a vital link to the content, purpose and audience of the message. It is here that we find a link with literacy scholarship, where one considers the relative values of different modes for meaning-making (Kress, 2003).

> Because mobile communication devices are multimodal, the new communication channels blur and combine languages, mixing voice, audio, images, text, and self-expression in the shapes, colours, and sounds of the device itself. Mobile communication becomes a multimodal layer of communication that embraces every social practice, extending the beat of life into ubiquitous interactivity, thus relentlessly giving rise to new sources of meaning. (Castells, Fernández-Ardèvol, Qui, & Sey, 2007, p. 126)

So whilst currently SMS has a prevailing popularity – especially amongst adolescents (Goggin, 2006; Levinson, 2004; Ling and Haddon, 2008) – increasing technological abilities put a wider range of modal choices for communication in the palm of the hand. This has advantages for overcoming and dealing with disability, enabling people with different types of disabilities to communicate in ways that are congruent with their abilities (Goggin, 2006). What is particularly significant with regard to these technologies, where choices of modes for communication are concerned, is the social context for their writing and reception.

There is a further link to literacy theory here, when one considers the nature of some SMS communication, where individual messages, taken in isolation, can carry very little weight of meaning. As such, one must take the string of messages – or string of communication – as a whole; not to mention, contextualising the conversation as part of a particular social exchange, between particular social actors for particular purposes (Ling, 2005). This was one reason for example why Ling had difficulty collecting data for his sociolinguistic analysis of SMS by Norwegians: in

capturing data, he was only able to access half the SMS conversations (sent *by* the participant), as consent could not be sought from every person who sent a message to this participant (2005, 336-338). The need for reconsidering the importance of the social context in communication, is explained in the 'logic of the 'apparatgeist':

> We see in the emergence of mobile communication, in a wide variety of nations, how the mobile phone initiates new questions about appropriate contact and renews contests over communication competence when new means for communicating require a new practical mastery of everyday activity. (Katz & Aakhus, 2002c, 308)

Communication is therefore increasingly dependent for meaning upon context, right down to the level of everyday, individual social practices, beliefs, attitudes and values, resulting in an impact on the forms of communication one engages in. Most significant for mobile technologies though, are concerns about how communication strategies are reshaping our understanding of social cohesion and coordination.

2.3.2 *Social Coordination*

Concerning social connections, mobile technologies have been involved in the strengthening and intensification of social bonds with established contacts (Ling, 2008). Because they are primarily used to contact people that the individual already knows in real life, what they offer is the potential of increased communication (in both depth and duration), which transcend the physical limitations of spaces.

> Mobile communication is enhancing interaction within the small group. At the same time, the data here suggests that this is not necessarily displacing interaction with the broader social sphere. (Ling, 2008, p. 185)

One can clearly see this process at work in the enthusiastic adolescent uptake of mobile phones, where they are used not just to communicate with family, but more importantly, friends and peers, in the development of their own identity (see Geser, 2006b; Goggin, 2006; Levinson, 2004; Ling & Haddon, 2008). The very ability of individuals who would otherwise be separated by distance, combined with mobile phones being identified with personal locus, rather than a location of place (Castells,

et al, 2007), enables and encourages the intensification of social connections though communication as 'gift-giving' (Johnsen, 2003), and helps to build 'social capital' amongst the whole group (Ling, 2008; see also Shirky, 2008).

Mobile phones – as the most pervasive of mobile technologies – are further implicated in substantial changes in the organisation of social interactions and meetings, encouraging an ad hoc, on-the-go, just-in-time, negotiated approach (Castells, et al, 2007; Colbert, 2005; Katz & Aakhus, 2002a; Ling & Haddon, 2008; Ling & Yttri, 2002; Rheingold, 2002). One of the most useful and persuasive perspectives developed to explain this new strategy of social coordination is Ling and Yttri's concepts of 'micro-coordination' and 'hyper-coordination' (2002). Whilst the first concerns mundane coordination of social interactions, the second concept adds a dimension of expression and emotional attachment, connecting it more firmly with identity and group dynamics.

The concept of 'micro-coordination' has emerged from the liberation of phone communication practices from the tyranny of place. The concept of organising on the go is also addressed by Rheingold's concept of 'swarming ... to describe the cybernegotiated public flocking behaviour of texting adolescents' (2002, p. 13), and Colbert's concept of negotiated 'rendezvous' (2005). Ling and Yttri explain the origin of these practices:

> With the rise of the mobile telephone, the communication and coordinating potential of telephony has entered a new era. Previously, coordination involved the direction and control of transport from geographically fixed terminals or nodes. Mobile telephony means that these stations are becoming less necessary. It is this notion that has given rise to the idea of micro-coordination, which is the coordination of interaction without the need for larger nodes or centralized bases of operation. (Ling & Yttri, 2002, p. 143)

This concept is further broken down into: 'basic logistics', 'the softening of time' and 'progressively exact arrangements of a meeting'. (pp. 143-144). 'Micro-coordination' then refers to the means by which individuals negotiate practical arrangements between people, such as transport options, meetings, money, etc. The concept of 'hyper-coordination' builds on this structure of constant negotiation.

'Hyper-coordination' adds an expressive and emotive element, suggesting the interactive and reciprocal nature of mobile phone communication. 'Beyond the instrumental uses of safety and logistical coordination, their use was often expressive in nature.' (Ling & Yttri, 2002, 147) This emotional aspect of mobile technology use is particularly connected with 'younger users' or adolescents, and the fact that their transition from childhood to adulthood has a social component, where the peer group gains increasing significance in the negotiation and formation of identity (Ling & Yttri, 2002, 147-149; Geser, 2006b; Green, 2003). An example of this form of coordination is what Johnsen terms 'gift-giving' (2003), which includes sending SMS messages in order to not just confirm a social tie, but to maintain it (p. 168). This is also akin to the practice of 'squillo', which Thompson explains is used in Italy, as a system where the call is not meant to be answered, but the message is implied as: '*ti penso*' ('I'm thinking about you') (2005, p. 34). Through the processes of 'micro-coordination' and 'hyper-coordination' social ties are both utilized and developed.

This ability to be in constant contact – even potentially – alters the trajectories of lived experiences, resulting in a softening of the concepts of time and space (Castells, et al, 2007), and a strengthening of intimate social bonds. However, this must always be placed within the locus of individual and local experience, meaning that individual identity – beliefs, attitudes, values – are involved. But as will be seen, this is also a dynamic process and not a simple cause and effect equation.

2.3.3 Identity

The very personal and private nature of mobile technologies – particularly the mobile phone – has resulted in a high degree of connection between device possession and use, and personal and group identity (see Fortunati, 2001; Fortunati, 2005b; Hulme & Truch, 2005; Ling, 2001; Skog, 2002). Not only the possession of a device, but *how* it is presented, *what* the actual device is, and the various multimodal texts created with it, connect with individual dispositions and identities. The location

of mobile technologies at the level of the individual body, places them in a central position for connections with identity. As Kress explains:

> Mode and materiality, through their close relation with the body's means of taking in information, and its possibilities of engagement with the world more generally, have wide repercussions for the issue of subjectivity. (Kress, 2000c, 187).

Larissa Hjorth has examined how different Japanese 'cute character culture' or 'kawairashisa' is used to customise phones in the performance of identity, though signalling certain tastes, such as *Hello Kitty*, or *Pokemon* (2005a). Katz and Sugiyama (2006) also examine how mobile devices can be used as fashion statements in public arenas as diverse as the USA and Japan (see also Katz & Sugiyama, 2005). Connected with this is the concept of 'thumb culture' which directly associates youths and their identities with the communicative act of texting (Bell, 2005; Glotz, Bertschi & Locke, 2005; Hjorth, 2005a; Hjorth, 2005b). That adolescents in particular have an identity that is aligned with the use of SMS is also something examined by Agar (2003), Levinson (2004), Goggin (2006) and Rheingold (2002).

With mobile technologies, it is not so much the devices in themselves that are vital in terms of constructing identity, although this does happen through particular device choice (Jones, 2005; Thompson, 2005). Mobile phones are caught up in adolescents' desires to emancipate from the family unit and from their own identity – though connections with peers – whilst paradoxically, enables and encourages stronger connections between family members, with these devices at least giving the impression of constant contact (Hjorth, 2005a; Ling & Haddon, 2008; Geser, 2006b). Mobile phones in particular, and the communication practices they enable, play a dynamic role in the performance of adolescent identities: blessed and cursed with the ability to be constantly contactable (Gergen, 2002; Levinson, 2004; Palen & Hughes, 2007).

Working with Goffman's notion of self-presentation in everyday life as a form of performance (1959), Fortunati examined how people intentionally and unintentionally presented themselves on public transport (trains) when using mobile phones (2005b). She used the metaphor of the 'stage' where individuals present

themselves in certain ways, and how the mobile phone can act as interference, resulting in situations where the 'backstage' can be revealed. She traced how individuals used performance strategies – including body language, voice, and technological features – to control how much of their private selves individuals might inadvertently reveal. Like the brand-camaraderie that exists around white ear-plugs and iPod culture (Jones, 2005), physical performance aspects contained symbolic value in the presentation of a particular identity on the public social stage.

The personal and private nature of these technologies has resulted in a strong emotional involvement for adolescents in particular with mobile technologies (Green, 2003). So much so, that 'addiction' has even been a term associated with mobile technology (specifically mobile phone) use (Park, 2005; Vincent, 2005). Vincent (2005) positions emotional attachment as being based on two interrelated factors: first, that 'the mobile phone is an icon for the user – an articulation of who they are' (p. 119) and secondly, 'it is relationships with others that provide the stimuli for people's attachment to their mobile phone' (p. 120). In this way, mobile phones are involved at the level of identity in terms of self-representation and interpersonal relationships. This connects with Geser's assertion that mobile phones are so popular among young people because they're new, and support the complex desire of teens to both establish their own identity, whilst also maintaining relationships with others who support this new identity (Geser, 2006b).

The cultural identity created around the iPod has become a far-reaching global phenomenon and success story of modern marketing (Levy, 2006). Not only has the cultural icon of the Apple and 'i' prefix become a highly identifiably feature, but it forms a particular identity factor associated with cultural consumption patterns. In both *iPod, Therefore I Am* (Jones, 2005) and *The Cult of iPod* (Kahney, 2005), the authors paint intimate portraits of what it's like to be part of this in-crowd, with passion and enthusiasm. What is clear from the literature and research – both academic and popular – is that mobile technologies play a strong role in children, adolescents and even adults, performing particular identities as part of social practice.

2.4 Mobile Technologies & Education

Technology and its use in education has a rich and extensive history, but it is certainly an area in its childhood where mobile technologies are concerned, still awaiting technological developments to be released and adoption patterns to become clear.

> If most schools have remained relatively unaffected by the advent of modern media technology, the same cannot be said of children's lives outside school. On the contrary, childhood is now permeated, even in some respects defined, by the modern media – by television, video, computer games, the internet, mobile phones and popular music, and by the enormous range of media-related commodities that make up contemporary consumer culture. (Buckingham, 2007, p. 75).

Buckingham develops a new interpretation of what is meant by the 'digital divide', shifting the focus to refer to the schism between 'in-school' and out-of-school' use of technologies, or a widening of the gap between children's life-worlds beyond school, and the emphases of many educational systems. (2007, pp. 96-97). The 'digital divide' as it concerns education then is not significant in terms of access to communication technologies, but the divide between ideologies about appropriate technologies for learning and entertainment, public and private spaces. This contributes to a sense of disengagement for students, from formal schooling.

Futurelab in the UK has released a number of papers outlining research approaches to using mobile technologies in learning. A handbook on *Handhelds*, provides useful case studies of four handheld learning projects (Faux, McFarlane, Roche & Facer, 2006). In addition a directory of handheld learning projects is included, though by this time, this number will have altered substantially. Recommendations and key messages are identified for the productive implementation of learning strategies using handhelds in classrooms. The majority of these projects once again draw upon a homogenisation of devices used, in that particular handhelds are provided or set for participation. Finn and Vandenham (2004) also outline a number of projects investigating the use of specific devices in educational settings. In Australia, education.au, a government sponsored organisation organised in order to develop approaches to education in the electronic

age – even their name is 'tech-savvy' – has released a number of research papers on various aspects of m-learning (*iPods in Education*, 2005; Watson & White 2006; White, 2005a; 2005b). The limitation of these studies for this discussion is that they are primarily predicated upon everyone having the same device – typically owned by the school or researchers – and not a consideration of the potential of the various devices already in use in students' lives. Thus, while finding a place for 'cybereducation' within the curriculum and schools is problematic, as Menchik discusses in relation to the UK situation (Menchik, 2004), equally problematic is figuring out how to actually make it work at the classroom level.

The field of 'm-learning' or 'mobile learning' is an evolving area of research and practice (Ally, 2009; Attewell & Savill-Smith, 2004; Clyde, 2004; Goggin, 2005; Norman and Pearce, 2007; Oliver, 2005; Pachler, 2007; Prensky, 2003; Prensky, 2004; Ragus, 2006; Tatar, Roschelle, Vahey & Penuel, 2003). Whilst this field of study is not strictly what I am concerned with investigating here, there are still some useful approaches and perspectives for thinking about mobile technologies within educational contexts, and how this relationship might be reconfigured in a more productive manner. The establishment of the International Association for Mobile Learning, or IAmLearn,[2] in 2007 was a significant moment for this area of scholarship. Some of the endlessly diverse areas of research include: using PDAs for specific learning purposes (Rekkedal & Dye, 2009); vocational uses of m-learning (Oliver, 2005); use of mobiles to enhance engagement (Beastall, 2006); new challenges for cyberbullying (Froude, 2005); investigated designing mobile technologies with primary children (Inkpen, 2006); the implications for designing content for mobile-content delivery (Cook, Bradley, Lance, Smith & Haynes, 2007; Bradley, Haynes, Cook, Boyle & Smith, 2009); the use of mobile devices to create a learning game (Mitchell, 2007); professional training, including nursing (Kenny, Park Ven Neste-Kenny, Burton & Meiers, 2009), teaching (Wishart, 2009), and the corporate sector (Metcalf, 2006); for the delivery of Distance Education (Gregson & Jordaan, 2009); for bridging between formal and informal learning (Ford & Leinonen, 2009). Markett, Sánchez, Weber & Tangney, (2006) used SMS for

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[2] IAmLearn Homepage accessed on 22 December 2010: http://mlearning.noe-kaleidoscope.org/news/

encouraging interactivity in the classroom, through the use of texting as a non-confrontational way for students to interact with teachers and classmates. Attwell and Savill-Smith (2004) present a range of case studies integrating different mobile technologies into different learning environments. Though as I pointed out at the 2007 International M-learning conference, scholarship and research devoted to the intersection between mobile technologies and literacy is an underdeveloped and under-theorised field (Taylor, 2007).

2.5   Reimagining Contemporary Youth

Another diffuse field of literature I would like to touch on, relates to the manner in which young people are positioned by research and in the public domain, with respect to their relationships to technologies. Two basic definitions may be identified: those based on a direct affinity with technology, and those which distinguish the particular 'generation' in a lineage. What both share is an assumption concerning the 'natural affinity' these *new* adolescents have for technologies. Whilst these distinctions based around difference are useful for certain contexts and purposes – discussing what is distinct about contemporary youth generally – their essentialising quality has the downfall of obscuring both differences amongst young people, and similarities between different groups. In developing this investigation into the pervasive and ubiquitious technologies that are mobile devices, which transcend generations and are domesticated differently by different groups and individuals, a more dynamic and fluid approach to understanding youth is needed.

2.5.1 Distinguishing Difference

Whilst, the majority of research supports the assertion that youth are more active and enthusiastic adopters of technologies, and that they appear to bear more relaxed and positive attitudes to new technologies (Buckingham, 2007; Geser, 2006b; Levinson, 2004; Wajcman, et.al., 2007), the temptation to develop generalising terms to describe young people and their relationships to technology, has been irresistible. 'Digital natives' (Leech, 2006a; Prensky, 2001a; Prensky, 2001b), 'cyberkids' (Holloway & Valentine, 2003; Valentine & Holloway, 2002),

'digikids' (Merchant, 2005a), 'the shi jinrui' or 'new humankind' (Carrington, 2004) the 'net generation' (Johnson, 2005; Oblinger & Oblinger, 2005), the 'digital generation' (Tapscott, 1998), 'generation M' (Boylan, 2008), 'Generation Y' (Pendergast, 2007), 'Generation Txt' (Goggin, 2006; Rheingold, 2002): these are just some of the concepts used to refer to contemporary students and young people. Whilst they suggest a connectedness with Information and Communication Technologies (ICTs), they also separate young people from other groups as somehow different in that respect. They do so in two general respects: in terms of a binary-based distinction, or on the basis of generational qualities. Young people are defined in terms of their membership of a particular group with particular qualities. Whilst these generalising terms do have an important usefulness in describing young people and their differences from older people, there are limits that emerge concerning describing the experiences of young people.

None of this is to suggest that I am against these particular concepts: they are enormously useful and help us to understand young people in terms of the nature of their upbringing. However one understands or frames developmental aspects of human dispositions – psychologically, socioculturally, intellectually – it is generally accepted that upbringing has a formative impact on how one perceives and functions in the world. Concepts such as 'digital native' and 'net gen' alert us to the high technological saturation in our students' lives, resulting in them having different dispositions and social practices compared to other contrasting groups.

The most well-known and widely used binary-based definition of young people is Prensky's concepts of the 'digital native' and the 'digital immigrant,' (2001a; 2001b) an extension on the socially-constructed distinction between child and adult (cf. Holloway & Valentine, 2003, p. 4). The basis of Prensky's concepts is that the young person, born into a world of increasing technological ubiquity and digitally mediated communication, is naturalised to this world, whereas their parents and teachers, the older generations, who remember a time before mobile phones, the internet and PowerPoint presentations, have had to adjust and learn their way in this new and changing world. As Prensky states:

> It is now clear that as a result of this ubiquitous environment and
> the sheer volume of their interaction with it, today's students *think*

and process information fundamentally differently from their predecessors. (Original emphasis: 2001a, p. 1)

Whilst he argues, it is possible for 'digital immigrants' to acquire the skills of a digital native, there is an extent to which they can't escape their previous practices, retaining an 'immigrant accent' in their engagement with digital technologies (such as printing out emails or documents which might be read on the screen). He even draws from neurobiology and social psychology, to indicate that young people do actually *think* differently, described with qualities such as 'neuroplasticity' and 'malleability' to suggest their more flexible, non-linear thinking modes (Prenksy, 2001b). This perspective, whilst generative of discussion about what makes contemporary young people distinct, is limited by its binary nature based on difference and generalisations.

It may of course be possible to describe different types of natives or immigrants, but this still doesn't bridge the constructed gap between these two main groups. It cannot account for an 'immigrant' who is actually indistinguishable in practice from a 'native'. Additionally, what happens to the 'digital natives' when they grow up and have children? Will their children be the '*new* digital natives'? What about their children, and subsequent children? How do we describe them in terms of 'natives' or 'immigrants'? Thus, the concepts of 'digital natives' and 'digital immigrants' remain somewhat bound to the historical period at the turn of the 20th century when digital technology became a common feature in post-industrial societies. As we move forward through the 21st century, as the 'natives' grow into adulthood and as digital technology becomes increasingly ubiquitous, this concept may find itself struggling to retain descriptive relevance. These same problems feature for other concepts based on distinguishing young people as different from others due to their connection with technology: 'digikids' (Merchant, 2005a) and 'cyberkids' (Holloway & Valentine, 2003) for example. This is not to say that they don't account for difference and variation, but that the concepts in themselves don't engender and encourage discussions around diversity within and between these identified groupings.

Concepts that describe young people in terms of their membership of a particular generation have more widely permeated the popular Australian

	Matures	Baby Boomers	Generation X	Net Generation
Birth Dates	1900-1946	1946-1964	1965-1982	1982-1991
Description	Greatest generation	Me generation	Latchkey generation	Millennials
Attributes	Command control Self-sacrifice	Optimistic Workaholic	Independent Skeptical	Hopeful Determined
Likes	Respect for authority Family Community involvement	Responsibility Work ethic Can-do attitude	Freedom Multitasking Work-life balance	Public activism Latest technology Parents
Dislikes	Waste Technology	Laziness Turning 50	Red tape Hype	Anything slow Negativity

Table 2.1: Generation-based definitions of people. (Oblinger & Oblinger, 2005, p. 2.9)

consciousness than the 'digital native'. Terms such as 'Baby Boomers', 'Generation X' and 'Generation Y' are frequently used in the popular media and other forms of public discourse, to refer to broad swathes of population. These terms are so often used across politics, media and theory, that their meanings have in some senses become blurred. Additionally, there are differences between societies and cultures regarding how to describe each generation. Table 2.1 presents an outline of generational groups and their qualities laid out in American research into the qualities of the 'Net Generation' (Oblinger & Oblinger, 2005).

Broadly, all the generational concepts that refer to contemporary students attribute certain qualities or affinities to young people who have grown up in a world of the internet and increasing digital technology. As socially constructed generalisations, they are only able to describe young people using broad-brush strokes. Although there is room for difference, for exceptions and sub-groups within generational-based definitions, the overwhelming focus is still on the description of individuals in terms of their apparent membership of a particular generational group, with qualities distinct from others.

Oblinger and Oblinger (2005) acknowledge about the concept of 'Net Generation' that membership of a group may actually have less to do with age, than with actual experience of technology: 'The differentiating factor may not be so much

one person's generation versus another; the difference may be in experience' (2005, 2.10). This distinction makes room to acknowledge the role of other factors – socioeconomic status, gender, location – in the construction of generational-based concepts; however, they still very much remain focused on differences between groups. You are a member of the Net Generation because you fit its qualities. This argument could be made equally persuasively for any number of other similar terms, from 'Shi Jinrui' (Carrington, 2004) to 'cyberkids' (Holloway and Valentine, 2003): if you fit the qualities, you fit that generational concept.

However, in an increasing number of contexts, such terms prove inadequate for descriptive purposes. Being perceived in terms of either their apparent differences from adults, or because of their generational grouping, only takes us part way in understanding young people and their learning potential. The teacher or adult is positioned in such discourses as 'the other', outside and separate from the practices of their students. In this process, the literacy practices of young people are similarly devalued. Grouping together the experiences of young people in terms of their difference from that of their teachers, can also obscure sophisticated practices. As Carrington points out for instance, SMS is actually quite a sophisticated language form (2005). If we only think of students and their practices in terms of their differences from their teachers, important learning opportunities can be missed.

Contemporary discussions present a more complex picture of young people and their relationship to digital technology, re-examining the notion of the 'digital divide' in an increasingly technologically-saturated world (for both children and adults). This 'digital divide', or system of difference that we need to be focusing on according to Buckingham (2007), is a more subtle one between competency with out-of-school technologies, and those used within classrooms (Buckingham, 2007, pp. 93-98). This transcends generational groups and peer groups, determined by a range of factors. The point about mobile technologies specifically, is that they have been so pervasive in their spread amongst many different groups in society (and society overall), that their absence from formal educational structures is felt by all as an aberration of real life.

With Wajcman et al (2007), conducting research throughout Australian National University revealing that in Australia mobile phones are predominately

used by adults, can we really retain a clear distinction between the digital experiences of students and teachers? With respect to mobile phones at least, teachers under 40 might be considered the 'natives', and their students the 'immigrants'. As time passes and students grow into adults, it is unclear what will happen to this usage trend. What this point does indicate though is that there are shared areas of digital experience between teachers and students that are obscured and go unexplored when young people are positioned as 'different' or 'more connected'. This suggests room for examining areas of commonality between young people and their elders.

The danger of these terms is not that they don't account for difference, for within each of the concepts there are indeed variations of experience, but rather, that the overall impression that they create is of a homogeneous unity of experience, which is not refelective of reality. Their use emphasises sameness at the prima facie level. Whilst this effect may be desirable and useful at the popular and even policy level, its relevance for educational research, particularly ethnographic, is limited and at times, detrimental.

2.5.2 *Dynamic Understandings of Youth*

> The technologically empowered 'cyberkids' of the popular imagination may indeed exist; but even if they do, they are in a minority, and they are atypical of young people as a whole. In general, there is very little evidence of the internet being used by young people to develop global connections: in most cases, it appears to be used primarily as a means of reinforcing local networks among peers. (Buckingham, 2007, p. 92)

In my efforts to understand young people's engagement with increasingly pervasive and ubiquitous mobile technologies, I have sought to engage with more dynamic perspectives on the nature of contemporary youth and technologies. I want to foreground not just the differences amongst young people, but their connections with other groups. As Buckingham argues: 'the reality is more prosaic and more complex' than a simple belief that both 'socially and psychology, the "digital generation" is seen to operate in quite different ways from the generations that preceded it' (2007,

p. 75). This is not only influenced by individual factors, but by technological advancements in themselves, which as we have seen, is a dialogic process, rather than one of uncomplicated adoption. The process of convergence for instance, Buckingham suggests, will contribute to the breakdown of established social hierarchies, even those around age differences (Buckingham, 2007, p. 81). Indeed, Kennedy, Judd, Churchward, Gray and Krause (2008b) conducted research into first year university student use of web 2.0 technologies, finding that they did not typically fit the concept of 'digital native': the reality was more complex and varied, just as Buckinham (2007) suggested above (see also Kennedy, Dalgarno, Gray, Judd, Waycott, Bennett, Maton, Krause, Bishop, Chang, & Churchward, 2007; Kennedy, Dalgarno, Bennett, Judd, Gray & Chang, 2008a).

Crang, Crosbie and Graham (2006) also paint a more complex picture of usage patterns of ICTs related to the 'digital divide' in urban environments. Whilst for both the affluent and marginalised neighbourhoods examined in this case study, the '*absence* of ICTs is both feared and craved' (Crang, Crosbie & Graham, 2006, p. 2566), variability of access and use of ICTs generally was related to socioeconomic status, with 'affluent neighbourhoods' being associated with 'pervasive ICT use' of 'multiple ICT systems' (p. 2565), yet this was not the case for the marginalised, working-class neighbourhood. Therefore, their finding that 'pervasive ICT users do seem to have much more individualised usage practices than episodic users' (p. 2566) indicates that being a 'digital native' is an identity that is written by a diversity of factors, some beyond a child's control (their socioeconomic status), and as such, doesn't necessarily apply to all individuals, but rather, erases their individual patterns of experience.

Other researchers have contributed to the development of more complex descriptive frameworks for young people around contemporary ICTs. Guy Merchant (2005b) develops the concepts of 'anchored' and 'transient' identities, in a study of children's digital writing, tracing those qualities which are concrete and enduring, against those which children assume, voices they take on in the course of digital writing. This notion disturbs the belief in a unitary self, as implied by the generalising notions raised above. One manner in which this is demonstrated is

through Gee's discussion of the subject's engagement with video games through the establishment of three identities – real, virtual and projective (2003, pp. 64-65)

In seeking a more dynamic concept to describe modern youth, I was initially inspired by Kenway and Bullen's concept of the 'cyberflâneur' (2001). Two particular articulations of this concept come to mind, in the form of the 'cyberflâneur' (Kenway & Bullen, 2001) and the 'cabbie flaneur' (Goggin, 2006, pp. 157-158). In both these cases, the 'flâneur' – male stroller or street reader – is reinterpreted both in terms of physical movement, but also movement through virtual, temporal and textual spaces. The concept of the 'cyberflâneur', as explained by Kenway and Bullen, is a way to:

> Relocate the "flâneur" from the embodied and lustrous streets of the metropolis to the disembodied nooks and crannies of the "virtual Rialto", the Internet' (p. 176)

Here the 'cyberflâneur', who is not just aware of their surroundings, but of themselves in their surroundings, refers to 'the child who transgresses the spatial, physical and temporal boundaries of the corporate world through technology' (p. 178). In more recent work, Kenway and Bullen acknowledge the contested nature of the concept of the 'flâneur' (at the level of gender and reflexive citizenship) (2008).

Goggin's 'cabbie flâneur' (2006, pp. 157-158) is a far more specific term than Kenway and Bullens', referring to a specific instance of a cab driver engaging in moblogging (blogging via a mobile device) about his experiences. Although the concept of the 'flâneur' is not fully elaborated and explored in this example – Goggin's concept plays more upon the literal concept of movement – there is still an extent to which the cabbie is a mobile publisher, whose self-conscious awareness of his movement though physical, virtual and temporal space is emphasised through the very act of 'moblog' publication. These more nuanced ideas about engagement with technologies being a continuous process, where descriptive elements arise from empirical reality, as opposed to top-down generalisations, are more sympathetic to the investigation of the varieties of adoption patterns and experiences around modern mobile technologies.

CONSUMER BEHAVIOURAL PROFILES		
Enthusiastic Embracers	**Mainstream Followers**	**Techno Non adopters**
Enjoy knowing and using new services/technology.	Try to keep up with services on a required basis.	Need help or do not see a need to adopt new technology.
Tend to be knowledgeable about and aware of the latest technology.	Tend to follow the lead of the enthusiastic embracers. Do not want the hassle of seeking out information and understanding every new development. Do enough to simply enhance and aid their lifestyle.	Are unlikely to adopt new technology unless pushed or helped by someone else. Do not easily integrate the technology into their lives or simply do not see a need for it.
Are likely to do without the fixed-line telephone. Are likely to actively use their 3G mobile for internet services. Are heavier internet users who have traded up to faster speeds and/or wireless access. Tend to come from a younger age group (18-30).	Are likely to be users of both fixed-line telephones and mobiles. May have a 3G-capable mobile phone, but use it solely for communication. Are moderate internet users. Tend to be aged between 31 and 50.	Are likely to be users of fixed-line telephones. Some do use mobiles. Are less frequent users of the internet. Sometimes do not see the need for certain services. Tend to come from an older age group (50-60+).

Table 2.2: Consumer behaviour profiles (ACMA, 2007b, p. 6)

Another interesting approach that arose during the course of the research, relevant to describing young people (and others) in a more productive manner, came from an unexpected source: an ACMA report into 'Consumer attitudes to take-up

and use' of modern telecommunications (2007b). This profile – reproduced in Table 2.2 – concerned behaviour patterns of consumers, reflecting attitudes towards technologies generally (see also Harper, 2005). The importance for this study is that it did not reduce attitudes to the level of a binary, but instead suggests a continuum of behaviours. Whilst there were three categories, the implication for qualitative research interpretations, is that adoptions patterns and attitudes occur across a range, not in either/or categories.

The final theory concerning understanding young people that I would like to address, concerns mobile technologies specifically, so is highly salient for this research. In considering what 'm-learning' or mobile learning, actually involves, Kress and Pachler (2007) turned their attention to the dispositions of the learner. In doing so, they developed the concept of the 'mobile habitus'. This understanding of a learner adapted to mobile technology speaks directly to both the continual status of learners as learners, and of the field of mobile learning as being in a constant state of change: always in the state of becoming. This notion of never being complete, of always being realised, of always in a state of deferral, spoke very deeply to the notion of mobile technology use and how one might interpret texts associated with this process.

> In 'mobile learning' we have, first of all, individuals who have the new habitus of learning (never mind the existence of devices which had provided relative mobility for learning – in museums etc) which we have described above. A part of the development of that habitus is that those who 'have' it are accustomed to immediate access to the world (to be) framed and that it should be ubiquitously available. *Ubiquitous* access to resources for learning assumes an attitude to the world where all of the world is always already curricularised, everywhere. The habitus has made and then left the individual constantly mobile – which does not refer, necessarily, to a physical mobility at all but to a constant expectancy, a state of *contingency*, of *incompletion*, of moving towards completion, of waiting to be met and 'made full'. The answer to 'who is mobile?' is therefore 'everyone who inhabits the new habitus'. (Kress & Pachler, 2007, p. 27)

As I will outline below, Bourdieu's concept of the 'habitus' as 'dispositions' (1977) within social practice, is highly generative for thinking about mobile technologies and their educational potential. But what the concept of the 'mobile habitus' (Kress and Pachler, 2007) brings to our understanding of young people as 'digital natives' (Prensky, 2001a), is that this is a continuous process, and therefore, summative definitions of groups will be in a continual state of slippage, always defining what has just passed, or is about to pass. Thinking of young people – indeed anyone – in relation to mobile technology is not a stable process, but one of continuous discovery, learning and incompletion.

This research intentionally adopts a perspective about young people and their approaches to technologies that is flexible and dynamic, that recognises congruence amongst similar and diverse groups, as well as acknowledging both individual and group differences. I avoid the use of generalising concepts of young people – except where a generalisation is intentionally used for meaning-purposes – but instead, sees our students as a diverse group with experiences that mirror, parallel, reconstruct and innovate on those of other groups. In this vein, I have developed the metaphor of the 'digital traveller', to emphasise young people's shared experiences with ubiquitous mobile technologies, whilst recognising their individualised experiences. Drawing on Kenway and Bullen's cyberflâneur (2001), and Kress and Pachler's 'mobile habitus' (2007), the 'digital traveller' is based on a notion of movement through space and experience, where the destination is not as important as the journey. Thinking of young people as diverse and different in their shared experiences is a way of working with ethnographic perspectives that is generative of more than simplistic categorisations.

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3

Literacy, Literacies & Educational Futures

Contemporary literacy scholarship is vast, but in seeking connections with these new technologies, this research has engaged with the field of literature in a very general way. This is not to imply without direction, as the examination of current research and scholarship has specifically focused on areas of theory relevant to emerging technologies, resulting in the emphasis of certain schools of thought, such as the New Literacy Studies (NLS) (Collins & Blot, 2003; Cope & Kalantzis, 2000; Jewitt, 2005; Knobel, 1999; Kress, 2003; Lankshear & Knobel, 2006; New London Group, 2000; Pahl & Rowsell, 2005). I will examine the literacies associated with mobile technologies drawing primarily from this theoretical perspective.

The purpose of this section is to broadly sketch the literacy domain as it is relevant to mobile technology use. Scholarship around emerging literacies is continuously expanding; as such this review is not exhaustive, rather, it traces relevant and promising trajectories of research for a focus on mobile technologies. I examine approaches to understanding literacy under three paradigms: traditional, everyday and concept-based. That this draws mainly from the NLS perspective is due primarily to the fact that this is where the use of mobile technologies currently occur, to the place in our lives that they are positioned. As such, this research is

located within that field of literacy studies that sees it as a multimodal, increasingly electronically mediated component of social practice, concerned with meaning-making using a range of semiotic resources, modes and mediums. The nature and structure of these semiotic resources and their relationships to each other constitute an inadequacy in research which this study will address.

3.1   Literacy Paradigms

Literacy educators and researchers (and therefore our students) find themselves caught up in what Ilana Synder terms *The Literacy Wars* (2008). Defining just what counts as legitimate literacy is a highly political act, involving not just researchers, academics and social commentators, but teachers, their students, and the educational community (see Kindler, 2009). In seeking to explore a concept of 'mobile literacy', I am intentionally engaged in this debate.

Inherent in the debate over 'new literacies' and their place within formal educational contexts, are a number of tensions: between discrete skills and literacy as social practice (Collins & Bolt, 2003; New London Group, 2000); between traditional and progressive concepts of literacy (Carrington & Marsh, 2005); between a 'return to basics' and a 'technologised' perspective on literacy (Snyder, 1999). Discussions about what to value as proper literacy is complex:

> On one hand, we are constrained by long-standing institutional pressures to restrict the 'literacy' of our classrooms to a particular set of practices. To do other than this is to leave ourselves and our schools open to critique and sanction. On the other, it is increasingly evident that new texts and new social configurations are in currency outside school where the children in our classrooms will need to adroitly read and construct hybridized and emergent forms of text, as well as the more traditional texts of modernist society, in order to ensure their own successful participation in economic and information flows. (Carrington, 2005, p. 172)

It must be indicated that in identifying three literacy paradigms, they are not discretely separated from each other, but rather are interrelated: any suggestion to the

contrary would not pay due regard to the complexity of contemporary literacy scholarship.

The fact that different people – and therefore different students – have differential access to a range of technologies (and this will vary across life trajectories), means we need a broad understanding of literacy. As Selwyn and Facer indicate, when deconstructing the 'digital divide' around emerging new media technologies:

> A much broader view of 'multi-literacies' sees individuals requiring the language, number and technical skills which give them access to the evolving digital world, alongside a set of creative and critical skills and understanding required to productively engage with technology use in their lives. (Selwyn & Facer, 2007, p. 11)

Literacy then, is a complex endeavour, both in theory and practice. In seeking to provide an overview of the field of research and scholarship, I have developed a triple-paradigm structure, in which I have organised the main areas of literacy on this topic.

3.1.1 Traditional Literacy Paradigm

Perspectives that see literacy as being the ability to code and decode written texts, comprise the 'traditional literacy paradigm'. This perspective designates the formal and 'legitimate' understanding of literacy that is often taught and assessed in schools (cf. Carrington & Luke, 1997). It is a perspective with its own history, conventions and expectations, which whilst appearing objective, are in fact arbitrary conventions based on a particular ideological framework. This framework makes very little room for the literacy practices that occur beyond the classroom.

The 'traditional literacy paradigm' is clearly elaborated by Brian Street in his concept of 'autonomous literacy' (1984). This autonomous model of literacy emerges from the distinction between written and oral language, and the historical privileging of the former over the latter. Literacy here concerns adherence to certain conventions as set down by those with the power to make this definition.

> What is being tested is often the social conventions of a dominant
> class, rather than universal logic. The convention most often
> mistaken for logic is explicitness, which, he shows, is not the
> same thing at all. (Street, 1984, p. 27)

Thus, whilst 'autonomous' literacy practices appear to be about getting things right, what they are really concerned with is the inculcation and mastery of a particular set of conventions and beliefs about what 'proper literacy' is:

> If we can establish that literacy practice involves a socially
> variable set of conventions ... then claims for its consequences
> will not so easily be disguised as universal truths. Such claims
> will be shown to rest, instead, on faith in the value, indeed
> superiority, of particular conventions. (Street, 1984, p. 29)

The significance of this paradigm for contemporary students, is that not all of them are raised, or inculcated with attitudes to and beliefs about school literacy (and if it is indeed important), that are productive of positive outcomes (Carrington & Luke, 1997). In the end, the 'traditional literacy paradigm' is revealed as being as dependent upon ideology, as more 'everyday' perspectives about literacy (cf. Gee, 2008b). However, despite its acknowledged arbitrariness, the 'traditional literacy paradigm' remains a persuasive discourse in public policy and debate (Snyder, 2008). But it is schools and other educational institutions where the position of literacy as being about 'correct forms of writing' is reproduced:

> The code, in the sense of cipher, that governs written language,
> which is identified with correct language, acquires the force of
> law in and through the educational system. (Bourdieu, 1991, p.
> 49)

In practice, proponents of traditionalist perspectives on literacy instruction, commonly adopt approaches advocating phonetics or linguistics, teaching the rules of grammar and appropriate forms of writing (Snyder, 2008). The artifice of the written word is something to be mastered, though this does not mean that it is simply correct. Rather, the traditionalist perspective is based on traditions of privileging certain types of behaviour and expression.

It is a conflict with the traditional paradigm of literacy that lies at the core of concerns over the impact of new technologies and emerging literacy practices, and

their relevance for education. Carrington examines how this challenge can be understood through a case study as a conflict between two discourses about literacy: between the 'players' of 'Standard English' and 'txting' (Carrington, 2005, p. 167). Because it is also written, SMS-language is often presented as the archetype of a challenge to literacy standards, with examples of txt-language creeping into student responses to formal assessment tasks, such as the exam in Carrington's discussion (2005). However, such moral panics have generally faded in recent years, with a tacit and explicit acknowledgement of the value of SMS for literacy as traditionally understood (see section 3.2.2).

The clear distinction between the traditional paradigm of literacy and everyday literacy practices, are being undermined at the curriculum level. In recent years, the position of SMS and other electronic forms of communication outside of assessable curriculum has been disturbed, with new curriculum structures, such as the Victorian Essential Learning Standards (VELS) framework, explicitly allowing room for the inclusion of electronic texts and language in the English Discipline area.

> The English domain is centred on the conscious and deliberate study of language in the variety of texts and contexts in which it is spoken, read, viewed and written. It is concerned with a wide range of written and spoken texts in print and electronic forms including literary texts such as novels, short stories, poetry, plays and non-fiction; film and other multimodal texts; media texts; information, commercial and workplace texts; everyday texts; and personal writing. (2009)[3]

This is aside from the fact that use of ICT for 'visual thinking ... creating ... and communicating' forms one of dimensions of the Interdisciplinary Learning domain of the VELS (VCAA, 2010).

SMS texts have also appeared as part of assessment, offering specific legitimacy to this form of text (Gibson, 2008) with Victorian Certificate of Education (VCE) English students offered an SMS text in comparison to an extract from a letter by John Keats on their 2005 final exam, seen in Figure 3.1. Although this was a

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[3] http://vels.vcaa.vic.edu.au/english/intro.html Accessed on 22 December 2010

> Sweetest Fanny,
>
> You fear, sometimes,
> I do not love you so
> much as you wish?
> My dear Girl, I love you
> ever and ever and
> without reserve...
> When you pass'd my
> window home
> yesterday, I was fill'd
> with as much admiration
> as if I had then
> seen you for the first
> time...
>
> Letter from poet John Keats to his fiancée Fanny
> Brawne, March 1820

how r u
pls 4giv me
I luv u
xoxox
O :-)

Figure 3.1: VCE English exam extract, 2005: Part of Section 2 (Writing Task) of the VCE English Exam 2005. Accessed on 22 December 2010, from: http://www.vcaa.vic.edu.au/vce/studies/english/pastexams/2005english.pdf

'Writing Task' as opposed to a text analysis, it was specifically directed at the topic of 'technology and communication', bestowing legitimacy on the features of SMS as a specific genre. Whether or not individual teachers had engaged deeply with a discussion of SMS as a particular genre, it is another issue to consider entirely, and one which this research seeks to contribute to.

In supporting this move towards acceptance of SMS in the 'traditional literacy paradigm', linguistic evaluations of SMS-language have also emerged, drawing attention to the clever innovation on written language that this form offers.

David Crystal, a renowned British Linguist, offers a focused examination of SMS across globally diverse and linguistically different cultures, pointing to the importance and value of SMS as a linguistic form (2008). The strength of his argument is in demystifying structural elements of this genre, and treating it with the same degree of rigor as any other linguistic form of communication. As he argues: 'There are undoubtedly problems in relation to the use of texting, but they seem to be social or psychological, not linguistic, in character' (Crystal, 2008, p. 168). More importantly, because SMS is a written medium for communication, and as Crystal illustrates, built upon clever innovations with the written form, claims of a detrimental relationship to traditional literacy don't seem wholly convincing:

> I do not see how texting could be a significant factor when discussing children who have real problems with literacy. If you have difficulty with reading and writing, you are hardly going to be predisposed to use a technology which demands sophisticated abilities in reading and writing. (Crystal, 2008, p. 157)

Direct connections can be drawn from these linguistic perspectives, to traditionalist notions of literacy, such as phonetics, and offer potential pathways into productive and critical classroom uses of this genre.

Despite arguments to the contrary, proponents of traditional perspectives on literacy have already yielded to the inevitable relevance of texts and literacies associated with mobile technologies. The presence of these practices in both curriculum structures and examinations points to the erosion of this position. Examinations of the linguistic structures associated with these technologies, particularly SMS – such as Crystal's examination of SMS (2008) – seek to position these practices within a traditional framework of grammar and rules of behaviour. However, the linguistic aspects of mobile technologies only form a very small part of the literacy picture overall. Theories of literacy that focus on the everyday, multimodal and electronically-mediated nature of literacy as tied to social practice, are far more generative of research potential, particularly for this study.

3.1.2 *Everyday Literacy Paradigm*

The 'everyday literacy paradigm' primarily concerns the New Literacy Studies (NLS) perspective (Beavis, 1999b; Burke, 2006; Cope & Kalantzis, 2000; Duncum, 2004; Gee, 2003; Gee, 2004; Gee, 2008b; Kist, 2005; Knobel, 1999; Knobel & Lankshear, 2007a; Kress, 2000a; Kress, 2000c; Kress & Van Leeuwen, 2001; Pahl & Rowsell, 2005; Snyder, 2002). From this perspective, literacy is not something merely restricted to the classroom, or to written language in and of itself. Rather, literacy practices concern the meaning-making practices individuals engage in throughout all aspects of their daily life, engaging with multiple modes and semiotic resources for meaning-making. Literacy then, is more than simply the ability to code and decode written text, but rather, includes 'negotiating a multiplicity of discourses' (New London Group, 2000, p. 9). In this respect, language and literacy only carry a part of the meaning in any text or communicative exchange, and one must examine its relationship to context and other modes used (cf. Kress, 2003).

Defining just what literacy involves, what modes and mediums, is a contested space, even within the 'everyday literacy paradigm'. Whilst some researchers seek to retain the connection between literacy and written language (see Kress, 2003), others seek to expand the concept to include other modes:

> The practices of students with new technologies – even as prosaic
> as they are in school – require a broader re-conceptualisation of
> literacy as multimodal design. (Jewitt, 2006, p. 8)

This research locates itself in this second camp, conceptualising literacy as concerning how multiple modes for meaning-making – different semiotic resources – are used across a range of everyday and formal contexts.

Contemporary social practice perspectives on literacy build on Street's 'ideological model' (1984), which locates literacy in the domain of everyday social practice, as something integral to participation in civil society.

> The concrete forms and practices of literacy are bound up with an
> ideology, with the construction and dissemination of conceptions
> as to what literacy is in relation to the interests of different classes
> and groups. / In talking about literacy we are referring to the

> ideology and concrete social forms and institutions that give meaning to any particular practice of reading and writing. (Street, 1984, pp. 105 & 121)

These concrete forms include the 'technology' used to engaged in literate practice. Street gives the example of seals being used to communicate the authority of the author with illiterate subjects (pp. 116-117) or how ordinary scraps of paper could be given authority with the use of headings, formatting, etc. (p. 174). In this way, literacy as social practice was not just multimodal, but multi-sensory as well, and tied to the purposes and audiences of particular texts that form part of social practice.

Street's 'ideological model' (1984) of literacy also draws attention to the 'technology of communication', and how these are not neutral elements, but carry with them structural, political and ideological features of the society that created them and in which they're in use (p. 96). There are clear examples from pens and paper, through to books and computer screens. This focus draws attention to the impact of implicit ideology built into the tools of the literate practice, but as we have seen with mobile technologies, these tools can sometimes be used in innovative and unexpected ways (see chapter 2). Therefore, one must avoid become blinded by the 'technology bits' and look for what lies beneath.

> But literacy, of course, is more than just the 'technology' in which it is manifest. No one material feature serves to define literacy itself. It is a social process, in which particular socially constructed technologies are used within particular institutional frameworks for specific social purposes. We cannot predict the social concomitants of a given literacy practice from a description of the particular technological concomitants. (Street, 1984, p. 97)

This warning to not get caught up with the technology involved in 'new' literacy practices is elaborated by Lankshear and Knobel (2006), because of course, technologies change, and many 'old' literacy practices simply continue in this new form (such as reading printed words on a screen). In problematising the notion of 'new' with regard to literacies, Lankshear and Knobel instead argue that what is new is a change in 'mindset' (pp. 29-62). Such a perspective must be understood in the context of the dialogic relationship between people and the technologies that they use.

The multimodal structure of NLS studies, which builds on Street's ideological model (1984), is most influentially laid out as a 'Pedagogy of Multiliteracies" by the New London Group, first in 1996, and then in 2000:

> One of the key ideas informing the notion of Multiliteracies is the increasing complexity and interrelationship of different modes of meaning. We have already identified six major areas in which functional grammars, the metalanguages that describe and explain patterns of meaning, are required – Linguistic Design, Visual Design, Audio Design, Gestural Design, Spatial Design and Multimodal Design. Multimodal Design, however, is of a different order to the others as it represents the patterns of interconnection among the other modes. We are using the word 'grammar' here in a positive sense as a specialised language that describes patterns of representation. (New London Group, 2000, p. 25)

The concept of literacy as social practice – multimodal, ideologically structured, and increasingly electronically-mediated – is one that is generative of a great deal of research and commentary. The movement is also from a concept of 'writing' to one of 'design', where the meanings of multiple modes need to be considered (New London Group, 2000). The fact that it is tied so intimately to the topology of everyday life, is linked by Gee, through the concept of discourses and their impact on language and linguistics (Gee, 2008b), whilst Collins and Blot explore the how 'Literacy and Literacies' are constructed through a combination of power relationships around texts and identity (Collins & Blot, 2003). Investigations of how multiliteracies may be understood in the context of emerging ICTs is perhaps the most productive and useful aspect of NLS scholarship for this research.

In exploring the 'everyday literacy paradigm', I draw substantially on the work of Gunther Kress, a researcher and scholar who has demonstrated a continuing interest in exploring and explaining the nature of modern literacy practices, for times of instability and change (Jewitt & Kress, 2003; Kress, 1997; Kress, 1999; Kress, 2000a; Kress, 2000b; Kress, 2000c; Kress, 2003; Kress & Van Leewen, 2001). Kress' focus is specifically on changes to literacy wrought by increasing electronic-mediation and technological capability. To an extent Kress sees 'literacy' as no longer sufficing as a descriptor for 'communication', and advocates a move towards

a multimodal literacy that is electronically saturated, and moves with developments: a move towards a 'curriculum of communication' (Kress, 2000a). This is due to the increased role of multiple modes and mediums for communication (separately, in parallel and interdependently).

A key point in understanding how the multiliteracies are configured is in understanding the relationship between different modes. This is not simply isolated to clearly multimodal texts, as: 'All texts are multimodal' (Kress, 2000c, p. 187), therefore, 'Print-based reading and writing are and always have been multimodal' (Jewitt, 2005, p. 315). Whilst they may be linguistic, they are also visual (letters on a page), spatial (arrangement of text), aural (the sound of words as in language), and therefore multimodal (the relationship between the other modes). The importance in terms of meaning, is that simply 'what is said' is not the whole story, but only part of it. Increasing electronic capability, through the presentation of multimodal information on screen, means that: 'The theoretical change is from linguistics to semiotics' (Kress, 2003, pp. 35-36). This movement away from the primacy of the linguistic is what is at the centre of multiliteracies theory.

In discussing the relevance of semiotics for understanding the relationship between literacy and multimodality, Kress explains that:

> Meaning is the result of (semiotic) work, whether as 'articulation' in the outwardly made sign, as in writing, or as 'interpretation' in the inwardly made sign, as in reading. /... *Reading as interpretation* is the making of a new sign from the sign that I have received as a signifier. I fill that signifier with my meaning. In *articulation* I use a signifier, say *tree*, and fill it with my meaning... (Kress, 2003, pp. 37-38)

This notion of 'articulation' and 'interpretation' sheds light on the vexed position of mobile technologies and their texts in the lives of contemporary students. Whilst they can articulate particular meanings using them, these may be interpreted in a positive sense by their peers, but generally negatively by institutions such as schools.

Importantly, meaning is not just contained within writing or a single mode, but as the 'Multimodal Design' suggested by The New London Group (2000) would indicate, it is contained across multiple modes, disturbing notions of a stable text, or

author and reader relationship. This presents challenges for research and scholarship, as 'we have to find ways of understanding and describing the integration of such meanings across modes, into coherent wholes, into texts' (Kress, 2003, p. 37). In explaining how to deal with this sharing of meaning across modes, Kress develops the notion of *'affordances'*, and suggests a new central question for evaluating meaning: 'What are the *affordances* of a mode?' Here the consideration is the meaning potential of different modes and their fit to the purpose of a communication.

> The assumption underlying a multimodal approach to communication and representation is that, on the contrary, humans use many means made available in their cultures for representation precisely because these offer differing potentials, both for representation and communication. (Kress, 2000c, p. 194)

Therefore, within the multimodal configurations of texts, articulating and interpreting meaning is not a free-for-all, in that modes cannot be used without regard to their impact on meaning. Rather, one must be aware of the strengths and weaknesses of various modes when it comes to articulating and interpreting meaning; more importantly, one needs to be aware of the multimodal implications, or how different modes impact upon each other in terms of meaning. Caught up in this are the concepts of 'hybridity' and 'intertextuality' (New London Group, 2000).

An important aspect of the 'everyday literacy paradigm' are the defining concepts of 'hybridity' and 'intertextuality'. As the New London Group (2000) propose: 'Two concepts help us describe Multimodal meanings and the relationships of different Designs of Meaning: hybridity and intertextuality' (p. 29). 'Hybridity' can perhaps best be explained by reference to the concept of 'convergence' discussed earlier (Buckingham, 2007). Texts presented in multiple modes and across media platforms, present examples of this quality: 'memes' are a good example of a hybrid text type, where a particular narrative, or topic is followed, reworked and transformed across multiple media (Knobel & Lankshear, 2007b; Lankshear & Knobel, 2006). The second concept of 'intertextuality' refers to the ways in which meanings are constituted through relationships to other texts, real or imagined (New London Group, 2000, p. 30). One need only consider the multiple texts around particular popular Hollywood franchises, such as *Star Wars*, *Star Trek*, *Harry Potter*,

or a range of Disney texts and products; or alternatively, the way a concept such as vampires or werewolves are reworked in different forms, resulting in different texts and different fictional worlds. These concepts of 'hybridity' and 'intertextuality' have the potential to be reworked across a range of mediums, as part of social practice, and conveying complex meanings, which if one is not aware of the context and history, run the danger of being missed.

The central element in the changing nature of literacy for this research, is as a result of increased electronic mediation of communication: the move from 'the page to the screen' (Snyder, 1997), resulting in an increasing importance and influence for visual culture (Burnett, 2002). At the most literal level, this involves how written text is arranged on a screen; as Jewitt points out, the screen is a multimodal site for display (2006, p. 158). The multiple modes and 'affordances' of these modes enabled by this shift, has resulted in changes even to written language, as Kress argues: 'Writing will more and more become organised and shaped by the logic of the image-space of the screen' (2003, p. 20). Whereas previously writing was organised in terms of time – following a linear narrative – the multimodal nature of information presented on screen, means that how texts are arranged in relation to other elements (and even by themselves) has value in terms of meaning. At another level, this move to the visual involves the increased capacity to present images and visual icons on screen (either isolated or in conjunction with text): Abbott refers to this as a 'shift to the iconic' (2002, p. 39). The visual nature of alphanumeric writing is also drawn out in IM and SMS writing, with the use of elements such as 'emoticons' (Bodomo & Lee, 2002; Crystal, 2008).

The increasing capacity for communication using multiple modes on screen, suggests an important issue for the everyday paradigm: how do we understand reading practices associated with this shift? This means that we must think of multimodality as not just associated with reading on a screen, but as the social *activity* of reading on a screen. Because the multiliteracies tradition is concerned with literacy as social practice, *all* modal elements around literacy practices need to be considered at both the point of 'articulation' and 'interpretation'.

> Texts realise the significant features of the environment in which
> they were formed. Above all, these include the interrelations of

> the social actors involved in the social event of which the text
>
> production is one part and the dissemination of the text another.
>
> (Kress, 2003, p. 87)

This is particularly true for mobile technologies, which specifically concern the 'Multimodal Design' (New London Group, 2000, 25; Kress & Van Leeuwen, 2001) aspect of a multiliteracies perspective. Here, it is not the discrete modes of meaning-making that are important, as much as the relationship between different modes, how decisions are made concerning choice, and the impact on meaning of different modal components. When considering the importance of a multiliteracies approach to Art Education, specifically visual literacy, Duncam (2004) argues that meaning is never restricted to just one mode, but rather, is a combination of them:

> Whether it is television, the Internet, zines, video games or
>
> simulation rides, each is clearly a hybrid of communicative
>
> modes. Moreover, one does not read the language and then the
>
> pictures and then listen to the sounds; rather, one takes them as a
>
> *gestalt*, a whole, all at once. This then is the challenge of
>
> multimodality for education. (p. 259)

The relationship between modes in both the reading and writing process, and how electronic mediation of communication is amplifying the potential of multimodal texts, are a central concern for all theories of emerging literacy, including this investigation into mobile technologies.

The challenges of these new multimodal, electronically-mediated texts concerns the mixing of logics associated with the process (Kress, 2003, p. 46). The shift to the screen involved a shift to the logic of the visual: if mobiles are taking our literacy practices out into the world of social practices, what other logics need to be considered around gestural and spatial designs? Whilst an understanding of the individual logics of different designs will be useful, what is most important, is understanding the relationship between them, or the 'multimodal logic'.

The essential component of skill in dealing with multimodal texts lies in understanding the 'affordances' (Kress, 2003) of different modes in both their 'articulation' and 'interpretation', and how the multiple modes of any literacy practice – manifested through hybridity and intertextuality – inform the meaning of

any text. Returning to the case of digital texts is a doorway into understanding wider social practices:

> Along with the choice of where to start to "read", the structure of many digital texts opens up options about where to start reading a text—what reading path to take. ... The design of modes often offers students different points of entry into a text, possible paths through a text and highlights the potential for readers to remake a text via their reading of it. The "reader" is involved in the task of finding and creating reading paths through the multimodal, multidirectional texts on the screen, a fluidity that is beginning to seep out onto the page of printed books. (Jewitt, 2005, p. 329)

When Jewitt's discussion above is taken strictly in the context of social practice, and where mobile technologies are concerned, the multimodal nature of the communication practices pose significant questions about just what 'reading' involves, and how meaning is distributed across and between modes.

On final, important point about the 'everyday literacy paradigm' must be added, namely its intimate connection with identity. Whereas some students may have difficulty engaging with and succeeding in school-based literacy practices (cf. Carrington & Luke, 1997), the multiliteracies perspective considers the multimodal trajectories of everyday life: it is therefore concerned with the *many* ways in which individuals write their *own* identity, in schooling contexts and beyond (see Collins & Bolt, 2003; Kumashiro, 2008; Merchant, 2005a; Merchant, 2005b; Thomas, 2007). Here, individuals write their identities, using a range of multimodal resources across different situations. The involvement of mobile technologies in this can be seen with Japanese 'cute culture' (Hjorth, 2005a) or Rheingold's Botfighters of Stockholm (2002), who adopt particular personas associated with their use of mobile technologies. However, it must be stressed that identities are not singular, but rather in a continual state of movement (see section 2.5):

> Speakers do not assume simple, singular identities, rather they inhabit multiple identities ... and this multiplicity highlights the constructed nature of society. (Collins & Bolt, 2003, p. 104)

The position of mobile technologies within educational institutions structures particular kinds of identities around these devices, although these do not typically

align with the identities that our young people have adopted in their home lives (see Campbell, 2006).

This research is concerned with the nuances of social practices that our contemporary students negotiate, informed by the ideological schism that exists between their in-school literacy practices and those they engage in beyond the classroom and playground. Perspectives that seek to remove literacy practices from their context, are not appropriate for studying such social and personal technologies as mobile phones and iPods. As Street warns: 'Isolated from its social relations, literacy takes on a reified and symbolic significance unwarranted by its own, more restricted influences' (1984, p. 105).

3.1.3 *Concept-Literacy Paradigm*

The 'concept-literacy paradigm' is essentially a measure of competency with regard to a specific area of human endeavour or interaction. Discipline-based literacy theories are a combination of traditional and everyday literacy perspectives. They concern specific knowledge and actions related to a particular field of study, area of life, or aspect of social interaction: examples include, 'technological literacy' (Luke, 1997), 'visual literacy' (see Anstey & Bull, 2000; Kress, 2003; Wilhelm, 2005), 'media literacy' (see Hobbs, 1998; Penman & Turnbull, 2007), 'bit literacy' (see Hurst, 2007), 'economic literacy' (see Forsyth, 2006; Stigler, 1970), 'digital literacy' (see Braga & Busnardo, 2004; Eshet-Alkalai, 2004; Faigley, 1999; Gibson, 2008; Gilster, 1997), 'postmodern literacy' (Willinsky, 1991). The usefulness of these paradigms lies in the extent to which they can be used to focus attention, discussion and research on a particular field of human activity. This discussion does not aim to be exhaustive in explaining different theories of this type – for they can be defined by scholars and commentator for specific purposes – but rather, to sketch examples which explain what this paradigm involves.

Unpacking Street's ideological model of literacy (1984), it becomes clear that concept or discipline-based paradigms of literacy constitute particular meaning-making practices organised in terms of a particular ideological model. The examples of 'Maktab Literacy' and 'Commercial Literacy' that Street explores in his work

Literacy in theory and practice, are not only organised in terms of Islamic religious and commerce knowledge, but are also specific to the culture they are entrenched in; in this case, Iranian villages. When proposing and working with particular 'concept-literacy paradigms', it is important therefore to be aware of the structure and history of the actual concept: what other theories, assumptions and contexts inform its ideology, essentially.

Cook's concept of 'Layered Literacies' (2002) presents a structure where she seeks to reconcile different theories of literacy with the institutional demands of an Engineering course teaching effective technical communication. In resolving a pedagogy for technical communication, she divides 'layered literacies' into six levels: basic, rhetorical, social, technological, ethical, and critical. What is significant about each of these 'layers' for this discussion, is that whilst Cook advocates that they should be considered as fluid and interrelate, they all concern knowledge of a specific field of learning, and the ability to act appropriately with regard to this knowledge. Cook also indicates that 'visual literacy' is relevant across the six layers (pp. 23-24). It is significant for the 'concept-literacy paradigm' that Cook's model of literacy relates specifically to a particular discipline – in this case engineering – illustrating that topic-based literacies can be nested and grouped around meta-narratives. This was also seen in Eshet-Alkalai's (2004) dissection of the concept of 'digital literacy', breaking it down into: 'photo-visual literacy', 'reproduction literacy', 'branching literacy', 'information literacy' and 'socio-emotional literacy'.

Another interesting concept to consider for this paradigm is Schirato and Yells' concept of 'cultural literacy' (2000). This is useful for drawing attention to the general contextual sensitivity of any literacy practice: 'a knowledge of the meaning systems and the ability to negotiate those systems within different cultural contexts' (2000, p. xi). I must make a clear point here that this concept of 'cultural literacy' is very different from that put forward in E. D. Hirsch's *Cultural Literacy: What Every American Needs to Know* (1989). This theory puts forward a specific 'body of general and specific knowledge to serve as a common touchstone...' (Christenbury, 1989, p. 14) and has been roundly criticized for its prescriptive content, based upon the dominant culture, which 'asserts a sort of cultural exclusiveness' (Simpson, 1991, p. 67) making contestable its central concept of

'culture' (see also Silva, 2006).   Such prescriptive lists of skills and facts to be learnt may bear something in common with traditional paradigms of literacy, but is not relevant for everyday, multimodal perspectives.

Slattery's research into the 'technological literacy' skills of technical communicators formulated a particular understanding of literacy based on skills deployed by employees when constructing new electronic documents (2005). This theory of literacy focuses specifically on workers who use electronic texts as part of their professional meaning-making practices.   His discussion of 'textual coordination' as a skill specific to using computers to produce documents, is not only a way of addressing fears about authenticity and authorship, but offers an understanding of skills that may be deployed in relation to mobile technologies. Slattery identifies skills in regard to 'textual re-use' (p. 355), 'remediation of information' (pp. 355-356) – very much similar to Kress' concepts of 'transformation' and 'transduction' (2003) – and the manner in which 'constellations of texts and programs' (Slattery, 2005, p. 356) are used productively to produce authentic documents. The implications of these observations are clear in that how a specific technology is used, and an individual's competency with a specific technology, have an impact on the manner in which meaning is made, and the types of literacy practices that are deployed. The ability of individuals to use a mobile technology therefore has an impact on the literacy practices at play:

> Writing, as a process of textual coordination, is increasingly reliant on technological repertoire necessary for building the genre ecologies that enable…[specific] kind[s] of thinking. (Slattery, 2005, p. 358)

It was in the 'concept-literacy paradigm' that I encountered a singular direct articulation of connection between mobile technologies and literacy in Donald and Spry's concept of 'mobile media literacy' (2007). Here they consider mobile phones as 'mobile media', and locate meanings associated with device use beyond traditional understandings of literacy:

> To question how young mobile media users are, through various iterations of mobile media literacy, participating in the formation, elaboration and contestation of mediated spaces within defined places. (2007, p. 108)

However, a detailed discussion of the concept is not developed or linked to established literacy theory and scholarship. What is significant for this research though, is that Donald and Spry's concept illuminates the importance of understanding the impact of mobile phones across different spaces, and that this is important for meaning-making. The 'concept-literacy paradigm' therefore provides a useful method for focusing attention on particular areas of meaning-making.

In the next section I will consider some areas of research and scholarship in specific areas relevant to mobile technologies. Whilst the intention is not to be exhaustive, I hope that it will suggest directions and trajectories in research which will help to explore the emerging practices around mobile technologies.

3.2 ICT & Literacy

The impact of emerging digital technologies on our understanding of what literacy entails has been a profitable and prolific area of scholarship and research. Emerging primarily from the Multilitercies tradition, or 'everyday literacy paradigm', they often take the form of 'concept-literacy paradigms', focusing on particular technologies, or particular aspects of these technologies. Here, I will offer an overview of some of the emerging text types and issues around ICT use that have engendered discussion concerning literacy. It is important to place a theorisation of mobile literacy in relation to these other fields, as patterns of convergence blur distinctions between technologies. As Jewitt warns:

> The representational and communicational resources are not given
> enough attention or importance in the theorisation and discussion
> of technology, learning and pedagogy. (Jewitt, 2006, p. 161)

The dramatic changes of mobile technologies in the social lives of many people point to deeper and more prevailing alterations to communication practices than previous ICTs not so intimately connected to the trajectory of individual social lives.

In this age where technological advancement seems to be ongoing and endless, one focus for literacy research and scholarship has been emerging text types, and the 'reading' and 'design' practices associated with them. Whilst the position of these texts as 'new' is debatable (cf. Lankshear & Knobel, 2006), literacy

scholarship has needed reworking in order to build connections between everyday literacy and 'traditional literacy paradigms', in a way that is productive for learning (see Gilbert, 2001; Koutsogiannis, 2007).

Computer games in particular offer an especially interesting example of how an out-of-school text type has been deconstructed in terms of its learning potential and literacy practices involved (Beavis, 1999a; Beavis, 1999b; Beavis, 2002a; Bevis, 2002b; Beavis, 2004; Beavis & Charles, 2005; Cross, 2005; Gee, 1991; Gee, 2000; Gee, 2001; Gee, 2003; Gee, 2004; Gee, 2007; Gee, 2008a; Gee, 2008b; Hammer, 2007; Prensky, 2006). Such perspectives are located within the 'everyday literacy paradigm', and draw upon the multimodal, electronically-mediated and ideologically structured nature of these texts. They present examples of contextual learning experiences that make use of multiple modes to teach selected skills and knowledge (cf. Gee, 2003). Computer games also offer an effective manner of engaging some disengaged students in their learning (Gee, 2003; Prensky, 2006). Gee's 'socio-cognitive' view (2001) links video games to literacy practices through the lens of social practice. One manner in which this is demonstrated is through his discussion of the subject's engagement with video games through the establishment of three identities – 'real', 'virtual' and 'projective' (Gee, 2003, pp. 64-65) – and how they are used to explore different cultural experiences through the medium of the virtual world. Beavis offers a range of studies into the literacy potential of computer games, including networked ones, finding links to narrative structures, characterisation, identity and the value of multiple modes for conveying meaning (1999a; 1999b; 2002a; 2002b; 2004). These everyday texts reveal themselves to be rich with learning potential.

Aarseth introduces the concept of 'ergodic literature' to draw attention to the linear, yet branching nature of computer games: 'In ergodic literature, nontrivial effort is required to allow the reader to traverse a text' (Aarseth, 1997, p. 1). This concept is used to explore the notion of 'cybertext' (including computer games), which offer a combination of linear and labyrinthine, structures, which he argues, are no longer incompatible thanks to digital technologies. There are clear connections here with the move to the visual/screen and hypertext theory (Kress, 2003; Snyder, 1996; Snyder, 1997; Snyder, 2002). Mark Finn (2005) also builds on this in terms of

the move of games into the field of mobile technologies, and the policy implications of taking such immersive and detailed multimodal texts into the wider realm of social engagement, where it 'has the potential to radically alter how people perceive leisure, making gaming available regardless of time and/or location' (Finn, 2005, p. 40). I will now explore three useful areas of scholarship for mobile technologies.

3.2.1 Reading & Writing: Digital Literacy & Hypertext

The impact contemporary emerging ICTs have had is significant for literacy scholarship. The NLS perspective has been active in integrating studies about the impact of new technologies into understanding literacy as multimodal and increasingly electronically mediated (Anstey & Bull, 2006; Baron, 1999; Jewitt, 2005; Jewitt, 2006; Kellner, 2004; Kress, 1997; Kress, 1999; Kress, 2003; Snyder, 1996; Snyder, 1997; Snyder, 2002; Snyder & Beavis, 2004).

Digital literacy first gained prominence as a term of importance in relation to electronically medicated information, in the work of Paul Gilster (1997). His initial text, *Digital Literacy*, was a response to the increasing amount of unmediated information available online, and an attempt to construct a framework for critical literacy skills in electronic environments:

> Digital literacy is the ability to understand and use information in
> multiple formats from a wide range of sources when it is
> presented via computers' (Gilster, 1997, p. 1)

Although somewhat dated now – in the light of current technological trends (both technical and social) – the importance of Gilster's concept lies in stressing the importance of critical evaluation strategies in assessing the validity and saliency of information presented in an electronic fashion, drawing attention to the role of new and emerging text conventions in this process (such as web site addresses).

Proliferation of terminology describing Computer Mediated Communication (CMC) has resulted in some confusion. However, there has been a response to this. Eshet-Alkalai (2004) seeks to construct a more rigorous framework for 'digital literacy' in an attempt to address the jejunely manner in which the term has been frequently treated. His:

> New conceptual framework for the concept of digital literacy,
> incorporat[es]… five types of literacy: (a) photovisual literacy;
> (b) reproduction literacy; (c) information literacy; (d) branching
> literacy; and (e) socio-emotional literacy. (Eshet-Alkalai, 2004, p.
> 94)

It is interesting to note that each of these sub-literacies identifies by Eshet-Alkalai are drawn from different understandings of literacy. Photovisual literacy is drawn from the visual literacy tradition; information literacy is drawn from the critical literacy tradition; branching literacy is drawn from understandings of hypertext literacy practices and socio-emotional literacy is essentially an understanding of literacy as social practice. The most innovative aspect of his framework remains that of reproduction literacy, which is seldom addressed in the literature except in connection with issues of copyright (Abbott, 2002, p. 42).

Eshet-Alkalai's concept of reproduction literacy seeks to find a meaningful way to discuss the fact that information expressed electronically allows for the opportunity for communicators to reuse 'texts that have already been published' (Eshet-Alkalai, 2004).

> Digital reproduction literacy is the ability to create a meaningful,
> authentic, and creative work or interpretation, by integrating
> existing independent pieces of information. (2004)

This is a move from the suggestion that simple digital reproduction of information, without editing, is a meaningless event, to a theory that recognises the functions of reproduction in creating meaning. There are links here with understandings of the multimodal nature of communication as social practice (New London Group, 2000; Gee, 2001; Kress, 2003). If we acknowledge that: 'If modes have distinct affordances then their potential for representing are partial' (Kress, 2003, p. 12), and that we use specific modes because their 'functional specialisation' makes them the 'best fit' (p. 156), to communicate a given meaning, then reproduction is never a meaningless process. Indeed the function of a reproduced text is different whenever it is reused, due to the individualistic nature of social contexts.

Another important theoretical framework to consider in relation to electronic reading practices is the concept of 'hypertext' (Snyder, 1996; Snyder, 2002). In

reconsidering what texts entail, Snyder moves us away from the linear, towards text as a network, the most clear current example of which is the internet. In this framework, the text is dispersed and decentred, open and subject to multiple beginnings and endings: reading and writing ceases to be a linear process or structure, but an interactive process between reader, writer and text. However, Snyder warns:

> At this stage in the history of the technology, most hypertexts merely reproduce existing works in the new medium. They are in Joyce's term, 'exploratory'. In such works, the hypertext component is limited to navigational devices that facilitate exploration of an information space. The users remain in 'audience' mode and the roles of readers and authors remain separate and different. It is not 'exploratory' but 'constructive' hypertexts that offer radical alternatives to educational processes. ... As with constructivist approaches to teaching and learning, 'knowledge' in constructive hypertext theory is seen as existing not as a preconceived truth waiting to be discovered, but rather as a potential: until we create it, link it, write it or recover it, it does not exist. (Snyder, 1996, p. 33)

When one considers the flexible and dynamic ways in which mobile technologies are used as part of social practice, discussed previously (see chapter 2), notions of linearity only have a certain degree of relevance. Self-contained texts may have more stable structures, and Riedl and Young suggest that both 'linear' and 'branching' (analogous to hypertext) narrative forms have a usefulness in developing educational games (2006). However, the indeterminacy of social practice means that the story essentially has no beginning, no ending and no pre-conceived narrative structure. Linear perspectives on meaning may encourage studies to track a series of communications between colleagues or peers as a sequence, but only take us part-way to understanding the complex ways individuals negotiate their everyday lives, not to mention if they use the internet on their mobile phone, in which case hypertext theory has a direct applicability and relevance.

3.2.2 SMS & Literacy

> Texting language is no different from other innovative forms of
> written expression that have emerged in the past. It is a type of
> language whose communicative strengths and weaknesses need to
> be appreciated. (Crystal, 2008, p. 158)

Despite popular panics to the contrary, there is a very strong correlation between 'traditional literacy paradigms' and the emerging genre of SMS or 'txtng' (Crystal, 2008). Concerns typically arose because of the particular 'terseness' (Goggin, 2006, p. 69), 'truncated language' (Levinson, 2004, pp. 110-111), or a misreading of when and where SMS language was appropriate, such as in an exam answer (Carrington, 2005).

David Crystal offers in his 2008 book *Txtng: the gr8 db8*, perhaps the most comprehensive analysis of SMS language so far. His examination covers multiple countries, and multiple languages, examining the structure, concerns and reasons for the genre form that txtng has taken. What is significant, is the positive correlation that he establishes between literacy and SMS-language, finding that users demonstrate a tacit understanding of the way that language functions. In removing letters from words, he reveals: 'Texters have evidently intuited a basic principle of information theory: that consonants carry more information than vowels' (Crystal, 2008, p. 26). He also indicates particular associations between languages and the linguistic form that SMS takes in response to that language:

> It is precisely because English has such unpredictable spellings as
> *see*, *you*, and *are* that abbreviating to *c*, *u*, and *r* has a point.
> (Crystal, 2008, p. 128)

Perhaps his most positive revelation with respect to SMS carries encouragement for literacy theorists, researchers and educators: that the SMS form evolved not just as a result of the restricted conventions of the SMS form (160 characters), but also as a result of the 'ludic temperament'. The idea that our students experiment with language when writing SMS messages, because it is fun, is a positive turn in respect of the debate over the educational value of this genre. In this way, I will use Crystal's contraction of 'txtng' to designate the communication practice of sending an SMS as part of written-language play.

Concerns over the detrimental impact of SMS on written literacy standards are, as contemporary research demonstrates, a misplaced assumption.

> Whatever else txt may be and what it may represent to various sections of our community, it remains an emergent form of text with quite explicit skills, social practices and knowledges associated with it. (Carrington, 2005, p. 171)

The particular limitations placed on language by this form of communication have spawned what Carrington terms a 'new literacy' (2004). This form of writing is consistently seen by education professionals and the wider public sphere as being a detriment to student skills: 'both txt and txt users … [are] deviant in relation to the established model of literacy practice' (Carrington, 2005, p. 169). However, as the literature demonstrates, SMS is a highly complex genre of communication: it just wasn't developed or defined by those who describe what proper literacy is; though they are now trying, as Crystal's efforts demonstrate (2008).

Despite its initial role 'as a peripheral feature of mobile phones in the early 1990s' (Cutler, 2005, p. 23), text messaging, or as it is more commonly known by the acronym SMS (Short Message Service), has become one of the most widely used features of mobile technologies. The limit of up to 160 characters (for a typical SMS) has resulted in changes to written language structures (Carrington, 2004). Further, the development of MMS (Multimedia Message Service) and IM (Instant Message) services on newer model devices, increases the modes through which a meaning can be represented. MMS impacts through the inclusion of more than just written modes of communication (including image, sound, video, files), and IM through further disturbing the already blurred boundaries between synchronous and asynchronous types of communication.

Bodomo and Lee (2002) suggest that 'there is a causal relationship between the emergence of new tools and media of communication and the creation of new forms of language and literacy' (p. 24). They term this 'Technology-conditioned approach to Language Change and Use (TeLCU)' (Bodomo & Lee, 2002, p. 23), an approach which builds on the tradition of the New London Group (2000), who acknowledged that 'new communications media are reshaping the way we use language' (New London Group, 1996, p. 64). The changes to written, alphabetic

language under the influence of SMS are perhaps the most obvious demonstration of this. Due to the restricted number of characters that can be used, there have been a number of changes: SMS-language (Prensky, 2004; Cutler, 2005) – 'squeeze-text' (Carrington, 2004) or 'txt' (Carrington, 2005) – 'acronymy' (Bodomo & Lee, 2002), 'emoticonymy' (Bodomo & Lee, 2002) and exploring the 'visual affordances' of language on screen (Merchant, 2005a; Abbott, 2002).

SMS-language in schools is sometimes decried as a degenerative form of language (Leech, 2006b). As Carrington discusses with relation to two media articles: 'Txting…is [viewed as] an alien and inferior form of language that is infecting the "real" English language and resulting in lower standards in examinations' (2005, p. 168). However, this is not the only way to view this textual form, as in opposition to established language. Instead, she suggests that we consider it along with other modes as a valued and meaningful form of communication:

> Being literate in post-industrial information economies is to have a grasp of the most valued and useful genres and to be able to shift between them as required by context. (Carrington, 2005, pp. 171-172)

Seen in this light, the development of SMS language skills has a very real function in social practice. Students already SMS each other, as do many other people in the community. To simply devalue this manipulation of written language off-hand as being somehow degenerate, teaches us nothing about how this form of communication works or the literacy practices involved. The student involved in media coverage Carrington deconstructed was actually involved in a valuable literacy practice:

> Her use of txting was, in fact, quite sophisticated and she was clearly experimenting with how far into other discursive spaces her mastery of txting could reach. (2005, p. 173)

The problem in this situation was not that what she has written was 'wrong', but that 'she chose an inappropriate genre in which to respond to a class assignment' (Carrington, 2005, p. 173). SMS-language therefore, is not a problem in itself, but only when it transgresses into modal spaces or genres to which it is not suited. This is a return to Kress's concept of 'functional specialisation' (2003, pp. 20-21) of

modes, and using a particular mode because it is the most 'apt' (pp. 42-43) for the situation. As a representational resource, these rules apply no less to 'txtng' (Crystal, 2008), 'squeeze-text' (Carrington, 2004) or 'emoticonymy' (Bodomo & Lee, 2002).

One key feature of SMS- language is the manner in which alphabetic language is compressed to the basest form from which an understanding can be gleaned. Carrington terms this feature 'squeeze-text' (2004) or 'txt' (2005), whilst Bodomo and Lee, identifying the same practice in Hong Kong, term it 'acronymy', combined with specific punctuation use and 'emoticonymy' (2002), and Crystal breaks it down even more, into 'logograms', 'initialisms', 'nonstandard spellings', 'omitted letters', 'shortenings' and 'true innovations' (2008). It is interesting to note that this feature of compressing language occurs across cultures, as is demonstrated by comparing the work of Carrington (2004), Bodomo & Lee (2002) and Crystal (2008). In Table 3.1, various examples have been selected from these texts, illustrating similarities and differences between the two cultures.

It is interesting to note some of the similarities and differences between the observations discussed in these writings, by simply looking at the language that SMS-users are using. We can see that across cultures there are similarities enforced by the compression of language, including breaking messages down well beyond the simple shortening of 'text to the minimum syllable length' (Carrington, 2004, p. 217). There is also more at play than the term 'acronymy' (Bodomo & Lee, 2002, pp. 32-34) would suggest, though its definition is more encompassing than that posed by Carrington: 'the shortening and abbreviation of words and phrases that are commonly used in real-life communications' (Bodomo & Lee, 2002, p. 32). We can note in the examples in Figure 3.1 that across cultures there is a tendency to use both abbreviation and compression as Bodomo and Lee have suggested.

There are examples between 'squeeze-text' and 'acronymy' that are exactly the same ('THX' & 'thx', 'RU' and 'CU'). Then, there are terms based on a phonetic understanding, in that the letters as typed, sound like the word they represent; thus, examples such as 'XLNT' and 'RUOK' from Australia and 'ic' and 'ar' from the Hong Kong students. Then, there are also traditional type acronyms that have migrated across from other textual forms or popular culture: 'ASAP' and

SMS-LANGUAGE/TXT LANGUAGE EXAMPLES		
Squeeze-Text (Carrington, 2004, p. 217)	**Acronymy** (Bodomo & Lee, 2002, p. 33)	**Logograms, Initialisms, Nonstandard spelling, Omitted letters, Shortenings** (Crystal, 2008, pp. 37-62)
THX – thanks RU – are you XLNT – excellent WRU – where are you? DNT – don't RUOK – are you okay? FYI – for your information 2DAY – today GR8 – great :-)BDAY – happy birthday	Ths/Thx – thanks CU – see you ar - are BTW – by the way BRB – be right back ic – I see Asap – as soon as possible ToD – today 88 – bye bye Halo – hello	B4 – before 2day – today @oms - atoms AML – all my love OMG – oh my God! GF – girlfriend Msg – message Wot – what Wanna – want to Cos - because Bro – brother

Table 3.1: SMS-language examples from research.

'FYI' for instance. What is particularly interesting though, are the differences between cultures.

Students in both Hong Kong and Australia had different SMS representations for today ('2DAY' and 'ToD' respectively). It would be interesting to know the etymology of these terms, as the differences are no doubt a product of 'the linguistic background of individuals' (Bodomo & Lee, 2002, p. 33). This is demonstrated by the different uses of the numeral '8' where it is related to its phonetic sound. In English, this is 'eight', which has a variety of phonetic matches: '-ate' and '-eat' are two common syllables it replaces. However, in Hong Kong, Bodomo and Lee theorise that the use of '8' is determined due to 'the resemblance between the Chinese pronunciation of 'eight' *ba* and *bye-bye* in English'. This is the example given in Figure 3.1. It is clear how cultural factors can have an influence on the structure of SMS-language.

There is however another manner in which SMS-language and other writing associated with 'screens' (mobile or not) related to the visual nature of language.

Whilst the linguistic visual 'affordances' (Kress, 2003) of alphabetic language bear some connection with the 'traditional literacy paradigm' (see section 3.1.1), it is useful to consider these aspects in relation to SMS-ing as a new form of text. Crystal (2008), Abbott (2002), Merchant (2005) and Bodomo and Lee (2002) all make mention of this phenomenon. This situation, which Bodomo and Lee refer to as 'emoticonymy' (2002, pp. 35-36) is developed further by Merchant under a discussion of the 'visual affordances' offered by the screen (2005, pp. 55-58). The difference is merely one of degree: one focuses on SMS (Bodomo & Lee, 2002), the other on email (Merchant, 2005). Here, it is a matter of technological capacity: some mobile phones have email capacity, though all are somewhat restricted in their visual capacity due to the size of the screen, requiring more careful design of screen based information for mobile technologies (cf. Prensky, 2003). The advantage of simple SMS is that it is limited to a form that almost anyone with a mobile phone can access.

The debate over the value of SMS language offers a significant point for mobile technologies: it focuses our attention on the potential of widely-distributed and used devices, to develop emergent text forms. As the capability of devices increases, as mobiles integrate further into our lived experiences, what new text forms might emerge?

3.2.3   Financial Literacy

In its examination of literacy as social practices, with a particular discussion of the world of work, the New London Group (2000) alludes to the need for individuals in society to have critical capacities when dealing with information that has a financial dimension:

> The increasing invasion of private spaces by mass media culture, global commodity culture, and communications and information networks. Childhood cultures are made up of interwoven narratives and commodities that cross TV, toys, fast-food packaging, video games, T-shirts, shoes, bed linen, pencil cases, and lunch boxes…. Parents find these commodity narratives inexorable, and teachers find their cultural and linguistic

messages losing power and relevance as they compete with these global narratives. Just how do we negotiate these invasive global texts? (2000, p. 16)

One need not go very far to identify with this experience, as Prensky does in testifying about raising his own child and experiencing the *Pokémon* phenomenon: his child ended up with books, figurines, trading cards, a 'Gameboy' game, sticker books and other computer games (Prensky, 2006, pp. 162-164). In this case, careful parenting was able to result in the child developing in a positive direction: researching on the internet about characters, communicating with others about the game and even writing and publishing his own *Pokémon* stories.

Street also drew attention to the ideological and political dimensions of everyday literacies, exemplified in his example of 'Commercial Literacy' in Iran (1984). This model focuses us on literacy practices existing within a particular sociocultural and socioeconomic framework, where financial knowledge and competence is valued. Knowledge of the implicit rules and conventions that made up the hidden structure of 'commercial' literacy were crucial components of that expertise and therefore of that power (Street, 1984, p. 175). Even as this is a specialised field, this instance points to the underlying social conventions of everyday literacies, including financial costs woven throughout.

The relevance of a concept of financial literacy for mobile technologies developed from media panics about the cost of mobile phones for adolescents. In a particular instance, this was in reaction to research released by Nina Weerakkody, whose work revealed personal and family tensions around youth use of mobile phones and difficulties managing the costs involved (2007). These situations were based on young people being on phone contracts, as opposed to the pre-paid system. Nina Weerakkody's (2007) work around financial anxiety and mobile technology use, points to a need for financial knowledge on the part of young people and in their use of mobile phones particularly (see Chipchase, 2005). The repositioning of mobile phones in particular (and mobile technologies generally), from technical and specialist culture, into consumer and popular culture, means that the types of people having to negotiate immediate financial costs associated with mobile communication is more diverse than ever (cf. Goggin, 2006).

While Weerakkody's arguments are somewhat undermined by apparent youth preferences for pre-paid mobile phone contracts (Agar, 2003, pp. 107-108), this does not remove the need for individual phone users to have heed for the financial cost of their communications. That this extends to the level of individual messages is illustrated by the development of SMS-language as a distinct genre. We can see here that finance has already had, and continues to have, and impact on literacy practices around mobile technologies. It was the very need to try and fit a lot of information into 160 characters (so that only one message had to be sent and paid for) – that resulted in the particular language form of SMS (Crystal, 2008). What the rise of SMS illustrates is a focus on cost-minimisation strategies – however tacit – in communication using these devices.

As a specific concept, 'financial literacy' has its history in financial and economic studies. A similar concept in 'economic literacy' was used to address knowledge and competency in the economic disciplines (Forsyth, 2006; Stigler, 1970). The concept of financial literacy that is most applicable here is a more popular reworking for a general audience of consumers (Beal & Delpachitra, 2003; Glouberman, 2004; Johnson & Sherraden, 2007; Vitt, Anderson, Kent, Lyter, Siegenthaler & Ward, 2000). In its relevance to the wider population, 'financial literacy' has found a role in policy, with the Australian government (National Consumer and Financial Literacy Framework, 2006), Australian Securities & Investment Commission (ASIC) (Financial literacy in schools, 2003) and the ANZ Bank (*ANZ Survey of Adult and Financial Literacy in Australia,* 2003) all developing policies and approaches addressing concerns about financial literacy in the general population. The ANZ developed its response to financial literacy as part of their 'Corporate Responsibility' policy, directed at adults.[4] Much of this work is directed at improving the financial competency of the general population, with children a peripheral element in this focus.

Financial literacy follows the form of a 'concept-literacy paradigm', with accurate knowledge and appropriate action forming the core of its structure:

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[4] ANZ Financial Literacy and Inclusion page: www.anz.com/about-us/corporate-responsibility/community/financial-literacy-inclusion/ Retrieved on 27 December 2010.

> Consumer and financial literacy is the application of knowledge, understandings, skills and values in consumer and financial contexts and the related decisions that impact on self, others, the community and the environment. (National Consumer and Financial Literacy Framework, 2006, p. 1)

This policy document lays out possible focuses for years 3, 5, 7 and 9 of schooling, and further breaks down financial literacy into four competencies – knowledge and understanding, competence, enterprise, responsibility – locating it as a specific concept paradigm of literacy, distinct from the everyday paradigm in which financial literacy exists in an interwoven form. Therefore, the significance of using 'financial literacy' as a concept, is not to separate it as a particular set of skills, but, to draw out a particular focus within the everyday, multimodal literacy practices that are woven throughout everyday life.

The significance of the relationship between financial literacy and mobile technology use for youth is that, unlike most other ICTs, these devices confer a personal economic cost on them. Whereas the cost of computers, internet, digital or pay television and such, are often borne by others – family, institutions (schools), businesses – the cost of mobile technologies is increasingly borne by youth themselves. This can result in financial problems, as Nina Weerakkody illustrates (2007), but also allows for youth to exercise agency and ownership concerning their own financial decisions, whether successful or not.

3.3   Mobile Technologies & Literacy Education

Debates over what literacy practices to integrate into formal education are highly political and charged, as Synder illustrates in *The Literacy Wars* (2008). But no one disagrees that the nature of everyday literacies is changing under the emergence of new technologies: how this translates across the 'digital divide' (Buckingham, 2007), and whether it should, is the significant issue. At the very least, such discussions result in the demystification of theories of literacy typically valued in educational institutions:

> The notion of literacy needs to be reconceived as a plurality of literacies, and becoming literate is a more apt term than being

> literate. People express themselves and make sense of the world
> in linguistic, visual, audio and other modes in a continual process.
> In our experience, mobile devices can certainly support this range
> of expression and identity creation. (Hartnell-Young, 2005, p. 20)

Mobile technologies in particular are emblematic of this need: multimodal and tied intimately to the experiences of everyday life, they seem a far cry from formal essays and legitimate communication practices. But the simple point remains: they're already here and already having a dramatic impact on everyday literacy practices. They are intimately linked to personal and group identity, tied to social groups and interaction patterns. In terms of multimodality, they move the interpretative framework beyond even the screen, taking us into the domain of sounds, gesture and spatial design, in the domains where new logics are needed. They perhaps best represent Lankshear and Knobel's requirement for a 'new ethos' for 'new literacies', being more 'participatory', 'collaborative', and 'distributed' in nature compared to conventional literacies (2007, p. 9). But we are yet to fully engage with the impact of these qualities for meaning around mobile technologies specifically. How to read meanings and evaluate the effectiveness of electronically mediated multimodal social practices in terms of the literacy practices that are occurring is a complex act which this study aims to unpack and explore.

Whilst an 'everyday literacy paradigm' featuring electronic texts and ICT use takes us some way to articulating a theory of mobile literacy, they are in part still tied to particular places and particular technologies. No unified examination of literacy practices specifically associated with mobile technologies, and the notion of mobilities, has been developed. This inadequacy in research and theory will further be exacerbated and revealed as more mediums for communication and expression are freed from their dependence on place, or new technological capabilities open up the potentials of social interactions using different modes of communication and expression. As the locus for literacy practices becomes further focused on the level of the individual body, rather than their engagement with external machines, the need for a literacy theory that follows the contours of movement, gesture, voice and tone (a phone call in a public place) as meaningful texts, is needed. This study contributes to filling this gap in research and theory around contemporary and emerging literacies.

3.4 Looking Forward

> Moore's law has almost universally been interpreted as a bald
> statement that the amount of processing power available at a
> given cost will double every eighteen months, indefinitely.
> (Greenfield, 2006, p. 116)

The impact that mobile technologies have had under Moore's Law (Greenfield, 2006), along with the process of convergence (Buckingham, 2007; Green, 2002), mean that the distinctions between different discrete technologies are only partially productive, and limited in time. This is a central reason why I have approached this investigation using the general concept of 'mobile technologies' (see section 2.1), for whilst the preponderance of research and writing in this area concerns mobile phones specifically, the communicative functionality of phones is being increasingly integrated through a wider range of devices, or, on the flip-side, phones integrate an increasingly diverse range of non-communication features.

In defining the significance of convergence for contemporary 'technoculture', Green explains: 'the convergence issue relates to the dissolving borders between media (content) telecommunications (carriage) and IT/Computing (process)' (Green, 2002, p. 139). We can already see the beginnings of this with the internet and cross-fertilization with television and other media forms. In terms of literacy, this concerns the processes of 'hybridity' and 'intertextuality' (New London Group, 2000). Institutional media has caught onto the trend as well, featuring supporting content on web pages for particular channels, programs or movies. The process of convergence also contributes to the breaking down of established binaries and ideological systems:

> Nevertheless, this convergence of technologies and cultural forms
> has been greeted by many critics as reflecting a breakdown of
> established cultural and social hierarchies – including those that
> are based on age differences. (Buckingham, 2007, p. 81)

The process of convergence therefore not only results in a melding of technologies and media, but a disruption to established social, cultural and political structures. There is limited scope for the prediction of trends though, as the social aspect cannot

be accurately foretold, as was seen with the dramatic popularity of SMS (Levinson, 2004) or the iPod that saved the Apple from obscurity (Levy, 2006). Efforts at predictions on the technological front are helpful, although care must be taken with regard to how these predictions might play out at the local level of individual experience.

Two particular theories which are useful when thinking forward about possible technological futures are Greenfield's concept of 'everyware' (2006) and Tiffin & Terashima's 'HyperReality' (2001). Both are based on a notion of continuous technological advancement and convergence. However, in stretching the limits of what aspects of our lives may become electronically-mediated in the future, and new systems of communication, sociability and identity expression, such models present questions for scholars and researchers of education, literacy and beyond.

As defined by Terashima: 'HyperReality ... is a technological capability that makes possible the seamless integration of physical reality and virtual reality, human intelligence and artificial intelligence' (2001, p. 8). 'HyperReality' functions in terms of 'coaction fields', as common sites for the interaction between the physical and virtual worlds; however, this does not examine specifically how this occurs on a mobile basis, and the levels of engagement that can occur. Rather, 'HyperReality' is constructed as a concept exploring the physicality of interaction between the real and virtual worlds, and how this might be technically achieved. It is of course theoretical, with many technologies specifically concerned with rendering the virtual world still in their infancy, as 'HyperReality' 'seeks to make virtual reality something that is experienced as part of physical reality, so that virtual and real phenomena appear to interact with each other' (Tiffin, 2001, p. 31).

> In HyperReality a person by definition is perceptually aware of the physical world around them, yet part of the attention normally given to the physical reality is given to interacting with virtual reality. It is difficult as yet to see how much this matters, but the increasing use of the mobile phone, which is a primitive form of HR, gives us some feel for the issues. People using a mobile phone can walk busy streets and drive cars while talking to someone who is not there. They are locked into a proto-coaction field that excludes the people around them. It can be distracting

and irritating to the people around them and we are creating new social habits and structures to deal with this. People now turn their phones off before a meeting and special places are being reserved in waiting rooms and lounges for people who want to use mobile phones. Similarly, there will need to be a process of social adaption and environmental adjustment to accommodate the advent of HR. (Tiffin, 2001, p. 36).

Greenfield's concept of 'everyware' (2006) is somewhat more nuanced than the 'HyperReality' paradigm of Tiffin and Terashima (2001), instead examining the various invisible and quiet ways in which ICTs and other new media form part of our lived everyday experiences. Through unpacking a series of 81 Theses, Greenfield points to the advent of mobile phones as a significant starting point in the diffusion of computing technologies into diverse areas of our lives:

And as mobile phones began to percolate into the world, each of them nothing but a connected computing device, it was inevitable that someone would think to use them as a platform for the delivery of services beyond conversation. (2006, p. 12)

'Everyware' concerns the distribution of ICT into our environment, to the extent that engagement with such technologies becomes tacit, often unintentional, at times unavoidable, but continuously pervasive throughout many facets of everyday life.

Part of what the everyware paradigm implies is that most of the functionality we now associate with these boxes on our desks, these slabs that warm our laps, will be dispersed into both the built environment and the wide variety of objects we typically use there. (Greenfield, 2006, p. 18)

The diffusion of processing and computing power into our built environments brings about new discussions about how to interact with such technologies, in terms of both expressing and understanding information presented. 'Ambient informatics' suggests that the methods for expressing information and interacting with computing technology will become far more diverse, involving multiple modes and mediums, technologies both noticed and unseen, operating at the scale of the body. Once again, mobile phones feature in the emergence of this theory of computing:

The advent of mobile computing based on smartphones and wireless PDAs opened up things still further, both technically and

interpersonally. On top of the kinds of places where laptops are typically used, we can spot people happily tapping away at their mobile devices on, in, and around sidewalks, cars, waiting rooms, supermarkets, bus stops, civic plazas, commuter trains. (Greenfield, 2006, p. 46)

The consensus that technology is diffusing into our physical environments, that wireless technologies further enable this, presents literacy educators with a plethora of new possibilities and new questions. Ananny, Biddick and Strohecker (2003) tapped into the potentials of mobile communication for collaborative learning, through constructing SMS-based public discourse, displaying txts from contributors on a large public screen, understood as 'intermodal literacies' (see Strohecker & Ananny, 2003). This is suggestive of possible futures for literacy education, involving collaborative communication with mobile devices.

However, whilst Kress pointed to the emerging dominance of the logic of the visual through the move to the screen (2003), what 'HyperReality' (Tiffin & Terashima, 2001) and 'everyware' (Greenfield, 2006) point to, is a development where the structure of the body and its engagement with physical environments can carry meaningful weight (either intentional or unintentional).[5] The fact that mobile technologies are already implicated and involved in the unfolding of both these theoretical understandings, suggests a prevailing need to understand how meaning is made with emerging technologies. It is here that questions around literacy emerge.

3.5 Challenges for Education

The essential challenge for education is in bridging the 'digital divide' between the use of ICTs out-of-school, in everyday lives, and their use in school contexts (cf. Buckingham, 2006; see also Beastall, 2006). This relates not just to issues of what counts as legitimate and valued learning, but the ways in which individuals already learn about and using mobile technologies through a 'cultural pedagogy' (Nixon, 2005). Students learn to use mobile technologies in concert with

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[5] One need only look at contemporary science fiction audio-visual texts for explorations of what interactions with these new forms of technology might look like. Gestural interfaces, such as in Spielberg's *Minority Report* are suggested by Greenfield and Tiffin and Terashima's theories.

other technologies and their everyday living. To understand the full potential and challenge for education, is to acknowledge that 'pedagogy is a broader concept than school-based teaching' (Nixon, 2005, p. 46). Rather, the learning that individuals engage in around emerging ICTs – including mobile technologies – is an example of 'cultural pedagogy' at work, with the influence of media a key contributor (p. 47). How our students learn to use mobile technologies appropriately, is an increasingly inculcated process, tied up with processes of domestication (Haddon, 2003) and tacit learning through social interactions.

The significance of Nixon's concept of 'cultural pedagogy' lies in both its pervasiveness within the everyday lives of youths, and its fusing with entertainment and advertising (cf. Kenway & Bullen, 2001). With respect to this 'cultural pedagogy':

> Today's high-tech media culture performs powerful pedagogic work on behalf of both institutionalized politics and the business sector. Although this pedagogic work supplements the pedagogic work of the family and the school, it may be becoming more dominant because of the pervasiveness of the media in all aspects of social life. (Nixon, 2005, p. 57)

This is no more true for mobile technologies that for any others. Because they are everyday commodities, as opposed to technical devices, learning about and how to use mobile technologies is something that occurs in the home and amongst social groups. It is not something that occurs in schools, but powerful pedagogic work that goes on in the realm of everyday life.

This disjuncture between children's ICT-rich consumer culture outside of school, and that of the formal educational classroom, can result in students not connecting with their teachers or the subject matter, in feeling that formal education doesn't speak to their lived experiences (cf. Kenway & Bullen, 2001; Buckingham, 2007). As Kress and Pachler suggest with regard to m-learning: 'the frame of institutional pedagogy is neither necessary nor necessarily most efficacious for learning' (2007, p. 19), particularly where mobile technologies are concerned. I have demonstrated the pervasive impact of mobile technologies throughout the lives of individuals – specifically youth – at a global level (see chapter 2); the fact that

educational institutions have largely not found productive uses of mobile technologies for learning purposes, seems significant in this context.

Importantly, in the popular consciousness – outside of emerging research and scholarship in the field – mobile technologies are positioned as irrelevant and, at best, peripheral to the real work of educational institutions. As Goggin argues: 'There is a very strong sense that cell phone culture, as a species of popular culture, is very much regarded as low, vulgar culture of multitudes' (2006, p. 205). Research and scholarship around mobile technologies must help to redress this misreading.

✳✳✳✳✳✳

A review of the research and literature around 'mobile literacies' reveals that this field of study is perpetually incomplete. Whilst a great deal has been studied and researched, mobile technologies and their specific relationship to literacy needs a theoretical structure.

While studies into the sociology and communication practices around mobile technologies have been frenetic, deep and promising, there is no clearly articulated theoretical relationship with established literacy theory. Likewise, whilst studies of emerging literacy practices around emerging technologies are rich and fruitful, a specific articulation in relation to mobile technologies is lacking, they are reduced to peripheral mentions and exemplars. The intimate interweaving of mobile technology use with the fabric of daily life suggests a much deeper connection between texts and their meanings, articulated at a multimodal level, and a level that goes beyond the screen and keypad of a mobile device, into the realm of relationships and the social interactions that surround them.

In addition, while the positioning and understanding of young people and their relationship to emerging technologies has been becoming more nuanced, the systematic reproduction of generalising terms engender misleading beliefs about the digital expertise of young people. This research will seek an understanding of

engagement with mobile technologies that is more dynamic through the articulation of the 'digital traveller' metaphor. In this way I seek to understand both the common shared experiences of adolescents, but at the same time, pay due regard to their individual voices.

4

Researching Mobile Technologies

The rapidity with which mobile technologies have spread throughout many societies opens a virtual Pandora's Box of social practices for researchers to investigate. Being so intimately connected to the mundane and exciting minutia of individual activities, consideration of investigative possibilities takes us into the imagined and intimate corners of localised culture.

Because I am concerned with getting at the everyday dynamics of adolescent social interaction, within a particular social context, an ethnographic approach has been employed. This perspective focuses on the lived experiences of participants, and seeks to explore their experiences authentically, whilst positioning them critically within the historical, social, cultural and political context of their communities. This research draws on ethnographic approaches that stress critical analysis, mobile subjects and an imaginative framework. The qualitative results do not aim to be generalisable to wider social groups, but rather, sketch a detailed narrative of individual experiences, developing into local patterns that speak to wider trends.

The interpretative framework for this study is based on the work of Pierre Bourdieu, which is used to explain the link between literacy and social practices in a dynamic and fluid manner. I appropriate his central conceptual tools of capital, field and habitus, to explore and explain the social practices around mobile technology use. The application of his theoretical principles at a dual-level of analysis, is an explicit way of acknowledging the paradoxical position that mobile technologies occupy in the lives of contemporary students: useful in everyday life, but not for schooling.

Finally, I outline the project design and instruments. An overview of the field of study – a rural high school, selected teen volunteers – is the initial step in appropriately contextualising the lived experiences of participants in a critical fashion. I explain the research strategies used and how these connect with the theoretical framework.

4.1   Working with Ethnography: Mobile Potentials

> When ethnographers conduct research, they are interested in describing the culture of a group of people and learning what it is like to be a member of the group from the perspective of members of that group. (Johnson & Christensen, 2004, p. 46)

The ethnographic focus of this research draws attention to the empirical level, the level of everyday practices, the level of what Willis terms 'sensuous experience' (2000). It is concerned with examining how global trends and discourses around mobile technology use are appropriated and manifested at the local level. In working towards a theory of mobile literacy which is responsive and relevant to the lived experiences of our students, I am seeking to explore the connection between their out-of-school and in-school digital technology engagement – identified by Buckingham as a 'digital divide' (2007) – and associated literacy practices. In order to respond appropriately to the topologies of mobile technology use in daily life, a dynamic and nuanced ethnographic perspective has been developed.

A key concern for this project is to illuminate the voices and opinions of youth themselves, as opposed to those positioned as 'digital immigrants' (Prensky,

2001a). It therefore takes the form of an 'incomplete problematization' (Golden-Biddle & Locke, 1997), exploring a gap in theory; the absence of student voices regarding their mobile literacy practices. It develops a 'positionality of voices ... where the subjects themselves are the focus' (Madison, 2005, p. 6). As such, the sensibilities of the research, in eschewing democratic teaching pedagogies and ideals, are central to this process. In order to give voice to the experiences of students, an ethnographic study, grounded in empirical evidence, is most appropriate.

In seeking to understand everyday practices as manifestations of a global change in communication practices, ethnographic research positions itself at the juncture between individual agency and overarching social structures, going beyond specifics, to the patterns that underpin them (cf. Sarantakos, 1998, p. 198). It is this critical examination of the relationship between the two that helps us understand the dynamic structural relationship of how individuals construct shared meanings:

> The approach employed by ethnographers and anthropologists is holistic in that it perceives human action in the context of the whole system, for which it is an expression. (Sarantakos, 1998, p. 196)

Whilst ethnography aims for a holistic description, as Johnson and Christensen also argue, there is an acknowledgement that 'a group is more than the sum of its parts' (2004, p. 46). Ethnography is not a zero-sum equation relating the individual to the group level, or vice versa.

Whilst there is a strong tradition of quantitative methodology in research around mobile technologies, this research has a history of using mixed-methodologies, often featuring ethnographic perspectives. In their examination of how mobile phones form an intimate part of the lives of Finnish children and teenagers, Oksman and Rautiainen conducted ethnographic research using interviews and observations, combined with an approach they call 'media ethnography', used:

> To examine different media and communication devices in a socio-cultural context ... The method also focuses attention on the use of the communication device … user-orientated approach of usability research. (2003, p. 295)

This research demonstrated how mobile phones are becoming a natural part of the lives of Finnish teens, but that they use these technologies in highly individualistic and heterogeneous ways. In her examination of the role of mobile camera phone use among Japanese youth (exact age unknown) Rivière makes use of semi-structured interviews to collect data from 41 people (2005). This allowed her to develop an understanding of how mobile camera phones were being used to construct new ways of being a 'community', closer akin to 'tribes' (pp. 123-184).

Conducting an ethnography requires flexibility of perspective and purpose, where theory does not fully dictate how one engages with the field. Horst and Miller's anthropological study of 'cell phone' communication in Jamaica, emphasised engagement with the subjects in the field of study:

> To conduct 'an ethnography' implicates the researchers in a radical movement away from such external evaluations as found in economics, sociology or media studies, and towards a general participation in the lives of the people of a region and an attempt to empathize with those lives. (Horst & Miller, 2006, p. 167)

Ethnography then requires participation of the researcher and their perspective in the field, however this must not be taken as total immersion, and they must keep in mind the overall purpose of ethnography: 'social conditions, attitudes, roles and interpersonal relationships are explored in conjunction with fundamental cultural prescriptions' (Sarantakos, 1998, p. 200). There is a necessary distance created by the position of the researcher:

> The characteristic element in this research is not primarily living with people as it is in anthropology, but familiarity with the subject, closeness to the respondents, quality and type of relationship between researcher and the researched, which must be at least equalitarian and referenced to the large sociocultural system as the explaining source. (p. 200).

In the case of this research the school as an institution provides particular structures for interaction, which I align my participation and perspective to. Whilst I will initially take on the role of a teacher in order to establish myself in this field, I will then shift to the roles of participant observer and interviewer. The pragmatic difficulties of getting at the personal and private texts of these technologies mean

that drawing on my own experiences, on experiences shared with the participants, enables me to develop a critical perspective concerning the students with regard to their mobile technology use.

Ethnographic research around literacy bears particular fruit for examining the everyday, multimodal level.   In this way, local practices in relation to particular ideological structures can be examined with relation to their multimodal frameworks. This is the potential that ethnography offers to an examination of literacy:

> A primary job of ethnographers is to track, describe, and enumerate multimodalities as *semiotic* resources in their combinations—linguistic, gestural, kinaesthetic, and visual ... they see systems of arrangement not only within each mode but in ways modes work together. (Heath & Street, 2008, p. 21)

The integration of mobile technologies and their associated literacy practices, with social practice and interaction, places an emphasis on the multimodal qualities of contemporary communication. They present instances where the relationship between modes and their particular 'affordances' (Kress, 2003), are closely tied to trajectories of individual and lived experiences. Tracing such experiences speaks strongly to the changing nature of literacy (in terms of all three paradigms; see section 3.1), under the influence of increasingly mobile and technologically capable devices.

In the report *Media and Communications in Australian Families 2007* (2007a), the ACMA indicated that the major factor in managing mobile technology use was their 'mobile and personal' nature (p. 32 & pp. 112-113). This quality also provides challenges for researchers. The pragmatic and ethical difficulties of collecting data about mobile technology use is linked to the personal and private nature of these devices. A range of studies have articulated the dimensions of this concern and developed approaches for dealing with it. Hård af Segerstad's study of 'Language Use in Swedish Mobile Messaging' explained the problem:

> Despite the popularity of mobile text messaging, it proved difficult to gather data. ... The difficulties are due to both ethical aspects … and the private nature of texting' (2005, p. 318).

The concern here was with accessing content. Ling made use of SMS messages to examine Norwegian teen SMS, yet this also came with an inherent limitation:

> It was only possible to gather messages that the survey participants had sent themselves, not messages they had received ... There may have been selective filtering of content since the respondents may not have wished to read particularly revealing or piquant message to the interviewer. ... that the messages are often taken out of context from a sequence of messages sent to another person. (2005, p. 337)

The examination of mobile texts within their complete social context proves to be a difficult beast to tame. Cohen and Lemishs' (2003) study of 211 Israeli adult mobile users use patterns, made use of technical features linked to individual social action: Interactive Voice Response (IVR) technology in an effort to address this. After making or receiving a phone call, participants could call *323 and take a quick, four question survey about the call. Still, this had its limitations, with the authors suggesting there were many variables affecting participant data linked to the inconvenience of taking the quick survey at certain times. Even so, through using limited questions, it enabled data to be collected from widely dispersed participants at the level of everyday practice. The fact that ethnographic research aims to get to fine-grained distinctions and events, makes such research into mobile technology use challenging. The flexibility of this perspective offers potential.

Because mobile technologies are such private devices, yet also social devices at the same time, understanding local and individual experiences is vital to understanding wider trends, but also how we work with such patterns. Understanding our students and their particular practices is more useful than understanding general trends and hypothesising about behaviour from that. The genre of SMS-language, as an *emergent* form, is an apt warning in particular with mobile technologies, to not presume what people do with technologies, but rather, to go into the field and find out.

4.2   An Ethnographic Approach: Critical Mobile Ethnography

The methodology developed for this study follows a critical-mobile ethnography. This is informed by 'critical ethnographic' interpretative structures (Madison, 2005), an 'imaginative ethnographic' perspective (Willis, 2001), the configuration of 'culture as a verb' (Heath & Street, 2008), and the conceptualisation of the study as a 'multi-sited, mobile ethnography' (Kenway, Kraack & Hickey-Moody, 2006; Marcus, 1998; Marcus, 1999). It takes a nuanced approach to understanding what has become a ubiquitous experience for contemporary Australian adolescents, though the consideration of it across fields of contested value. The very flexibility of mobile technologies plays both towards and against ethnographic understanding.

The broad theory of ethnography employed consists of theoretically-informed engagement with specific fields of human experience (cf. Madison, 2005).   In elaborating this perspective for research into language and literacy, Health and Street indicate the importance of a dialogic relationship between theory and the research process:

> Ethnography ... is a theory-building and theory-dependent enterprise. Ethnographers construct, test, and amplify theoretical perspectives through systematic observing, recording, and analyzing of human behaviour in specifiable spaces and interactions for the co-occurrence of language, literacy, and multimodalities for any situation or context selected as field site(s). (2008, p. 38)

Theoretical considerations are at the heart of this research endeavour, where different paradigms of literacy are examined in relation to the use of mobile devices in and across educational fields. Literacy particularly relevant for this study, concerns multimodal literacy practices, linked to individual and group identities and dispositions.

In considering the contextualised experiences of adolescents using mobile technologies as part of social practice, critical ethnography offers a perspective that emphasises the examination of lived experience in tension with different ideological frameworks:

> As ethnographers, we employ theory at several levels in our analysis: to articulate and identify hidden forces and ambiguities that operate beneath appearances; to guide judgements and evaluations emanating from our discontent; to direct our attention to the critical expressions within different interpretive communities relative to their unique symbol systems, customs, and codes; to demystify the ubiquity and magnitude of power; to provide insight and inspire acts of justice; and to name and analyse what is intuitively felt. (Madison, 2005, p. 12)

The intention of this research dovetails with Madison's definition concerning the aims of critical ethnographic work. The variable position of mobile technologies throughout different situations in the everyday lives of the participants, means they must traverse fields structured by different and sometimes contradictory ideological frameworks. Dominant ideological structures are explored, but also those that are negotiated at an everyday level. In elaborating the place-based global ethnography at the heart of their research into *Masculinity beyond the Metropolis*, Kenway, Kraack and Hickey-Moody, outline the critical component of their approach:

> Critical ethnographers use a range of ethnographic techniques to generate data about 'real life', bringing this into creative tension with conceptual frameworks that are pertinent to their central research questions. (2006, p. 38)

Here they argue that ethnographies of globalization must be 'multi-sited', an approach that fits the development and dispersal of mobile technologies throughout the world: a mobile ethnography aims 'not to be completely bound by local place and time' (Kenway, Kraack & Hickey-Moody, 2006, p. 46).

The very nature of mobile technologies in traversing places and spaces, points to the need for an appropriately mobile approach. I work here with Kenway, Kraack & Hickey-Moody's concept of 'mobile ethnography' (2006) tracing adoption and usage patterns, as well as ideologies, across spaces. Drawing on Marcus, this approach suggests that researchers:

> Follow the people ... follow the thing ... follow the metaphor ... follow the plot, story or allegory, ... follow the life or biography, [and/or] follow the conflict' (Marcus, 1998, pp. 90-95).

Conducting a 'multi-sited ethnography' doesn't mean physically following participants and objects, but considering the multiple spaces and places those particular patterns of practice, ideology, or cultural commodities inhabit. In working with this concept of 'mobile ethnography, I have developed the concept of 'mobile field', working with Pierre Bourdieu's theories (1977), in order to consider how these devices work across different sites (see 4.4.2).

Another key component of the ethnographic perspective of this research is based on understanding 'culture as a verb' (Heath & Street, 2008). If we think of culture as a verb, then it is something that is constantly moving, changing and evolving: this perspective sees culture as 'unbounded, kaleidoscopic and dynamic' (Heath & Street, 2008, p. 7). This is especially pertinent when we think of the impact of technological change on cultural discourses and experiences (such as Harper, 2005). Whilst the impact of some technologies on culture has a rich tradition – transport and communication changes over the twentieth-century, the internet – studies around mobile technologies – particularly the mobile phone – are still an evolving area of scholarship (only around ten years old), which is expanding at a dramatic rate.

The creative and negotiated ways in which mobile technologies are used – including their unpredictable nature – influence my use of Willis' concept of the 'ethnographic imagination' (2000). Broadly, Willis describes the focus of this approach:

> The ethnographic imagination should concern itself with the relations within and between at least three 'elements': creative meaning-making in sensuous practices; the forms, i.e. what the symbolic resources used for meaning-making are and how they are used; the social, i.e. the formed and forming relations, necessities and conflicts of society. (2000, p. 109)

Unpacking this definition with relation to this specific study: in terms of the 'sensuous practices', I am concerned with the individual's interaction with mobile devices as both physical objects and the digital texts they involve; the 'symbolic resources for meaning-making' concerns the texts involved in mobile technology use, be they digital, physical or performative; and the 'social' aspect concerns the

context for mobile technology use (cultural, social, institutional and ideological). This perspective inherently encourages critical consideration of ideological structures that influence any of the three elements, and significantly, of the sensuousness of lived experience. In her theory of critical ethnography Madison (2005) urges a focus on social practice as 'performance'. This fits with a study of multimodal literacy around mobile technologies, drawing attention to the connections between these various modes in the iterations and innovations of everyday life. It also urges a focus on the minute and mundane intricacies of everyday life, something which mobile technologies are strongly involved in.

The instruments used throughout this research are typical ethnographic strategies, and include interviews, participant observation, artefact collection and focus groups (cf. Madison, 2005; Patton, 2002). These examine 'sensuous practices' and the forms of meaning-making, examined within a particular social context (Willis, 2000). The subjective position of the researcher is also something that is accepted as inevitable and unavoidable (see Madison, 2005; Willis, 2000), though in itself, provides an important component of the research, helping to build connections with participants as fellow 'digital travellers' (see 2.5.2), through shared experiences with these technologies. The ethnography does not aim for representativeness, and does not claim generalisability to wider groups, but rather, aims to produce a degree of 'verisimilitude' – 'in its most naive form, verisimilitude describes a text's relationship to reality' (Denzin, 1997, p. 10) – through close examination and reflection of student voices. In giving voice to the individual experiences and perspectives of students, this study will create dense description that aims to reflect the reality of the lived experiences studied, including vignettes and documents produced by these students. The explicit aim is to trace local manifestations of a global trend in emerging literacy practices around mobile technologies, through giving voice to those who live with them, and work with them.

4.3   Bourdieu's Sociological Toolbox

Because mobile technologies and their associated literacy practices are tied so intimately to the level of social practice, there is a prevailing need to emphasise

and examine the importance of this 'social practice' facet. In order to fully explore and elaborate this dynamic aspect of mobile technology use, I have specifically engaged with the theoretical frameworks developed by the French anthropologist and sociologist, Pierre Bourdieu (1977; 1980; 1984; 1986; 1991). It must be indicated that I am not critiquing or analysing Bourdieu's theoretical framework; rather, I am appropriating his framework and concepts to help me elaborate the patterns of literacy that surround mobile technology use (see Albright & Luke, 2008a).

Because Bourdieu's theories emerged from his own anthropological/ethnographic research tradition (see Kramsch, 2008), there was an initial affinity for his perspective that drew me in. There was a sense that whilst his theories presented structured understanding of society and the cultural reproduction of meaning, there was also an acknowledgement of fluidity, and there was always the possibility of an exception to a 'rule'; change and difference was just as important as objective homogeneity within social theory (see Calhoun, LiPuma, & Postone, 1993; Robbins, 2008; Swartz, 1997; Webb, Schirato & Danaher, 2002). The idea behind Bourdieu's theoretical approach is that of uncovering the relationship between objective realities (social structures) and individual agency (subjective experiences) (cf. Bourdieu, 1977). It is in this discursive relationship, between the rules of social structures and institutions, and the freedom of individual communication and behaviour that mobile technologies engender and challenge, that this research is located.

> Bourdieu's notions invite us not to deconstruct it [literacy] entirely, but rather to take it as an object of discursive analysis instead of an objectively existing phenomenon. Bourdieu invites the analysis initiated by the NLS to complete its path, problematizing literacy as an element of processes of symbolic domination, rather than as a specialized form of communication or social interaction. (Heller, 2008, p. 64)

The conventional use of Bourdieu's theories to examine literacy, do so from the perspective of examining the different levels of symbolic value accorded to different types of literacy practices, and the ways in which institutions such as schools, maintain the status of certain literacy practices (see Hill, 2008; Luke & Carrington, 1997). This perspective is useful in this study, considering current educational

practices around mobile technologies and their use in educational contexts: while there is some experimentation, it occurs in a context that seeks to retain the dominant position of school literacy practice.

The dominance of 'traditional paradigms' of literacy is established as 'doxa':

> The misrecognition of forms of social arbitrariness that engenders the unformulated, non-discursive, but internalized and practical recognition of that same social arbitrariness. (Deer, 2008, pp. 119-120)

Ideological perspectives on literacy (Street, 1984), such as the NLS, invite a dynamic consideration of social practice in terms of literacy: multimodal, everyday, contextually dependent, ideologically structured (New London Group, 2000). This perspective takes us behind the facade of 'doxa'. It is this everyday literacy – now tied up with mobile technologies – that is continually subsumed under the domination of institutionally recognised and accredited literacy practices. In exploring the voice of students in terms of the mobile literacies, the research seeks to elaborate practices that are positioned outside of school understandings of literacy.

4.4   Analytical Framework: A Theory of Social Practice

As individuals engage in social practice, they find themselves involved in a complex process of negotiation, broadly summarised in Bourdieu's formula:

$$(\text{habitus X capital}) + \text{field} = \text{practice}$$

(Bourdieu, 1984, p. 101)

One doesn't have to be a mathematician to understand the formula, but rather, understand the relationships between the elements involved, as Maton explains:

> Practice results from relations between one's dispositions (habitus) and one's position in a field (capital), within the current state of play of that social arena (field). (2008, p. 51)

Thus, in this framework, the individual and their resources ('habitus' and 'capital' respectively), function in relation to a particular set of situational variables which contain predictable structural elements, identified as 'field'. The important move that

this research makes is to relate this to theories of literacy though the 'articulation' (Kress, 2003) of capital for meaning-making purposes, in relation to mobile technologies.

Understanding the relevance of Bourdieu's theories to literacy, involves a shift in focus to the individual level of social practice, but seeks, in an ethnographic vein, to establish connections with wider social and cultural patterns (see Grenfell, 2008; Johnson & Christensen, 2004; Madison, 2005; Sarantakos, 1998). In using Bourdieu's theories to draw connections from the specific level, to the level of pattern, I am following in the pattern of the uptake of technologies (outlined previously, see chapter 2), where global trends are manifested differently at the local level. Emerging technologies create particular challenges for this process, due to their 'emerging' nature, at both the level of technological development and user adoption.

Where we should locate technologies within Bourdieu's theories remains a matter of some debate, though, especially where personal and private technologies are concerned. In their connection with identity, mobile technologies in particular would seem to have a great deal to do with 'habitus'; however, their use in social practice as a resource for the exchange of 'capital' blurs the distinction between the two. The display of an iPod at the level of the body, suggests certain dispositions, but may also be understood as the 'articulation' (Kress, 2003) of a particular type of capital, as discussed below (see section 4.4.1). Their relationship to 'habitus' is as follows:

> Technologies are associated with habits and practices, sometimes crystallizing them and sometimes promoting them. They are structured by human practices so that they may in turn structure human practices. They embody in physical forms particular dispositions and tendencies – particular ways of doing things. (Sterne, 2003, p. 377)

This notion of a dialogic relationship between technological development and individual practices, emphasises the need to explore the structural relationships that are at play, whilst building from an acknowledgement and examination of agency in everyday practices. These emerging practices are connected to past practices, making

them not new per se, but innovative 'articulations' (Kress, 2003) of past patterns of practice.

> While technologies may contribute to shaping practice, it is only because practice is always shaped by the sedimented history within it, even as its spontaneity becomes the basis for the creation of new practices, experiences, and social relations.
> (Sterne, 2003, p. 386)

As mobile technologies are caught up intimately in the topography of everyday life – not some specialised realm of experience – it is necessary to place apparent changes in the context of on-going social history. Bourdieu's theory offers a framework by which this can be considered.

Where Bourdieu's theories have been applied to literacy, there has been a common trend. This is particularly associated with examining how the position of 'legitimate literacy' (associated with the 'traditional literacy paradigm') is maintained within educational contexts, through the exclusion of out-of-school literacies through *symbolic violence* (Albright & Luke, 2008a; Carrington & Luke, 1997; Heller, 2008; Hill, 2008). As Marsh argues, this extends to positioning popular culture as unrelated to learning (2006). Carrington and Luke's 1997 examination of "Literacy and Bourdieu's Sociological Theory" typifies the manner in which his theoretical framework is often applied to education and debates over literacy, explaining how 'legitimate' literacy maintains its dominance in schools. Hill's study (2008) works within this perspective, using hip-hop to teach literacy: he examines how the use of out-of-school literacies can recast teacher-student and even teacher-teacher relationships around what constitutes legitimate and valued literacy in schools. As mobile technologies are caught up in this juncture between 'legitimate' and everyday literacy practices, it is important that this approach be flexible, which I have done through working with Bourdieu's central concepts of 'capital', 'field' and 'habitus'.

4.4.1 Working with Capital

Bourdieu's concepts of capital are used to describe the structured resources individuals have access to and can realise in the exercise of their literate agency. It is a question of how individuals draw on these resources for social exchange, that form an image of their literate lives. Bourdieu's concept of capital aims to describe social practice as involving a system of exchange, where various personal and social resources are accorded specific values associated with their use as part of situated social practice. Bourdieu identifies four primary types of capital:

> Capital can present itself in three fundamental guises: as *economic capital*, which is immediately and directly convertible into money and may be institutionalized in the form of property rights; as *cultural capital*, which is convertible, on certain conditions, into economic capital and may be institutionalized in the form of educational qualifications; and as *social capital*, made up of social obligations ("connections"), which is convertible, in certain conditions, into economic capital and may be institutionalized in the form of a title or nobility. (1986, p. 243)

The final form of capital is symbolic capital, which concerns the prestige assigned to other forms of capital, as a result of their 'articulation' (Kress, 2003) during social practice. Maximising the conversion of different forms of capital in terms of this symbolic value is a central aim of social practice. Broadly, whilst 'economic capital' is generally clear with regard to mobile technologies (they cost money) other forms of capital have been significantly reworked.

The substantial impact mobile technologies have had on social practice have likewise had an impact on how we work with Bourdieu's theories: whilst Bourdieu's (1986), Carrington & Luke's (1997), and Moore's (2008) definitions of capital provide an important starting point, they benefit from rethinking specifically in terms of contemporary and emerging media and technology (see also Moore, 2004). Ling (2008) argues that significant changes in how social capital is structured have resulted from changes to socialisation as a result of mobile phones. Because they are closely linked to interpersonal relationships, the relevance of social capital becomes particularly significant. Returning to Bourdieu's definition:

> Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition—or in other words, to membership in a group—which provides each of its members with the backing of the collectively-owned capital, a "credential" which entitles them to credit, in the various senses of the word. (1986, pp. 248-249)

Ling further works with the idea of social capital 'as a kind of "stock" that is built up or dissipated over time' amongst social groups (2008, p. 25). In the context of mobile communication technologies:

> With social capital, the focus is on the interpersonal and social resources that a person can contribute to as well as draw on in everyday life. It is perhaps best seen as a kind of metaphorical common bank account where the individual can make various types of contributions. (p. 25)

The networking power of these technologies has moved understandings of social capital away from formal grouping structures and organisations, to the networking that people engage in as part of their everyday social lives. Johnsen for instance, examined 'gift-giving' in terms of txt messages sent in order to confirm and strengthen a social tie (2003, p. 168). Further, Ling & Yttri's 'hyper-coordination' as emotional and expressive communication (2002) is another example of how social capital can be maintained through participation (see section 2.3.2).

The most significant aspect of capital as it relates to mobile literacy practices, concerns the relationship between different forms of cultural capital, and their transformation into symbolic capital. Understanding the value of different forms of cultural capital does not mean a simple, direct transformation of economic capital, as Marsh states: 'Bourdieu (1986) made it clear that there is no simple correlation between economic and cultural capital' (2006, p. 170). One cannot simply buy appropriate resources for embodying valued meaning, if one doesn't know what is to be valued: that is, if one doesn't have a habitus attuned to the value system.

For different forms of cultural capital to have symbolic value, there must be a profitable match between the form used, and the structural system of particular

fields. In practice, different forms of capital are realised in their symbolic form as part of social practice:

> The broad distinction that Bourdieu develops is that between economic capital (or "mercantile exchange") and symbolic capital, that includes sub-types such as cultural capital, linguistic capital, scientific and literary capital depending on the field in which they are located. (Moore, 2008, p. 103)

Cultural capital can be further broken down into three sub-types: objective, embodied and institutional cultural capital forms (Bourdieu, 1986). Objective cultural capital generally refers to cultural resources (such as a mobile device), while its embodied form concerns the manner in which capital is deployed and displayed at the level of bodily hexis. The third form concerns institutional awards and recognition, such as university degrees, but does not seem to have a direct correlation with mobile technology use. A form of cultural capital linked explicitly to literacy studies is that of 'linguistic capital' (Bourdieu, 1991; Collins, 1993). Used in Bourdieu's traditional sense, this concerns individuals of upper-classes, who have the appropriate habitus and linguistic skills to be awarded high symbolic prestige at the educational level (cf. Collins, 1993, p. 118). However, like cultural capital, linguistic capital is a slippery term, and depending upon the system of prestige it is being deployed in, varies in terms of its symbolic value. Moore (2008) points out how symbolic capital can be considered in two primary ways: Bourdieu's traditional institutional level, and the level of culture or friendship groups (see section 4.4.3). This exemplifies the digital divide between out-of-school and in-school digital experiences (Buckingham, 2007).

The line between different forms of capital often gets blurred at the level of social practice, especially where literacy is concerned. The distinction between embodied capital and objectified capital becomes blurred around multimodal, everyday texts that are connected to devices imbued with aspects of individual identity. Significantly for school contexts, forms of cultural capital are accorded differential value as symbolic capital, depending upon the ideological structure of particular fields. As such, cultural capital that may be valued around mobile technologies, are typically not valued in school contexts, meaning that they are not

realised effectively as symbolic capital. This is the basis of distinctions over 'legitimate' literacy and behaviour in schools (Carrington & Luke, 1997).

Working with Kress' concepts of 'interpretation' and 'articulation' (2003), as with literacy, 'articulation' may be understood as the outward use of particular forms of capital, whereas 'interpretation' concerns the way a particular social practice or artefact is read as capital. My concern here, is with the practice of literacy, whereby certain semiotic resources (in the NLS strand: multimodal, everyday, increasingly-electronically mediated) are utilised for meaning-making. The recognition of certain literacy practices as having symbolic value for educational purposes, traces a path whereby distinction is realised through the exercise of symbolic violence, and the elevation of certain literacy practices as being more 'legitimate' than others (see Bourdieu, 1991; Goldstein, 2008). Schools are involved in this process of symbolic domination of language through their reproduction of the social order: in this case, the elevation of reading and writing above everyday literacies (cf. Carrington & Luke, 1997). This research takes a perspective that understands capital as the social resources and outcomes of the 'articulation' and 'interpretation' of meaning (Kress, 2003). It specifically concerns the ways by which a selected group of adolescents understood the performance of meaning around mobile technologies, including the structural elements that governed their social interactions.

As a sociological approach that examines the ways in which institutional structures construct and reproduce levels of distinction around literacy – especially around multimodal literacies or literacy as social practice – Bourdieu's theories enable us to explore the ways in which legitimate literacy is reproduced and maintains its hegemonic dominance within educational institutions. This is linked to the structures of power and domination:

> To understand literacy education as such a discursive space, then, is to understand it as a space where symbolic and material resources are constituted as valued resources, whose regulation serves as a site of production and reproduction of relations of power which, while they might well involve acts of coercion, are more likely to take the form of practices of symbolic domination. (Heller, 2008, pp. 50-51)

Literacy practices around mobile technologies are concerned with using them as part of social practice. This involves the utilisation of different forms of capital to transform them into other forms of capital: typically symbolic forms.

At the level of practice, the distinction between different forms of capital can become indistinct. As Moore (2008) suggests in his examination of capital, the only real clear distinction is between economic capital and symbolic capitals. The other levels of capital such as those examined in this research – namely social and cultural capitals – are involved at the level of everyday social practice, in such a continuous process of transubstantiation, that their distinctiveness from each other becomes tangled.

My examination of economic capital considers the financial basis that underlies all mobile technology use, and explores how this influences literacy practices and the forms they take (see chapter 5). In considering the influence of social capital, I position mobile devices and their meanings in relation to shared understandings and ideologies, amongst peer-groups (see chapter 6). Because mobile technologies primarily function at the level of personal everyday practice and interactions, social connections have a deterministic impact on mobile technology use. In considering cultural capital, I am primarily concerned with how our students use these devices to articulate meanings in ways valued at the peer-group and everyday level, and the texts associated with this. This includes both the objective forms of mobile devices, and how they are used as part of social practice, that is, their embodied form. My examination of symbolic capital explores the value system around mobile technologies and their use at the school level, or how these practices are recontextualised within the school field (see chapter 8). The significant relationship at the heart of this research – the disjuncture between out-of-school literacies and in-school literacies – is examined in this differential value system between meanings that are 'articulated' as embodied cultural capital (an SMS for instance), and how this is 'read' or 'interpreted' in terms of their symbolic value in formal educational institutions.

4.4.2 Working with Field

Bourdieu's concept of 'field' provides a way to understand the 'objective' social structures that govern and influence social practice (Bourdieu, 1977; Crossley, 2008; Grenfell & James, 2004; Thomson, 2008). Whilst mobile technologies may be thought of as transcending the rules and limitations of different fields, such a perspective would misread Bourdieu's notion of the field as purely physical. Even if it were, by their very nature as physical objects, mobile technologies can disrupt and augment fields in terms of physicality, as they intersect them. Working with Bourdieu's notion of 'field' broadly, I have developed the notion of 'mobile field' to understand this relationship between device and context. Fields detail the context for social practice:

> These social relationships take place within a multi-dimensional space, composed on *fields*: semi-autonomous, structured social spaces characterised by discourse and social activity. (Carrington & Luke, 1997, p. 100)

In defining the concept of field as more than simply physical context, Marsh offers the follow succinct definition: 'A field is a dynamic nexus of cultural, economic, and symbolic capital that structures the discourses within it in particular ways' (Marsh, 2006, p. 164). When we consider the lives of adolescents and school students, they inhabit a variety of fields, with competing and at times, contradictory demands. School and home spaces are delineated by particular places, though this is not enormously helpful when we think of technologies that move through and between these spaces. Instead, what is more generative is to think, as Marsh (2006) suggests, in terms of a nexus of capital-structured discourses. As such, schools emerge as places of top-down authority, where literacy is measured in terms of a meritocracy; where cultural values are not developed, but taught and learnt; where value is awarded by experts; where symbolic capital is a matter of abidance by school rules and the wearing of school uniforms or insignia (broadly speaking of course). Against this field is the field of the peer-group, a much more nebulous arrangement, fluid in terms of the negotiation of cultural and symbolic values, and based upon the reciprocal development and maintenance of social capital: the nexus of discourse development around symbolic values, typically develops in a discursive way in a bottom-up manner, suggesting some affinity with the emergence of 'mobile' or

'thumb cultures' (Glotz, et al, 2005). Is it really any surprise then that mobile literacy practices have emerged from the peer group as opposed from the institutional level, where the rules of use are negotiated at the daily level.

If habitus, explored below (see section 4.4.4), designates the extent of individual agency, it is field that identifies the structures for social practice, and it is this:

> Relationship between habitus and objective conditions [that] is crucial in Bourdieu's theoretical proposal to explain practices and to conceptualize change and its mechanisms. (Costa, 2006, p. 877)

The relationship between field and habitus is never complete, but in continual dialectic engagement: 'the field conditions the habitus; the habitus contributes to constructing the field' (Costa, 2006, p. 878). The negotiation of these demands is complex and on-going, particularly with mobile communication:

> This balancing act, latent and overt, is much more central to one's actions with a personal/mobile communication device, relative to previous communication technologies and to face-to-face interactions – different enough ... to merit a theory (explanation) of its own. (Ling & Donner, 2009, p. 26)

Mobile technologies cross these fields, but not invisibly, certainly not in terms of literacy practices. Instead, mobile technologies always carry with them 'mobile fields' which intersect, augment and are augmented by the fields they penetrate.

Because this study is concerned with mobile technology use within the school context, the structure and power relationships of this field must be considered. Schools as institutions structure fields in particular ways, encouraging certain behaviours and attitudes, whilst frowning upon others. This is achieved through the process of 'symbolic violence' (see Bourdieu, 1991), which accords prestige only to those forms of capital that are positioned as valuable. The use of Bourdieu's theoretical concepts in relation to this study is a conscious effort to explore:

> The role that schools and school systems play in reproducing social and cultural inequalities and legitimizing certain cultural

> practices through the hidden linkages between scholastic aptitude
> and cultural heritage. (Mills & Gale, 2007, p. 234)

The school at the heart of this study is typical in that the cultural practices around mobile technologies do not align with scholastic achievement, but rather, are positioned outside traditional conceptions of 'proper literacy' and learning. As fields provide the nexus point for habitus and capital to be utilised in practice, the classroom can be understood as a site that structures behaviours in certain ways.

> Practices within the classroom can therefore be seen to be formed
> by a complex set of relationships between the field of education,
> the habitus of pupils and teachers, and the cultural capital that
> individuals bring to the site of learning. (Marsh, 2006, p. 164)

Working effectively within this field results in the award of symbolic capital or prestige: this is a point where the habitus of the individual towards learning, their knowledge deployed as cultural capital, and the field of the classroom, are in congruency.

There are a range of other fields that our students inhabit, both in and out of the school context, but they are all similarly structured, characterised by particular discourses and social activity. The other main school-mediated fields include the schoolyard and school buses. Beyond the scope of school, everyday fields are even more diverse: from bedrooms, family homes, public spaces, public transport, sporting fields, and friends' houses. What is needed is a form of consistency that helps us trace the impact of mobile technologies across divergent fields.

A related perspective which examined the relationship between mobile technologies and Bourdieu's concept of field was developed by Hulme and Truch in their theory of 'interspace':

> A complex environment in which complex processes concerned
> with the maintenance, structuring and re-structuring of field
> boundaries take place. (2005, p. 145)

Whilst this perspective focuses on space between places, I am concerned with how mobile technologies work across fields – including the 'interspace' – and re-structure them in patterns reflective of habitus. I would contend that the mobile phone in itself – its constant digital presence understood in terms of the 'apparatgeist' (Katz and

Aakhus, 2002c) – means that there is always a field present, associated with the mobile device – the 'mobile field'. The development of the concept of 'mobile fields' – fields related to (the use of) mobile technologies – allow an understanding of the way mobile technology use is augmented and augmenting in relation to other fields. Of interest for this research is the relationship between 'mobile fields' and 'educational fields', though this relationship involves understanding other associated fields, involving a range of pragmatic limitations.

To understand the ways in which mobile technologies function as a field, yet one which is continuously intersecting and augmenting other fields, I have worked with the concept of the 'Apparatgeist' (Katz & Aakhus, 2002c; Katz, 2003b; Ling & Donner, 2009, p. 26). As was discussed earlier (see section 2.3), this concept is designed to describe the intimate relationship between individuals and mobile phones across various domains of their lives:

> Instead, a technology's being taken for granted is the result of a large amount of prior evaluation and resolved choices of people concerning technology. Their evaluations and choices are based not only on the function of the technology but on their own social roles, status and values. An important aspect of this process is the competition for status and prestige as well as public perceptions of competence and the management of social roles and commitments. (Katz & Aakhus, 2002c, p. 315)

Whilst technology use is about people, the 'apparatgeist' imbues mobile technologies and their relationships to social practice, with a degree of autonomy, through 'Geist' or 'spirit'. This includes a range of perspectives and understandings, beyond academic research and scholarship.

> It seeks to encompass both the folk and the expert frameworks; tangible and intangible aspects; material and social issues; and, quintessentially, the machine and "spirit" elements of flexible interaction with assistive technology. (Katz & Aakhus, 2002b, p. 11)

'Mobile fields' must be understood as a flexible and dynamic nexus of capital, concerning mobile technologies not just as devices, but as a concept. They move

with the user, present particular structures, and interrelate with intersecting fields in both predictable and unpredictable ways.

The concept of the 'mobile field' has also been developed in order to help trace the patterns of mobile technology use across multiple sites. This fits with a reworking of the notion of 'the field' of investigation as mobile, which Kenway, Kraack and Hickey-Moody argue:

> Must be extended, even rethought, and that new understandings of field sites are possible; global flows, networks or scapes can, for instance, be understood as sites of ethnographic investigation. (2006, p. 46)

A further important factor of 'mobile fields' drawn from the concept of the 'apparatgeist' (Katz & Aakhus, 2002c), is that even those who do not have mobile phones (increasingly rare) have to negotiate the impact they have on fields they inhabit: 'Because these tools have a life of their own, people must deal with the tools in their social environments even if they do not adopt the tools themselves' (p. 316). Therefore, mobile fields have meaning for all in society.

The 'mobile field' allows us to track patterns of mobile literacy, and offers a framework for mobile ethnography, following devices throughout the lives of students, by following the dialogic relationship inherent in this process of augmentation, and efforts to control it. This does not mean that a device has to be physically present, but that the possibility of this technology mitigates the nature of an intersecting field. By their very nature these devices permit movement through space, so whilst 'mobile fields' concern a particular technology, they are also physically and ideologically mobile: they can exist, come into being, be called into being anywhere, anytime. But the 'mobile field' is never stable, never clearly delineated, always in the process of occurring.

4.4.3 Working with a Dual-Level Analysis

Because I am concerned with understanding the value of literacy as capital at the level of social practice, and the tensions that exist around its differential values between 'legitimate' literacy and everyday practices, I have taken a dual-level

approach to applying Bourdieu's sociological theory, particularly around symbolic value systems. This dual-level structure is innovative in that it draws together and promotes the two primary ways in which Bourdieu's notions of capital have been worked with throughout the research literature.

> Bourdieu's theory of *capital* and how it is used in various areas of his work possess distinctive characteristics. .... There are, in effect, two different ways in which this is done, both in Bourdieu's own work and by those using his ideas. In the first, the values, tastes and lifestyles of some social groups (of *habitus* held in common in different status groups by virtue of power relations in society and in terms of which they are defined and differentiated) are, in an arbitrary manner, elevated above those of others in a way that confers social advantage (for example, in education). In the second way, forms of capital such as cultural capital can be understood in terms of qualitative differences in *forms* of consciousness *within* different social groups (class fractions rather than classes in themselves); that is, in terms of *habitus* as a specialization ("cultivation") of consciousness and a recognized mastery of some technique(s). (Moore, 2008, p. 102)

Because this research includes a focus on adolescents engaging in a culturally-valued social practice (using mobile devices) across spaces including institutional schooling, I am significantly concerned with the differential system of symbolic value accorded to different forms of capital exhibited as literacy practices. As such, I follow Moore's (2008) perspective recognising that for students, two main levels of value govern: the institutional level, and the peer-group level (including family). This dual-level analysis draws attention to the paradoxical way in which mobile technologies are positioned within the lives of contemporary students, exemplifying Buckingham's 'digital divide' (2007).

Related to literacy, the institutional level is structured by hegemonic discourse, and primarily positions everyday paradigms outside of institutional and assessable considerations, maintaining distinctions around the symbolic value of 'legitimate lieracy' (Carrington & Luke, 1997). The peer-group level is associated with popular discourses and a 'cultural pedagogy' (Nixon, 2005) that value the use of mobile technologies. Significantly, the value of mobile technologies at this level,

is strongly connected to social capital as defined by Ling (2008), as something held by the collective peer group, and maintained though constant connection, and such activities as 'gifting' (Haddon, 2003; Johnsen, 2003). The value of literacy practices at this level in terms of symbolic capital, is variable and negotiable, far more so than institutional perspectives.

This dual-level perspective allows us to explore the structures of power that exist in relation to the exchange value of different forms of capital, whilst allowing room to hear and examine the value system that functions amongst adolescents. It is here that the divide between the digitally-rich lives adolescents are alleged to live outside of school, and the technologically-deficient educational environments they need to negotiate (cf. Buckingham, 2007), is revealed in the different levels at which symbolic value is assigned to different usage patterns. As an 'articulation' (Kress, 2003) of capital in various ways, literacy practices are caught up in this system of dual-distinction. This is best exemplified by the high value adolescents place on using SMS in their everyday lives, and its relative absence in much literacy education.

4.4.4 Working with Habitus

The fact that mobile technologies are primarily personal and private devices, *designed* for use by a single individual at a time, places a degree of importance on the influence of individual personalities. In order to understand how individual agency works interactively within a social environment, Bourdieu's concept of the 'habitus' is employed (Adams, 2006; Bourdieu, 1977; Bourdieu, 1980; Crossley, 2001; Crossley, 2003; Couldry, 2004; Maton, 2008; Nash, 1999; Reay, 1995; Reay, 2004; Roos & Rotkirch, 2003).

The concept of habitus is useful for this research because it emphasises and explores the extent and limitations of individual and group dispositions, across different fields, or put another way, the relationship of agency to objective structures. This relationship begins early, and is inculcated though first participation in the social life of the family, and later of the wider community:

> The structures constitutive of a particular type of environment (e.g. the material conditions of existence characteristic of a class condition) produce *habitus*, systems of durable, transposable *dispositions*, structured structures predisposed to function as structuring structures, that is, as principles of the generation and structuring of practices and representations which can be objectively "regulated" and "regular" without in any way being the product of obedience to rules, objectively adapted to their goals without presupposing a conscious aiming at ends or an express mastery of the operations necessary to attain them and, being all this, collectively orchestrated without being the product of the orchestrating action of a conductor. (Bourdieu. 1977, p. 72)

In positioning habitus as something that is both 'structured and structuring', but also flexible and adaptable, Bourdieu enables a consideration of common and differentiating trends across groups of individuals, whilst not advocating a deterministic structure. A simple description for habitus is having a 'feel for the game' (Maton, 2008, p. 55), where the 'game' refers to social practices of particular kinds. According to how one's individual habitus was inculcated for instance, and its particular structure, an individual may be more or less well suited to the 'game' of formal, academic schooling (Carrington & Luke, 1997). It is at this level of formation – of inculcation and development of structures in the habitus – that individuals have limited control over how their habitus develops. This proceeds through a tacit and iterative process where 'The child imitates not "models" but other people's actions.' (Bourdieu, 1977, p. 87) As the process of habitus formation may occur in early childhood, this past is always present in current action, as 'limits are set by the historically and socially situated conditions of its production' (p. 95). Habitus is inculcated in a tacit and iterative way in the formation of identity.

In examining the un-critical overuse of Bourdieu's concept of habitus, Reay problematises criticisms that the concept is too deterministic and, as might be suggested by the role of inculcation, locks people into certain attitudes and dispositions. She argues that 'Choice is at the heart of habitus ... but at the same time choices inscribed in the habitus are limited' (Reay, 2004, p. 435). One can in essence choose whether or not to follow one's dispositions, whether to follow past performances. Whilst sometimes action is un-thought and automatic, this does not

remove the possibility of choice. Therefore, whilst habitus creates a stable structure for thinking about individuals engaged in social practices, allowing for a degree of predictability and continuity, there is an indeterminacy that reflects individual agency. However, in matching the complex messiness of the real world, this indeterminacy seems apt (cf. Reay, 2004, p. 438). As Reay elaborates:

> Paradoxically the conceptual looseness of habitus also constitutes a potential strength. It makes possible adaptation rather than the more constricting straightforward adoption of the concept within empirical work. (Reay, 1995, p. 357)

It is this conceptual flexibility that is so valuable when examining the level of lived experience, allowing one to trace individual actions in response to objective structures. The complexity further emerges in the fact that 'habitus cannot be directly observed in empirical research and has to be apprehended interpretively' (cf. Reay, 2004, p. 439). However, because at the empirical level habitus can be understood as both collective and individualised (p. 440), examining patterns of behaviours in terms of social practice amongst a collection of individuals reveals both points of similarity and difference in interpreting habitus.

The position of mobile (and other) technologies within a Bourdieuan theoretical framework is related to the patterns of individual dispositions towards social practice in differentiated fields. Particularly with contemporary ubiquitous technologies, it is vital that they be considered in context:

> Because technologies do not have an existence independent of social practice, they cannot be studied in isolation from society or from one another. They are embodied in lived practice through habitus, and so even the most basic 'phenomenological' aspects of technological practice and experience are themselves part of the habitus. Their nature ... is second nature. ... As part of the habitus, technologies and their techniques become ways of experiencing and negotiating fields. (Sterne, 2003, p. 385)

As an ethnographic study, I am here interested in the local level, or how global and national cultural and technological trends are appropriated and manifested for particular communities.

In terms of communicative and literacy practices, new media extend the concept of 'bodily hexis' (1977) into the digitial realm, resulting in a 'digital-' or 'virtual-bodily hexis' – hereafter referred to as 'digital hexis'. As has been discussed, there is a strong connection between both mobile technologies (physical devices) and everyday literacy practices (texts) with identity (Collins & Blot, 2003; Kress, 2003; Levinson, 2004; Merchant, 2005a; Palen & Hughes, 2007). This relates to the texts that individuals use to represent themselves and the meaning about individual identity and habitus that these convey, in both physical and digital terms. For example, the linguistic features of an SMS are as representative of individual dispositions as the way a phone is carried and used by an individual, as well as illustrating connection with certain cultural discourses, depending upon the linguistic and lexical features they make use of in these messages (Crystal, 2008). Whether or not they use 'SMS-language' or whether they overtly resist this trend and fall back to traditional linguistic structures, acts as a form of embodied cultural capital, though not at the traditional level of bodily-hexis, when we consider it at the level of 'interpretation' (Kress, 2003). Therefore, embodiment of meaning, occurs not just at the level of the individual body (social practice as performance), but more importantly for the concept of literacy, in the digital realm, where texts reflect and construct individual identities.

Whilst habitus is structured by past experiences, and allows for predictability of individual dispositions, Pachler and Kress (2007), disturb the notion that a complete and finished habitus is developed around attitudes towards mobile technologies and their use (specifically for learning), through their concept of the 'mobile habitus' (Kress & Pachler, 2007; see section 2.5.2). That the 'mobile habitus' is never stable, but in a constant state of 'becoming' generates a high degree of tension between fixed the traditional and everyday paradigms of literacy, ensuring that the symbolic value of mobile technology use for meaning-making (multimodal literacy), is continually in a relationship of negotiation not just with institutional structures, but individual dispositions. The 'mobile habitus' traces individual experiences with 'mobile fields' intersecting educational fields.

The fact that mobile technologies are used at such a personal level puts a significant emphasis on considering the role of habitus in social practices. That both

technology use and literacy practices are caught up with issues of identity – at the individual and group level – further stresses the importance of considering this concept in any comprehensive theory of mobile literacy. How one uses their mobile technologies across a variety of fields, even attitudes towards and beliefs about this, is a result of habitus. Through tracing literacy practices around mobile technology use, I track the traces of habitus through fields.

4.5   The Study Design

Being concerned with the everyday practices of individuals using mobile technologies from an ethnographic perspective necessarily involves entering the field as a participant in these very everyday practices.   There are pragmatic difficulties investigating mobile technologies, because they traverse the public and private spaces of individual lives. As this research specifically concerns the structure of mobile literacy practices within educational fields, the data collection was limited to the educational field: specifically, the school yard. Whilst the research also concerns use outside of these spaces, efforts made during discursive data collection moments (interviews and the focus group) articulate and investigate these 'unseen' uses. Fortunati (2005b) suggests a relevant method for considering how mobile technologies allow an insight into private lives in public spaces: her formulation of the 'backstage' coming to the 'frontstage' during overheard phone conversations on public transport is generative of meaning. It also evokes the importance of reading 'performance' in the ethnographic research framework (see Denzin, 1997; Madison 2005). In understanding everyday practices around mobile technologies, it is vital to keep in mind their inherent capacity to traverse spaces and flatten the differences between places in the school context. As such, private practices around mobile technologies are observed in the public spaces of the school, reflecting the desire of many schools to regulate the behaviour through prohibition and punishment. Observations and interviews form important tools for interrogating this boundary that seeks to separate the public and private practice around mobile technology literacies.

4.5.1 The Site

This study was undertaken in a rural township over 250 kilometres from Melbourne: Riverton (a pseudonym). The township consists of around 10,000 people, with a district population of over 21,000. Riverton High (a pseudonym), a school of just under 1,000 students, was the focus site for the study. This is appropriate as the research is concerned with the intersection between in- and out-of-school practices around mobile technologies. The school ground also provides a nexus point for social interaction, where adolescents from dispersed geographical locations meet: in this case students travelled anywhere from 75 kilometres to a couple of hundred metres to reach school each day. The school provides the primary 'field' (Bourdieu, 1977; Marsh, 2006) for the Bourdieuian interpretative framework.

Riverton high is a typical school, without a particularly innovative design or exceptional technological infrastructure. General classrooms are spread across five large buildings, interspersed with offices and administrative spaces. There are specialised classrooms for Art, Science, Food Technology and computer rooms. The majority of these classrooms contain windows onto the hallway, meaning classes can be observed from outside the room. There is also a Resource Centre (library) and a number of portable classrooms for general purposes. There are also four specialised buildings: an industrial-sized shed for automotive studies, a building for technology studies, and a performance hall and pool/gym/basketball court used in conjunction with the local council and general public. The school grounds are extensive, featuring two basketball courts, and students have access to an oval and other general sports fields. There are numerous areas for sitting and playing, with shade sails, trees and gazebos. As a physical environment, it is spread out and uncrowded: Figure 4.1 presents photos of the school grounds depicting their physicality and geography.

The school grounds functioned as a shared site for social practice amongst Riverton High's students, particularly as rural students, who come from widely dispersed geographical locations. Combined with this was the vexed position that mobile technologies currently occupy in Australian schools. Whilst there were calls for

Figure 4.1.1 – Looking towards the school Resource Centre

Figure 4.1.2 – Green area with tables

Figure 4.1: Photos of the site of study.

Figure 4.1.3 – Outdoor Basketball Courts

Figure 4.1.4 – Canteen Area

Figure 4.1: Photos of the site of study.

mobile technologies to become a part of the learning landscape – 'm-learning' (see section 2.4) – this was more difficult than the ideal would suggest. As mobile technologies increasingly offer the ability to transcend traditional institutional and social boundaries (to escape the school without leaving), they appear to contradict folk-theories of schools as places of attention and learning. The response of schools has typically been one of prohibition and punishment, and whilst some have moved on from this somewhat, Riverton High still positioned mobile technologies as 'other' in relation to learning. Mobile phone use was seen as a problem, which the school had dealt with by banning their use in class, including confiscating devices. This did not extend to a blanket ban though, with the newsletter announcing: 'the school policy in regards to mobile phones is that they must be **off** (or on silent and out of sight) during class times' (School newsletter, 27th February, 2008).[6] This ruled out any observations of mobile technologies in the classroom, as in doing so, I would inadvertently encourage behaviour designated as against rules. This did not however rule-out incidental observations of in-class behaviours as I went about my duties and observations whilst in the school grounds.

This meant that coming to school and associating with peers and teachers was an important (and often only) location for physical socialisation, as opposed to the dispersed digital and virtual socialisation that ICTs allow. The physical nature of socialisation is important with regard to the 'performance' of 'cultural' literacies inherent in an individual's use of mobile technologies; that is, the physical qualities of a shared situation (being at school, in the playground, in class) and the impact they have on literate practice around these technologies. The school-site also offers a position from which to examine the dual-levels of power-relations that students must negotiate around their mobile technologies when attending school. For whilst the environment and student behaviour (or expected-behaviour) is somewhat structured in terms of their school day (their timetable, classroom behaviour, school rules, etc.), outside of class times they have a degree of autonomy (within structured blocks of time). Mobile technologies offer the potential of transcending the confining structure of the school as an institution, physically and ideologically.

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[6] Original emphasis from the school newsletter.

The telecommunications infrastructure of this field concerns both the wireless network operated by the school itself, and mobile phone networks provided by telecommunications providers. The wireless network in the school grounds was only available to staff, with students only having access when using one of the school's class set of laptop computers. To use the school network, students signed an agreement, rules were contained in their diary, and students also completed a 'computer licence'. There were also a number of restrictions on sites that students could access, and computer logs were kept by the school. Regarding the mobile phone infrastructure, there were a range of telecommunications providers in Riverton, but beyond the township, this was reduced substantially. As a rural area, telephone reception beyond the township was a problem, reflective of wider rural experiences in ACMA research (2008b). The analogue network which functioned in rural areas closed during April 2008, meaning that everyone in the area, not just the students in this study, needed to change to a digital network. In the rural areas outside of town, the only option in this respect was the Telstra[7] Next-G network (a 3G network). No other mobile phone networks functioned beyond Riverton's township, including my own phone on the Vodafone network.

4.5.2 The Participants

Throughout the following chapters that comprise the ethnographic analysis (Chapters 5-8), I draw on the voices of the participants. The interviews with students form an important data set for the study. Other data – the unit of study, student work, the focus group, artefact collection and observations – are used reflexively and iteratively to inform these interviews and their interpretation. The interviews are used in a number of ways to build on established literature and research. At times, participants' experiences are articulated concurrently to explore shared social practices and dispositions. At other times, individual students are profiled with respect to a specific issue in order to explore shared and differential experiences. In briefly profiling the students below, I draw attention to salient aspects of their

[7] Telstra is the largest telecommunications company and provider in Australia.

personal identity and experiences that resulted from direct questioning or emerged organically in the interviews.

All participants in this project were given pseudonyms to ensure confidentiality, as well as family members, town names, local organisations, or other possibly identifying features. In alphabetical order, the participants were:

> Bailey completed three interviews. She was an enthusiastic and extroverted 15-16[8]-year-old girl who was an only child, and lived with her two parents roughly eighty kilometres from Riverton. Her mother was a carer and TAFE student, and her father a computer technician. Bailey herself had part-time job at the Riverton Safeway supermarket, aimed to be a designer as a career, and was involved in performing arts (a drama production) outside of school with a community group. She had an enthusiastic attitude to her digital technologies, had many different devices, and displayed considerable interest in the research.

> Beth completed one interview. She was a 16-year-old girl, who lived roughly 25 kilometres from Riverton in a small town, with her mother, father and five siblings. She worked part-time at a local jewellery retail business, which her mother owned. She had a small range of mobile technologies, and there was some sharing of devices among family members. She had left school in 2008 when the final round of interviews were conducted.

> Brad completed three interviews, and was a member of the focus group. He was a 16-year-old boy, who lived roughly 75 kilometres from Riverton, with his mother, father and three younger siblings (two brothers and a sister). He had a part-time job working in the dining room of a local restaurant. He had a range of portable technologies, but was required to update from the CDMA network when it was closed in April 2008, to the Telstra Next-G network.

> Erin completed four interviews, and was a member of the focus group. She was a quiet and softly-spoken 15-16-year-old girl, who lived roughly forty kilometres from Riverton, with her mother,

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[8] An age range indicates that the student had a birthday during the course of the research.

step-father and two younger brothers. She had a part-time job at a general store in one of the out-lying towns of Riverton, and her mother worked at the pharmacy in Riverton. She is an insulin-dependent diabetic, and carried around her required equipment. At the start of the research she had just a mobile phone, but by final interview, she had a range of mobile and portable technologies.

Jennifer completed three interviews. She was a confident and studious 16-year-old girl, who lived in the township of Riverton mainly with her mother. Both of her parents (divorced) were secondary teachers at Riverton High, as well as her step-mother. She had one younger sister, and a step-brother and step-sister, all younger. She had a part-time job at Riverton Safeway, and had a number of mobile technologies that she owned herself.

Jo completed one interview. She was a 16-year-old girl, who lived in a temporary arrangement in the Riverton township, with the family for whom she was employed as a babysitter. She soon planned to be living with her cousin. She had two brothers, one younger, one older, and her parents lived in Riverton. The reason for this estrangement was not investigated. She owned a mobile phone and generic MP3 player. She had left school in 2008 when the final round of interviews were conducted.

Josh completed three interviews, and was a member of the focus group. He was a confident 16-year-old boy, who lived in Riverton with his father and older brother. He also had an elder sister who was away at university studying nursing, and his mother lived in a town roughly two hours drive away. He had a part-time job at the Riverton Target store, whilst his father worked at a local FM radio station. He had a mobile phone and an iPod, and a range of other new media technologies at home.

Matthew completed one interview. He was a 16-year old-boy, and lived about fifteen kilometres from Riverton, with his mother or his father: they were divorced, but lived nearby to each other, and his accommodation arrangements were somewhat fluid. He had two younger siblings, a brother and a sister. He had a part time job at the Riverton Safeway, and owned a mobile phone and PSP.

Owen completed three interviews, and was a member of the focus group. He was a quiet 16-year-old boy, who lived about four

kilometres from Riverton with his mother, father and a younger sister. His mother worked in financial planning, and was studying a related course online, whilst Owen worked part-time at Riverton Safeway. He had a passion for music and demonstrated competency and knowledge about internet use. He had an iPod, mobile phone and PC.

Peter completed three interviews. He was a 16-year-old boy, who lived roughly forty kilometres from Riverton, but resided in town during the week. He lived with his mother and father, and had an elder sister who had left home. He had a part-time job at Riverton's KFC restaurant, and had a range of mobile technologies. He regularly up-dated his mobile phone, buying a new one, though by the final interview his priorities on this had shifted.

Rebecca completed two interviews, and was a member of the focus group. She was a 15-year-old girl, who lived about forty kilometres from Riverton, with her father and step-mother. She had two sisters and four step-sisters, though only one of each currently lived at home. Her mother lived in a town two hours away, but she seldom saw her. She did not have a part-time job, but received pocket money from parents. She owned a mobile phone and generic MP3 player.

Sarah completed three interviews. She was a 15-16-year-old girl, who lived with her mother, father, and younger brother and sister. During the course of this research her family moved home, from within the town of Riverton (only two blocks from the school) to location roughly 45 kilometres from the town. She had a part-time job at Riverton Safeway, but for the majority of the research, did not have or use any mobile devices of her own: this changed by the final interview in April 2008.

Tom completed three interviews. He was a friendly and jocular 16-year-old indigenous boy, who lived in the township of Riverton with his mother. His parents were separated – he was estranged from his father – and he had two older brothers who no longer lived at home. He did not have a part-time job and had a relaxed attitude to his schooling. He had access to a number of mobile technologies, including his own phone, although there was a degree of sharing of devices that went on with his relatives.

4.5.3 The Instruments

A variety of traditional ethnographic instruments were used as the basis for the data collection in this study. These included: an English unit of study, observation, interviews, a focus group and cultural artefact collection (see Baker, 2006; Denzin & Lincoln, 1998; Madison, 2005; Patton, 2002). Data collection methods were approached with a sensitivity concerning both the pervasiveness of mobile technologies and the restrictions on investigating such personal and private devices. Awareness of these restrictions unfold throughout the data analysis sections. The data collection methods informed each other in a developmental and reflective process, resulting in narrowing of focus on issues of importance that emerged, and allowed for flexibility in the pursuit of data collection. The duration of the data collection was two-months, spread over nine months, with the September and summer holidays intervening; I spent my time at Riverton High between August 2007 and April 2008.

To orientate myself into the field, and develop a rapport with the students, I developed a unit of study on mobile technology use, to be completed in their English class (Appendix A). In taking this class, I positioned myself as a teacher within the school field. Students were made aware of my 'temporary' and 'researcher' status, and after the unit of study, I positioned myself in a more casual role within the school grounds, with participants involved in the research aware of my role and purpose in the school yard.

The unit outcomes aligned with VELS curriculum, Level 6, resulting in students producing an informative piece of writing: 'How to use mobile technologies properly' (see Appendix A). The theoretical basis of this perspective was based on exploring the schism between in-school and out-of-school literacy practices. The task description stated:

> You will be required to complete an informative piece of writing, drawing on class discussions, as well as your own experience and knowledge, about how *you* think mobile technologies should be used. Remember to consider not just your own beliefs, but rules and laws related to the wider society. (Informative Writing Work Requirement Sheet)

The topic of the informative piece was intentionally positivistic in tone, in order to be somewhat provocative. I wanted to prompt a reaction to the idea that it was a black/white choice, a binary of experience. I also made 'multimodality' a requested component of the student's task, meaning that they needed to think in terms of visual elements that could be used to support their written work: some students used this suggestion to structure their pieces as pamphlets and brochures.

The structure of the unit was intentionally loose, and light on prescriptive content. I emphasised to students that it was 'their ideas and experiences' that formed the content for the piece of writing; using such tools as the Langford Framework (2002) to encourage them to examine and organise their own ideas. The assessment focus concerned their ability to express that in an informative piece of writing. I consciously minimised pre-empting responses; as such, democratic teaching strategies took precedence, rather than prescriptive content. I completed one lesson on the legal aspects of mobile phone use, in order to provide some factual content for the students' informative writing pieces. Artefact collection in this class comprised three document types: a class-created Affinity Diagram evaluating various aspects of mobile technologies; Worksheet 1 (Appendix B), visually depicting individual student access to mobile technologies; and, the informative piece of writing on mobile technology use. These were used to inform data collection in an iterative and reflective manner. The purpose of the unit of study was to orientate myself to the field of study, position myself appropriately within the school field, and to encourage participation in the interview and focus group components of the study.

Observations took place throughout the duration of my time at the school, focusing on 'observable' student behaviour (see Adler & Adler, 1998; Baker, 2006; Laughlin, 2001; Patton, 2002). The spaces involved included: classrooms, playgrounds, outside of school areas, and any other places that students gathered. Detailed notes were kept with a focus on the contextual factors surrounding the use of mobile technologies. As this research concerns understanding the highly variable nature of 'mobile fields', this observational data is crucial in establishing an understanding of how mobile technologies are used in situated social practice. Whilst it is not within the ethical and pragmatic scope of this research for the

researcher to become a 'full' participant in the mobile-mediated social activities of students, the intention is to move as close as possible to such a perspective, through engagement, observation and questioning. This data also informed the interviews, in an iterative manner. Whilst observations provide examples of 'observable' phenomena, interviews build on this, exploring the social practices around mobile technologies in depth, including decisions around meaning-making practices.

Loosely-structured interviews followed on from the unit of study, and integrated with the observational stage of the research (see Fontana & Frey, 1998; Madison, 2005; Patton, 2002). Each participant was interviewed between one and four times, with the majority completing three interviews. The interviews were audio-recorded, and a digital camera used to document student demonstrations of some practice with a visual element (such as a demonstration of their SMS predictive text feature, or tour of their stored pictures, etc.). The questions used are listed in Appendix C, and were organised in terms of general topics, allowing flexibility to follow trajectories of discussion raised by students, but also direct their response to topics of relevance for this research. Throughout the interviews questions were asked about: personal circumstances and beliefs, usage patterns, attitudes, beliefs and emotions towards mobile devices, how they managed information, school rules and other forms of regulation, cultural and technical literacy, and finally what they thought about the future of these technologies. The questions listed in Appendix C provide a guide for each interview, but are not prescriptive. These interviews were informed in an iterative manner, by the other data collection methods

The focus group was developed in order for students to negotiate possible meanings around emerging technologies (both mobile and otherwise) in a semi-structured manner. I presented information on technological developments in the following areas: the Infrared Keyboard, the iPhone, Microsoft Surface Computer, Wearable computing (glasses, watches, and headphones), increasing miniaturisation, digital key rings, technological implants and technologies of augmented reality. These documents were presented to students with text and images in order to provoke discussion about the possible potentials of technologies, encouraging students to reflect on their current situation, and extrapolate their attitudes and beliefs. The focus group was conducted at the end of the first round of interviews

(December 2007), and added direction to further data collection, increasing confidence in patterns that emerged from earlier collected data.

Aside from examples of student work, the collection of relevant cultural artefacts formed an important backdrop for the site-specific data collection: advertisements, flyers, promotional material, newspaper articles (see Hodder, 1998). Because mobile technologies and their uses are not the sole domain and experience of youth, it was necessary to contextualise their experiences within a wider sociocultural context. The collection of this data occurred throughout the research, focusing specifically on cultural artefacts directed at young people, but also, those cultural sources that the young people themselves produced, or pointed out as relevant to their experiences. In this way, the data collection method was highly flexible, reflexive and at times spontaneous. It also paid attention to broad cultural trends, such as the release of a highly popular or anticipated item into the marketplace (such as iPhone in Australia in 2008, or a new games console), but generally took its direction from the data presented by young people themselves, in an emergent manner.

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The methodology that has been outlined is concerned with flexibility and authenticity, investigating the lived experiences using a critical-mobile ethnography. The use of Bourdieu's theoretical framework – particularly his concepts of 'capital', 'field' and 'habitus' – enable a structured focus on literacy as an essential part of social practice. Further, applying his theories in terms of a dual-level of analysis, allows for an examination of the symbolic value of mobile technology and their use at the peer-group level, whilst emphasising the system of distinction that participants negotiate across school fields. Thus, located in the ethnographic tradition, this study investigates a group of students at a rural secondary school. Traditional ethnographic instruments are used, though with a sensitivity to the challenges that mobile technologies present for researchers.

5

Pre-paid Literacy

5.1   Economic Capital & Mobile Technologies

1 cent text.

Extract 5.1 (direct quote: Bailey, Brad, Jennifer, Owen, Sarah;
paraphrase: Beth, Erin, Josh, Peter, Rebecca, Tom)

******

I prefer to wait for them to message me. If I don't have to waste
credit I won't.

Extract 5.2 (Peter)

A clear and distinct issue that emerged early during this study was the importance of financial cost for mobile technology use. Significantly for these devices, mobile technologies do not just cost money up front, but do so on a continuous basis. For the study participants, the actual financial cost of using a mobile device was determined, at least in part, by economic capacity. Access to and

management of economic capital is a base requirement for participation in literacy practices involving mobile technologies, such as phones (see Taylor, 2009b).

The relevance of financial pressures on mobile technology use for the study participants was reflective of emerging trends regarding adolescent use of communication technologies. As examined in the 'financial literacy' discussion (see section 3.2.3), the work of Nina Weerakkody (2007) points to the pressures that managing a mobile phone bill puts young people under (Kingston, 2007):

> Anecdotal evidence suggests that most teens rack up higher monthly bills than expected, due to getting 'carried away' during weekends with too many calls sent unnecessarily or downloading games or ring tones on impulse. (Weerakkody, 2007, p. 3)

It should be kept in mind that Weerakkody's discussion related specifically to bill-subscribers. Importantly though, it is indicated that: 'aggressive marketing and confusing advertising' (p. 3) are contributing to consumer confusion, and related financial strain managing phone bills. The influential impact of cost on mobile technology use is a common feature across different cultures, from Australia (ACMA, 2007; Goggin, 2006), to Indonesia (Barendregt, 2008), Jamaica (Batson-Savage, 2007; Horst & Miller, 2006) and Europe (Geser, 2005; Geser, 2006a; Geser, 2006b; Ling, 2001a). Concern over cost is also one of the main reasons that SMS took off so spectacularly among youth and adolescents: it was cheap, easy and immediate (Crystal, 2008; Goggin, 2006; Levinson, 2004).

This chapter specifically examines the relationship between economic capital and mobile literacy practices. It explores the participants' experiences using different devices for meaning-making, both in 'articulation and interpretation' (Kress, 2003) with regard to the structuring impact of individual financial capacity on usage patterns. The participants in this study had limited access to economic resources, and this influenced the importance that they placed on mobile devices. Following on from this, I examine how purchasing decisions around ICTs connected with individual and collective prioritisation of them, examined as an example of the inculcation of habitus. That on-going costs are associated with these devices suggests the importance of financial literacy in managing their use. How the study participants demonstrate their financial literacy is explored though their voices,

around such strategies as contract knowledge and other cost-minimisation behaviours that match usage patterns to economic resources. This has also resulted in the emergence of a peer-economy of exchange around mobile technologies, based on social networks. Subsequently, the cost of different modes for the participants influences preferences for particular mediums for making meaning. Significantly, this study identifies a 'monopoly-membership dynamic' that structures mobile literacy around cost factors linked to a single telecommunications provider. The impact of this pattern of practice on literacy flows throughout the analysis, influencing different forms of capital and resulting in a particular culture around mobile technology.

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The issue of cost in the present study first arose during a whole-class exercise to gauge general opinions about mobile technologies using an 'Affinity Diagram'. This activity was used in the second lesson of each class: in research terms, it provided a general overview of the attitudes of students in the classes. In terms of the student learning outcomes, the notes from this activity were typed up by the teacher-researcher (myself), and a copy given to each of the students for them to use as part of their research for their informative writing assessment task.

Briefly, the Affinity Diagram activity involved distributing 'post-it' notes to students in each of the classes. Writing just one response on each of the sticky notes, students were to provide as many ideas or opinions as they could to the following topics on the appropriately coloured post-it note: green - advantages of mobile technologies; pink – disadvantages of mobile technologies; yellow - places of use of mobile technologies; and blue - reasons for using mobile technologies. Posters for various technologies – mobile phone, SMS, mobile phone cameras, mobile internet, iPods and music players, PSPs and game players, and others – were put up around the room, and students' attention drawn to them. After five minutes of writing time, students were invited to put their notes on the relevant posters around the room. I specifically instructed them to look carefully at other comments, and try to group similar opinions.

In compiling the responses, certain words and phrases jumped out: 'cost', 'expensive', 'cheaper', 'credit'. These phrases were associated only with 'mobile phones', 'SMS' and the 'internet on mobile phones'. Although just a brief classroom activity, what was demonstrated in these responses was an awareness of the cost of mobile communication. I pursued this monetary sensitivity in the interviews and focus group, seeking to uncover how this influenced particular behaviours with regard to mobile technologies. What emerged from the experiences of the adolescent participants were literate practices that attempted – not always successfully – to limit or manage the on-going cost of using mobile technology. This involved the interrelationship of participants' economic capital and financial literacy.

This revealed an important issue where spending on mobile technologies is concerned. Whilst they are at times configured by 'older generations' as somewhat of a luxury – perhaps accounting for their being given as gifts at special times – amongst the study participants, devices occupied a more essential place in their social lives. While research has demonstrated that there is a component of parental influence in youth up-take of mobile phones in particular (for safety and security), this is juxtaposed with a concurrent desire by young people to emancipate themselves from the family home and seek their own social independence (see section 2.3; see ACMA, 2007a; Geser, 2006c; Ling & Haddon, 2008; Weerakkody, 2007; Rizzo, 2008). As Ling mentions with regard to Norwegian youth and parents: 'The negotiation over who pays is one of the elements in the emancipation of teenagers' (Ling, 2001, p. 130). In part, this accounts for the desire by the participants to take control of their own mobile devices, paying for them and the credit on them, themselves. The participants often made their own purchases of mobile devices, either new or second hand, relying upon advice from peers (utilizing their social capital) to make a decision. Similarly, in some instances parents or friends gave them as gifts (Erin, Sarah), lent them one of their own phones (Bailey, Rebecca), or they were inherited from older siblings or relatives (Josh, Tom). Regarding paying for on-going costs: most of the participants in the research had part-time jobs, enabling them to take responsibility for their own spending and develop a sense of ownership with regard to their own communication. But this is

not to imply that financial issues with mobile technologies were not a concern, with at least one participant (Sarah) explaining how her parents took her phone from her as she was spending too much time and money on it.

Controlling on-going costs associated with mobile technology use, as a prerequisite for continued use, constitutes a necessary element of any framework of mobile literate practice. This reference to 'financial literacy' is at the heart of contemporary Australian consumer culture, with the Australian Government (National Consumer and Financial Literacy Framework, 2006), ASIC (Financial Literacy in Schools, 2003) and ANZ bank (Financial Literacy and Inclusion, 2010)[9] having policies concerning it. The Riverton experience demonstrates adolescent preference for cheap communication modes (SMS), but also the use of other strategies to both minimise and avoid costs associated with mobile communication. With regard to mobile phones, knowledge of telecommunications contracts was one particular strategy employed to control spending. In the mobile literacies framework, financial imperatives bear a structural and semi-deterministic relationship to different communication and text interactions, at the level of everyday practice.

5.2 Adolescent Access to Economic Capital

This first section considers the impact of participants' age and social status as adolescents regarding their ability to access economic capital (see section 4.4.1). Using mobile technologies imposed a financial burden on them, and involved them in a culture of consumption of new media and associated technologies (see Kenway & Bullen, 2008).

Like many adolescents, Riverton High's students had restricted access to economic capital and limited money of their own. Here, economic capital is used in the conventional sense as that 'which is immediately and directly convertible into money' (Bourdieu, 1986, p. 243). What is significant with regard to the contemporary situation, is that despite limited disposable income, adolescents and

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[9] ANZ Financial Literacy and Inclusion page: www.anz.com/about-us/corporate-responsibility/community/financial-literacy-inclusion/ Retrieved on 27 December 2010.

other young people are actively positioned as a consumer group, with its own disposable income. Kenway and Bullen (2001) argue that 'the market has increasingly separated children from adults and one another – offering them identities based along a consumption grid' (p. 61). That mobile phones – so ubiquitous and pervasive among young people – as both objects of desire and cultural expectation, eat into financial resources on a continuous basis, means that the limited economic capital that an adolescent has access to, needs to be managed carefully: a measure of 'financial literacy'. In the case of this study, the participants were typical examples of their age group in this respect, at times having to deal with confusing rules governing costs.

Despite their limited economic capital, the issue of access did not pose a significant hurdle to participation. Unlike the internet and other ICTs, the 'digital divide' (Angus, 2003; Selwyn & Facer, 2007) where mobile phones are concerned is increasingly less pronounced (Castells, et al. 2007): for instance, all the participants in this research had a mobile phone of their own. Due to the continually decreasing cost of handsets, combined with pre-paid contracts, mobile phones specifically are almost ubiquitous among adolescents with near 'saturation' penetration rates (Australian Psychological Society, 2004): the transformation of economic capital into objective cultural capital, in the form of devices, was relatively complete across the participants. One's economic capital does play a part, for whilst mobile phones are increasingly affordable, new features, newer model phones and the services they enable, are typically more expensive than basic features. Here we see how limited economic capital has a concrete impact on young people's literacy practices with regard to mobile technologies: one's finance dictates the modes one can afford to communicate using. As a general guide, the more data involved, the more expensive the exchange (leaving aside differential contract arrangements). What has developed among the students in this study has been a culture of cost-minimisation and cost-avoidance, where particular modes and mediums are favoured or avoided, depending upon cost.

All the students involved in this study were from rural, middle- to lower-middle class families: economic capital was therefore not something to be spent unthinkingly. Mobile technologies, where they were purchased by parents for their

teenage children, were given for Christmas or a birthday. A number of students – Erin, Bailey, Jennifer – received gifts of mobile devices during the course of the research. However as mentioned above (see section 5.1), the majority of the students took primary charge for their on-going costs: all but two participants had part time jobs (with half of the employed working at the same local supermarket). This gave each independent spending power, allowing them to take responsibility for their own consumption of mobile technologies goods and services. Of the two participants who did not have part time jobs, Tom relied on his mother for money and Rebecca on pocket money.

5.3   Purchasing Decisions: Transforming Economic Capital

The first step in managing economic capital associated with mobile technologies, concerns the initial conversion of economic into objective cultural capital, in the form of the actual devices themselves. At the base level, this involves decisions about whether to buy a certain device or not. This decision is complicated by a range of issues and choices, such as: brands, models, and features, network and contract details, and personal tastes. All these details, of course, are influenced by the amount of economic capital that the individual has access to. Because this is typically restricted for adolescents, family and peers play an important role in shaping attitudes and choices about different technologies. Families in particular play an inculcating role in the formation of habitus, and thus, influence subsequent attitudes towards, and behaviours with mobile technologies.

The study participants presented a wide variety of technologies throughout this research; from simple 'brick' mobile phones (older models), to recent releases (Motorola RAZR); from iPods to generic MP3 players, from PDAs to PSPs. Regarding phones specifically, because all students were on a pre-paid plan (discussed further below: see section 5.5.1), this required buying or owning a phone outright. As a result, students owned a wide variety of devices which was often more reflective of their social connections, personal dispositions and attitudes towards these technologies, than their disposable income.

Bailey's experience of the up-take of mobile technologies provides an interesting starting point from which to examine how her contemporaries – the other participants – make decisions about purchasing mobile devices. She demonstrated enthusiasm as a 'digital traveller' and so her experience might be located towards one extreme end of the ACMA's behaviour spectrum – an 'enthusiastic embracer' (ACMA, 2007b). Whilst her family was not affluent, due to her father's enthusiasm and professional interest in new and emerging technologies, the spending of family financial resources on mobile technologies received a priority it did not in other households. Peter, for instance, avoided txtng in the presence of his father, who had a negative attitude towards his son's mobile phone use. As a result of her family's spending priorities, Bailey had access to the largest amount of personal technologies amongst the group of students studied. Whilst it is probable that other Riverton students have similar family experiences, in this study Bailey's access to a wide range of mobile devices was unique and notable.

However, the relationship between parental and adolescent attitude to mobile technology use, is not a certain and fixed line. Whilst Peter's family had mixed attitudes towards technologies – his father with some negative attitudes – Peter himself placed a high personal priority on spending his *own* money on technologies, earned from his part-time job. In his first interview he indicated that he bought a new phone roughly once a year. He also had access to a range of other technologies, including a PSP, games console, laptop computer and other domestic ICTs (television, radio, CD player). However, his attitude had changed by his third interview, and as he was approaching 18 in the following year, he indicated that he was saving his money to buy a car. His priorities with regard to the spending distribution of his economic capital had changed under the influence of changing life circumstances, in this case, turning of legal-age to drive. However, a car may also be understood as 'mobile' technology in one way – a discussion I had with Brad as he worked on completing Worksheet 1 (Appendix B). He did not add it to his page though.

The influence of family and peer attitudes to mobile technologies, and how this in turn influenced spending on mobile technologies, can be seen in Erin's experience, which is partially an inverse of Bailey's. Erin's family was not one that

placed a high priority on technologies. They had limited economic capital to begin with, and minimised their use of mobile phones to limit costs. When I asked Erin whether everyone in her family had a phone, she replied:

> My parents do and I do, but they never answer their phone. Like, they got mobile phones and they put 'em on a plan, and they attached the plan into one bill with the home phone…so two mobiles and a home phone, and it got really expensive. It got up to like $1000 or something, so they cut everything off.

<div align="right">Extract 5.3 (Erin)</div>

In this situation, a priority was not placed on mobile technologies in terms of the expenditure of economic capital. Here, when her parents' phone bills got out of control, they reduced their use of these technologies. Erin further claimed they would not take their phones everywhere, and were neglectful in using them. Her inculcation towards mobile technologies was different to that of Bailey (though they still share some commonalities), made even more distinct by her diabetic status, and access to and use of the 'mobile technologies' associated with managing her condition: her phone as a form of security, a 'glucometer' (as Erin called it) and her insulin kit. Erin had a pragmatic attitude towards her technologies and her spending on them. The phone that she had the first time I met her was a second hand one, purchased through a friend. This was an older model, with poor reception at her home: this was improved, not by purchasing a phone, but by purchasing a 'signal boosting sticker' from eBay at the suggestion of a friend. By her final fourth interview she did have a number of new technologies – a new phone, an iPod, and a laptop – all of which she received as birthday and Christmas gifts at the end of 2007: these were not unexpected gifts and she had been consulted beforehand. This meant that the economic capital that was already going to be expended by family and friends – on gifts – was directed towards technologies that Erin requested or was perceived as needing, by her boyfriend, whom she indicated had told her she needed a new phone and that he would get her one. The distribution of economic capital towards technologies was therefore covered under a 'gift-clause', somewhat distancing it from examination as part of everyday household practice.

Social capital has a role to play in how limited economic capital is used to purchase devices. Some participants discussed their purchasing choices with friends in order to make more appropriate purchasing decisions: 'Yeah, I'll ask 'em how their phone's going … stuff like that', said Josh. Tom had an advantage in that he had a relative working at an electrical-goods retail store, which gave her a degree of authority on mobile devices:

> CT: How are you going to decide which one to get? Where are you going to go to get that kind of information?
>
> T: I'd probably ask my cousin, and she'd probably recommend to me somewhere. Like Melbourne, or … or even their shop or something like that.
>
> CT: This is the one [cousin] who works in a, what, Telstra shop or…?
>
> T: At Retravision.[10]
>
> CT: Okay. Yep. So she should know what she's talking about?
>
> T: Yeah. Should.

<div align="right">Extract 5.4 (Tom)</div>

As an extension of this sharing of knowledge, costs associated were also partly minimised through a peer-based market for the exchange of objective cultural capital (see section 5.5.3). The on-selling and gifting of second hand phones was something which many of the students had experienced. Erin's first phone, for instance, was purchased from a friend; Rebecca's phone was obtained by swapping an even older model phone with a friend; and Sarah, perhaps the most curious example, was gifted a second-hand phone by one of her friends. This gift was particularly interesting as she did not request a phone and was enjoying not having one, but her friend gave it to her as she 'found it in a taxi' and had no need for it herself. In these situations, the phone was often an older model one, with limited features: the potentials for embodied cultural capital were therefore restricted by the features of particular devices (See Chapter 7). Still, what this demonstrates is that the connections mobile

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[10] Retravision is a franchise store chain specialising in selling electrical and telecommunications goods. There is a store in Riverton.

phones enable were more significant for the participants than the devices in and of themselves. The importance of social connections with regard to mobile device use is examined in more detail in chapter 6.

Limited economic capital was not so much associated with a lack of access, but rather, a reduction in the sophistication of the device a student could own, and the richness of the features they could use regularly. Although many of the participants demonstrated a pragmatic attitude – that they would like a better phone but just couldn't afford one – there was still an appreciation of the need to continuously upgrade. As such, a 'digital divide' existed around socioeconomic status (Angus, 2003; Selwyn & Facer, 2007), but also personal priorities concerning the spending of one's economic capital on mobile technologies.

5.3.1 Prioritising Mobile Technologies

The vital moment concerning expending economic capital on devices comes from the prioritisation of such purchases. Aside from Sarah expressing reluctance for a new phone or an iPod, as an exception amongst her peers, overall students valued mobile technologies and saw spending on them as necessary. Though as Peter's change of preference shows (a new mobile phone or a car), priorities may develop and change. However, for the sake of thinking about habitus, the value placed upon these technologies by families is particularly important.

Bailey's enthusiastic attitude toward mobile technologies – most technology – was in part, due to the influence of her father, and the priority he placed on them. As a result, Bailey had access to a wide array of technologies, including: two mobile phones, a portable DVD player, an iPod, a camera, a portable hard drive, a laptop computer, her own television with headphones, a calculator, a video camera, a PDA, a DVD player and a stereo. Throughout the course of the study, she also upgraded her technology. She spoke about her father as the expert on technology in her house, who conducted his own freelance PC work, whom she would always turn to for advice on such issues; she mentioned that her mother by contrast, was ignorant of most technologies. In considering the role of participants as consumers, the 'consumer behaviour profiles' used by the ACMA (2007b) in conducting their

research are useful (see section 2.5.2, Table 2.2). Being directed at consumer behaviour, these are particularly useful when examining how economic capital is expended with regard to mobile technologies.

On Worksheet 1 (Appendix D), competed during her English class work, Bailey illustrated the wide range of technologies which she had direct personal access to. Throughout her interviews she used up to three mobile phones at a time for different purposes and added a laptop and portable hard-drive to her list of personal objective cultural capital. Whilst she did have access to all these technologies, she did not use them for learning purposes at school, partly as a result of their cost. She was not, for instance, permitted by her father to bring her PDA to school for use, due to his fear of theft: an illustration of the value placed on mobile technologies in her family. She also mentioned that she didn't want to be singled out amongst her peers because of it:

> I don't want to walk around with a PDA, 'cause they're all just
> like: "Oh, she thinks she's cool!"

Extract 5.5 (Bailey)

This demonstrates a tension between her habitus and the symbolic capital associated with certain devices at the peer-group level. Whilst a degree of distinction may be emerging around the effective use of personal ICTs in particular workplaces and study environments, it doesn't manifest in this manner at the level of her peer-group. In fact, a degree of blasé-ness with regard to mobile technologies was expected, with the participants all displaying attitudes locating them as 'mainstream followers' (ACMA, 2007b; see Table 2.2), where they 'do enough to simply enhance and aid their lifestyle' (ACMA, 2007b, p. 6).

In Bailey's household, her father behaved as what the ACMA identified as an 'enthusiastic embracer' (2007b), and so prioritised his financial and professional efforts on such issues. By comparison, Bailey was perhaps a 'mainstream follower', with the influence of her peer group and wider cultural discourses focused around the successful domestication of mobile technologies, resulting in a less intense enthusiasm for technology than her father. In fact, Bailey's mother was a 'techno non adopter', who she suggested, had difficulty operating the remote controlled

ceiling fans in their home. Essentially, in this one family, there were different experiences of being a 'digital traveller'. As a result of her particular inculcation, Bailey saw nothing wrong with prioritising the spending of her own economic capital – earned from her part-time job – in terms of appropriating mobile technologies, but relied on her father for advice in such situations.

The value of Bailey's experience is that it demonstrates the importance of family attitudes and beliefs towards mobile technologies, and how it influences just what devices – objective cultural capital – that students have, or desire access to. This manifestation of social capital – at the level of the family – is of course involved in the process of inculcation. Other forms of social capital, in the form of friend and peer-group associations, also played a role in purchasing mobile devices.

The importance of mobile devices in the lives of the study participants, their family and peers, was illustrated through the number of technological gifts that were given, just during the course of this study. This was one way in which adolescents circumvent the initial costs of purchasing a particular device (objective cultural capital), by delegating this to the spending power of others, as requested gifts. As this research straddled the Christmas holiday season, a number of participants reported that they had received mobile technologies as gifts: Erin received a new phone and iPod, Peter received a laptop, Bailey received a new phone, laptop and portable hard-drive, Sarah received an iPod and was given a phone. Spending on mobile technologies has become, for the study participants, a part of the 'gift-giving' landscape (Johnsen, 2003), particularly with regard to adults, or those with access to more economic capital. The predominance of 'gift-giving' was from adults (generally parents) to children, seeming to support research demonstrating parental involvement in youth mobile technology purchasing decisions (ACMA, 2007a; Geser, 2006a; Ling & Haddon, 2008). While at Riverton High, I heard anecdotally of a student convincing their parents to buy them an iPod, as they were doing a year 12 subject for which the teacher had produced podcasts: learning then, and not just safety, could act as a possible route to getting devices for gifts.

The priority that one placed on mobile technologies was an important influence on associated purchasing decisions. What is more significant for literacy, is the impact these personal preferences have on managing on-going costs.

5.4   Financial Literacy & Money Management

As was discussed in the literature review, in relation to the 'concept-literacy paradigm', the concept of 'financial literacy' is based firstly on an understanding of personal financial issues and details, and secondly, the use of that knowledge appropriately and effectively (National Consumer and Financial Literacy Framework, 2007). It can be a literacy concept considered in isolation from others, though more appropriately, is integrated with a particular field of study or experience. In this case, it relates specifically to dealing with costs associated with mobile technology use, or the 'everyday literacy paradigm' (see section 3.1.2). That these can be highly complex arrangements is reflected in consumer difficulties in understanding the details of how costs are calculated.

The domestication of these technologies by young people connects with the cultural discourse of consumption. This discourse, exemplified in cultural artefacts such as advertisements and promotional material for mobile phone and telecommunications companies, suggest the affordability of these devices, while at the level of individual consumption, it is often confusion that reigns. The Australian Competition and Consumer Commission (ACCC) for instance, criticised Crazy John's, a leading Australian mobile phone retailer, for false advertising (Rennie, 2008). This problem is not limited to this one company though, but rather, as a media release on recent research by Global Reviews pointed out:

> Australia's largest mobile telephone companies are leaving customers confused and unsure of their options…. The study revealed that major telcos left many customers unable to identity a suitable mobile phone plan online, that large numbers of emails receive no response, and that many phone operators did not actively seek to help customers identify the right plan for them. (Winzer, 2006).

The implication for any consumer of mobile technologies – adolescent and adult alike – is that there is a need for individuals to have a degree of 'financial literacy' with regard to their commercial-communicative behaviours. In particular this relates

to knowledge of contracts governing mobile phone use, but also to the level of everyday individual practices, and the costs that these incur at the micro-level.

Knowledge about phone contracts proved to be an important component of the financial literacy associated with mobile technology use. Weerakkody (2007) points out that the confusing array of contracts and phone plan options, can result in spending that gets out of control, either through misunderstanding, or through student excitement (pp. 2-4). While some participants purchased phones themselves or were given them as presents, control of the on-going costs associated with their use typically fell to the adolescents themselves. An important part of effective management was a working knowledge of the terms and conditions, the 'ins and outs' of mobile phone contracts, and then acting in accordance with that knowledge to minimise costs.

Even where an individual was ignorant of financial structures – such as the 'fine print' on a mobile phone contract or bill – there was still an extent to which 'trial-and-error' played a part in demonstrating financial literacy, because in such cases, the individual had to keep a track of their mobile technology use and calculate that use against the known costs. In such a way, Brad was able to access free content via 'Loop' (on the CDMA network) and via the Big Pond homepage (on the Next-G network), despite being unsure if they were free; he was only sure that he hadn't been charged. Keeping track of the general cost of communication activities was a necessary step in effective financial literacy. Such knowledge was particularly important for adolescents whose economic capital is limited to pocket money and part-time jobs. The experiences of participants in managing the on-going costs associated with their mobile technologies, presents a demonstration of their financial literacy practices.

5.5   Navigating On-going Costs

Mobile devices – particularly the mobile phone – presented the study participants with particular challenges in controlling financial costs associated with their use. As products of the marketplace, mobile phones have a range of costs associated with making phone calls, sending SMS, sending emails, browsing the

internet, or downloading/purchasing content. The fact that there is a wide range of different phone contracts and plans, covering an even larger field of possible billing structures, mean that matching the choice of contract/plan with on-going phone usage patterns, is important for individuals to effectively control costs. iPods also incur on-going costs in the form of purchasing digital content: iTunes credits can now be purchased at the counters of many stores and supermarkets. PSPs, video and game consoles also cost money in the form of purchasing digital content. Wherever there is an interaction with outside market and corporate entities, a financial cost is typically incurred. The participants deployed strategies to navigate these demands, from contract knowledge, to behaviour patterns and the exchange of financial resources with family and friends (phone credit, music and digital texts, devices).

The fact that different modes and mediums for communication incur different costs has an impact on how young people use these devices. The economic capital that one has access to influences the process of domestication on two levels: what device (objective cultural capital) can be purchased, and the ability to afford on-going costs. Recognition of this process of 'domestication' (Haddon, 2003) is an important point for the exploration of habitus, and how different forms of capital are transubstantiated from economic capital as the prioritisation of spending (see section 5.3.1). While how these technologies are domesticated is in part influenced by inculcation and personal preferences, other pressures and discourses that adolescents are collectively subject to at the level of the peer-group are also influential.

Although most of the participants had part-time jobs, not all students had access to their own economic capital in the form of wages or salary, with Tom and Rebecca being examples of this. In such cases, paying for a pre-paid phone contract, as well as other mobile technologies – was based purely upon the disposition of other members of their family and peer group to spend money on these technologies. Tom spoke about how he would ask his mother for five dollars every once in a while, whilst Rebecca spoke about having to carefully manage pocket money given to her by her parents. In this case, Rebecca was very vague as to where she obtained her money to buy credit from; a combination of pocket money, anything she earned from temporary jobs, and gifts from friends.

While all students participating in this research were connected with Telstra, in order to minimise cost, people on other networks were avoided: participants tended to restrict contact to those on the same phone network. The cheap cost of SMS was a major factor, in that people not connected with Telstra, who were therefore more expensive to contact, were excluded from extensive SMS-communication, with excuses ('I'm running out of credit') or through creating more detailed and information-dense SMS messages. While a 1-cent text may seem cheap and an effective cost-saving measure, this can be somewhat deceptive, and costs are incurred elsewhere. The participants for instance, commonly spoke about spending up to 20 dollars a fortnight on SMS', equivalent to roughly 2,000 txts if that was all the phone was used for. When I indicated to the participants that this would last me for many months, I received strange or exasperated looks, as if a high level of txtng was something expected of people their own age, but not necessarily by older people. Still, the veil of 'cheapness' created by the low cost of '1-cent' per txt was generally effective, though as Bailey indicated, *she* was well aware that this was still too much, and that it cost Telstra a mere fraction of that amount to process an SMS.

It is curious to note that whilst cost was a prevailing *concern* for the majority of the participants in this study, when students were asked to articulate the negative aspects of mobile technologies, very few indicated that 'cost' was a *problem*. This seems to indicate that the financial cost these devices incur is an integral part of using them, and seen as unavoidable. As a result, when asked to express negatives, other, more avoidable aspects (such as social situations, coverage and social contacts) were nominated.

5.5.1 Using Contract Knowledge

A significant factor in the successful management of financial costs associated with mobile phones involved a self-reflexive understanding of telecommunications contracts. In this way, students matched their communication behaviours to fit their contract pricing structure, or conversely, chose a contract that reflected their communication behaviours. In Riverton, the choice was limited by pragmatics and social demands; all the participants were with Telstra, as it had the

most comprehensive and reliable network in the area. Because of these reasons, even beyond the study participants, it was the most popular provider. On a pre-paid basis, there were two contracts students chose from: either the '1-cent txt' or 'Freedom' plan.[11]

The prevailing practice among students at Riverton – reflective of trends in other groups where limited economic capital is a concern (see Castells, et.al., 2007, pp. 32-34; Selwyn & Facer, 2007) – was to be on a pre-paid plan. As Castells, et al. outline:

> For poorer countries and people with limited access to credit,
> prepaid billing systems have been the primary factor facilitating
> adoption of mobile telephony. (2007, p. 32)

However, this was not universal, and these differences speak to the need for matching self-reflective knowledge of communication practices with contract structures. This amounted to a sophisticated level of applied 'financial literacy' which was interwoven with everyday communication behaviours.

The '1-cent txt option' allowed these adolescents to feel a sense of control over spending what was often their own money, on mobile phones, whether successful or not. It did not seem to matter that pre-paid is at times more expensive than some contract options (cf. Weerakkody, 2007); what mattered was that students couldn't get into debt, but rather, had to work with what they had. When the credit ran out, the participant was partially silenced as an articulating participant in conversations. Three participants (Erin, Rebecca & Jo), were on the 'Freedom' plan, due to contract knowledge and an understanding of their own communication behaviours. Throughout the interview process, Bailey had access to at least two phones at all times (and during the second interview, was actually carrying three); each was on a different plan, with one on the 'Freedom' plan belonging to her parents so that she could contact them anytime. Jo had one phone, but two SIM

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[11] The '1-cent text' plan allows texting to any other phone on the Telstra network at the cost of 1 cent each. The 'Freedom' plan, enables the consumer to nominate 5 favourite contacts: they can contact these people in any fashion at no cost, though pay more expensive rates to contact anyone else, regardless of their network.

cards, both on different plans, and Erin liked the fact that the 'Freedom' plan allowed her to do more than just SMS people.

Connection on the 'Freedom' contract option opened up richer modes for communication, albeit with only five nominated people. Erin for instance, spoke about the fact that now she was connected to the Telstra Freedom plan, she made a lot more phone calls, specifically to her five nominated contacts. Asked whether she made more phone calls on her new plan, she replied:

> Yeah. A lot more. I never made phone calls but now I do.

> Extract 5.6 (Erin)

This change in behaviour occurred not just due to the change of plan, but because Erin herself was familiar with the terms of this new plan and its advantages and limitations. She was aware for instance, that txtng people outside her nominated five cost more money (25 cents per text), and that phone calls to others were also far more expensive: she was in effect, aware that to pay for the free contact with her nominated people, she was paying a higher rate for contacting people outside this core group. Her confidence with this knowledge was underlined by the fact that she sent credit to her mother's phone, writing against the discourse of adolescents and financial irresponsibility.

Other students employed more complicated strategies for minimizing their costs associated with mobile technologies. Jo used SIM cards, deploying her limited economic capital with regard to two different contracts. Her use of these two different SIM cards gave her the ability to control costs by using the appropriate plan for the appropriate communication. If she was to send an SMS for instance, she would put the SIM card attached to the 1-cent text plan in her phone, but if she wanted to talk to someone (one of her five nominated contacts), she would use the SIM connected to the Telstra 'Freedom' plan. Josh, also explained how this system works:

> But a few of my mates have got two SIMs, just so they have 1
> cent and then on the other one they've got 'Freedom'; that's 5
> different people you can nominate to have free calls all the time.
> So when they need to call someone, chuck that one in.

This same strategy was explained by Bailey throughout her interviews regarding her use of multiple phones. By the final interview she was down to two phones: one was her own, on a pre-paid plan, which she paid for and used mainly for txtng. The other, was on a Telstra contract paid for by her parents: she used this for phone calls, but only to her parents. (The third phone which she only had in the second interview, was used as an MP3 player.) In this way, her parents bore the financial cost of internal family coordinations, whilst connections with the peer-group and the maintenance of social capital beyond the family group, was at Bailey's own expense. Not all students had access to a number of phones though, and although I observed students using two phones in tandem/parallel on a number of occasions, the predominant case was for the study participants to own one device of their own, on a pre-paid plan for which they themselves were financially responsible.

5.5.2 Cost-minimisation Behaviours

Aside from contract knowledge, the participants used a range of strategies to minimise the cost they incurred through using mobile technologies. Whilst at times this involved knowledge of contracts and devices, the role of social connections was significant. The participants also avoided cost-incurring services, or employed devices' features which were free to use. These strategies speak to the micro-management of the financial cost of literacy practices. Social strategies for avoiding cost included making use of one's social capital in order to circumvent limitations in one's economic capital. The shared experience by adolescents in Riverton of being short of money was a contributing factor in developing a web of a particular ideological model of literacy around mobile technologies. There were shared understandings – such as the preference for SMS over calls – that did not need to be spoken, because they originated out of a shared culture which emerged from shared or similar experiences. Integral to these shared experiences was the limited economic resources of participants.

Brad's experience in circumventing costs, whilst generally low-tech, was an effective one: he only made use of features that were cheap or had no cost at all.

Being from an isolated area, some 70 kilometres from Riverton, there was limited and restricted mobile phone coverage. Initially, in 2007, he was connected to the Telstra CDMA network, but during the period of the research, this network was actually closed down (in April, 2008), meaning that he needed to get a new phone, connected to the only other option where he lived, the Telstra Next-G network.[12]

Upon his connection with the Next-G network, he had access to a more sophisticated phone with more advanced technological 'affordances' (both physical and digital), however, he still demonstrated the same behaviours with regard to his minimisation procedures as he did in using the 'Loop' program: he only used features that were cheap or free. Of particular note was his admitted use of the internet on his phone, as through the BigPond[13] options he found he could access certain content for free (Trading Post, Weather, News, and an equivalent of YouTube). His strategy was no more complicated than avoiding content where he was unsure of the cost. That cost retained a relationship with the mode of communication, meant that particular mediums of communication (video, audio) gained a degree of distinction through their higher economic price. None of the students in this study with capable devices made regular use of the video feature on their phones, except to *receive* video calls, which were rare and highly irregular. Peter for instance purchased a Next-G phone so he could have a video call with his aunt, who had only called him once in such a way in the months of his ownership.

A practice where cost minimisation was used to reduce personal expenditure on mobile phones was that of 'pranking'. Related to 'squillo' practiced in Italy (Thompson, 2005), this involved calling someone, but hanging up before they had a chance to answer the phone. In this way, the call recipient would be able to see who had called them, and decide how to respond appropriately, whilst the caller did not incur any financial cost. This form of communication – calling without talking – was used by all the participants to some degree. The primary two purposes were: for fun, and more frequently, for functional purposes.

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[12] Telstra's Next-G network is a 3G (Third Generation) high capacity, digital network. It has speeds that allow for internet browsing, and the accessing of video and music content.
[13] BigPond is the online portal for Telstra customers, whatever platform they are accessing it through: desktop, laptop, phone.

One student in particular – Tom – admitted to being a prank caller (or rather, was 'outed' by his friend Peter), although most other students expressed distaste for pranking people just for the fun of it, as opposed to a functional purpose (see chapter 6). Some explained that whilst they had done this in the past, it was no longer funny; they had grown up. The object of the game, was to prank someone so that their phone rang when they were in a embarrassing situation. This involved an understanding of the field where the recipient was located, and a conscious attempt to reduce the symbolic capital of the individual within the field in which they were engaged. This commonly took the form of pranking someone in a classroom, so that their phone would ring out, and they would get in trouble with the teacher. Of course, this wouldn't work if the person's phone was off or on silent. Pranking in this way could also be accomplished by sending an SMS to someone. Tom admitted that he enjoyed engaging in this practice and that it was in his words 'funny'. This fits with the identity that he was establishing for himself as a bit of a joker.

The second use of 'pranking' was for functional purposes, and involved pranking someone so that they would call you back. Josh's explanation covers this use:

> Oh like, if I need Dad to come and get me … like ring me, I'll
> prank him and then hang up before he answers it, but I won't do it
> to people just to be annoying. I know some people do.

Extract 5.8 (Josh)

This was a common social practice across all the students, especially with regard to pranking parents or someone else in order to get picked up somewhere. The basis of this practice lies in the fact that it is free: as long as the other person doesn't pick the phone up, it costs nothing. This medium of communication cannot convey any detailed information, save to notify a recipient of a pre-arranged point of this communication: 'When I prank you, I'm ready to get picked up' or 'When I call you, call me back.'

Efforts to control expenditure of economic capital was demonstrated in a range of ways, reflective of literacy practices embedded in social practices and connected to social networks. All participants avoided costs by avoiding all 'SMS-Clubs', labelling them as 'rips-offs' or costing too much money. SMS-Clubs – such

as those advertised on television, in magazines, online, on billboards, posters and in the mail – were the subject of a huge amount of scepticism among the participants in this study. They were labelled as 'stupid' by participants, who all indicated a clear distain for these money-making projects. The predominant means by which negative perceptions of these SMS-clubs were built up, was through anecdotal experience, either their own, or those of others. Only one student – Jennifer – even mentioned that she read the 'fine print'. Then again, Jennifer demonstrated a high degree of self-direction overall, researching technologies she purchased on the internet (her iRiver[14] for instance), and seeking advice from others (parents primarily) whom she considered more expert than herself. The advice of social networks played a role in influencing avoidance of SMS-clubs.

The fact that these participants were not always effective in controlling their spending associated with mobile technologies was not always entirely their fault. Additionally, the receipt of an unexpectedly high bill is not an experience limited to youth. For the majority of students, the '1-cent-txt' plan was their plan of choice, but as has been discussed, this price only applied to txts sent within the Telstra network (i.e. to other Telstra phones). When the txt was sent to a phone on another network, the cost was much higher. The point here is that it was not always possible to know what network another person is connected to. Whist there was a tacit expectation that other teenagers in Riverton were connected to the Telstra plan, it was more difficult for the participants to predict what plans people from other places were on. As Peter related with regard to his own experience of this problem:

> Oh … I text my cousins like in *Melbourne* and that occasionally,
> but … if they're not on *Telstra* I just … like, I remember, I used
> to text this one chick and I didn't know that she was … wasn't 1
> cent, and I had like 20 bucks and I texted her for ages, and I
> looked at me phone and there was like 5 buck left and I was like:
> "Oh shit."
>
> Extract 5.9 (Peter)

This experience is a demonstration of situations where spending on mobile technologies can be more expensive than anticipated, due to factors beyond the

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[14] An MP3 player

control of the individual, in this case, the network membership of another person. This is also an illustration of the participants' particular local culture, in that they typically expected others were with the same network, and acted adversely when they discovered otherwise. There is in fact, no way of determining what provider another person is with aside from asking them directly. Therefore, despite different strategies used to minimise cost, there was an extent to which costs could accidentally or unavoidably be incurred as a result of trying to expand one's social network.

5.5.3 *The Peer Economy of Exchange*

Taking the concept of economic capital at its most literal manifestation – money – the study participants were involved in their own forms of financial transactions, extending their access to economic capital. This took many forms, often dependent upon social networks (creating a complex interrelationship between economic and social capital), including: the buying, selling and gifting of second hand phones, the gifting of credit and the exchange of phone parts.

Many of the study participants had previously purchased or had at present, a second-hand phone, which they had either paid for – such as in Erin's case – or they had been gifted from family members – such as with Josh's first phone – a new form of 'passing down'. Sarah's third interview presented an example of someone who was gifted second-hand phone by a friend. The exchange of technologies in Tom's family made it clear that mobile devices were freely shared and frequently swapped among family members. While this functioned as method for saving money (why have iPods for everyone when we can share one) it also added to the family dynamic, where use was more important than cost. Tom spoke about how he would get five dollars from his mum whenever he needed credit, as well as credit off friends.

Alternatively, a student could boost their own economic capital in terms of phone credit through the utilization of social connections, in the form of getting phone credit gifted to them by friends. A peer-based economy of exchange was in effect amongst Riverton's adolescents, beyond the study group, based on friendship and reciprocal gifting and sharing of economic capital in various forms. Erin had a

second hand phone in her first interview; Josh swapped different colour phone parts with friends who had the same model phone; Sarah was gifted a second-hand phone in early in 2009; Josh and Tom spoke about phones and mobile devices being swapped with relatives and friends; Erin had help from a friend to buy a sticker on eBay to boost the reception strength on her phone, saving her the need to buy a better model. Participants repeatedly indicated social connections and acquaintances playing a role in making decisions about mobile devices, including practices which had a financial aspect.

Apart from exchanges and reselling of objective cultural capital, in the form of devices, there was also the direct exchange of money in the form of phone credit: where both individuals were on the Telstra network (a necessary quality as emerges throughout the analysis: see sections 5.7, 6.5, 7.4 and 9.5.3), they could 'send' phone credit to each other. While in the school grounds I also overheard a random student ask another to send him some credit. Whilst this cost the sender roughly 25 cents, the recipient of the gifted credit, was now able to be back in contact:

CT: What I'm sort of interested in is also the role that using the phone, SMS-ing, calling, and sending content and sending credits, using credits of friends too …

B: That's a rip off.

CT: Why?

B: 'Cause it costs 25 cents to send it!

CT: 25 cents to send the credit?

B: Yeah, plus how much you want to send them.

CT: Okay. So ....

B: They're making money there.

CT: What I'm interested in is how that plays a role in strengthening friendships or relationships or family or something like that…

B: Well the only reason I send … when I first got the 10 … 'cause it came with 10 dollars, I just sent it to people I owed credit to, like… 'cause that's just a fair thing to do I guess

Extract 5.10 (Brad)

While based on the social capital that a student had access to (social networks and peers), there was an element of expected reciprocation. When Brad got his new Next-G phone in 2009, he sent credit to friends he owed. Jessica also spoke about exchanging credit with friends when she was running low or had run out. However, as were indicated by the comments of Tom and Peter, students who make a habit of asking others for credit and not using the money wisely, or not reciprocating, lose a degree of symbolic power through their social capital. They spoke about a student named David:

> T: One person just loves sending txt messages asking me for credit all the time. David. That's all he ever txts me for ... And he's just like random and he goes: "Oh, can you send me a dollar credit? Oh, Peter's in the same boat as me: he just txts out of the blue, he just txts him, asking for credit. It's a bit stupid, like, if you send him a dollar credit and you're like: "Oh, can you send me a dollar credit?" and you're like: "Nah, nah, nah." … Like, I rarely ever txt David at all, like … I just see him at school and then, like 2 weeks ago I got a message asking if he … sent me a message: "Oh, can you send me a dollar credit?" And that was it.
>
> P: He's done it to about 50 people too, like … wouldn't you just save it for 50 messages?
>
> T: I only send credit to people I know who will send me some back if I need it: like Peter sometimes. If he needs credit, I'll send him some if I've got enough.

Extract 5.11 (Tom)

Involvement in this system of exchange around mobile technologies and economic capital was strongly linked to social capital, at both the family and peer-group level. It was not a free system and reciprocation formed a component of this social practice. Access to and management of economic capital, as a prerequisite for participation in mobile communication, had resulted in a peer-based economy where economic capital was directly traded, or was traded in objective cultural capital

forms. It is illustrated below just how pervasive the management of this limited economic capital is in influencing the literacy practices that students engage in.

5.6   The Monetary Cost of Modes

I don't really call anyone, 'cause it costs too much.

Extract 5.12 (Peter)

The concern for controlling cost bore a direct relationship to the modes and mediums that students could afford to use. This related specifically to the cost of digital content, and through this, other modes associated with social performance. The particular financial practices of Riverton's teens resulted in a preference for SMS and other 'cheap' modes of communication.

Significantly for the multimodal nature of the 'everyday literacy paradigm' (see section 3.1.2), under the pressure of limited economic capital in the lives of youth and adolescents, written communication has again risen in prominence around mobile phones. In discussing the global 'haves' and 'have-nots' of global mobile communication, Castells et.al. explain:

> If we look at the latest mobile gadgets and applications, like 3G or Wi-Fi services, more often than not the bulk of subscribers still tend to be wealthier and better educated because these more advanced, non-voice services are usually more expensive and require a higher level of literacy. (2007, p. 56)[15]

In an age of digital multimedia communication, and the emerging potential of multiple modes of meaning-making, the return by students in particular to a simpler, more low-tech communication medium is largely driven by cost imperatives. The study participants were a typical (but local) manifestation of this global communicational shift. All participants who had a mobile phone indicated that SMS was the main feature they used. Because the reason for this use was often articulated

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[15] The use of 'literacy' in this quote reflects an understanding of this concept from the 'traditional literacy paradigm' (see section 3.1.1)

in terms of cost, it seems appropriate that the discussion of this language form emerge from the discussion of economic capital.

The primary means by which many students articulated their management of the cost of using mobile phones was through the preference for using SMS. This was due to their collective connection to the Telstra network, and the predominant use of the '1-cent-txt' pre-paid plan. As has been pointed out in numerous books and research studies, limitations of SMS as a genre have resulted in the evolution of a particular way of using written language (see Crystal, 2008; Carrington, 2005; Bodomo & Lee, 2002; Goggin, 2006; Ling, 2005). In his linguistic study of txtng, Crystal points out a number of features of the genre – pictograms, logograms, initialisms, omitted letters, non-standard spelling, shortenings and genuine novelties – which provide a language for understanding and talking about some of the peculiarities of SMS use among the participants in this study (see section 3.2.2). In her second interview, Erin attempted to articulate one of the ways by which she shortens words in txts:

> If I was going to put 'ing' on the end of a word, I'd put a comma, then 'n'. Like 'seeing' I'd go 'c'n',,,or something…. Like the apostrophe I think, the one up the top…. Yeah. I dunno what they're called but… or, I cut out vowels sometimes…like if I spell 'don't' I'd go 'dnt'…or 'would' – 'wld' or something..

> Extract 5.13 (Erin)

Although her understanding of the grammatical and technical features of written language is admittedly not perfect, she is making unconventional use of some conventional methods for using written language. The importance at this point is that SMS is preferred due to its cheap cost. The economy of characters needed in such messages does at times results in the use of SMS-language (broadly defined), though this is not the dominant experience.

It must be emphasised however – as Crystal (2008) does throughout his analysis – that the 'deviant' form of SMS language – that which features unconventional lexical or grammatical features – distracts us from the fact that much of the language used in these text forms is conventional. This was strongly reflected in the fact that around half the participants used predictive txtng or the dictionary

feature on their phone (see section 7.6, Table 7.5). Cost factors did not bear a significant impact on the linguistic and grammatical structures of SMS messages in this study. As Bailey explained in one of her interviews, the use of predictive txtng makes the use of unconventional language features – 'squeezetext' (Carrington, 2004) and other such devices – much more problematic: 'I don't do that because I always have it on dictionary, so it takes a lot longer if I wanted it like that'. Bailey went on to explain, like many other students in the study, that writing SMS in a high amount of code or SMS-language was not good. But instead of expressing an overt value for clearly written messages, she shifted the modal focus, instead suggesting:

> And then I just, like I didn't understand that message. It's like, I'm more of the girl that, you know, I say something important on a message, but I'd rather them call me, because, you know, you can say what you want to say in half the time, that you want to text it. It'll be like, just come and see me or, something like that.

<div align="right">Extract 5.14 (Bailey)</div>

Here, the vital point of distinction between modes – their different capacities for communication – is drawn out by Bailey in relation to her communication practices. In some situations synchronous communication (phone calls) is more effective than asynchronous communication (SMS). The back-and-forth communication of SMS can be a downfall, when a message is important, or has a lot of information. However, for most students cost is a restricting factor with regard to choice of mode and medium of communication.

As an aside, there was an interesting juxtaposition or tension within the experience of students who used SMS as a cost-effective means of communication. Whilst some used 'SMS-language', this was typically not associated with being cost-conscious with messages; after all, they were only 1 cent each. Therefore, the whole point of trying to limit the number of messages sent through using 'truncated language' (Levinson, 2004) – trying to fit as much information as possible into a single message – was not reflected in this case. In practice, the participants sent short and simple messages, as they each individually only cost a small amount. This resulted in such behaviours as Peter SMS-ing jokes to groups of people, Josh talking of 'chatting' to friends whilst watching TV on the couch after school, and the

capacity of many participants to go through hundreds of messages per week. The preference for txtng has also resulted in an ignorance of costs associated with the use of other features, as Rebecca indicates that she is not sure how much sending an MMS costs, or when Brad indicated that he was unsure how much using the internet on his phone might actually cost.

In their dominant use of txtng, other modes and mediums of communication were reduced to the level of novelties or luxuries. Contrast the modal density of 'pranking' with video calls, considering their cost differences, and the usage patterns. As discussed previously, the practice of 'pranking' relies on the absence of any explicit message content, acting as a free 'prod' whereby the attention of another is gained (see section 5.5.2). Another newer feature, which is available through the Telstra Next-G network, is the availability of audio-visual content in the form of online TV or video calls. Not many students in the study were on the Next-G network – Peter, Brad and Bailey – but none of them made use of these audio-visual capacities, due, it was voiced, primarily to cost issues. Peter indicated that one of the reasons he wanted to get a Next-G phone, was to try out the video-call feature, but this was then limited to instances when his aunt – the only other person he knew with this feature – video-called him. He made no video-calls himself, and received none from other people. While he demonstrated an overall interest in playing with the capabilities and features of his phone – sending out bulk SMS', recording videos of 'random stuff', Bluetooth sharing content – his ability to use wider features were restricted by cost. This meant that the primary use he made of his phone for communication was in the form of SMS, in line with the rest of his peers and despite his interest in other, richer features.

The choice of modes and mediums used for communication was partially determined by the limited economic capital that adolescents had access to. More complex digital content was more expensive, resulting in such behaviours as Rebecca recording songs off the radio as a way of avoiding costs associated with purchasing digital music and ringtones. While established social practices resulted in a preference for SMS and connection with the Telstra network for communication, this can be traced back to the financial costs involved in the maintenance of social networks and social capital via mobile phone (see chapter 6).

5.7   Emergence of the 'Monopoly-Membership Dynamic'

This initial examination of mobile technology use has revealed a notable relationship between mobile technologies and a telecommunications service provider. The prevailing dominance of Telstra in the rural area of Riverton, combined with differential costs associated with intra- and inter-network communication, resulted in the preferential use of this particular provider. Further strengthened by its connection with social capital, this 'monopoly-membership dynamic' has resulted in a preference for the '1-cent-txt' pre-paid plan, and the resulting preference for SMS as a written form of communication. That modal preference is influenced by cost is further illustrated by an avoidance of accessing content (often modally-richer) with a higher cost. Deploying economic capital in order to connect to the Telstra network was a significant financial decision, with an impact on future costs associated with the use of such a phone for communicative purposes. It also had additional benefits in terms of social capital accumulation, and its transformation into other forms of symbolic capital. However, the 'monopoly-membership dynamic' is not just linked to cost, but further associated with social interactions and a particular cultural history, examined further in proceeding chapters (see sections 6.5 and 7.4 respectively).

<div align="center">❇❇❇❇❇❇</div>

This chapter has explored the structural relationship between economic capital and mobile technologies, and the subsequent impact on literacy practices. This influence is determined by prioritising spending on devices in the first instance, and on affording this use on a continuing basis. Having restricted access to financial resource, the adolescent participants employed a range of strategies in controlling costs associated with the use of these technologies, from mobile phone contract knowledge, to cost-minimisation behaviours, including the use of social connections. Further, the study participants were involved in a peer-based economy of financial

exchange, also aiming to mitigate cost factors. The impact for literacy has been the development of an intimate association between communication and monetary costs. Efforts to avoid and evade financial expenditure resulted in a preference for low-cost (SMS) and free options (pranking, Bluetooth), and an avoidance or minimisation of those seen as too expensive (phone calls, videos). Specific to the study participants' experience was a gravitation towards a single telecommunications provider, also connected with financial factors. Important in Bourdieu's sociological theory is the interrelationship of different forms of capital, and as will be seen, social capital also plays a significant role in mobile literacy practices.

6

The Literacies of Mobile Socialization

CT: Those people you contact via SMS…your friends you have via SMS and the friends you have at school … do you think … because you can contact them in all sorts of different times, has made the friendships stronger?

O: Yeah. Oh I think … yeah, I think it might because you seem to distance yourself away from people you don't talk to for a long time. So if you don't see 'em at school … oh well, it doesn't apply so much to people you see at school, because you see them every day and you just talk to them there … but people you don't see at school … if you don't message them you might lose the relationship. So like, for example, if I met someone at *St Mark's*, on Saturday night, I message them Sunday, I could keep talking to them and have a relationship/friendship with them.

CT: But if there's a big gap between…?

O: But if I stop talking Saturday, and didn't talk to them for a couple of weeks and didn't see them, then it's gone.

Extract 6.1 (Owen)

> Indeed, nothing about the cellphone and its impact can be understood without recourse to relationships—between caller and receiver, audience and speaker, and even among just the members of the audience themselves. A group of friends, devoted to their own conversation, are less likely to be annoyed by someone outside of their group speaking on the cellphone than would a group of unrelated individuals, with time on their hands and attention to burn. (Levinson, 2004, pp. 82-83)

In their use of economic capital, the study participants transformed it into social capital, primarily in terms of communication: this chapter examines the relationship between social capital and mobile literacy practices. This is based on the influential role that social networks play in influencing and structuring behaviours and attitudes towards mobile technologies. As an example of the role of social capital, I consider how mobile phones present a manifestation of this capital, in the form of phonebooks. Drawing on research (see chapters 2 and 3), I consider how mobile phones play a significant role in strengthening social bonds for the study participants, particularly considering their rural status. The paradoxical nature of mobile contact as both positive and negative is examined, with participants having experiences in both these veins. The maintenance of social capital is also significantly influenced by the 'monopoly-membership dynamic' uncovered in the previous chapter (see section 5.7). The most significant issue to emerge from the use of mobile communications relates to social coordination, understood in terms of Ling and Yttri's (2002) concepts of 'micro-coordination' and 'hyper-coordination'. Subsequently social capital also has an influence of modal preferences, structuring the means of communication. Further, social capital around mobile technologies has a different value at the peer and school level, presenting possibilities, but also challenges for educational futures.

The quintessential mobile technology associated with social capital is the mobile phone. As has discussed in the literature review (see chapter 2), the rise of mobile phones has resulted in dramatic changes to the way social groups are organised and maintained, particularly among adolescents. At the level of bodily

hexis, mobile devices and their use bespeak of membership of a 'mobile generation' (Boylen, 2008), a 'thumb culture' (Glotz, Bertschi, Locke, 2005) or the very least, membership of an increasingly global 'mobile communication' culture (Castells et al, 2007). The very device presents an embodied form of social capital in the form of its digital phonebook; a list that locates an individual within a potentially complex social network by their association with others, even if some numbers are never dialled. Meanwhile, while the internet can be understood as a technology for expanding social connections (thereby expanding social capital), mobile phones have become associated with the strengthening of established social contacts (see Ling, 2008). The adolescents in this project used their mobile phones as a way of strengthening pre-established social capital in the form of family and friends. But frequency of contact doesn't necessarily transform into strong and symbolically effective social capital. At the level of everyday practice, the symbolic value of phone contacts varies according to the structures of a particular purpose, field or practice: the capital relates to the types of memberships that can be articulated in relation to specific social practices (see Bourdieu, 1986). Thus, social capital is tied through the level of everyday practice to its symbolic power, through the articulation of particular social connections as part of social practices.

The social capital around mobile technology use by adolescents is organised around two competing demands: that of individual teenage emancipation, and that of mobile parenting (ACMA, 2007a; Geser, 2006b; Ling & Haddon, 2008; Rizzo, 2008). These two competing demands set up, for adolescents, two distinct spheres of social networks: those connected to the family, and those beyond it. Of course, there is a degree of overlap between these two, and they are an artificial distinction: real life is generally not as clear cut as this.

6.1 Social Capital & Mobile Technologies

As previously discussed (see section 4.4.1), social capital resides in the actual and potential connections that arise from an individual's membership of a particular group or network (cf. Bourdieu, 1986). As a form of symbolic capital (cf. Moore, 2008), social capital, when utilized effectively, crosses an invisible line from the

utilisation of social connections to the performance of prestige. The value of social capital in relation to social practices around mobile phones is heavily structured and structuring of the context of use. The exchange value of social capital comes from the symbolic value associated with particular network contacts for a given field of social practice: it is converted into prestige via its 'articulation' and 'interpretation' (Kress, 2003) in relation to particular social phenomena.

Because these technologies are *mobile,* this opens up new possibilities, but also new debates, about the role of social capital in education and assessment. For example, media attention was recently attracted to a school which sought to integrate mobile technologies into assessment tasks by allowing 'students to use the internet and iPods during and English exam' (Cook, 2008). The potential to 'phone a friend' during an exam, or consult a website, or content on their iPod, may disturb the traditional concept of an exam as measuring isolated individual knowledge and capacity, but opens up new perspectives on knowledge, learning and assessment. The social capital – understood as 'mobile membership' generally – in such a situation, doesn't rely on their ability to contact another source for the answer, but lies in contacting a source that has the correct answer. Established concepts such as 'digital literacy' (Gilster, 1997) and 'information literacy' (Eshet-Alkalai, 2004), have relevance here. Such concepts stress the importance of critical discrimination/literacy skills. Here though, the discrimination skills would have to do with evaluating the value and saliency of information gained through social networks. Just because a friend (or website) gives a particular answer, this does not necessarily mean it is true.

In evaluating 'how mobile communication is reshaping social cohesion', Ling (2008) articulates the concept of social capital, linking it to exchange values associated with the social group as opposed to the individual:

> Social capital is not the possession of an individual but of a collective. It is a characteristic of the social situation in which the individual finds him or herself. As individuals, we can contribute to the development of social capital by helping to maintain the group. (p. 26)

In building on Bourdieu's notion of social capital, Ling points out that this collective form of capital – broadly configured as membership – is strengthened in its casual

form (primarily at the peer-group level), by forms of 'ritual interaction' (2008). 'Gift-giving' is a part of this ritual interaction, as Johnsen points out: 'the gift works towards sustaining social relationships in a society' (2003, p. 166). In Johnsen's research, 'gift-giving' is used to examine the role of text-messaging in Norwegian teen's social lives, but there is a shared social function: it contributes to collective social capital. For instance, if one does not regularly keep in contact with their social group via SMS – and therefore, is not involved in this form of 'gift-giving' – then their ability to draw on the collective resources enabled by social capital, can be restricted.

With regard to mobile technologies, when we talk about social capital, we are primarily concerned with the peer-groups as opposed to society-institutional level; in this first instance social situations are more fluid, and less associated with official and legitimised 'memberships', such as 'alumni' and official organisations, which typically delineate social capital at more 'official levels'. Since mobile technologies and their uses remain primarily in the domain of 'everyday practices', everyday social connections represent the social capital associated with mobile technologies that the majority of people experience. It emerges below, how in the present study the frequency of social connections was linked with the ability of participants to draw on social capital in order to transform it into more individual forms of capital. One such instance was the student mentioned by both Tom and Peter previously (Extract 5.11), who asked many people to lend him credit, without reciprocating. The result was that individuals were reluctant to share credit with him, as he had not engaged in the creation of social capital through the lending of credit to others. As such, his ability to access economic capital via his friendship networks, and cultural capital, was restricted by his lack of investment in social capital, or his lack of understanding about the importance of reciprocity for social interactions. The fact that Brad paid back credit as soon as he was able, points to the value of social capital in enabling access to monetary resources (see 5.5, Extract 5.10).

The importance of social capital with regard to mobile literacy practices concerns the process whereby it is transformed into symbolic forms of capital at the local level: in educational contexts, this transformation is influenced by the structure of the educational field, and the way in which it seeks to position mobile technology

use. The role of mobile technologies, particularly the mobile phone, in social capital, is still emerging. The 'membership' and 'credentials' (Bourdieu, 1986, pp. 248-249) that constitute the structure of social capital as concerned with mobile technology use is somewhat different from those which govern professional fields. Whilst membership of a professional organization – unions, societies, honours lists, etc. – functions as a type of prestige through its articulation across institutional fields, there does not yet exist this recognised and legitimated membership around mobile technologies. But this is changing: research already demonstrates that mobile phones have changed the nature of work for businessmen (Metcalf, 2006), journalists (Levinson, 2004) and emergency services workers (Sawyer & Tapia, 2006). In such cases, their dual-membership of a particular profession and 'mobile culture', enables them to utilise relevant social connections in relation to specific social practices, exercising power in particular fields (in this case associated with their professional work). As mobile technologies are an emerging technology and social implications are still developing, the variety of ways in which they are used in the articulation of social capital is still expanding. At the very least an individual may be able to point to their phone and say they have the details of a V.I.P. or some 'expert' related to the current issue at hand. For the study participants, social capital was enabled by possession of a mobile phone and structured by membership of the Telstra network.

The importance of mobile technologies – specifically the phone – with regard to gaining and retaining social capital – and its conversion into symbolic capital – is demonstrated through other studies into mobile technologies, as Haddon (2008) points out when discussing the domestication of these technologies:

> Studies of mobile telephony use by adolescents similarly indicate that consumption patterns often only make sense when non-domestic social relationships are considered. This allows analysts to appreciate the importance of "gifting" calls, which serve to cement relationships with peers. It also shows that the amount of numbers stored in the phone's memory has itself currency, showing the user has the (right) mobile phone markers of participation in a network. (p. 50)

Mobile technologies, in a very short time, have come to play a central role in the socialization of adolescents, particularly with peers beyond the family group.

Name	Mobile Phonebook	Mobile regular contacts	MSN contacts	MSN regular contacts
Rebecca (Interview 2)	'a lot'	4-5	68	?
Brad (Interview 2)	240	20	-	-
Jennifer (Interview 2)	121	1, 3-4, 10-ish	112	10
Josh (Interview 2)	-	-	-	3-5
Owen (Interview 2)	70	20	300 odd	30
Tom (Interview 2)	120	30-40	-	-
Erin (Interview 2)	?	5	-	-
Bailey (Interview 3)	'…a couple of hundred'	'…a few'	-	-
Peter (Interview 2)	200-300 (235)	15-20	-	-

Table 6.1: Participant phonebook contacts: for selected participants, from responses in Interview 2 and 3.

Combined with cultural pressures and parenting influence (see Ling & Haddon, 2008), actually having a mobile phone, and having contact with others, in itself emerges as a form of social capital. Whilst there is a symbolic prestige at the peer-group level associated with *having* a mobile technology, what is more important is that the device is *used* as part of social practice with friends. Riverton's students were not significantly different in this respect, and spoke of mobile phones primarily in terms of contact with either parents or peers.

6.2   Phonebooks as Embodied Social Capital

As suggested by Haddon (2003), the social capital that an individual has access to can be observed in an embodied form in mobile phone address books (directories), seen in Table 6.1. In the process of the interviews, at times, the participants were able to explain the frequency of use of contacts in their mobile phone directories. What these offer is an indication of patterns with regard to 'potential' social capital in the form of the number of contacts participants had and how many they actually used.

Whilst there is no direct ratio-pattern to these responses, and to an extent, we cannot be certain of their numerical accuracy, the shared trend is clear: a wide variety of *potential* contacts, but the utilization of a notably smaller number. As a type of embodiment of personal communication, mobile phone numbers have taken on a form of social currency, which are used to develop connections with acquaintances:

> CT: Are you careful with who you give your phone number to?
>
> J: Yeah. Oh…yeah. If I meet someone I'll probably not just give them my number.
>
> CT: Yeah. I mean, how protective are people of their mobile phone numbers?
>
> J: Not really very protective.
>
> CT: Yeah, okay.
>
> J: 'Cause…like if a chick comes and asks for your number, "There it is!"

<div align="right">Extract 6.2 (Josh)</div>

In this instance, Josh suggests that while his phone number is not for general distribution to *any* individual, it could be used to further connections with *desired* individuals. The intensification of such relationships was based on frequent contact, and as is seen in Table 6.1, only a few of phonebook contacts were actually frequently contacted, deepening the social connection. This tension – between expanding contacts and intensifying known contexts – comprises another duality important for mobile phone use. Decisions made about who to increase contact with sketches a connection between individual dispositions and social capital development. However, even as *potential* connections, contacts do have weight in symbolic terms. Take the instance of 'security' (ACMA, 2007a), which a number of students spoke of as an advantage of mobile phones: here the potential of connection with others has value for personal safety; an issue market forces and the concept of 'constant connection' play off (see Kenway & Bullen, 2008).

The role of mobile phones in the exercise of social capital is particularly important for these youth, because of their rural location (Taylor, 2009a). Great

distances between people and friends, combined with limited public transport, made it difficult for them to socialise with others beyond their family group. Many of the participants – whether inside the township of Riverton or beyond – used their phones to talk with friends outside of school, and organise to meet up. The mobile phone allowed for distances to be transcended to a degree, and previously isolated individuals had the possibility for communication with peers who they may not be able to see regularly in person. For students from rural areas outside of town – Brad, Bailey, Peter, Erin – this contact was not just important for organising 'real-life' physical and geographical meetings, but for the emotional support it permitted. But as this study argues, the rural Australian landscape, with its particular infrastructure, makes the ideal of anywhere, anytime communication for anyone, into just that, an ideal, as indicated by ACMA (2008b) research into rural usage patterns. Gaps in coverage influenced the manner in which social capital could be maintained, with the asynchronous nature of SMS proving advantageous in these circumstances.

At the basic level, for students to be able to contribute to and draw on forms of social capital, they need to have access to the technologies involved. Students who did not have mobile technologies – especially a mobile phone – suffered a form of isolation, in that they were not participants in or privy to communications associated with mobile technologies. Similarly, if one did not have an iPod (or other compatible MP3 player), then they could not be involved in file-sharing with other friends – a form of 'gift-giving' (Johnsen, 2003) or the exchange of objective cultural capital through embodiment – and therefore not able to effectively draw on this network when one wanted to exchange free music. If one did not have a mobile phone, therefore they did not have phone number of their own, they lacked an identity that was embodied in this digital form (their phone number as digital hexis), and were absent from communication in this medium.

Whilst phonebooks in mobile phones present an embodiment of social capital, it is in the use of these numbers for communicating with others that literacy is relevant. The choices participants made about who to contact, stemmed from prioritisation of particular social connections (and the social capital they represented), and the subsequent strengthening of social bonds with those chosen contacts, sketching connections between 'digital travellers'.

6.3   The Strengthening of Social Bonds

This section considers how mobile phones in particular are involved in the maintenance and strengthening of social bonds. The wide geographical distribution of these rural students plays a particular role, and their experiences represent a manifestation of wider global trends.

The family group comprises the base social network from which many students orientated themselves. Research indicates that mobile technologies are generally concerned with the maintenance and strengthening of pre-established social relationships, rather than increasing the number of new social connections one has (cf. Geser, 2004; Ling, 2008). Geser terms this 'regressive social insulation', suggesting that: 'mobile phones may support tendencies towards closure rather than tendencies to open up to new acquaintances' (2003, p. 4). Fortunati's research into self-presentation in public when using a mobile phone, also suggests that individuals are using mobile technologies to engage with known acquaintances, rather than with strangers:

> We are able to create a "bubble" of dual relations with the distant interlocutor. This seems to limit our concern for those who are physically nearby…. The usefulness of the mobile rests on the presumption that you should always be reachable. Thus, if you are unavailable your network of relations may feel that they have the right to protest. At the same time, there is an implicit, and perhaps intensified, indifference towards bystanders, who are not considered very important, because they are unknown. (Fortunati, 2005b, pp. 209-210).

What is important in the context of the family is the role of mobile technologies in the push-pull relationship of parenting versus teenage emancipation (see section 2.3). For adolescents the mobile phone is caught up in complex choices around establishing individual identities, whilst retaining family links. Research indicates a significant role for parents in using mobile phones to extend the capacities of their parenting (ACMA, 2007; Geser, 2006b; Ling & Haddon, 2008; Palen & Hughes, 2007; Rizzo, 2008). Likewise, there is the youth intention to build an individual

identity through contact with peers beyond the family group (Geser, 2006b; Goggin, 2006; Ling & Haddon, 2008).

As youth seek to build an identity beyond the family group, mobile technologies are involved in forming closer relationships with peers. Josh for instance, explained the person he contacted the most was his girlfriend, indicating the intimate role that these technologies have come to play in adolescent socialisation.[16] Mobile phones also played a part in Erin's relationship with her boyfriend, so much so that he told her he was getting her a new one for Christmas: 'My boyfriend's told me he's getting me one whether I like it or not'. Her new model phone enabled richer connection possibilities, and on the 'Freedom' plan, she indicated that she now made phone calls (see Extract 5.6) and sent MMSs:

E: Yeah, I got a phone for Christmas … a … a ZT and some number.

CT: Z …?

E: Yeah, I didn't want a flip phone. I find they're just annoying…flippy bit. So yeah I wanted just a normal flat phone and…yeah…and then an iPod, a 4-gigabyte, yeah, for my birthday.

CT: So do you like SMS or anything more often or…?

E: Yeah. I can do it faster.

CT: You can do it faster?

E: Mmmm Hmmmm. My old phone had really dodgy buttons. The new one's quite good, and yeah, I can send MMS' now which I couldn't on the other one.

Extract 6.3 (Erin)

As a commodity, the mobile phone becomes an object of desire and pragmatism, for both peers, parents and adolescents, and their relationships. However, the most significant aspect of socialisation around mobile technologies related to the peer group.

[16] Dating and flirting underlie recent media controversies over 'sexting', but a full investigation of whether this was occurring between participants and others did not form a focus for this project.

Whilst the peer group formed an important part of participants' informational network and distributed knowledge, parents, siblings and guardians also played a role. Some parents were more active in their child's mobile technology social networks: the majority of participants spoke of using their mobile phone for functional communication with their parents, such as sending messages or pranking them when they wished to be phoned back or picked up from a pre-arranged location. But there were also examples of more emotionally-based communication. Josh indicated that he kept in touch with his mother, who lived in a town 200 kilometres away via his mobile: he would message her – or prank her – and she would call back. Bailey's father was heavily involved in her choices around mobile and other technologies: she relied on him for advice about these technologies. By her own admission, Sarah's intensely-emotional attachment to her mobile phone was broken when her parents took it from her after they deemed that she was using it too much. Attitudes to mobile technologies for adolescents were an intimate and complicated issue, structured by the inculcation of particular dispositions towards them, under the influence of family and peer group-based social networks.

The social networks, and their manifestation as social capital that an individual has access to, are also influenced by individual dispositions, as a result of inculcation, which in turn influences mobile technology usage patterns. For instance the rather shy Erin consciously restricted her social group through her connection to the Telstra Freedom plan:

> CT: So you've got your five best friends or your parents and boyfriend and…?
>
> E: Yeah, I've got my five closest … four closest mates and my mother.
>
> CT: Your four closest mates and your mother?
>
> E: Yeah.
>
> CT: Yep. And is that cheaper than … the 1 cent?
>
> E: Yeah it is … I put thirty dollars on a month and then the credit accumulates, so whatever … and whatever … and it's 25 cents to text anybody else…the credit that accumulates you generally spend txtng other people or

> sending credit ... 'cause my mother never has credit so I can send it to her or something…
>
> CT: So it's a … because it's *Freedom*, do you find that you actually make more phone calls?
>
> E: Yeah. A lot more. I never made phone calls but now I do.
>
> CT: Okay. 'Cause this is one thing that really strongly came out of all the information, or the interviews … and it was something that interested me, was how much of an influence is cost, or the money involved on, you know, how many SMS' you send, whether you send an SMS or whether you call. So do you find that the cost has a impact on you or is it…?
>
> E: It is … I mean, the 30 dollars a month … but it … I can, it doesn't occur to me … like, if I'm going to ring someone who's on my *Freedom*, it doesn't occur to me that this is going to cost me because it doesn't.

<div align="right">Extract 6.4 (Erin)</div>

By contrast, Peter readily admitted – being connected to the Telstra 1-cent txt plan – that he would send out bulk SMS' to a range of friends, 'when they're funny messages'. As an only child living far from Riverton, Bailey found her phone invaluable for socialising with peers, but indicated that most of her contact was with a friend at different Riverton school. In broad terms, the amount and frequency of different social contacts, paints an outline of the particular adolescent's position within the socialisation patterns of their peers.

While students did coordinate social activities with friends and family via mobile phone, this was generally done in the wider context of face-to-face communications. As such, pre-negotiated meanings and understandings were layered upon mobile literacy practice, most aptly seen when students 'pranked' their parents (which, as discussed, saved money). The text that comprised this literacy practice contained scant meaning – only the name or number of the missed call – so the majority of the weight of meaning was carried by previously negotiated or common understandings. Josh pranked his parents when he was ready to be picked up from somewhere or wanted them to call him:

> I need…yeah…need them to call. My mum does it, 'cause she
> gets free calls and her boyfriend rings her and then hangs up and
> then she'll call him back 'cause she gets free calls.

<div align="right">Extract 6.5 (Josh)</div>

The shifting of responsibility for contact was not just based on financial capability (see section 5.5.2), but upon negotiated status within the relationship. In functional uses, prior discussions meant that the meaning of 'pranks' are contained in a string or history of related discussions and understandings between sender and recipient. Their effectiveness in functional terms was heavily dependent upon the relationship between sender and recipient, author and reader, as well as the immediate physical context of the communication.

At the heart of mobile phone based socialisation is the possibility of any individual being constantly contactable. As was discussed in chapter 2, this is both an advantage and a problem (cf. Levinson, 2004). An important component of effective mobile technology use then, is the management of the constant potential of communication: this created a tension in negotiating different social connections on a continuous basis.

6.4   Managing Perpetual Contact

The capacity to be constantly contactable has both its opportunities and problems: it presents as both a blessing and a curse (see Levinson, 2004; Haddon, 2005a). The vexed position of mobile devices at Riverton High presented the participants with challenges around perpetual availability. Two stories – Sarah's and Bailey's – stood out as having significance for this dynamic around maintaining social capital.

It is in the moments of disconnect and difficulty that the comfort found in constant contact can be revealed to the young person as a type of surveillance, which can be impossible to escape: a mobile-mediated dialogue which is inescapable. Sarah's particular disconnection was useful for understanding this. Through her extended disconnection from mobile technologies, Sarah came to appreciate the freedom she gained from being out of contact with her parents: she now had a

relative freedom where she could be out of contact from her parents, whereas when she had her phone, this was not the case. She admitted that having freedom from constant contact by parents gave her a feeling of freedom from control and supervision:

> Well a mobile phone I don't really…it doesn't really bother me if I have one or if I don't have one… like when I had one, my parents used to ring me all the time…like *all the time*…and I'd be at my friends house and they'd ring me that night, and they'd ring me in the morning, and then they'd ring me in the afternoon, and I'd be like "Go away!"

<div align="right">Extract 6.6 (Sarah)</div>

She continued on to talk about the advantage of not even being *potentially* contactable: that when she had a phone, she would get in trouble for *not* answering it when her parents called. It was only in the absence of her mobile phone that she came to appreciate the freedom that she gained from being out of contact, so her parents couldn't continually monitor her activities. This resulted in a curious situation, where her parents were encouraging her to get a phone again, an experience that plays against the wider public discourse that parents are against mobile phones, while kids are for them. Interestingly, this did not seem to impede her peer-interactions, and throughout the research, she displayed a disinterest in being re-connected. Even in 2008 when one of her friends 'gifted' her a second-hand phone, her attitude to this device was out-of-step amongst her peers, and she was in no hurry to buy a charger so she could use the phone. The removal of mobile contact – both in its advantages and disadvantages – resulted in a revelation not just of what was gained through mobile phone use, but what was also lost. To maintain social capital Sarah indicated that she turned to other technologies: 'I think you can live without a mobile phone. It's called internet and home phones!' However, the prevailing expectation amongst the participants in the study was of being constantly contactable.

Whilst Sarah's situation – not having a phone and not feeling socially excluded either – may problematise this notion (she said she never felt excluded), what may be inferred by one of her friends 'gifting' her a phone (Haddon, 2003), is other people in her social network felt her absence more keenly. In not having a

phone of her own, Sarah had been absent from contributing to the social capital of her network around their mobile technologies, a universal practice among the rest of the participants. The fact that one of them felt a gift of a phone was necessary, suggests the importance of having a mobile phone for contemporary youth socialisation. Sarah had effectively lost symbolic power in not having a mobile phone – and she would not have realised what she had been missing out on – something which her friends, in order to maintain the symbolic value of their collective social capital, could not continue to condone. Whilst Sarah did not feel that she had missed out on anything, perhaps her friends thought differently.

The strong desire to be perpetually in contact with family was typified by Bailey's use of a second phone – owned by and in the name of her parents – on which she only made phone calls to her parents. However, she also spoke of the disadvantage of mobile technologies in terms of social capital, in that being constantly contactable, meant that you could not 'digitally' get away from undesirable contacts:

> There's like people that call you up. I had this time one time that people…like there was a guy that like, really liked me, and I thought he was feral…and it was just like, he'd always call me, all the time, and I'd be like: "Oh sorry, my mum's calling me for tea" … stuff like that.

<div align="right">Extract 6.7 (Bailey)</div>

This illustrates a situation where the social capital appropriated via the potentially constant communicative capacity offered by mobile technologies, can result in undesirable, or unwanted social connections. Managing these social connections effectively then becomes important for a concept of mobile literacy.

6.5   Social Capital & the 'Monopoly-Membership Dynamic'

The central and significant feature of social capital associated with the participants' mobile phone use, had to do with network choice. As examined in the previous chapter on economic capital (see section 5.7), every participant in this study was with Telstra. While cost was an important factor in this choice, this was linked

inextricably to the fact that the majority in the larger Riverton community were also with Telstra. This was also determined by infrastructure (objective cultural capital), which is examined in the next chapter (see section 7.4). To have social interactions via mobile phone, thereby contributing to and drawing from collective social capital, it is first necessary to have a connection: Telstra had the widest network. However, it was more than pragmatic concerns about coverage that structured individual preferences for Telstra; social relations were also vital. When asked about how she decided on which phone company to connect with, Bailey replied: 'just 'cause everyone else had Telstra'. If someone was with another Telecommunications provider, they were more expensive to contact, and as Josh, Peter and Tom explained, contact with these people was avoided or minimised.

Not being connected with Telstra resulted in a type of social exclusion, rendered by the importance of cost-control. As both Sarah and Josh indicate, Telstra membership is presumed for anyone wanting to be involved in social interactions:

> Yeah. It's either … *Telstra*, *Telstra*, *Telstra* or, if you're really stupid, *Optus*. Like, my sister: I told her not to get *Optus*.

> Extract 6.8 (Sarah)

> If you're not with *Telstra*, you're pretty much a loner. Like … everyone's with *Telstra* round here.

> Extract 6.9 (Josh)

Other participants elaborated about the possibility of social isolation for people who were not with this carrier, and in some cases, spoke about connection with another carrier as being an indication of a lack of social understanding: Sarah is quite fierce in her assessment of her sister's choice of Optus for instance (Extract 6.8). Peter spoke about not talking to a girl he had met, after unintentionally spending a lot of money on txts to her, not realising she was not with the Telstra network (see Extract 5.9). It was therefore, always better – but not always possible – to know who the message recipient was connected with. Among the study participants, the expectation was that recipients in Riverton were with Telstra.

When it was known that the recipient of a communication was with another telecommunications provider, different strategies were employed, including the avoidance of contact. Jennifer explained the impact of known cost on txtng:

> If I'm txtng someone that's not on *Telstra* pre-paid, so they're not
> 1 cent, I'll make sure that I keep the message under…like, to one
> message.

<div align="right">Extract 6.10 (Jennifer)</div>

There is however, no indication that 'keeping it under one message' resulted in the use of 'SMS-language', and even if there was, this would have been an aberration; a step back to a by-gone practice that the combination of cheap SMS and predictive txtng, had rendered unnecessary for the study participants.

In effect, being connected with Telstra has come to represent a kind of social capital for the adolescents of Riverton. It is not enough to simply have a mobile phone, or a particular kind of mobile phone, but more importantly, one must be connected to the Telstra network. Lack of membership with Telstra is positioned as something for the marginalised or the 'Other', as Owen suggests when discussing who is and who isn't with Telstra:

> I've seen a lot of foreigners come to *Safeways* and they buy *Optus*
> [phone] recharge … like, I don't know how they met … where
> they got *Optus* from, but … nearly all of them buy *Optus*
> recharges so…

<div align="right">Extract 6.11 (Owen)</div>

Without Telstra membership, the individual is excluded from membership of social networks associated with mobile communication. Whilst they may still be in the social loop, and still be able to access social capital associated with friendship or acquaintance groupings – Sarah did not feel excluded, despite not having a phone – they are marginalised in the increasingly important field of mobile-technology-mediated capital. A phone connected with a different telecommunications provider did not provide effective access to social capital (as action or potential) that membership of the Telstra network did.

6.6   Social Capital & Social Coordination

Participation in the 'monopoly-membership dynamic' influenced a culture of SMS-communication, and resulted in not only the maintenance of social capital, but its intensification and extension. This was connected with the coordination of real-life social interactions and the negotiation of friendships.

As an addition to the intensification of emotional attachments that the mobile phone entails, research has also demonstrated an increased capacity for social organization, at the 'grass-roots' level (see section 2.3.2). Building on the concept of the phone tree, mobile phones and SMS communication enables the wide dissemination of information to a wide variety of people quickly, directly and on an almost viral basis.   These behaviours are behind what Rheingold (2002) terms 'swarming', a form of social coordination which gains a strength of immediacy due to the connection of mobile technologies to individuals, rather than to particular locations (such as a desktop computer or landline phones). The power of the 'mobile many' offers a demonstration of the way in which mobile technologies facilitate the exercise of symbolic power drawn from social capital associated with these mobile networks:

> Individual members of each group remain dispersed until mobile
> communications drew them to converge on a specific location
> from all directions simultaneously. (Rheingold, 2002, p. 162)

Rheingold illustrates a number of political events where the networking potential of mobile technologies have played a central role, including: the outing of the Estrada government in the Philippines, the organization of protests at the World Trade Organisation meeting in Seattle (November 30, 1999), a September 11 blocking of fuel delivery at service stations in Britain as a protest against fuel prices (September, 2000), roving journalists-researchers covered a violent political demonstration in Toronto in 2000, and the bicycle activist group 'Critical Mass' using mobile phones to organise moving demonstrations in San Francisco since 1992 (2002, p. 158).

The concepts of 'micro-coordination' and 'hyper-coordination' developed by Ling and Ytrri (2002) to describe social practices around mobile technologies, offers

an insightful perspective from which to understand how social practice is utilised and realised by the adolescents in this study, as part of their literate social practices. 'Micro-coordination' is best understood as the mundane coordination of everyday life, whilst 'hyper-coordination' adds an extra emotional dimension.

When discussing the importance of having a phone, Bailey overtly linked her use to social networks and social practices linked to individual dispositions:

> It just depends what your social spheres are like. Some people, they're more so into work or, some people are for work and just social. So, just depends what you really are really.

<div align="right">Extract 6.12 (Bailey)</div>

She made a clear distinction between the uses she made of a phone she was lent by her parents – only for calls to them – and her phone, which she used for all other communications, mainly with friends. A key component of accurately using social capital for coordinating purposes was utilizing appropriate contacts for appropriate purposes. Tom explained his selection of contacts:

> CT: You said had about 120 and … people you call often, well, probably 30 or 40.
>
> T: 'Cause like, you've got to have the numbers for just like say, you need a ride to footy or cricket or something like that and you don't, like, talk to them all the time, you just have their number just in case and that.
>
> CT: Yep. And you … and the people you talk to on a daily basis … perhaps only txt 3 or 4 people?
>
> T: Yeah, that's about right. I txt Peter when I need something.

<div align="right">Extract 6.13 (Tom)</div>

Here Tom differentiates between contacts, distinguishing between functional connections for the coordination of his social life and closer connections that contain an emotional element; without prompting he designated 'micro-coordinating' practices as drawing from a wider social network than 'hyper-coordination' practices. This reflects Ling & Yttri's (2002) concepts.

The rich density of mobile technology uses – specifically the mobile phone – for coordinating processes, was revealed throughout observations, after being initially raised by interviewees. While it was not uncommon to see students walking around the school-yard, txtng while on the go, particularly during allocated recess and lunch breaks, the use of phones seemed to take on an increased intensity after the final bell had gone and students were headed towards school exits. My observational notes are peppered with examples of students txtng and walking, but these intensify after school. The following cover a 10-minute period after school on a single day:

> 2 females students exiting the locker bays, closing phones – had they just sent texts or made phones calls?
>
> 2 females students walking and talking on phones (separately – i.e. they were not together);
>
> A female student walking through the ½ crowded and emptying locker bay, txtng;
>
> A male student (yr11/10) standing near the outside of the locker bay, chatting on his phone (Peter);
>
> A student waiting for a bus, talking on a mobile phone;
>
> A male student, walking towards the bus area and txtng on his phone – looking up/looking down;
>
> Students waiting in the bus area, operating phones before them (txtng?) – at least 5 independent students witnessed;
>
> A female student operating a phone and standing with a group of other students – they disperse by the time I pass them.

<div align="right">Extract 6.14 (Observations)</div>

These brief observations were made in the time it took the majority of the school grounds (except for the bus area) to fully empty of students. Txtng whilst walking indicated particular prioritisations, either immediate, or up-coming. Bailey and Jennifer might term it basic 'multitasking', but txtng whilst walking spoke to the very heart of the nature of mobile technologies: the very notion of mobility. The fact that many were engaged in communication which primarily *appeared* to be SMS, stretches notions of social connections further away from face-to-face, or two

individuals at fixed locations conversing. The locus for communication with the social group becomes located at the level of bodily and digital hexis, which moves.

The involvement of mobile phones particularly in the coordination of social interactions though continuous negotiation, is effectively explained by Ling and Yttri's (2002) concepts of 'micro-' and 'hyper-coordination'. I now consider these constellations of practice in more detail.

6.6.1 Social Capital & Micro-coordination

Mundane coordination was a vital aspect in negotiating the lives of the study participants. Many students at the high school lived out of town – over fifty per cent of the participants in this study – and with limited public transport, and for students unable to drive cars, coordination around transport issues are vital for social interaction (see Paragas, 2005). Although adolescents living out of town had access to a school bus, this was restricted to certain times, writing against the discourse of 'anywhere, anytime' communication, and the emerging social practices of 'just-in-time' information and negotiated social practices; the buses only ran in the morning and afternoons of school days, and only on certain routes. This meant that for things such as employment, sports, meeting up with friends, going to parties, etc., coordination of transport issues was vital.

'Micro-coordination' is a way for understanding the use value of social networks, and their ability to be realised as having exchange value – understood as capital – at the level of everyday practice.

> With the rise of the mobile telephone, the communication and coordinating potential of telephony has entered a new era. Previously, coordination involved the direction and control of transport from geographically fixed terminals or nodes. Mobile telephony means that these stations are becoming less necessary. It is this notion that has given rise to the idea of micro-coordination, which is the coordination of interaction without the need for larger nodes or centralized bases of operation. (Ling & Yttri, 2002, p. 143)

The concept of 'micro-coordination' has been utilized by researchers in a number of ways. For example, Colbert utilizes Ling & Yttri's concepts of 'micro-' and 'hyper-coordination' in developing his concept of 'rendezvous':

> Rendezvousing, here, is the informal co-ordination of a face to face meeting between friends and family. The purpose of rendezvous is to come together to participate in a subsequent activity, such as to 'watch a movie', or to 'have lunch'. (Colbert, 2005, p. 451)

Colbert's concept then, whilst drawing on 'hyper-coordination', is more closely aligned with the concept of 'micro-coordination'. The involvement of mobile phones in social coordination of meetings and transport, resulted for participants in social interactions that were often negotiated, often on an on-going basis, as opposed to planned in detail in advance (see also Paragas, 2005).

Unidirectional 'micro-coordination' involved the sending out of information to recipients about an event, without the social expectation of a reply, but at times with an implication that the message may be passed onto others. At Riverton High I observed and was told about 'micro-coordination' in action when students txt each other about a fight that is going to happen, or is happening. In this way, others are able to be alerted to the fact that something is happening that they might be interested in seeing. There is no expectation of a reply in these cases, merely that you might turn up at the event. There are clear parallels with the 'swarming' teens Rheingold (2002) observed in Helsinki. However, in this instance there was bleed-over into 'hyper-coordination', as the sharing of a message about a fight is based upon the assumption that this is a valued activity for the social group. Therefore, teachers and other adults were typically screened from such messages.

The more common form of 'micro-coordination' among the participants was multi-directional. In this case, two or more people hold an asynchronous communication, which involves meetings and arrangements for events. Given Riverton's rural location, socialising with friends on a face-to-face basis needed organization and negotiation.

> Oh, if I want to go to a party, I've got to organise like…I'll message my mate: "What time you coming over?" and stuff like that… "How you getting there?"

> Extract 6.15 (Josh)

There were cases where it was not always needed, such as for Jo, where she claimed she would just txt friends to say that she was coming to visit or stay the night. This interactive form of coordination was also indicated by a number of students as being used in the school grounds at times – being large and spread out – to find out where peers were during the school day, if arrangements had not been made beforehand. The function of this – as opposed to 'pranking' – was to orientate and organise social interactions on the school ground, although other students did express distaste for the idea.

The asynchronous nature of SMS made it a preferred medium for communication practices in rural areas where reception could not be relied upon. When he travelled to a town two hours away by train, Josh spoke of the frustration of trying to communicate via SMS, due to the sporadic telephone coverage:

> You'll get it in bits. Like, you'll send a message and it won't send, and then when you get into range it will send. The next time you get range you'll receive one.

> Extract 6.16 (Josh)

 However, it remained the only way of socialising whilst moving, with phone calls not a reliable option.

However, with 'micro-coordination', at times, when clarity was important, synchronous communication was necessary, and a phone call was the preferred option. Tom gave an example of this when talking of organising transport for cricket training and games, where synchronous communication also gave certainty that a message was received and understood:

> Sometimes you're better off to hear it through voice than text, because, if you send a text at say twelve o'clock, they mightn't get it 'till quarter-past or something like that."

> Extract 6.17 (Tom)

The immediacy of synchronous communication allowed for a certainty of understanding, and the ability to quickly check facts. This was not always possible, due to reception problems: Tom's cricket games were often played far from Riverton, where there was limited reception, making the use of SMS in a 'just-in-time' manner, unreliable.

6.6.2 *Social Capital & Hyper-coordination*

'Hyper-coordination' emerged as a far more important concept for the articulation of social capital. Whereas 'micro-coordination' had a clear functional and pragmatic value for social connections, it is through the process of 'hyper-coordination' that social capital gains its true conversion potential into symbolic power. 'Hyper-coordination' is the process whereby meanings associated with mobile technologies for a particular group are negotiated and the practices determined, whereby social capital is maintained through individual contributions.

> The device is employed for emotional and social communication…. The second aspect of hyper-coordination is in-group discussion and agreement about the proper forms of self-presentation vis-à-vis the mobile telephone – that is, the type of mobile telephone that is appropriate, the way in which it is carried on the body and the places in which it is used. Thus, hyper-coordination encompasses instrumental and expressive use of the mobile telephone as well as strictures regarding the presentation of self. (Ling & Yttri, 2002, p. 140)

Whereas 'micro-coordination' focuses on the functional uses of mobile technologies for social interaction – including the softening of time and space – 'hyper-coordination' is linked to the process whereby individuals contribute to and draw on social capital they have access to. Effective 'micro-coordination' in essence required that an individual had contributed to the development of social capital with individuals whom they are coordinating with. This can be in formal ways such as sport team-membership, such as Tom and Peter needing to organise car rides with team mates for their respective sports. Or it can be linked to pre-established networks, such as with family; participants indicated they used their phones to

coordinate transport with parents. However, the link between 'hyper-' and 'micro-coordination' suggests that the relationship to social capital is far more complicated.

'Hyper-coordination' offers a way in which individuals can make contributions to social capital, which can be then drawn on in a functional way to coordinate social interactions ('micro-coordination'). This is part of the social rituals that allow individuals to contribute to and draw on social capital associated with mobile technologies (Ling, 2008). 'Hyper-coordination' also influences the structure of social capital in that it encourages the intensification of social relationships, which as discussed above, is a particular feature of emerging mobile communication socialisation (see section 6.3). Whilst some students – such as Peter – engaged in exchanging texts with many other people, other Riverton students restricted their social group for interaction, such as Erin limiting her friend contacts to five, through her phone contract choice. As such, while Peter was involved in reinforcing social connections with a wider range of contacts – even if it was just the occasional joke txt – Erin focused her emotional connections to a much smaller group of family and friends. These social network arrangements speak to the social capital that individuals seek to establish and maintain through contributing to the social capital of different groups. Peter was a more extroverted, 'popular' student than Erin, who was introverted and quiet, perhaps meaning that he had a wider social network to maintain and 'groom' with 'gift giving' (Johnsen, 2003).

'Hyper-coordination' also allows an examination of the nexus point between social capital and other forms of symbolic capital.

> There were also strictures regarding the style and modes of use.
> For this group the importance of the system was far more central
> than for the older groups. (Ling & Yttri, 2002, p. 147)

The publication of fights via txtng is not just an example of 'micro-coordination', but has links to identity through the social networks that students belong to. Is the recipient someone who is disposed to go and watch a fight? Most students acknowledged that txtng about the where and when of fights was something they had experienced, but not something that they would necessarily follow. The sender of the message and their relationship to the recipient would act as a mediating factor in this decision-making process.

Social capital concerning mobile technologies was important in effectively negotiating costs associated with mobile technology use (see section 5.5.2). At the peer-group level this manifested as the sharing of digital texts, the sharing of credit and the sharing of information about mobile technologies (see 5.5.3). This resulted in 'hyper-coordination' in that the group identity and communication narrative structures mobile technology uses in some ways. As an example, it has been indicated that all students in this study expressed distaste for 'SMS-clubs' as a 'rip off', or as essentially too costly (see section 5.5.2). The point of interest here is that for many of these students, their attitudes to these clubs were formed on the basis of anecdotes and testimonies from friends (Bailey), as well as some individual experience which they shared with others (Rebecca).

Mobile technologies formed an important part of social discourse amongst the adolescent students of Riverton High. Whilst some students indicated that they conducted their own investigations into mobile technologies (e.g. Jennifer, Peter), the majority indicated that talking with peers was an important source of information about these technologies (e.g. Josh, Brad). Seeking advice from parents – and thus running against the concept of the digital native/digital immigrant divide – was also a feature in the experience, through Bailey and Jennifer's testimony. Students were also actively involved in swapping and lending technologies to each other, especially where this did not involve any financial cost (Rebecca). It was not an uncommon sight around the school to see two students sharing an MP3 player, each with one ear-plug in, or to see students handing their phone to another, or gathering around a device to share digital content. This manifestation of embodied cultural capital was however strongly connected with the peer-group, and in strengthening social relations through social performance: the sharing of devices was one way in which friendships could be demonstrated, maintained and strengthened. Tom and Peter's experience with their friend frequently asking for them to send him credit (see section 5.5.3, Extract, 5.11), demonstrated someone using their social capital, but in such a way that it did not effectively realise symbolic power: both Tom and Peter expressed disdain for this behaviour. Financial contributions to the collective social capital, was expected to be reciprocated, as Brad did when he got his new Next-G mobile phone. This only seems to have been the prevailing trend *within* the peer

group though: in general, adults who shared social capital with the adolescents (parents) were expected to bear a greater financial burden for communication, as indicated by the use of such practices as pranking by Riverton's adolescents, as a way of prompting parents to call them back.

Even texts apparently empty of explicit meaning, such as pranking, were used for emotionally-based communication. Aside from the functional use of pranking, there was an expressive use, designed to get others into trouble in class. While Tom was the most enthusiastic proponent of this activity, Peter also explained that it was something he too had once participated in. Here, pranking acts as a kind of 'ritual interaction' (Ling, 2008) to contribute to and rearticulate social capital, through connection with others. As Peter puts it:

> Or just to make them look and think "Oh, someone's calling me"
> or "Who is it?" if you put it on, like, private.

Extract 6.18 (Peter)

Once linked to social relationships outside the actual 'prank' text, here it performed a social function expressing a connection of friendship or acquaintance. Peter indicated for instance that Tom did it frequently, which he found irritating. This practice formed part of Tom's identity within his social group, allowing him to make a contribution of sorts to the multimodal discourse of the group. This 'pranking' as fun, to get people in trouble in class, or just to see if they can do it before the phone is answered, might be understood as a form of 'digital horseplay' though no doubt, at times and in particular situations, it might be understood as a form of 'cyberbullying'. The gap between the intention of 'articulation' (Kress, 2003) and the receptive 'interpretation', can sometimes be wide on the basis of misunderstanding where individuals do not share social capital.

Students could also prank using the Bluetooth feature on their phone, though it was not called 'pranking'. The principle is the same – getting someone's attention via a medium that is free (an unanswered call or a Bluetooth message), but the density of the modes used was different. As Tom indicated during his third interview, whilst 'pranking' is just the record of a call, Bluetooth pranking involves: 'You just send 'em random stuff … Porn.' Obviously however, the ability to

'misread' a pranking text, or to read a pranking text in a particular way – to laugh or be offended – depends upon the relationship with the sender. A prank in class from a friend has a different message than from a stranger. The relationship between sender and recipient can be utilized as a form of social capital in this way only if there is a joint understanding. Pranking strangers using Bluetooth obviously has great potential for misuse and abuse, as Tom alludes to in sending 'Porn' to others.

The use of mobile technologies to contribute to and draw on social capital doesn't just have an impact on social organisation and coordination, but upon the literacy practices that occur. Particular modes and mediums were negotiated at the peer-group level, which were valued as part of social interaction, linked further to economic and cultural influences.

6.7   Social Capital & Modal Preference

In line with their limited access to economic capital – a common feature of youth txtng culture globally – interaction with friends and social groups was largely conducted via SMS. Such social behaviours have resulted in terms such as 'thumb tribes' or 'thumb culture' (Glotz, Bertschi & Locke, 2005) being used to describe participating groups. The successful use of social capital was dependent upon social relationships between the sender and the recipient, and the use of appropriate mediums for communication. Modal preferences for SMS were written against the backdrop of almost universal connection with Telstra's pre-paid '1-cent-txt' plan. In this way, effective membership of the social group, and the effective utilization of that membership, was predicated on the shared understanding of the requirement for cheap communication.

Social capital at the level of the peer-group is also influenced by the type of objective cultural capital that the individuals within that collective have access to. As pointed out by Owen, this has an impact on mode and medium preference: 'If everyone had really good phones, I could probably email'. Peter had a similar experience, where he bought a Telsta Next-G phone, and looked forward to having video-calls, but the only person he knew who had a compatible phone and could afford the associated costs was his aunt. The accumulated objective cultural capital

within a social network – influenced by the restricted economic capital of adolescents – had a deterministic impact on the modes which Riverton youth used for meaning-making. As Owen acknowledged, even though he would like to send email, this possibility was marginalised by the cost and the fact that many of his potential recipients had phones that lacked this capability. The shared experience of limited financial resources amongst peers resulted in social capital being maintained through the common cheapest medium of communication: SMS.

Where cost and communication were not an issue, students were active in their sharing of digital content with friends. Not only did the exchange of numbers and credit signal connections, but the sharing of texts – such as listening to music together on an iPod – was a common form of social interaction. Bluetooth was used for sharing files, mobile-to-mobile, whilst content was also downloaded off the internet (Owen) or individually created, such as Peter's videos of 'mucking around'. At the level of lived social interaction, an absence of cost factors enabled students to freely share rich digital content with each other – primarily videos and music – either through digital exchange, or simply watching the same device together. As multimodal objects for meaning-making, it quickly became obvious that for the participants, mobile technologies are actively used in the performance of social interactions.

The other important communication medium for social capital presents as a form of 'textual absence', relying on a multimodal and continuous dialogue between participant and sender. Pranking contains no overt meaning in the message itself – it is just the record of a call – but relies entirely for its meaning, for it to be 'read' effectively, on the nature of the relationship between sender and recipient, much as Ling (2005) points out that SMS messages must be read as part of a string of conversation and interactions. Participants used pranking in functional ways as a form of 'micro-coordination' – txtng parents when they needed to be picked up or so they would be called back (Josh, Owen, Erin) – but also using it in more symbolic ways, as a way of showing someone that they were thinking of them – such as Tom 'pranking' people in class. The key to understanding the relationship between pranking, social capital and literacy practices (in terms of this being a modal preference, or non-preference), is that the meaning of this text (the record of the call)

is linked to the narrative wherein the social capital is maintained. In the case of 'micro-coordination', there needs to be a prior understanding – long-standing as between parents and children, or related to specific occasions – for the actual 'prank' to have any functional meaning. Otherwise, the recipient may not know why they have been called, and wonder what they are to do next. Likewise, in the context of 'hyper-coordination', where the meaning of the text can be more symbolic, the interpretation relies on a pre-established relationship, and is written against the discourses of those particular social groups. Many students in this research for instance indicated a distaste for 'pranking' for fun, though some indicated that they had done it in the past. Though in line with Thompson's concept of 'squillo' (2005), these symbolic connections, devoid of any explicit meaning, may imply or write a meaning in terms of the relationship between sender and recipient.

Peter made particularly interesting use of SMS as an alternative form of pranking, akin to teasing friends. He related how he would send multiple messages to particular friends as a form of social interaction.

> CT: So the SMS jokes still go around?
>
> P: Yeah pretty much. If I'm bored one day, I'll just send like 50 of them to piss off someone or…
>
> CT: Just to one person?
>
> P: Yeah.
>
> CT: *[laughs]*
>
> P: Mainly Richard, 'cause he gets real cut when you just send him…just random messages.
>
> CT: Can you send like a whole lot of bulk…send them in bulk so they just get message-message-message-…?
>
> P: Yeah. And it wrecks heaps of people's phones if you just keep sending them and sending them and sending them…freezes them up.

<div align="right">Extract 6.19 (Peter)</div>

Peter's digital horseplay – in 'crashing' a friend's phone with too many messages – presents an example of how socialisation using mobile-based texts is connected to the collective dispositions of particular social groups. In their interaction with

friends, in both real and digital life, Peter and Tom engaged in stirring and 'fooling around' with friends, often taking the form of physical tustling in the school grounds. Peter's digital manifestation of this group dynamic demonstrates how he has adapted a particular medium, and articulated it in a innovative way. It was only the social capital he and 'Richard' shared that meant this practice was seen as playful rather than malicious. The meaning of the articulated texts (overly numerous SMS messages) has a connection to the nature of social capital for particular groups: in Peter's case, the positive value placed on teasing as a part of interactions with peers. The pervasive use of SMS among the study participants generally demonstrated a distinct preference for a medium valued by the social group.

The naturalness of SMS as a communication medium for social networks amongst peers – though not necessarily with parents (as many students indicated that they did not txt their parents) – has resulted in a conflation of 'SMS' and 'chat' as distinct modes for these particular students. This is an indication of 'mobile habitus' structures (see sections 2.5.2 and 4.4.4): the melding of modes for communication. A number of students spoke during their interviews about SMS as 'chat', and it was frequently indicated by participants that they txted frequently: 'chatting' with friends consisted of more than just one text, but instead many linked messages (Josh).

Whilst there was not a strong connection between social groups and the linguistic features of SMS messages sent – use of predictive txtng being more a predictor of the use of 'SMS-language' – there was due consideration to the clarity of messages. Erin, for example articulated a connection between her use of unconventional language features in txt messages, and communication with friends. Essentially, there was no manual on how to create SMS messages, and she did not use messaging programs on the internet, as she did not have it at home (instant messaging being a possible place where txtng language emerges and is learnt). Instead, Erin learnt through a kind of linguistic apprenticeship with her friends who were also using these new text genres:

> Like, when I received SMS's you sort of try and figure out what
> the word means, and if you don't know, you ask them, and stuff
> that … otherwise, yeah, you sort of do it yourself I guess.
>
> Extract 6.20 (Erin)

Erin locates this experience of learning to use txt language within the realm of personal experiment with language through social interaction. Basic and tacitly understood rules of language form the basis for developing skill with this genre, and as Crystal (2008) points out, there is no point writing an SMS if it cannot be understood.

The particular Telstra monopoly arrangement that presented itself in the experience of Riverton adolescents demonstrated a dynamic relationship between social and economic capital concerning mobile technology use (see sections 5.7 and 6.5). The majority connection to the '1-cent text' plan resulted in social interactions based on a rich SMS-ing culture. By contrast, Erin's particular case demonstrates a situation where an individual seeks to control their economic capital through the restriction of her social networks. In this way, her membership of her peer-group becomes somewhat limited by her own design. The pay-off is that she opens up richer routes of communication with her selected-peers. A dynamic connection between economic and social capital either enabled or restricted rich digital content for meaning-making.

The peer-group level plays a significant role in influencing the modes and mediums for communication. However, the value of social capital accrued and maintained through mobile technologies tends to have limited symbolic value at the school level.

6.8   The Symbolic Value of Social Capital

The most important aspect of how social capital is utilised for literate practice with mobile technology relates to how this capital is transformed into symbolic capital at the level of everyday social practice. It is not enough that an individual has a phonebook full of names and numbers, what is more important is how these networks of friends, colleagues and acquaintances are utilised. It has already been discussed how the rural context of these students' experiences, require frequent negotiations on issues of 'micro-coordination' (see section 6.6.1). However, it is only if these negotiations are done effectively that symbolic capital is achieved.

Txtng someone who just can't help in a situation is a clear example where social capital is not effectively utilised in its symbolic form.

For the study participants, mobile phones in particular form an essential part of their socialisation, both with family and friends. They didn't employ significant discrimination skills with regard to their contacts. As most contact was with known individuals and for relatively mundane and personal tasks, such skills were generally not necessary. The structure and nature of social relationships had an influence on the types of communications that occurred. While financial cost was still a factor, who the recipient was and the nature of the communication was also important to the nature of a literacy practice. As physical objects, these devices are also interwoven throughout the social interactions of individuals with their peers, meaning that not even the individualising iPod is free from the impact of others. Because mobile technologies move with people throughout their everyday lives, they are necessarily involved as a tool of social interaction.

However, in terms of being recognised as symbolically valuable at the institutional and official school level, the capacity of mobile technologies to contribute to and draw on social capital is largely unutilized. Whilst at the peer-group level social connections and their maintenance retain symbolic value – as long as you're with Telstra – this does not translate to the classroom. It is a further example of the 'digital divide' (Buckingham, 2007) that separates the everyday adolescent world from that of school.

******

In this chapter I have examined how social capital structures literacy practices around mobile technology uses. This has been substantially influenced by the changes to social capital enabled by emerging technologies, particularly the mobile phone. Phonebooks present an example of the embodiment of social capital, but of more significance is an individual's participation in the development of

cultural-capital through 'gift-giving' (Johnsen, 2003) and 'ritual interaction' (Ling, 2008). Social capital also has an impact on the structure of literacy practices through the strengthening of social connections, the management of the potential of constant contact, and social coordination. The processes of 'micro-coordination' and 'hyper-coordination' (Ling & Yttri, 2002) played a significant role in the study participants' literate lives, with different communication patterns for different audiences and purposes. Social connections and the nature of those relationships had an impact on the inculcation of attitudes and on-going behaviours associated with preferences for different modes and mediums of communication: SMS was strongly encouraged amongst peers, whilst pranking relied on prior-understood meanings. The value of symbolic capital for literate practice using mobile devices does not translate cleanly to current educational practice though. This disjuncture between out-of-school and in-school worlds where digital technologies are concerned is further exacerbated when cultural capital is examined.

7

Mobile Cultures & Meaning-making

CT:	So, is it actually essential to have a phone?
J:	I think it is. Like, the pressure's there. Like, if someone said they didn't have a phone, you'd be like: "Oh, okay …"
CT:	I've seen a few student s around who don't … is there … what kind of attitude is there amongst everyone to them?
J:	Oh, just that you'd probably end up feeling left out. Like, you'd feel more sorry for them … more than like, abusive towards them.

<div align="right">Extract 7.1 (Jennifer)</div>

This chapter explores the value of mobile technologies and the practice of using them in terms of two different forms of cultural capital: objective and embodied (see section 4.4.1). The pervasiveness of mobile technology discourses is examined through consideration of a number of artefacts, student attitudes to and beliefs about mobile devices. Objective cultural capital is defined as the physical and digital cultural resources (devices and texts) associated with mobile technology use.

In this form, mobile technologies carry an inherent meaning, connected to cultural discourses. However, it is how this form of capital is used that results in the embodied form of cultural capital. Part of this involves being connected to the right mobile phone network, thereby strengthening participation in the 'monopoly-membership dynamic' (see sections 5.7 and 6.5). Literacy is involved in this system of exchange in the utilisation of cultural capital to 'articulate' particular meanings, using a range of modes and mediums. How mobile technologies are related to the 'articulation' (Kress, 2003) of meaning is examined in terms of txtng and the negotiation of values around usage patterns at the peer group level. The significance of the participants' use as part of social practices – as mobile physical objects – is examined in relation to identity and the sharing of 'sensational texts', as performances of particular literacy practices. I then examine the relationship between embodied cultural capital and choices of modes for meaning-making and how this can be understood in terms of patterns of dispositions towards the 'articulation' of meaning using these devices. The interpretation of mobile technology practices in terms of their symbolic value within educational fields is examined in the next chapter (see chapter 8). The focus at this point is how the study participants used these devices to 'articulate' meanings (in both objective and embodied forms of cultural capital) in ways which were valuable primarily in terms of their peer-group and adopted cultural discourses.

Since the mid-1990s mobile technologies – particularly the mobile phone – have become an integrated and pervasive part of contemporary lifestyles and cultures. Not only have references to these devices and their use infiltrated popular culture, but engagement with them has resulted in changes to cultural norms around human behaviour and communication patterns (see chapter 2). Of specific concern for even the most traditional literacy scholars and linguists are the changes to written language.

A vital component of this critical ethnography is an examination and consideration of the cultural discourses around these technologies, in relation to the practices of the adolescents at the heart of this investigation. As such, I became keenly – almost obsessively – aware of language and references to mobile technologies that pervaded the spaces I travelled through (both digitally and

physically). This was primarily in lieu of the fact that I could not pragmatically inhabit the same spaces and experiences of my subjects and therefore could never completely inhabit their experience of the cultural values associated with these technologies and their use. In seeking to contextualise their experiences within a cultural narrative, and to build a relationship of shared experiences within the research as fellow 'digital travellers', my own observations and experiences of mobile technologies (and references thereto) provide a useful (albeit subjective) context for the consideration of the experiences of the study participants. My own observations and experiences around mobile technologies as a cultural discourse, provides a 'cultural framework' or 'cultural profile' within which the literacy practices of this project can be explored.

7.1   Forms of Cultural Capital & Mobile Technologies

This section considers the relationship between mobile technologies as objective forms of cultural capital and their 'articulation' (Kress, 2003) as embodied cultural capital through social practice. The focus here is specifically on embodied cultural capital as the 'articulation' of particular meanings connected with mobile technologies. The transformation of objective cultural capital into its embodied forms is examined using the concept of the 'Apparatgeist' (Katz & Aakhus, 2002a) and how this connects with individual dispositions. This process can be understood as the 'articulation' of meanings that are valuable at the peer-group, but not necessarily in schools. How this use can be understood as an issue of performance is explored, and how mobile technologies are used as embodied cultural capital related to modal preferences.

It must be made clear what is meant by objective cultural capital as distinct from its embodied form. While both can be understood as a form of symbolic capital (cf. Moore, 2008) – in that they have a symbolic value as part of social practice – objective cultural capital are the products of culture separate from the actions of individual participants, what Fortunati might label 'cultural artefacts' (2005a). Embodiment designates the participation of an individual at the level of bodily/digital hexis. Therefore, a mobile phone as an object can have a symbolic

value in itself (objective), but also value through the way in which it is used (embodied): sometimes these are related to each other and sometimes not. The way in which they are 'read' or 'interpreted' (Kress, 2003) is of course determined by structural elements of fields involved and the habitus of individuals: that mobile technologies augment other fields through different modes of meaning-making is of course an essential element in what might be termed being 'mobile literate'.

The creation of meaning using mobile technologies as forms of cultural capital is heavily structured by contemporary advancements in technological development, how this is domesticated by individuals, and how they are rearticulated in wider cultural discourses. The impact on cultures at large is an emerging area of scholarship and research (see chapter 2), and ethnographic perspectives have much to contribute at the fine-grained level of everyday life (see section 4.1).

> The mere possession of a cell phone is often dictated by parameters outside the respective individual: by social expectations and social controls emanating from family members, friends and peers. Similarly, the intensity of usage is at least partially independent from subjective preferences, e. g. because incoming calls and text messages have to be answered. (Geser, 2006b, pp. 2-3)

The role of mobile technologies as cultural goods, and how they are used to convey meaning at the level of bodily/digital hexis, opens up a new landscape of meaning-making possibilities using multimodal semiotic resources. Cultural capital around mobile technologies concerns the ways in which they are 'articulated' for the purposes of meaning-making. The transformation of this cultural capital into symbolic capital concerns the way in which those 'articulations' are 'read' in relation to rules of distinction of particular fields: the 'interpretation' of meaning (Kress, 2003) in other words.

Recently, mobile technologies have taken on an important role in Australian cultural discourse (Goggin, 2008); indeed, it is arguable that worldwide mobile technologies, and the ability to communicate, consume and create information on the move, is an increasingly expected cultural discourse, or as Levinson (2004) calls it 'The Irresistible Calling' (p. xiii). Riverton, and the youth culture the participants in

Figure 7.1: 'Paradise Kidz Mobile Fones' chocolate biscuits. Shaped like small phones, the packaging replicates SMS language, and a personality – "Moby" – is created for the biscuit, making use of references to movement, connection, friends and fun. There is also reference to a web page which has games and other products on it.

this research are a part of, could best be described as a specific – albeit typical – example of how mobile technologies are increasingly an important and valued tool of culturally embedded social practice.
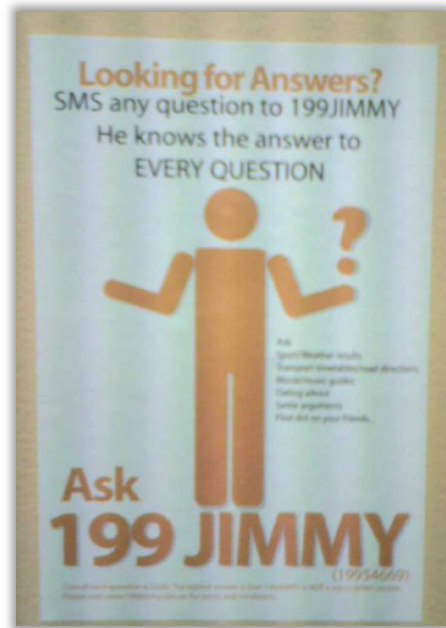
Discourses of mobile technologies are increasingly prevalent throughout many areas of Australian society. Figures 7.1 and 7.2 present visual examples of

cultural artefacts that I came across during the course of this research. They all illustrate aspects of how discourses about mobile technologies are appropriated for different purposes throughout Australian society, and help form the environment contemporary students inhabit. The particular significance of the 'Paradise Kidz Mobile Fones' chocolate biscuits (Figure 7.1) is that it exemplifies a cultural pattern of early inculcation for modern Australian students, not necessarily into worlds rich with digital technologies, but rich with hybrid and intertextual references to them. This early saturation in a culture of consumption around mobile technologies is different from the culture of educational institutions. This presents an example of Nixon's 'cultural pedagogy' (2005), where discourses about the ubiquity of mobile devices, their connection to friendship, fun and consumption, work in inculcating their target consumers (children). Mobile phones are then positioned as fun social tools, rather than in a more functional or productive position.

The various images in Figure 7.2 suggest wide dispersal patterns for references to these technologies which adolescents live amongst (though not necessarily the participants in this study). They are an illustration of the extent to which mobile technologies are appropriated for various literacy practices. These were all items displayed in public places, and specifically, places young people might inhabit. The public KFC sign unashamedly appropriates a language form similar to SMS – 'U' for 'you' – in an effort to connect with their target audience (adolescents). The '199 JIMMY' sticker, found on a university campus, advertises a cost-based service for answers to random questions; the genre of SMS suggesting succinct answers to one and all. The third image is particularly interesting: it presents a poem published on posters on Melbourne trains in order to publicise the artistic talent of the city. By 'Janette Fernando', a 'poet/teacher, 52', the traditional poetic structure makes a complex reference to the harmonising impact of iPods on the experience of public transport travel. The last image presents a clothing store directly targeted at the adolescent and young adult youth market: once again, the truncated language of SMS is appropriated in the name of the store 'sbrbn' (for 'suburban') in order to connect with their target audience. As illustrations of the presence of discourses of mobile technologies in Australian culture, these may not be

Figure 7.2: Assorted cultural references to mobile technologies: 1) Advertising sign in Riverton KFC advertising part time job positions; 2) Sticker for SMS-service '199 JIMMMY' for answering questions; 3) poem on Melbourne train, where the imagery relies upon reference to iPods; 4) a Melbourne clothing story for adolescent fashion, called 'sbrbn'.

representative, but they do suggest a trend that wherever you look, references seem to occur, particularly when there are young people about.

Cultural capital concerns the field of multimodal texts that exist in connection with mobile technologies: the 'forms' of the three elements in Willis' (2000) ethnographic imagination (see section 4.2). It concerns the emergence of such

texts at the level of the bodily/digital hexis: both 'articulation' and 'interpretation' (Kress, 2003) are involved in writing and reading embodied texts, transforming them into symbolic capital. What is meant here by 'texts associated with embodiment' is more than just written texts, but rather the multimodal, increasingly electronically-mediated texts of the 'everyday literacy paradigm' (see section 3.1.2). There are of course the traditional texts – written and oral – in the form of SMS, phone calls and music/audio files. Then there are visual texts associated with pictures and videos; hypertext in the form of menus and internet documents; and multimodal text in the form of social performance, involving gestural and spatial design, when using mobile devices.

Moreover, these technologies have so influenced cultural discourses – and not just at the teen level – as to infuse general cultural interactions with extra levels of meaning.

> If you are ever near Russell Crowe he will throw it [a phone] at you.

> Extract 7.2 (Class Affinity Diagram: Mobile Phone Disadvantages)

This comment from an anonymous class survey illustrates the extent to which mobile technologies have integrated into popular culture and discourse, and from there into the narrative of contemporary adolescent lives. This joke followed on from a recent incident where the actor Russell Crowe threw a phone at a hotel employee in anger. The use of this event in relation to personal understandings of mobile technologies – even as a joke – illustrates that these devices are an increasingly natural part of the landscape of contemporary social practice, and further, form part of the discourse of youth identity. SMS, as a prominent feature of the study participants' communication practices, provided a complex layer of connections between the 'traditional' and 'everyday paradigms' of literacy. The students of Riverton High talk about and via mobile phones, they joke about and via them, they position them within their lives in individualised ways, which nevertheless are impacted by structural elements that govern the fields of their everyday life. The peer group is replete with discourses about mobile technologies, but it is background

noise: an accepted condition of life behind other more immediate discussions and activities.

As 'institutional cultural capital' is aligned with prestige and distinction associated with institutional membership and achievement (see Bourdieu, 1986), its relevance for such everyday and ubiquitous practices as the use of mobile technologies is problematic (see section 4.4.1). In the case of Riverton, it might be argued that 'institutional cultural capital' is represented by an individual's membership with the Telstra network. Membership with other networks was afforded low symbolic value (in interpretation), due primarily to pragmatic concerns around phone reception/coverage, but also with regard to social connections and cost pressures (the monopoly-membership dynamic: see sections 5.7 and 6.5). Arguing that buying membership with the Telstra network constitutes a form of institutional capital is problematic, in that it does not require a demonstration of expertise, skill or achievement, aside from the understanding that amongst the peer-group this was the valued membership. As such, it can be considered under the mantle of the objective (a phone contract) or embodied (use of the Telstra network) manifestation of cultural capital.

For the moment, I am concerned with exploring how particular forms of cultural capital carry meaning at the level of bodily and digital hexis: how participants used these for meaning-making processes that had symbolic value for the peer-group. This includes cultural capital in both its objective and embodied forms; inclusive not just of the physical objects themselves, but digital texts that individuals create, manipulate and/or use, such as MP3s (see Sterne, 2006). It also includes device use as performance within particular spaces of social practice. There are common spaces that emerged in the experiences of these students (classrooms, school buses, school grounds, bedrooms), indicating that while there remains a degree of indeterminacy with regard to negotiating social spaces (individuals on the move), there are shared spaces that structure meanings associated with the 'articulation' (Kress, 2003) of text types in particular ways.

7.2   Mobile Technologies as Objective Cultural Capital

> Oh, more and more people are getting heaps of that stuff. I know plenty of people that have a PDA now. Heaps of people have video cameras but ... you know, like ... plenty of people have iPods and you know, cameras and stuff. It's kind of the modern thing really.

Extract 7.3 (Bailey)

In the assessed course work assignment that students completed, most students acknowledged that they had access to a range of different mobile technologies or 'cultural artefacts' (Fortunati, 2005a). There were of course mobile phones and iPods, but also other digital players (MP3 and video), digital cameras, and a 'glucometer' for Erin. Table 7.1 provides an overview of the various technologies that the participants indicated they had personal access to (either by ownership of association), illustrating variations in access, as well as understandings of just what is meant by 'technology' and 'mobile technology'.

The participants also completed a worksheet where they visually depicted their relationship to various mobile and other technologies. Bailey's example (Appendix D) has previously been examined as rich and filled with a range of different technologies (see section 5.3.1). Jennifer, Owen and Sarah, all likewise illustrated their experiences with technologies. Jennifer's worksheet (Appendix E) features only three personal devices, yet she clearly illustrates the ways these interact and connect with other technological devices in her life. Owen's depiction of himself as 'Techno-Man' (Appendix F) is illustrative of the personal interest he has in these technologies, and his depiction not just of the connections between the devices, but his illustrations of the devices themselves, suggests that meaning is also contained in the physical nature of a device. Finally, Sarah's sketch of her relationship to technologies (Appendix G) visually depicts her disengagement. Whilst she positions a mobile phone next to her body, the interviews revealed that she no longer had, nor wanted access to this device (see section 6.4). What is therefore visually striking is the absence of any connection between devices and her body. Unlike other participant worksheets, which depicted the relationship between personal technologies held near the body and other ICTs, Sarah's figure appears to exist in a

Name	Personal Mobile Technologies	Other Technologies Participants Access
Bailey	Mobile phone (x2), iPod, MP3 player, portable DVD player, digital camera, video camera, calculator, laptop computer, portable hard drive, USB memory stick	Parents' mobile phone, TV, DVD player, Desktop PC, stereo, laptop computer
Beth	Mobile phone, iPod, digital camera	Home phone, TV, DVD player, laptop computer with burner, hair straightener
Brad	Mobile phone, iPod, portable DVD player, USB memory stick	Home phone, TV, DVD player, Desktop PC, Play Station, Digital Camera, alarm clock, speakers
Erin	Mobile phone, iPod, Glucose monitor, walkman, calculator, laptop computer, watch, USB memory stick	Home phone, TV, DVD player, Radio, iPod, MP3 player, portable DVD player, PSP, Gameboy, Tamagotchie, PS2, Nintendo 64, Super Nintendo, personal organiser, digital camera/video camera, hair dryer
Jennifer	Mobile phone, MP3 player (iRiver), Digital camera	TV, DVD players, audio system, Stereo, desktop PCs, laptop computers, broadband internet, PS2, iPods, hair dryer, hair straightener
Jo	Mobile phone, MP3 player	TV, DVD player, Desktop PD, portable DVD player
Josh	Mobile phone, iPod	TV, DVD player, stereo, Austar (Pay TV subscription), sound system, PS2, digital camera, bank card, Desktop PC, broadband internet, USB memory stick
Matthew	Mobile phone, PSP, Portable DVD player	TV (personal), DVD player, VHS player, sound system, digital set-top box, Desktop PC
Owen	Mobile phone, iPod	TV, Desktop PC, internet, PS2, PSP, CD player
Peter	Mobile phone, iPod, PSP	TV (personal), Desktop PC, Laptop computers, iPods
Rebecca	Mobile phone, MP3 player, pen, hair straightener	House phone, TV, DVD player, Desktop PC, digital camera, alarm clock
Sarah	Mobile phone (confiscated)	House phone, TV, Plasma TV, DVD player, VHS player, portable DVD players, MP4 players, laptop computer, voice recorder, digital cameras, Game Boy, PS2, PS3, Nintendo 64, xBox, internet, toaster, microwave
Tom	Mobile phone, iPod	TV, DVD player, VHS player, CD player, Desktop PC, PS2

Table 7.1: Participants' mobile technologies: participants access to mobile and other technologies. Drawn from Student completed Worksheet 1, and interview data.

bubble, surrounded by technologies, but not connected to them. Her experience, later expressed in interviews, suggests the influence of emotional attachment (Vincent, 2005) on usage patterns. As discussed in chapter five, economic capital has an important role to play in the particular devices that a student has access to, and in chapter six social capital is shown to have a role in the formation of attitudes towards usage patterns.

Figure 7.3: Devices of Riverton students. TOP: Jennifer's phone; Erin's phone; Erin's Glucometre; MIDDLE: Bailey's phone; Sarah's iPod; Brad's new phone; BOTTOM: Josh's personalised phone; Peter's phone with cover; Brad's old analogue phone.

That objective cultural capital can have value divorced from actual use was demonstrated during the focus group discussion when I asked students about the prestige of particular 'brands' of mobile phones. When asked 'Does brand matter?'' (Focus Group), there were some mixed responses. Although Brad suggested that it didn't really matter 'when it comes to phones' – as long as you have one – he was also highly critical of his current model, stating emphatically: 'I would never get another LG'. After much discussion rating the quality and prestige of brands – Nokia, Motorola, LG, Sagem, Kyocera, Samsung – and differing opinions, Owen summed up the best two: 'If you can name two, they would be Nokia or Motorola. But there's an exception'. As Josh's experience dealing with both Nokia and Motorola phones indicates – discussed further below (see section 7.6.1) – the brand

of the device can have a bearing on how they are articulated and embodied at the level of bodily hexis. Figure 7.3 presents visual examples of assorted participant technologies, illustrating not just a wide variety of devices, but also indicating the physical form of a device can carry meaning without 'articulation' (Kress, 2003), especially when individuals personalised them in different ways (such as photos for phone backgrounds, different coloured covers and slip-covers).

There was wide variety amongst the participants in this project with regard to the technological devices that they had access to, and a wide variety of attitudes towards 'new technologies'. In exploring the symbolic value of objective devices with students, I asked:

> CT: Okay. Um … do you think it's important to be up to date with the latest technologies?
>
> B: Nup. I don't reckon. That's my opinion, because you know, who cares if you don't have a proper phone. You know, it's quite funny to see someone with a … you know, old phone, but, like, it doesn't matter if it's … it is becoming a fashionable item to like, other people that are, like, just say rich or are expected to be rich, that they have a certain expectation, but for most people around here, no one cares what kind of phone you have.

> Extract 7.4 (Bailey)

As was discussed previously the outlay of economic capital on mobile technologies is related to the dispositions of individuals, their families and social networks (see section 5.3). Other students such as Josh and Brad, did indicate that it was important to be 'up to date', but interpreted this to mean having a mobile phone: 'Yeah, sort of. Like, phones, it doesn't really worry me' (Josh). At the peer-group level, for participants pragmatic concerns took precedence over fashion, and having any phone was more important than having no phone at all:

> E: Yeah, it's only a black and white; it's not anything flash, it's just an old one.
>
> CT: What sort of features does it have?

E: Uh, it's got really basic ones like: you've got your text and your phone calls, a calculator, alarm clock, stopwatch … um … your choice of language.

CT: Which you've used.

E: *[laughs]*

Extract 7.5 (Erin)

Erin was planning to get a new phone with more features, but expressed limited passion for hurrying this process up. Her approach was practical: she couldn't afford a new phone, so was waiting to receive one as a present from her boyfriend. As such, whilst in broader 'fashion concerns' – at the level of societal fashion – these undifferentiated technologies may not have had strong symbolic value, at the level of the peer-group; they retained symbolic potential. This was a point at which the 'cultural pedagogy' (Nixon, 2005) associated with media promotion of mobile technologies was subsumed below the peer-group value system. A pragmatism towards affording mobile devices prevailed amongst the study participants in contrast to a cultural discourse of consumption and newness.

Mobile technologies – as artefacts – have become so entrenched in Australian culture that they have, in some cases, disseminated to the level of hand-me downs and essential items for children. The role of mobile phones in the social life of adolescents has an aspect of parental encouragement. This idea has become so culturally pervasive that the market has responded with special model phones developed for children, such as 'the Gecko' (Kenway & Bullen, 2008). But in the home, mobile phones as artefacts have been 'domesticated' (Haddon, 2003) to the extent that they are now 'hand-me-down' items, as experienced by Brad, Sarah, Josh and Tom, who all engaged in family-based distribution of these cultural goods. In this way, the family appropriates these devices as cultural goods that have a functional value in being 'inherited' by younger family members. Rather than disposable commodities, outdated models retain value through the features that they *do* have: for phones, this is the ability for the owner to be constantly contactable (see section 6.4). But the nature of mobile technologies as objective cultural capital also extends to the 'texts' that are related to them.

Objective cultural capital should also be understood in terms of the 'digital texts' that individuals have access to, separate from individual articulation. In using these texts – or in creating their own – each individual embodies them, therefore unavoidably imbuing them with an individual meaning only discernable in the relationship between sender and recipient (i.e. the hidden meaning implied by the nature of particular relationships between the 'articulation' and 'interpretation' of texts). The reference here is not to how such digital texts are articulated, but to the digital texts themselves: 'objective' items such as pictures, ringtones, songs, etc., have an objective form beyond how they are used to embody personal meanings as cultural goods. It was a significant feature for the participants that they were cynical about things such as 'SMS-clubs' as ways of accessing digital content (see sections 5.5.2 and 6.6.2). Rather, they obtained digital texts for their mobile devices via other means, such as burning songs from CDs (Jennifer), downloading content from the internet (Owen, Josh) or the most common practice of exchanging digital content with friends. As cultural goods, these digital forms of objective cultural capital were then used to embody certain tastes, dispositions and affiliations.

7.3   Embodiment as the Articulation of Objective Capital

In order to explore this relationship of transformation fully, Katz and Aakhus' 'apparatgeist theory' (2002) is useful for understanding the relationship between mobile technologies as cultural capital in terms of movement from objective embodied forms. The concept of the 'apparatgeist' draws focus to the influence of mobiles and their technological capabilities, on individual dispositions, when such devices exist increasingly at the level of bodily hexis. 'Apparatgeist' theory encourages us to focus on how particular devices or features of devices encourage certain usage patterns: in other words, how the structure of objective devices influences their embodied forms.

The manner in which objective cultural capital is realised as embodied cultural capital is specific in terms of its relation to habitus and the economic and social capital that an individual is able to access. For the participants, SMS was the most important mode for communication practices, and as such txtng plays a

prominent part as embodied cultural capital; as such, SMS features heavily throughout this analysis. Throughout the research students were also observed wearing earphones for iPods or other seen and unseen music devices. Students were observed carrying mobile phones in their hands, used and unused. The presence of objective devices at the level of bodily hexis was overtly evident throughout the school grounds during break periods, and even in *some* classrooms. Objective capital was on-display as a form of performance, embodying certain meanings, depending on the context.

When asked about these instances, interview participants expressed little surprise, especially when out-of-class displays were questioned. Carrying devices, wearing them, listening to music when on the move or with friends, sharing earphone pieces with friends, carrying phones in hands instead of pockets, were all understood as naturalistic behaviours. Listening to music was pleasurable and a way to relieve boredom, as was txtng. Phones were carried in case one received a call or txt as many were kept on silent or vibrate as a matter of course. In her second interview, Bailey explained how she used her mobile devices for different purposes: one for music, one for SMS, and one for calls to her parents (see section 5.5.1). The use of particular device features structured performance at the level of social practice; the combination between the physical and digital 'apparatus' features of the device was closely linked with the 'Geist' or mind that it enabled (Katz & Aakhus, 2002c, 305).

The influence of objective cultural capital in the form of telecommunications infrastructure on the literacy practices of participants can be seen in their travel. Whilst researcher observations on urban public transport found numerous instances of people talking on phones, the experiences of the research participants were quite different, due to limited phone reception – even with Telstra – beyond the main town centre and suburbs of Riverton. This was particularly evident in the experiences of students who lived outside of town and bussed to school every day, who without reception, resorted to iPods or other devices or features (Brad and Bailey). Josh also talked of the limited reception on the train to Goldville when he went to visit his mother. A number of participants mentioned that they had PSPs or portable DVD players, which they used when travelling. Peter indicated that he did not use the

portable devices at home, because he had a computer: watching movies on a smaller screen was not preferred in this case, but when travelling was an acceptable sacrifice for relieving boredom. In the case of travelling, embodied cultural capital took the form of consumption of objective cultural capital (in the form of music, videos and games).

As this study is concerned with literacy as social practice, how objective forms of capital are used for meaning-making practices is a central focus. Therefore, how meaning is embodied using the range of semiotic resources available, constitutes an important shift of focus in the following section.

7.4   Network Connection & the 'Monopoly-Membership Dynamic'

The issue of Telstra's monopoly of the youth market in Riverton was one that impacted upon the entire landscape of these adolescents' experiences, and pervades the analysis (see sections 3.5.7 and 6.5). This is really the only point at which the concept of 'institutional cultural capital' (Bourdieu, 1986; Carrington & Luke, 1997) is relevant, configured as membership of the 'correct' network for the particular society involved.

On a pragmatic level, connection to the Telstra network was an important choice, due to its superior telephone coverage by comparison with any of their competitors. It's either "Telstra, Telstra or Telstra," as Sarah said (Extract 6.8). Coverage and appropriate reception had a determining impact on social practices using mobile technologies, particularly outside of the town's urban fringe (where many of the students travelled, if not daily, then on a regular basis). In such cases, where smooth synchronous communication could not be guaranteed, the participants relied on SMS, or undertook other activities that did not require reception. In this way, money spent on a connection to the Telstra network, while unreliable, was more useful than a competing network, and was money well spent in the view of the participants.

The objective cultural field, in terms of the student's physical location, also had a role to play (see section 4.5.1), as illustrated not just by Brad's case, but by the

collective experiences of the participants. The network coverage available impacted on what devices worked in a particular area, and therefore, how economic capital was best spent in such a situation. Brad's move from the CDMA network to the Next-G (see subsections 4.5.2 and 5.5.2) effectively ruled out some phone models and some plans. The contribution of economic and social capital in the structuring of this dynamic is linked to the objective infrastructure and cultural discourses around consumption. This dynamic also functioned because Telstra had the longest continuous history in Riverton (and many rural Australian areas), resulting in new mobile phone buyers entering a market that was already saturated with users primarily using this one carrier.

As was mentioned in relation to both economic and social capital, the market saturation of Telstra membership amongst Riverton adolescents was determined by a number of interrelated structures: cost, social networks and infrastructure. A consideration of mobile telecommunications infrastructure involves an examination of the objective cultural capital which, although not possessed by individuals directly, is the structural element by which mobile communication devices gain their primary social function: communication. Reception, or coverage, for mobile phones is a vital feature of many 'mobile fields' (those associated with communication): the fact that this reception can vary, structures the uses of mobile technologies heavily. Where there is no reception, there is no communication. This has an impact on the forms of embodied cultural capital that can be articulated.

7.5   Mobile Technologies & Embodied Cultural Capital

Embodiment with regard to literacy practices around mobile technologies should be understood with regard to both the bodily and digital hexis, and how they relate to the texts that are created. In a very real sense, individual and group identity can be represented through the performance of mobile technology use across different fields, but also by the texts one creates and/or uses to convey meaning. The preference for the use of SMS by the study participants and other young people in Riverton, is not only a result of cost pressures (though these must not be excluded),

but was an expected form of communication within the peer group.[17] This reflects the general trend of youth to use SMS, from the development of the service (cf. Agar, 2003; Levinson, 2004) to contemporary teen culture (cf. ACMA, 2007a; Geser, 2006b; Ling & Haddon, 2003). As was discussed in the previous chapter (see chapter 6), SMS was an essential part of maintaining social capital through digital connections, but further, its 'articulation' (Kress, 2003) embodies certain perspectives on language and communication that describe identity. Through the use of SMS, participants demonstrated something about their personality, their familiarity, competency and comfort with technology and other aspects of their identity. The fact that some participants indicated that they did not txt their parents (Bailey, Erin, Josh, Owen) feeds into beliefs of a generational or digital native/immigrant divide (see Prensky, 2001a).

How objective structures are utilized to embody meanings is structured not just by the limitations and affordances of those devices themselves, but by the individual habitus as it related to articulating meanings with regard to the interpretive context. We see in the next chapter (see chapter 8) just how this relates to educational or schooling fields. The influence of situational factors, or the structure of certain fields, also structures embodiment practices in certain ways, in terms of individual dispositions about how they should 'play the game'. One such case, where objective structures heavily influenced the 'articulation' (Kress, 2003) of meaning, concerns the problem of phone reception (see 7.4).

For participants the issue of 'coverage' and 'reception' remained a key factor in influencing how certain mobile technologies were embodied at the level of bodily hexis. As reported by the ACMA (2008b), mobile phone reception and gaps in coverage remain a continuing concern and problem for rural consumers. At the level of everyday practice, these infrastructural restrictions (objective cultural capital over which the consumers had limited control) played a key role in how students articulated embodied cultural capital. The result of reception problems in terms of

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[17] The way mobile technologies are inculcated into the lives of adolescents at the level of bodily hexis and with regard to habitus, relates to the way in which mobile technologies have been domesticated. Domestication theory offers useful ways for understanding the way technologies are adopted and articulated in terms of embodiment (embodied cultural capital) as it relates to habitus and individual/family identity. Haddon (2003) has examined such processes. See section 2.3

embodiment was that individuals engaged in generally private pursuits.[18] It is explained further below how this related to preferences for modes of text (see 7.8).

There were a range of performative elements associated with the use of mobile devices during travel, when there was generally no phone reception. These related to visual, gestural and spatial design elements: individuals sitting in vehicles, looking down at devices, or with earphones in. But Brad indicated a particularly interesting articulation of meaning that accompanied the use of phone on his bus from home to school. With the intermittent reception, he explained that at times there would be students holding their phones up to the windows, moving them around, trying to get some reception, trying to send off an SMS. As an embodied meaning, this social performance suggests a shared desire to be connected, to the point of moving the phone round in the air, searching for a signal, searching for that moment of potential connection. Here the embodiment of meaning, written for the observer, indicates shared experiential stories around mobile technologies that are not always consciously articulated or understood by their users.

The emotional connection of teens to their mobile technologies was also evident in Riverton teen culture. Attachment to mobile technologies was not purely a result of the objective forms of these devices – though perhaps a degree of fetishism fed by media discourses was to be expected – but rather, the ways in which these devices are used as part of the everyday lives of these students. There was a good deal of variation with regard to the emotional attachment the participants had to their devices, with Bailey and Sarah representing the extremes – one self-admittedly unable to cope without her mobile devices, the other seeing the advantages of being 'disconnected':

> CT: I was going to say, how are you coping?
>
> S: Nah, I don't know … some people like, you know, they
>   can't live without their phone, but I don't really care.
>   Doesn't really bother me. *[laughs]*

---

[18] Although jointly listening to iPods was observed in the school grounds, and may therefore occur on school buses or other forms of transport, there was no observable evidence for this. It was also not mentioned by any of the interviewees. In such cases though, the sharing of texts (MP3s or videos) may occur, resulting in a strengthening of social capital with regard to travel companions through shared activities.

Extract 7.6 (Sarah)

Sarah, admitted that before her parents had confiscated her mobile phone, she was addicted, and spent a lot of money on SMS. However, through the experience of being disconnected – in which she could see the social advantages (privacy primarily) she had been blind to before – she became less enthusiastic and reliant on these technologies. She only accepted a new phone when a friend gave her one, but did not seem overly enthusiastic about this either (see section 6.4).

7.6   Embodied Cultural Capital as Articulated Meaning

Particular ways in which meanings are articulated using mobile devices represent particular identities, ideologies and technical capabilities. I am not concerned at this point with the interpretation of particular literacy practices at the school level. Rather, I am concerned with the peer-group level, and primarily, the reasons for particular 'articulation' (Kress, 2003) patterns.

In undertaking his Informative Writing assessment task, Owen negotiated a focus specifically on SMS use. Figure 7.4 reproduces his advice for the 'Dos and Don'ts' of SMS use. His advice relates specifically to practical concerns, but also demonstrates concern for clear and effective communication. The advice relates specifically to the 'affordances' (Kress, 2003) of the SMS medium, such as its silence, shortened nature and the use of txtng abbreviations. There is an overt concern about being misunderstood, related to the use of abbreviations and txtng while inebriated. These rules are not based on formal rules – indeed, the innuendo in the first points offers guidance to circumvent them – but rather, on social interactions and communication. The value of SMS as an embodied form of cultural capital relies on the 'articulation' (Kress, 2003) of meaning being apt for the medium. Owen's advice suggests that at the level of the peer-group, the interpretation of meaning is based on clarity and social circumstances. As was discussed with regard to social capital (see chapter 6) the negotiation of these meanings is on-going.
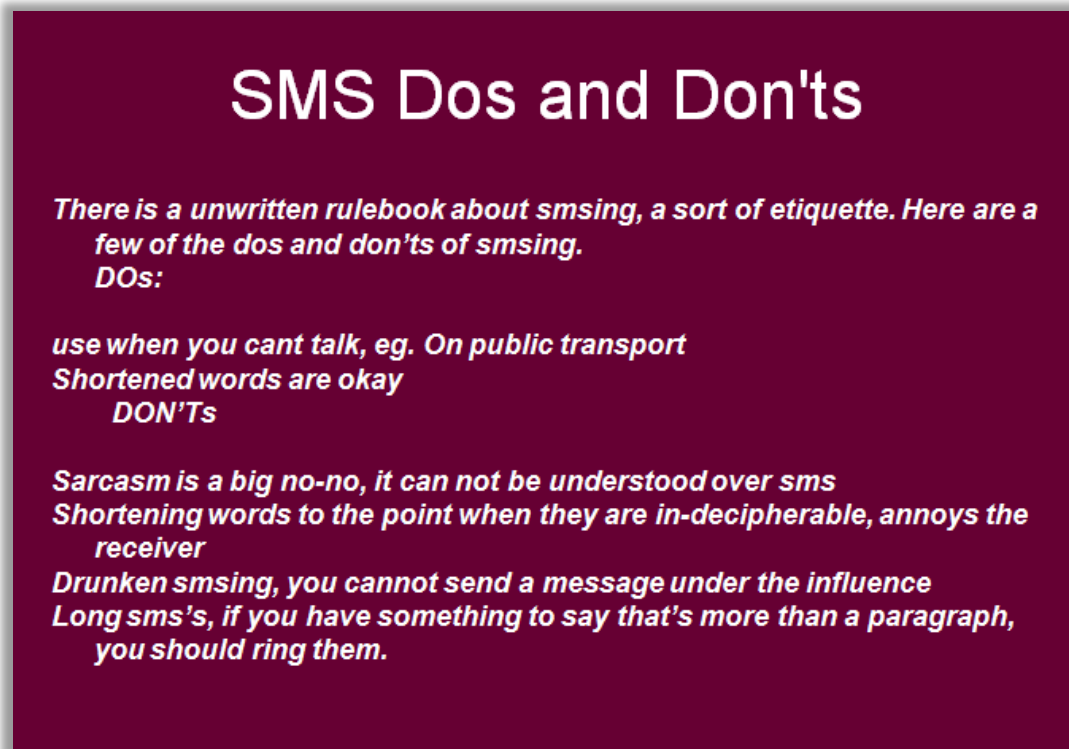
SMS Dos and Don'ts

There is a unwritten rulebook about smsing, a sort of etiquette. Here are a few of the dos and don'ts of smsing.
DOs:

use when you cant talk, eg. On public transport
Shortened words are okay
DON'Ts

Sarcasm is a big no-no, it can not be understood over sms
Shortening words to the point when they are in-decipherable, annoys the receiver
Drunken smsing, you cannot send a message under the influence
Long sms's, if you have something to say that's more than a paragraph, you should ring them.

Figure 7.4: Owen's 'dos and don'ts of SMS: Guidelines for SMS etiquette from Owen's Informative writing assignment.

7.6.1 Txtng as Articulated Meaning

An example of how particular forms of cultural capital are embodied at the level of both bodily and digital hexis is further found with regard to *how* an individual txted: specifically, whether or not an individual used predictive-entry or manual writing of the message. Here we trace the emergence of a written text as a dynamic activity, linked to individual dispositions, through both 'articulation' and 'interpretation' (Kress, 2003). Owen's informal survey (Figure 7.5), indicated that fifty per cent of the class used predictive txt, and the other half entered messages manually. At the level of the 'articulation' of meaning (though the writing of a message), how students used the device relates to competency and skill with technical features of the phone: how it has been domesticated (Haddon, 2003). However, as Josh's experience points out, the model phone (objective cultural capital) could have an impact. While he indicated his use of predictive txt on a previous model phone (Nokia), the system for predictive entry on his current phone (Motorola) was more
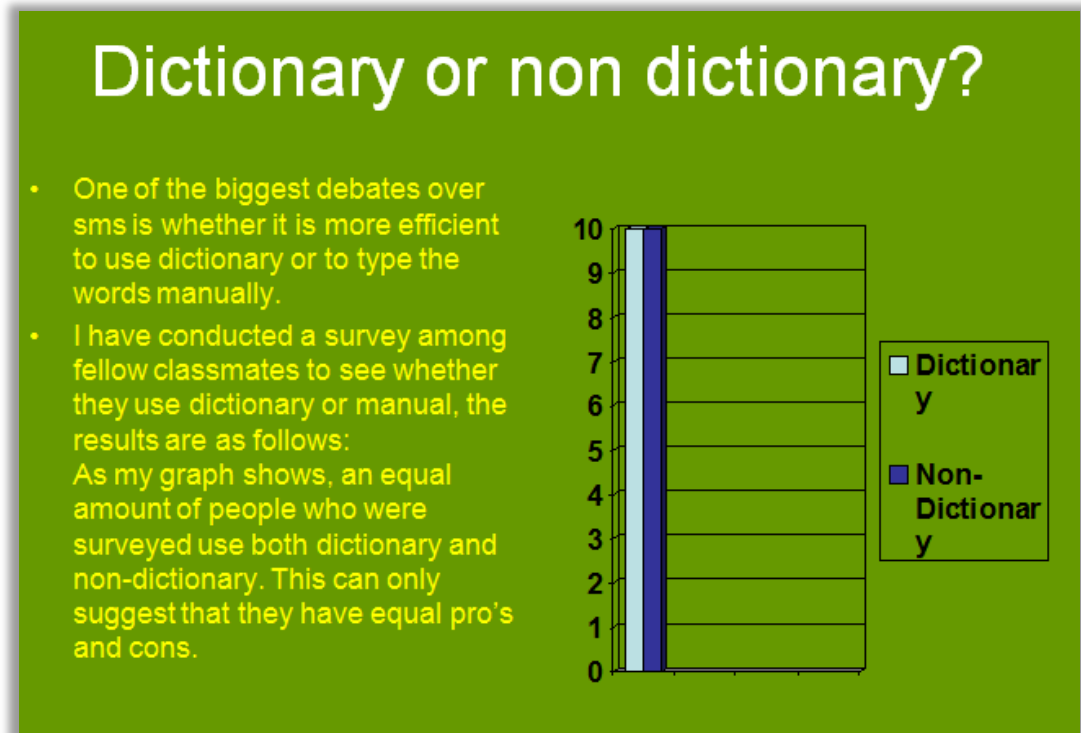
Figure 7.5: Screen shot from Owen's assignment, indicating his survey of the class' predictive vs non-predictive txtng habits.

cumbersome, and so he didn't use it anymore.

An important aspect of the embodiment of meaning through SMS and how this is related to the use or not of predictive entry, is the impact that this has on the interpretation side. Whilst moral panics have occurred lamenting the negative impact of SMS-language on traditional literacy (see section 3.2.2), such debates reduced in intensity, with SMS increasingly acknowledged as a legitimate language form (cf. Carrington, 2005; Crystal, 2008; Leech, 2006b; Ling, 2005). Indeed, a number of students sought to catalogue SMS-language as part of their informative writing assignments. Both Figures 7.6 and 7.7 are examples of participants' work. Here the use of 'squeeze text', 'emoticons', 'intitialisms' and 'acronymy' can be observed, as discussed in section 3.2.2 (Table 3.1).

Where interpretation is concerned, the use of predictive or manual entry to write SMS messages had an impact on the structure and features of an actual message. As Bailey went to lengths to point out, the use of predictive entry made
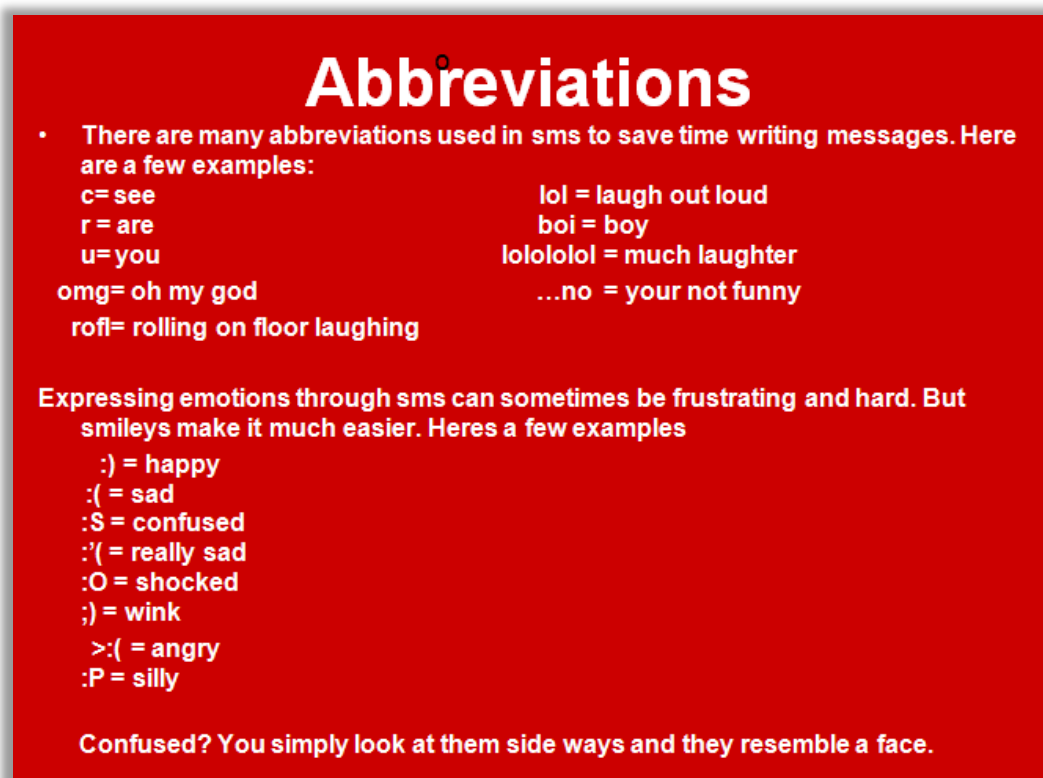
Figure 7.6: SMS abbreviations: an outline of SMS abbreviations from Owen's Informative Writing assignment.

the use of 'SMS-language' more difficult, and as a result, she defaulted to the use of full words and phrases as a result of this technical feature. This would seem to suggest that the use of predictive SMS-writing features may result in more traditionally spelt words, though the impact on punctuation or grammatical structures is unclear. Josh indicated that he used punctuation for non-traditional purposes for instance, by using a full stop to indicate the end of a conversation: 'But if I just write something, full-stop, it's "shut up, leave me alone."' What became evident throughout this research was not a preference one way or another for SMS' with traditional/conventional or truncated language, but rather a concern for the meaning of the message, for its interpretation over form. That this may at times default to traditional language was something influenced by audience, context and input strategies. In this way, the digital text – a single or string of SMS texts – embodies a particular identity, speaking of participants' linguistic practices.

TEXT:
~When making arrangements, eg, working out a meeting time, place.
Also, when texting, it is acceptable to use short hand instead of typing out a full message. Some examples are:

LONG HAND:	SHORT HAND:
people	Ppl
you	U
Too, to	2
together	2getha
Laugh out loud	Lol
Be right back	Brb
Ate	8
Four	4
Got to go	Gtg
tonight	2nite
love	Luv

Figure 7.7: SMS abbreviations: an outline of SMS abbreviations from Jennifer's Informative Writing assignment.

The objective cultural capital that one has access to and that one actually uses (converting into it embodied form) has a flow-on effect with regard to modal use of mobile technologies, as seen through the concept of 'apparatgeist' theory (Katz & Aakhus, 2002c). An example of this was demonstrated by Erin in 2007, during one of her first interviews. At this time she did not have access to the internet at home and so admitted that she had no experience of using instant messaging on the computer Further, when we were discussing her admitted use of non-standard txtng language in her SMS's, we got onto discussing acronyms (or initialisms as Crystal [2008] calls them).   Erin was confused when I gave her the example of 'BRB' – meaning 'Be Right Back'. She said that she had never heard of this term. When I explained what it meant, she again indicated that she had not previously heard of it.

It was only upon reflection that I realised the obvious: 'BRB' is a term primarily suited to synchronous communication such as Instant Messaging (IM) programs, where an interruption to the flow of conversation is undertaken. It also

indicates connection with a particular place, and restrictions of place: moving away from the computer. It is more difficult to think of how the term 'BRB' could be used in an asynchronous and mobile conversation (though not impossible). I know that I was aware of the term emerging in media and popular discourse, but my immersion in such discussion is much more intentional, probing and exploratory than Erin's: I look for these terms in common conversations. But Erin, having not used chat on a computer, had no reason or use for such a term. This did not rule out the use of 'BRB' in SMS, as Jennifer seems to suggest it has use by including it in her list of txt 'short hand' (Figure 7.7): she was at least familiar with this term. This suggested that experience of different cultural technologies has a role to play in determining one's knowledge and conceptual toolkit in any kind of literacy practice. As such, she volunteered that she knew what 'ROLF' was – 'Rolling On the Floor Laughing' – saying that she had received it from a friend. 'ROLF' in the meaning that it communicates and in the economy of language as an 'initialism' is suited to the txtng genre, and, as among this group, sending jokes to friends and simply chatting, was an indicated activity, one can easily imagine a situation where such a term would be useful and meaningful. In fact, Crystal traces a whole series of manifestations of ROLF that have developed as a matter of ludic experimentation with language by txters: from ROTFL[19], to ROTFLMAO[20], to ROTFLMAOAY[21] and ROTFLMAOWTIME[22] (Crystal, pp. 23-24). It is not expected in such situations that if you are unfamiliar with the technology as part of social practice and/or the ludic play with language in an SMS, that you would have the experience to understand such terms. It's a playground with negotiated rules, and if you don't play, you don't know how some of the rules of the game work.

By the same token, since SMS deals with written language, and linear meaning, individuals with knowledge and ability with 'traditional literacy' may be able to play through the reinvention of rules for this new genre. This happened when I was travelling to Riverton to conduct interviews and received an SMS from a cryptic-crossword loving relative at the other end, which simply read: '? U'. My

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[19] "rolling on the floor laughing" (Crystal, 2008, p. 23)
[20] "rolling on the floor laughing my ass off" (Crystal, 2008, p. 23)
[21] "rolling on the floor laughing my ass off at you" (Crystal, 2008, p. 24)
[22] "rolling on the floor laughing my ass off with tears in my eyes" (Crystal, 2008, p. 24)

immediate thought was 'how innovative' and also 'how situationally-dependent'. Whilst I do not know to what extent this relative had been playing with written language in SMS over time, what is indicated in this two-character message was deep understanding of what language and written text can do. Just as the question mark in the above txt took on extra-linguistic meaning, so the 'period' takes on more meaning-making capability than it was perhaps intended to, in Josh's case indicating the end of a conversation – full-stop!

7.6.2 *Negotiating the Values of Articulated Meaning*

The meaning of mobile technology uses at the peer-group level was something that was not mandated, but rather negotiated in an on-going fashion. Participants often looked at me blankly when I asked about social rules around mobile technologies amongst their peers. As opposed to the clearly stated rules for classrooms, appropriate use of devices with their friends and family was something that needed to be determined from individual situations: the appropriateness of embodied cultural meanings was something that one did, supporting the idea of 'culture as a verb' (Street & Heath, 2008). The rules of use however were vague and indistinct, tacitly negotiated, neither written in stone, nor completely irrelevant.

Although there were some variations, the study participants were all aware of school rules governing mobile technologies. There was even some agreement over family rules, with 'no phones at the dinner table' being a common one. However, all the participants had difficulty explaining rules or guidelines that governed their behaviour with peers, especially when and where to use a phone when with others. Throughout my fieldwork, it was common to see students socialising in groups with a number of mobile devices – phones and iPods primarily – being used by one or more of the students at the same time.

> 3 boys sitting at a table in the school yard under the shade of trees. 1 has earphones in, 1 is txtng on his phone, and the other doesn't seem to be using any mobile technologies at all but is talking to the other two – they respond intermittently to his comments.
>
> Extract 7.7 (Observations)

When investigating the nature of embodied cultural capital as symbolic capital at the level of the peer group, I asked a number of students about manners amongst their peers with regard to the use of mobile devices. Their limited responses were underwritten with a tacit understanding of the qualities of particular mediums of communication. Taking SMS again for instance, Brad responds to a question about rules regarding phone use amongst their friends:

> Oh, not really. But like, you do have times where you sort of, it's
> a bit rude to use your phone in front of other people, like when
> someone's talking to you, just whip your phone … like, that's …
> I reckon that's a bit rude, to do that.

<div align="right">Extract 7.8 (Brad)</div>

Here, the concern is with divided attentions, seemingly at odds with my own observations in the school yard, where I frequently witnessed groups of students socialising *and* using mobile technologies in various ways at the same time. These were practices amongst friends, and as such, rudeness could be regulated through negotiation.

When I asked Jennifer about this apparent contradiction she laughed, saying that most people her age could 'multitask'. This multitasking required an understanding of the 'affordances' of particular modes (Kress, 2003), with respect to the impact on those physically co-present:

> Well, MP3 players, not really. But with … you know, we can
> multitask, listen to that and talk at the same time, but we all get
> annoyed if we're trying to talk to someone and they're just
> ignoring us and they're on the phone. Like if we're just sitting
> there and no one's really saying much, or no one's trying to talk
> directly to you though, like, we don't care. But if someone's
> trying to like talk directly to you and you're just ignoring them
> flat-out, then...

<div align="right">Extract 7.9 (Jennifer)</div>

Whether to communicate using a mobile technology, and which mediums to use, is caught up in the dynamics of social interactions. Amongst peers, competing literacy practices have to be prioritised and balanced in a way that affords symbolic value. Jennifer's gives an example of both effective and ineffective 'articulations' (Kress,

2003) of cultural capital (Extract 7.9). But as Bailey adds to this idea, the dispositions of individuals towards the value system, and appropriate literacy practices, is also important:

> It's like, I'm more of the girl that, you know, I say something important on a message, but I'd rather them call me, because, you know, you can say what you want to say in half the time, that you want to text it. It'll be like, just come and see me or, something like that.

<div align="right">Extract 7.10 (Bailey)</div>

The purpose of the communication and the personality of the individual are involved in the selection of appropriate mediums for communication with regard to different social interactions. The negotiation of symbolic value of mobile technologies is thus caught up in the dynamics of social groups involving specific people, and under the influence of a particular habitus.

How students used these technologies as a form of embodied cultural capital at the classroom level was important for expressing their identity in terms of their attitude to formal learning (something examined in more detail in chapter 8). Attitudes towards listening to iPods whilst doing work were varied, with Bailey in favour and Brad against the practice. This was not reflective of either participant's attitude towards iPod use outside the classroom and both indicated that they listened to their music players at other times, especially as both travelled on the bus to and from school. Beyond the classroom listening to music on portable MP3 players was one of the most frequently reported and observed activities, as Owen's opinion suggests:

> CT: So was it important to actually get an iPod?
>
> O: Yeah-oh yeah. For me it is. I … I like listening to music every day, so…
>
> CT: How often ... every day?
>
> O: Oh … well, walking around, probably an hour or two. At school and stuff … But then at home, while two hours on the computer or just in … laying down listening to music.

Extract 7.11 (Owen)

My observations were peppered with details of students listening to iPods in the school grounds, including sharing the ear-buds to a single device (one each). In their leisure time, students consumed music texts, allowing them to engage in other activities at the same time, such as walking. This aspect of embodiment is also structured by different levels and types of emotional attachment to these devices, and the value placed on them by particular social groups. Their obvious use in the classroom required regulation and negotiation (see Chapter 8), because the use of these devices was an overt performance of a particular behaviour pattern. This was not so with all mobile technology use.

7.7   Embodied Cultural Capital as Performance

The ways in which individuals use mobile technologies as part of their social practice, can be read as an inscribed performance of identity. This links Goffman's understanding of performance in everyday life (1959) with studies of identity around ICT use (specifically mobile technologies) and the gestural and spatial design modes laid out in the New London Group's (1996; 2000) pedagogy of multiliteracies, but also with the notion of 'conspicuous consumption' (Levinson, 2004, p. 74), in that the use of these devices is itself is an indication of individual connections with consumer culture, and one specifically valued by their peers. Because mobile technologies intrude across multiple fields, and are both structured and structuring of such fields – as a 'mobile field' – their physical use at the level of bodily and digital hexis has a sociocultural meaning beyond traditional understandings of text.

In her research into mobile phone use on public transport, Fortunati (2005b) outlines the meaning-making potential of mobile technology use as a form of public performance (indeed, using the metaphors of 'front' and 'back stage' to describe the projection of individual identity). She argues:

> The mobile-induced exposure of separated roles and personalities
> is, according to the respondents, the most fragile element of self-
> presentation in public spaces. In addition, respondents noted the
> passion for prostheses as supporting elements in facing the public
> space, the recourse to a multiplicity of systems of meaning and

> the reduction of the information that individuals communicate
> through their appearance. (Fortunati, 2005b, p. 210)

The use of devices at the bodily level – *how* they are used – can be read as a performance within a particular cultural context, and reflecting individual dispositions and identity. The conscious and unconscious aspects of device uses can write individualistic patterns which nevertheless reflect cultural patterns of identity and consumption.

At the level of the peer-group, phones and digital texts as objective cultural capital can be articulated in an effort to gain symbolic capital, as a form of social display (embodied cultural capital) resulting in an elevation of social status. In this way, the use of objective cultural capital (devices) at the level of bodily hexis was a 'presentation of self' (Goffman, 1959) which communicated alliance with certain trends and fashions. However, a more pragmatic attitude governed the perspective of Riverton's adolescents as was pointed out above (see section 7.2). Having a phone (any phone) was preferable to having no phone at all. Thus, students such as Erin purchased second hand phones, and Josh accepted family hand-me-downs. Still, at the level of social performance, Bailey admits that there are limits to acceptable 'articulation' (Kress, 2003) through the display of devices. Whilst she acknowledges the prestige associated with device type is not a good thing, she notes:

> It's also becoming a fashion item. Like if you have a … you
> know, 30 … like 3150 or something, which is like those old brick
> phones, you know, you're not cool.

> Extract 7.12 (Bailey)

Thus display of devices at the level of bodily hexis was partly mediated by device type, and perhaps even by number. In my observations, I witnessed a number of students using more than one device at the level of bodily hexis, including iPods and phones, and even more than one phone. How devices were used as performance retained importance, not just in terms of the 'interpretation' of symbolic value, but also in terms of peer-group levels of value.

7.7.1 Identity as Performance

The 'articulation' of meaning through a range of modes and mediums (Kress, 2003) was used by participants to signify particular identities and social connections. Whilst communication primarily took the form of simple SMS, denser, more complex modes were used to express other aspects of identity. This included the creation, consumption and swapping of digital texts such as photos, videos and music. However, it also concerned patterns of how mobile devices were used at the level of bodily hexis, understood as social performance. How technologies are used in daily life, how they are articulated as part of practice is the point at which the objective cultural capital an individual student has access to, becomes embodied at the level of bodily or digital hexis. In the process of 'articulating' a meaning (Kress, 2003) – in the preferences for modes, the awareness of context – individuals imbue the embodied cultural capital with traces of their identity, or at the very least the accent of their habitus.

The importance and emotional attachment of students to mobile phones in particular was demonstrated at the end of all classes. My observations are riddled with daily observations of multiple students 'walking and txtng' often after leaving class. A common behaviour observed in students as they left classrooms was to very quickly pull out mobile phones and engage with them (what they were actually doing could not be discerned). I also observed many students around the school grounds sharing iPods or music players, by wearing one ear-bud each. These performance patterns were enough to write a narrative of constant connection, where classrooms exist as obscuring forces to this valued process.

The use of photos as part of social practice was a display of social connections or personal tastes: it amounted to an 'articulation' (Kress, 2003) of embodied cultural capital, a writing of identity. Students set photos as backgrounds for their phones (Jennifer, Rebecca, Josh), recorded images or videos to share with friends (Tom and Peter), took photos of things of personal interest (Bailey) or of funny events (Josh, Peter). In this way identity was displayed using visual and audio-visual texts on mobile phones. However, for communication purposes, a point of consistency is that written text remains the primary means by which embodied cultural capital is articulated.

The very selection of a phone model can in itself express aspects of identity, particularly when students personalise them in some way, much as Hjorth's (2005a) Japanese youth express identity through the personalisation of the *keitai* with accessories of 'Japanese cute culture'. Peter, for instance, had a *Simpsons* cover 'sock' for his mobile phone (see Figure 7.3), giving an overt visual display that interest in this television show comprised part of his identity. Josh also altered the external look of his phone by exchanging half of the device's cover with a friend: this friend had the same model, but in a pink colour (see Figure 7.3). Here, his identity was linked with a social network, signifying relationships significant for himself. These were physical changes, obvious at the level of lived experience.

Digital texts also offer a way of performing or writing particular identities, connecting with different cultural discourses of consumption and taste. Both Owen and Peter were students who indicated they downloaded different videos from the internet (using 'torrent' programs) to watch on mobile devices (both on their PSPs). Josh also indicated that he regularly downloaded podcasts of programs he liked: at the time of the interview this included the comedy program *The Chaser's War on Everything*[23]. Then there was the almost universal use of mobile devices to listen to music, individually and in groups (except for Sarah in 2007). Digital texts that were consumed wrote trajectories of particular tastes and identities.

A further way in which particular identities were written related to the creation and sharing of 'sensational texts', often positioned as having limited or detrimental symbolic value at the social-institutional level. However, the passion demonstrated by some study participants for writing and reading texts which breached social conventions, was such that they created and shared complex and entertaining videos in their contribution to the collective social capital of their group.

7.7.2 Performance & Sharing Sensational Texts

A specific incident of student social practice within the school ground offers an interesting example to consider the importance of 'performance as text' around

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[23] Melville, Earl, Howard, Fitzgerald & O'Donnell (dirs.) (2006-2009); www.abc.net.au/tv/chaser/

mobile technologies.   The following was recorded in my observations about half-way through the data collection phase:

> During lunchtime today, there was a group of around 6-7 boys crowding around, looking at something on *one* of their phones. It appeared to be very interesting as they were all very intent on getting a good look. Was this something illicit or explicit? They were so intent as to be grabbing at the phone, all of them, crowding around, and rubber-necking to see. The owner of the phone (at least I presume it was his phone) had to at times, wrestle possession of his own phone.   The intensity of the engagement was active and very high.   The intensity was also accompanied by furtive looks around at times. I was tempted to wander over and ask what was going on, but did not want to interfere with the 'naturalness' of this event.

<div align="center">Extract 7.13 (Observations)</div>

Here the performance of meaning was the result of shared use of a mobile technology by a peer-group, where the observed text (whatever it was) had a degree of symbolic value for the individual participants: thus their eager jostling to view the phone. However, the students also demonstrated through their 'covert' behaviour that what they were doing was breaching the structures of appropriate behaviour for school contexts (see chapter 8).

The important thing about this 'performance' is that by trying to share the text on the phone covertly, their placement within the school grounds – out the front of the boy's toilets and within view of a teacher's office – and their body language, actually wrote a meaningful performance text of their social practice, one which could be read by external persons, but which they displayed partially unintentionally. The symbolic value gained through the 'interpretation' of this 'articulated' (Kress, 2003) performance, depends upon the habitus of the viewer, and the structures of distinction that they employ within the school grounds.   Teachers watching this unintended performance – Fortunati's 'mobile induced exposure of separated roles and personalities' (2005b, p. 210) – might develop a range of possible interpretations, depending upon their habitus. Due to their furtive glances around, I read the performance as one regarding some form of illicit text – and there is the possibility of this being a misreading – they might have just been gathering so

enthusiastically due to the generally entertaining nature of the text and jostling each other because of the small size of the phone screen. The importance of this performance though, is that it demonstrates how the 'articulation' of meanings (Kress, 2003) through performance as social practice can be interpreted in certain ways as part of the social text of the school-as-institution. The filming and use of 'forbidden' texts had a certain allure for some students.

In recent years, media panics over misuse of mobile technologies have taken a number of forms. One specifically connected with adolescents and young people has been the use of video-camera enabled phones to record instances of misbehaviour and skylarking. Goggin (2006) traces some of these in the UK phenomenon of "happy slapping" involving the recording of assaults on random citizens by adolescents recording misbehaviour. Only two students demonstrated an interest in the creation of such texts: Peter and Tom.

Peter spoke at length about his recording and sharing of '*Jackass*-type' texts, based on the U.S. television show featuring stunts and dangerous skylarking. Texts in this genre take the form of slapstick comedy which is subversive of social norms. They typically feature a prank or physical tomfoolery of some kind, which carries a level of danger, resulting in some degree of personal harm (typically physical) to the main actor. Presenting a form of risk-taking, the primary audience for this genre is adolescent males. Peter was enthusiastic about this show and was eagerly looking forward to the release of a *Jackass* computer game. He was proud of his efforts filming his stunts and sharing them with friends:

> P: Oh, we do it most of the time. If we're bored we'll film
>   something … doing something stupid.
>
> CT: I've seen one example … someone face-planting …
>
> P: *[laughs]* Tom!
>
> CT: One of the other participants, yeah … face-planting. So
>   what sort of things does that involve?
>
> P: I dunno … just, you see a bush or something and you …
>   it looks funny … just jump into it.
>
> CT: And record it?

P: Yeah.

CT: Okay. So you need to make sure you've what … got a video … a camera with video on it?

P: Ah yeah, pretty much.

CT: Does anyone like go out of the way and get like a full-on digital camera?

P: Oh, not really … never really had one to do that. Me and my next door neighbour used to always do that, like … think of just stupid stuff to do behind his 4-wheeler, and film it with a digital camera.

<div align="right">Extract 7.14 (Peter)</div>

The fact that Peter engages in the production of these videos with others illustrates the extent to which this text is valued by his peer-group. It is also enabled by the technical features of his kind of phone, meaning he always has a video camera on him and doesn't have to worry about organising a specialist camera. Essentially, this embodied form of cultural capital allows him to contribute productively to social capital amongst peers (see chapter 2). Whilst these types of videos were not produced and enjoyed by all, his production for even an unknown audience demonstrates knowledge of the genre conventions of this text type.

I actually had the opportunity to observe Peter producing one of his videos with his friends during a free Physical Education lesson at Riverton High. It was a highly social process, involving seven students jointly constructing a text:

> Peter recording fooling around on his phone. Students were meant to be playing a game of soccer. However, they discovered huge, inflatable super-balls (about 1 metre diameter). After kicking them around for a while, they discovered that if two students held them in front of them and ran at each other, when they collided they were both thrown backwards. I was interested when I saw Peter pull out his phone. He asked the others to wait, he wanted to record it: then he recorded about 3 instances of this activity. After each one, a couple of the students would gather around and watch the replay on his phone. There was a great deal of laughing and fooling around during this activity.

<div align="right">Extract 7.15 (Observations)</div>

What was evident was that it was not just the final video product that was important, but the actual process of filming and getting the *right* video and action recorded. This event and the manner in which Peter described others – with a sort of blasé nonchalant attitude – evoked memories of the moral panic over such phenomena as *Jackass*. In the construction of these audio-visual texts, Peter engaged with a particular cultural discourse that valued the type of literacy practices he engaged in. This was not the same as school discourses.

Tom engaged in similar filming activities (Figure 7.8). Although only one example was claimed by him, the thought and consideration that went into his use of this digital text was illustrative in terms of literacy practices. Firstly, there was the audio-visual aspect of the text's creation, as with Peter's film of him riding his bicycle over a jump and crashing. Tom filmed two separate videos at this location (almost identical), but preferred the first one because: 'I jumped it the second time and didn't hurt myself'. The texts were self-admittedly in the '*Jackass*' genre, and the more spectacular the disaster, the better. Tom's knowledge of purpose and audience was a significant element in how he handled these texts: he selected his preferred version and showed this to others. Additionally, he was in discussions with one of the other teachers about how to upload this video to YouTube, demonstrating further engagement with publication processes via networking.

Through the creation of this particular text, Tom constructed his own identity in a specific way, just as he did when he 'pranked' other students in class to get them in trouble (see section 6.6.2). His bike jump video projects an identity of a risk-taker, who can take an injury, get up and walk away. In the publication of a 'crash' as opposed to a successful jump, he writes against discourses of physical activity as healthy or successful. He writes an identity for himself against social convention. He positioned himself within the school as someone who did not necessarily play by the rules, a position which at time brought him into conflict with authority, and had seen his mobile phone confiscated on numerous occasions. However both his and Peter's realisation of the value these texts have at the cultural level, for expressing individual stories and experiences, combined with their capacity to produce and share these realisation of the value these texts have at the cultural level, for expressing individual stories and experiences, combined with their capacity to produce and share these

Figure 7.8: Tom's bike-jump crash. Stills taken from a video, numbered sequentially.

 texts, points to potentials offered by mobile technologies. The literacy practices at play in articulating cultural discourses are deep and significant.

This extends to the level of general performance, with both Tom and Peter talking of a shared friend whose phone would fly to pieces when he threw it against something, and which I also observed. The phone was undamaged, as only the covers had come off, and could quickly be put back together. However, as a form of writing identity using multiple modes, it was successful in being disruptive of audience expectations, and in a 'perverse' form, entertaining for those in on the joke: who would expect someone to just smash their phone apart on the ground? Gestural, sound, visual and spatial elements all contribute to the construction of this performance, which Tom and Peter both claimed was conducted in public settings, deriving entertainment from its shock value for the unsuspecting audience.

The sharing of sensational texts by students illustrates participants' ability to engage in mobile literacy practices, in the form of text production, which have value as cultural capital at the peer-group level. These complex performances involved an understanding of modal 'affordances' (Kress, 2003) and genre conventions, and illustrated a particular habitus in terms of device usage patterns. Students' capacity to create complex texts using mobile devices was not something that the school encouraged or harnessed.

7.8   Cultural Capital & Modal Preference

The performance of a particular social practice involving mobile technologies is always contextualised within different fields due to their physically and digitally mobile nature. Therefore, the use of a device for a particular purpose, or the text associated with a mobile technology use, is continually being rewritten against the ideological structures of different contexts. Although mobile technologies were rich cultural resources in the lives of these students, they are still finding a productive place within the educational-institutional landscapes. The symbolic value of embodied cultural capital is in a process of becoming, of negotiation, of moving towards a point of value. Whilst embodiment is associated with a particular social practice which might be understood as a 'performance' or a static text, symbolic capital – discussed in the next chapter (see chapter 8) – is concerned with the relationship between the educational field and the capacity of an individual to negotiate the value system of those fields.

Of importance in this process is the selection of appropriate modes for the embodiment of meaning ('articulation'), not just for the purpose of the message, and with regard to the audience, but also with regard to the context of both the messages' creation and subsequent interpretation. The selection of verbal modes of communication within certain social situations can be problematic at best, and as Fortunati (2005b) illustrates with her study of public transport users, a moment when the private lives of individuals intrudes upon the public sphere: speaking loudly on the phone in public was something that Jennifer indicated was rude and inappropriate (see section 8.3.2, Extract 8.11). The selection of inappropriate modes for the

'articulation' of meaning (Kress, 2003) can result in a loss of symbolic capital and prestige in certain circumstances; it can also disturb the performance of a particular public identity, thereby disturbing notions of stable identities.

At its very base level, the ability to choose particular modes and mediums for communication or meaning-making is dependent upon both objective cultural and economic capital: the features that their devices have, and what features individuals can afford to use. For an individual to take and send mobile photos via MMS, they must first have a phone with a camera on it, and secondly, they must be able to afford to send this data to another person. Both these narratives were presented in the stories of participants – with some students having no camera on their phone (Erin), and the majority expressing that MMS was too expensive to send. Therefore, the ability to articulate meanings as part of social practice was structured by economic and objective factors that were at times beyond the control of the individual, whatever their actual or potential dispositions. Therefore, the medium that had the best access potential for participants and was cheapest – SMS – became the primary mode for the 'articulation of meaning' (Kress, 2003), functioning as embodied cultural capital.

As a text form, SMS holds the most weight as 'authentic' communication among adolescent friends. Whilst the previous discussion concerned the use of SMS to articulate particular meanings (see section 7.6.1), here I consider factors that influence the prevailing preference for SMS as a form of embodied cultural capital; from device capabilities, to personal beliefs and the value of asynchronous communication. In his informative writing assignment, Owen compared 'SMS versus calling' (Figure 7.9), suggesting advantages of this medium, but also disadvantages such as its impersonal nature. From a lexical and grammatalogical standpoint, it doesn't seem to matter whether or not an individual student uses 'SMS-language' though. As a form of 'gift-giving' (Johnsen, 2003), it is the communication in itself that is important, both in terms of maintaining social capital, co-ordination of social interactions, the maintenance of friendships and sharing of information (see chapter 6). Even with its 'impersonal' nature (see Figure 7.9), as an embodiment of identity at the level of digital hexis, written language has the capacity

Figure 7.9: Guidelines for SMS versus phone call, from Owen's Informative Writing assignment.

to communicate information about individual identities. The fact that many students indicated that they sent lots of txts, and many with very little content – because they were so cheap – combined with the fact that they were sent to friends, indicates that written language can function as a semi-synchronous communication medium, with the added redundancy of asynchronicity. It must be acknowledged in this case that the preference for embodying meaning in written form is heavily structured by the shared Telstra membership of Riverton adolescents (the monopoly-membership dynamic).

The original purpose for SMS-language development (in that it aimed to reduce the amount of txts that one had to send, as one could squeeze more information into the limited 160-words than with conventional language) seemed to be undermined by the deceptively cheap cost of SMS, at '1 cent'. It sounds like a small amount, but as many of the students admitted throughout the research, they

could go through hundreds, even thousands of messages in a fortnight. What the telecommunication company appeared to lose through the low cost of individual messages was actually reaped through the large volume of SMS messages. Whilst it was beyond the scope of this research to discover the content of each SMS, it can be articulated from the 50% use of predictive txtng, combined with the fact, as Crystal (2008) observes, that most SMS's contain a high degree of conventional language anyway, that there is a degree of conventional expression going on in the participants' messaging. Sure, they use abbreviated language, but it is just one aspect of this genre.

Another factor that influenced the way that SMS texts were written related to personal preferences and the affordances of particular phone models (see also section 7.6.1). Josh for instance, discussed how his experience using Nokia and Motorola phones enabled him to understand that their predicative txtng systems worked in different ways. His own preference was for the Nokia's system with his old phone, over his new Motorola, which he expressed frustration and dislike for:

> The buttons are a lot better for one … and … and just the … with the dictionary, they've got a different style. Like with this one [Motorola] you scroll through … with that one you just press a button and it changes word, and you can like add 'em easily. With this one you can't add quite easily.

> Extract 7.16 (Josh)

Whilst it was beyond the scope of this project to investigate just how these differential input methods influenced his actual writing of SMS in different situations, what is clear is that dispositions towards writing SMS' in particular ways – using predictive or manual input for instance (see Figure 7.5) – are influenced by the actual nature of the devices themselves; a demonstration of the influence of objective cultural capital over its embodied form. No prevailing or prescribed structure with regard to how students used their mobile phones in terms of SMS-language use could be discerned. What was clear was a continuum of variance, linked to individual dispositions and competencies, but also tailored to the audience of the text.

The use of SMS enabled individuals to embody a more confident and fluent personality, as pointed out by a couple of students (Owen and Tom). Using SMS allows an individual to avoid awkward or stilted conversations, and instead just get the message/information across to the respondent. Concerns about how one sounds on the phone, or how one seems, is an issue relative to individual habitus. Owen in particular was rather introverted. Preference for SMS-ing, whilst related to a number of factors, was also influenced by personal dispositions with regard to communication. This issue initially emerged during the 'Affinity Diagram' activity conducted in class, when students listed advantages and disadvantages for SMS: here students articulated the advantages as being able to talk with friends about a range of issues without having to call. However, the disadvantages listed in this class exercise hinted at an issue around this, specifically that the written form results in the communication being more impersonal:

> Impersonal … don't know if the person has got the message … hard to be sarcastic … confident because they can't see [or hear] the other person … tell you something instead by phone without having to talk to you … get confident because they aren't face to face

<div align="center">Extract 7.17 (Affinity Diagram, Disadvantages of SMS)</div>

It is interesting to note that in this class activity what was seen as a type of 'false confidence' was put down for SMS as a *disadvantage*; this, despite it being the preferred method of communication between peers.

Josh linked the preference for SMS and the increase in communication confidence through the notion of pragmatism, explaining that txtng was a way of getting direct and immediate information, without wasting money and time:

> Instead of calling ... which costs ... and then just um-ing and ah-ing on the phone. You can think about it and then message it.

<div align="center">Extract 7.18 (Josh)</div>

He also positioned making phone calls as a back-up to txtng: 'And if you're not sure they get the message you'll call'. The acknowledgement was that phone calls were important for organising where large amounts of information were exchanged, or where person-to-person understanding was vital. As such, Tom used phone calls to

organise his transport for cricket, because it was important that he was sure everyone involved had received the information and understood the message (see section 6.6.1, Extract 6.17). Writing creates a distance from the immediacy of the communicative exchange, and the limited expressive form allows room for individuals to misunderstand each other, as the media furore over 'SMS-language' demonstrates (see Crystal 2008). Whilst the written mode may be cheaper for the participants and asynchronous communication useful for times when coverage is not reliable, there was still a need for synchronous communication. The ability in the verbal mode to check comprehension and understanding with immediacy, means that this form of 'articulation' (Kress, 2003) is still used: in the case of participants, often as a result of a pranked phone call to a parent, or, as in Bailey's case, the use of a phone specifically paid for by her parents for her to contact them. As such, whilst SMS is maintained as a preferred mode for communication amongst peer groups – a way of contributing to social capital – the use of phone calls retains a role of importance for 'articulating' (Kress, 2003) certain information.

Richer modes were not used for communication purposes over distances, but rather, to consume, create and share meanings around digital texts associated with friendships, identity and cultural discourses. Despite many of the participants having devices (objective cultural capital) capable of taking pictures (though definitely not all the students), the extent of MMS-ing was limited. Students did take photos on their phones, but these were seldom exchanged via the phone system: if they were exchanged, Bluetooth was used. This was put down to cost. However, the photos that were taken were often articulated in a highly personal way, used as backgrounds for phone screens (where devices had this ability). A number of students indicated that they engaged in this practice, of taking photos of friends, objects or events, and putting these as their phone background – Josh, Jennifer, Tom and Rebecca for instance – changing them as new photos were taken. Though it was common practice, not all students ascribed to it; Brad for instance was happy with an animated screen background that came with this phone. None of the participants in this research indicated that they downloaded or purchased backgrounds or ringtones, fitting with their limited economic capital. The use of photos as backgrounds embodied certain meanings, in particular social connections and shared

understandings: to receive the photo of a passed-out Owen with writing on his face, was a demonstration of involvement with a particular social group, where certain behaviours were recorded and published as valued.

The use of visual texts as a part of the articulation of social connections was common amongst participants. Texts were created to be shared with friends, as an embodiment of cultural values linked to their social group. Tom created his "Bike jump crash" video for the entertainment of friends (see Figure 7.8), as did Peter with his videos of silly pranks and actions (see section 7.7.2). Josh indicated that there was a photo circulating of Owen, passed out at a party:

> Well…usually my friends have had a couple…they take stupid photos of just random stuff, and they just set them as a background or, like my mate. My mate was drunk once and he…friends took a photo of him, *covered*…moustache, big 'L' on his forehead…and they set that as his background. And everyone else got it. Yeah. But I just chuck…I took a picture of my guitar and put it on the background.

<div align="right">Extract 7.19 (Josh)</div>

Whilst this practice might be interpreted as a form of 'cyber bullying' (Froude, 2005), here we are concerned with the meaning behind this articulated text. The group of students were friends, and this was a way for them to effectively tease, in a friendly natured way, one of their own: it was indicated that any embarrassing incident that anyone was caught doing would be fair game in this embodiment of group-association. While sharing photos was a common practice among the participants – aided by the increasing ubiquity of mobile phones with cameras – SMS retained the central role in the 'articulation' of a variety of meanings (Kress, 2003).

Embodied cultural capital bears a direct relationship to personal dispositions towards situational demands, as regards preference for certain modes of articulated meaning. The preference for txtng at the peer-group level relates to connections with both economic and social capital, but also to cultural discourses inherent in the peer group about how articulated meanings are embodied. But this demand is not blind to the 'affordances' of particular modes (Kress, 2003) and demands of certain

situations, where for communication purposes phone calls were preferred on occasion.

7.9   Dispositions towards the Articulation of Meaning

The inculcation of attitudes and dispositions towards mobile technologies is a complex process, influenced by an increasingly pervasive 'cultural pedagogy' (Nixon, 2004) and tied to the process of inculcation (Haddon, 2003). In this process, the role of the family is key– though not thoroughly predictable – in adolescent attitudes to mobile technologies (see chapter 6). Just so, the adolescent peer-group plays an increasingly important role in forming dispositions about various technologies.

The importance of heeding the individual level is to understand the scope of variation within patterned behaviours, due to the dispositions of individuals. Whilst some students seek to maximise their symbolic capital in the education field by not using mobile technologies in classrooms (e.g. Jennifer), others seek to write against this structure, intentionally engaging in practices which breach the rules governing the field, reducing their capacity for symbolic capital (e.g. Tom). It must be noted however, that in such situations, the differential types of symbolic value associated with social practices around mobile technologies between the societal-institutional level and peer-group level may appeal to a certain habitus. Tom for instance engaged in 'pranking' friends in class, an activity which actively breaches the structures of the educational/classroom field, but which may strengthen social capital at the level of the peer-group, manifesting as symbolic value at the level of the peer-group. Preferences for the levels and types of prestige that one is going to seek when using mobile technologies is thus an issue of negotiation for the individual with regard to their own 'mobile fields'.

The inculcation of habitus and integrated dispositions towards mobile technologies and their use is a complicated process. It is generally agreed, even by Bourdieu (1977), that the process is so ingrained in the minutia of everyday experience, that fully explaining the process is significantly difficult. So much is tacit, unsaid and continuous, that the most we can hope to do is paint with broad

strokes, delineating trends and themes that influence the development of a particular habitus. The focus in this study on mobile technologies specifically, presents an interesting opportunity: it is only recently that children and adolescents have begun to emerge who have been raised in an age of mobile technologies and the potential of constant connection. Families, as social networks (social capital) which form the basis of early inculcation, can have an unpredictable impact on dispositions towards mobile technologies. Whilst it is not possible within the scope of this research to examine the process of inculcation towards mobile technologies (the pragmatics of doing such research is also highly problematic), we can make reasonably educated judgements about habitus, based on the responses of participants and my observations from around the school yard.

Bailey presents an example of a confident and frequent 'digital traveller'. She was, by all appearances a digital native, with multiple devices, able to txt on her phone without looking, and admittedly emotionally attached to her phone. Her behaviours – taking financial responsibility for her own phone, a preference for txtng, taking photos of items of interest, listening to her iPod while doing school work – also fit the mould of a 'digital native' (Prensky, 2001a). Her self-proclaimed ability to 'multitask', demonstrates an ability to confidently and effectively negotiate multiple literacy practices. Her hidden txtng in class comprises a performance text, whereby she was able to continue an asynchronous written conversation, whilst adopting appropriate gestural modes for the immediate classroom field.

However, to an extent, Bailey's identity as a 'digital native' was undermined by a reliance on her father for information about these technologies. Whilst the seeking of information from another was part of the social capital that all participants in this project drew from, Bailey's inculcation as an only child with a parent whom she stressed was an expert on technology, and 'read all the magazines', was a unique feature of her habitus.

> CT: So, if the mobile phone network went down?
>
> B: It would be like a depression. I think it would be a depression. People wouldn't know what to do. You've read things in the newspaper about apparently there's a new disease … a phobia of losing your phone?

Extract 7.20 (Bailey)

Among the participants, attitudes towards mobile technologies shared a common denominator: the naturalness, or the taken-for-granted-ness of these technologies. These adolescents have grown up in a world rich in digitally based media and mobile technological devices. Even our reluctant 'digital traveller' Sarah is caught up in the meaning-making dynamics around mobile and other technologies.

But we must not simply assume that all students want to engage with mobile learning and that it works for everyone. As this research has demonstrated throughout, the 'tyranny of place' still exists, though in a muted form, through differential access to technologies, services and infrastructure. Socioeconomic, geographical, cultural factors, and individual habitus, can all impact on usage patterns with regard to these technologies (see Taylor, 2008; Taylor, 2009a).

Many students spoke throughout their interviews about their changing attitudes to, and behaviours regarding, their use of mobile technologies. They spoke about using phones less, not pranking or using them for fun activities, as they became more incorporated into the naturalness of their everyday life. As Bailey put it: 'I haven't used my phone much anymore. I just … I don't find it as important, maybe it's because I've matured or something'. This might be understood in a number of ways: there is an extent to which students develop a growing understanding of the symbolic capital that functions within different fields – they become inculcated to the power relations that dominate them – and align their deployment of embodied cultural capital more precisely with the structure of that particular field. It might be understood also in terms of embodied cultural capital associated with the acquirement of a new technology. It becomes more ingrained into the habitus, becomes more a part of instinct – a 'feel for the game' – a more natural part of habitus. It is a form of inculcation of the habitus, and as Kress and Pachler (2007) points out, the 'mobile habitus' is something that is always becoming (see section 4.4.4). In an age where continuous technological change presents us with a social practice topography defined in terms of its fluidity, the need for habitus to continually evolve and change is a natural part of social practice, even beyond childhood. People pick up their mobile phone with their keys and wallet/purse. They grab an iPod to go jogging. They call the mobile number instead of house

number of a friend. These small changes all reflect an ongoing inculcation of dispositions, linked to a habitus in a continual state of 'becoming.'

Sarah, as the extreme example, talked of her understanding of the down-side of mobile phones (always being contactable) growing, but only as a result of not having a mobile phone, initially because of its confiscation, and then by choice (see section 6.4). Throughout the whole research process, Sarah demonstrated herself to be a critical 'digital traveller', who did not blindly accept or adopt technologies because of cultural or peer trends. Instead, she had become a far more resistant to hype and evaluated technologies according to their usefulness for herself.

CT: So, do you have a … did you say you had an MP3 player
        or not?

S: Nah, I don't 'cause I don't have one because I don't
        want to go deaf. *[laughs]*

                    ******

S: I don't really use the internet … I don't know, I'm not
        really … I don't rely on talking to people all the time.

                    ******

S: I really like having a phone ... and I like not having a
        phone, 'cause then my mum and dad weren't constantly
        tracing me all the time. Like, whenever I'd go
        somewhere, like when I used to have my phone, I'd get
        like a call, like every hour: "Where are you?" And I was
        like: "Arghh!" Like, I knew that if I didn't answer it,
        they'd like get angry at me and stuff.

                                        Extract 7.21 (Sarah)

Sarah's dispositions towards not engaging with technologies, was a marked difference with the rest of her peers, though some others did acknowledge the down-side of these technologies. Many students indicated that they in part had the phone because their parents agreed to it for security reasons (Bailey, Jennifer). This plays out the tension between teen emancipation and extended-parental supervision at a practical level, and one which adolescents find themselves negotiating in their daily lives (see section 2.3). It is only with the removal of mobile connection – as with Sarah having her phone confiscated by her parents – that the value of not being

connected for individual identity is able to be realised. None of the other students actually complained of not being able to get away from their parents. Indeed, only one of the Affinity Diagrams constructed with students in class made mention of 'not being able to get away from people', though this was not specifically directed at parents, but rather a general reference to the down-side of being constantly contactable.

While the preference for SMS remains, this was not always determined by financial aspects directly. Some students for instance indicated that they felt more confident communicating via SMS (Josh, Owen). Personal dispositions towards modes for communication were also related to the content of a message, as Jennifer indicated with her disapproval of dumping someone via SMS:

> Dumping someone, I reckon is pretty harsh. If you ever have a big thing, or if you have like really bad news, or if like really good news then ring them, or see them in person.

Extract 7.22 (Jennifer)

Making a phone call also had importance in certain sensitive situations, or where synchronous understanding was vital to the communication, such as Tom needing certainty when he arranged his transport for cricket. As Josh discussed in his first interview, the use of SMS-language by some people made written messages difficult to understand, which was why, he claimed, he preferred to write using traditional language styles.

Despite having to negotiate the 'rules' of different fields, participants also have to negotiate disconnection from their engagement with mobile technologies across a range of fields. Whilst the enforced disconnection in classroom settings is reflective of wider approaches in Australian schools, beyond the built-up sprawl of the town, rural and isolated students must deal with infrastructure gaps in respect of mobile phone reception. Students who had more expensive devices such as portable game-players (PSP and Nintendo DS) or portable DVD-players indicated one of the major places they would use these was 'while travelling' – generally on holidays – and very few of them brought such devices to school regularly, if at all. Bailey indicated a possible reason for this when she explained that her father rarely permitted her to take her PDA and laptop to school because they were too expensive

and he was concerned about possible theft. Schools it seems are not productive places for mobile technologies.

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This chapter has sought to trace experiences of articulated meaning across the experiences of participants, primarily beyond the scope of school fields. That this is linked with peer-group based concepts of symbolic value at times puts practices at odds with the structures of distinction and legitimating around school-as-institutions, a process which is unpacked in more detail in the following chapter (see chapter 8).

It has been demonstrated how mobile technologies are articulated as a form of embodied cultural capital, dependent upon the individual dispositions of students, linked to their social networks. As forms of objective cultural capital, mobile technologies carry with them a range of associated meanings linked to cultural discourses. Yet these participants often displayed a pragmatic attitude towards device ownership that underwrote their beliefs about technological fads and trends; having a mobile phone was more important than having a particular model. This perspective carried over to use of SMS-language, where the message was given more importance than the use of specific language features, though a more fine-grained analysis (beyond the scope of this study) may reveal shared lexical or grammatical features associated with particular peer-groups.

At the peer-group level, the use of mobile technologies as a form of embodied cultural capital has become so naturalised a feature of their lives that articulated meanings can range between covert practices, overt displays of identity and unintended performances. Examining the use of mobile technologies as an articulated performance text offers generative ways for understanding these social practices in terms of multimodal literacy. That these practices vary at the level of individual dispositions – are influenced not just by cultural discourses, but by the way in which devices are domesticated and articulated by individual adolescents –

further complicates the picture down to the fine-grained level of individual students in individual classrooms. This of course brings us to a point common for NLS scholarship: finding connections between out-of-school and in-school (legitimate) concepts of literacy. In the following section I examine how the articulated meanings discussed this chapter are interpreted at the level of school-as-institution (a more traditional application of Bourdieu's theories), and what this means for the future of literacy associated with mobile technologies.

8

The Symbolic Value of Mobile Literacy

> I think…I reckon they're good and they're handy to have around.
> I use mine a bit, but I'm conscious of being rude and not doing it
> when, you know, someone's trying to talk to you or whatever,
> but, I don't know…I use mine a fair bit and I reckon they're good.
> Like, they're a positive thing, not so much a negative.
>
> Extract 8.1 (Jennifer)

Jennifer's comment about her reflective self-consciousness when using her phone, illustrates a central concern of mobile technology use, and their influence on social practices generally, and schools specifically. The symbolic capital of a particular use of a mobile device – be it a phone call, txtng or listening to music on headphones – is continually negotiated across different fields, in relation to the objective demands and structures of those fields. The specific focus on symbolic capital central to this research, concerns the interpretation of participants' literacy practices in relation to school/educational fields.

This chapter considers how mobile literacy practices are structured by school and educational fields; it is particularly concerned with the apparent 'digital divide'

between in-school and out-of-school digital literacy practices (cf. Buckingham, 2007). It examines how the articulated meanings of students using mobile devices are interpreted and structured by institutional educational ideologies. In exploring the symbolic capital associated with mobile technology use, I am primarily concerned with Bourdieu's traditional configuration of this form of capital as institutionally legitimised literacy practices (see Bourdieu, 1991; Carrington & Luke, 1997; Moore, 2008). This is not to imply that levels of distinction cannot be organised at the level of the peer group, and working with the dual-level analysis, I have considered in the previous chapter how different forms of cultural capital are valued at the peer-group level, creating a type of distinction (see chapter 7). However, in terms of educational outcomes, it is the institutionally valued practices that largely structure behaviour within schools as institutions. Bourdieu's (1991) concept of symbolic capital, as that accorded by institutions as forms of distinction, carries significant weight in how to understand what passes for approved or sanctioned literacy practices.

The study participants inhabited shared spaces of school classrooms, grounds and educational fields. Setting aside Sarah's exceptional experience, across all these spaces they carried mobile devices of various kinds, though typically – and in line with statistical data (ACMA, 2007a) – almost always the indispensible mobile phone. The school, as a particular educational place, sought to control how and when students used their mobile devices; from school rules and policies, to an individual teacher's discretion. The practices of students in response to these structures varied at the level of individual habitus, though the disjunction between in-school and out-of-school practices was consistently emphasised in the multimodal choices students made around their mobile technology use.

8.1   The Symbolic Value of Mobile Technologies

> I don't reckon that teachers will ever allow it [mobile technology] to be used in class.
>
> Extract 8.2 (Bailey)

The key disjuncture at the heart of mobile literacy in schools is the different symbolic value assigned to the literacies from students' everyday lives, and educational institution values (cf. Carrington & Luke, 1997). The participants' experiences with mobile technologies present a particular challenge, not just because they transcend the spaces of home and school, but because their particular ubiquity for many adolescents embodies the distance between real life and school as an institution (see Buckingham, 2007). Essentially, these disjunctures reveal the constructed and arbitrary nature of schooling. This was demonstrated through the fact that all participants saw their mobile technologies as separate from school learning. Significantly, when asked directly about the educational potential of these technologies, the participants gave negative assessments. Part of this is the process of 'symbolic violence' (Bourdieu, 1991).

Drawn from the work of Bourdieu (1991), 'symbolic violence' is the process by which institutions maintain the system of distinction around particular behaviours: it is the exercise of domination of one ideology over another. Through the encouragement and/or punishment of different practice, institutions structure the symbolic systems by which prestige can be gained. Individuals subject to symbolic violence participate in its perpetuation through their 'misrecognition' of the arbitrary nature of the system, and their acceptance of the prescribed perspective as objective, as doxa (see section 4.3). The 'everyday literacy paradigm' (see section 3.1.2) is involved in this process, at the level of lived experience, as Bourdieu (1991) indicates:

> Thus the modalities of practices, the ways of looking, sitting, standing, keeping silent, or even of speaking ... are full of injunctions that are powerful and hard to resist precisely because they are silent and insidious, insistent and insinuating. (p. 51)

Riverton High, as an educational institution, positioned as valuable particular social practices, literacy skills and technologies. This extended from the school administration (setting school policies and rules) to the individual classroom, where teachers negotiated arrangements around technologies (either explicit or tacit). It was not so much the devices as objective cultural capital that were intrinsically forbidden (although at times they were, where safety was an issue) but rather their

'articulation' (Kress, 2003) as embodied cultural capital, when students used them in particular ways. Although students spoke of mobile technologies as separate from their school lives, as being objects banned in classrooms, they likewise continued to use what they saw as necessary technologies within educational fields, either with permission or without. Individual attitudes and usage patterns about technologies, are of significant importance when considering how to integrate mobile technologies into learning environments. Being designed for single-person use, mobile devices suggest different approaches to learning from traditional collective learning environments, like classrooms.

The pedagogic approach of Riverton High resulted in a situation where mobile literacy practices were prohibited or controlled. Peter's relaxed attitude to these rules offers testimony of the different value assigned to mobile use by his peer-group and his school:

P: I use it [phone] lots during school. I don't like to do, but I suppose I'm used to it now. I mean I even use it in the Vice Principal's class. Ms Clancy, we have her for maths now…

CT: Okay. And they don't notice?

P: No. I don't care if they do anyway. *[laughs]*. They never catch me.

CT: So would you use it in the school grounds?

P: Yeah, all the time. Oh, when I'm with my mates, I don't really use it, like I put it away and play footy and stuff, but when you want to tell them where we're drinking on the weekend or what we're doing on the weekend, I'll do it.

CT: Yeah, Okay.

P: I use it at work a lot as well.

CT: Well yeah… *[laughs]*. So what sorts of school rules are there, about using phones and PSPs?

P: Well phones and that are supposed to be off during class and you are allowed to use them in the school grounds.

CT: Yep.

> P: But um…PSPs I think… You're allowed to listen to music I think whenever you want.
>
> CT: Some classes.
>
> P: Like if some teachers say you aren't allowed to use it, you just turn it off.

<div align="right">Extract 8.3 (Peter)</div>

While Peter has a general understanding of the school rules his relaxed attitude to his phone use amongst friends carries over into the classroom; a manifestation of Buckingham's 'digital divide' (2007). It is an important tool in Peter's socialization, vital for organising his weekend activities, especially as he lives out of town. This strong attachment offers a contrast to restrictive classroom rules, resulting in a conflict between the symbolic value of the literacy practices involved.

Cultural capital, in both its objective and embodied forms, gains its symbolic value through 'articulation' (Kress, 2003) at the level of everyday practice. The clothing that one wears, the persona one projects in particular social settings, may suit certain fields but not others. A clear example of this relevant to the experiences of adolescents is the wearing of school uniforms: this was the case at Riverton High School. Within school grounds students were required to present their identity as an allegiance to their particular school through wearing this uniform: other embodiments of identity were also strictly regulated, from requiring particular kinds of shoes to be worn, the prohibiting jewellery, make-up and particular hair styles. These are typical expectations in many Australian high schools. Mobile phones and other such devices – as tools of every-day, home-based consumption – were positioned as disturbing the system of symbolic values that function with this school environment. So, how students use and display mobile technologies, allows the realisation of particular levels of symbolic capital in educational settings.

8.2   Symbolic Capital as Interpreted Meaning

The most significant issue for mobile technology use in school environments is the way that its use is 'interpreted' (cf. Bourdieu, 1991; Kress, 2003). In literacy terms: it concerns the way that mobile literacy practices are 'read' within the school
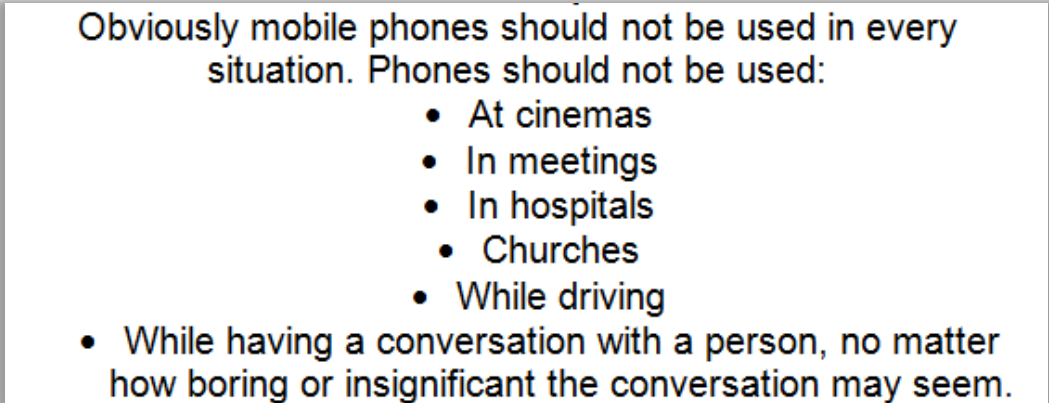
> Obviously mobile phones should not be used in every
> situation. Phones should not be used:
> - At cinemas
> - In meetings
> - In hospitals
> - Churches
> - While driving
> - While having a conversation with a person, no matter
>   how boring or insignificant the conversation may seem.

Figure 8.1: When not to use a phone: extract from Jennifer's Informative Writing assignment.

context. The specific ideological structures of individual schools, indeed, individual classrooms, can position identical usage practices in very different ways. Participants identified particular teachers who would not tolerate mobile phones in their classrooms, and others who were more permissive. Likewise, listening to iPods while doing school work was permitted in some classrooms, but not in others (aside from being a individual choice). Therefore, despite appearances of blanket-bans, the situation was somewhat more dynamic, where teachers reached working-understandings with their students about the place of these technologies in their classrooms. This was the level of multimodal performance that we can identify with Willis' (2000) notion of 'sensuous experience'.

Being interpreted as 'rude' in her use of her mobile phone was a significant concern for Jennifer. She understood that different spaces demanded different usage patterns, even the absence of use, and explored more detailed rules for use 'at work', 'at school' and 'on a date'. However, as in Figure 8.1, some spaces and situations were seen as antithetical to mobile phone use in general. Whilst this black and white certainty was broken down in more detail throughout her informative writing piece, it demonstrated her understanding that different spaces structured mobile usage (including phones and iPods) in different ways; that they had different symbolic value in different spaces.

Literacy as social practice entails meeting the ideological demands of fields in terms of how one behaves and the forms of communication that one engages with. Whilst there were school rules not to use mobile phones in class, the reality at Riverton was more complex. The study participants indicated that negotiation at the classroom level – especially understanding the expectations of particular teachers – was ongoing. I incidentally observed a range of classes during my time at Riverton High, and mobile phones were not always hidden out of sight.

> During period one I walked past a number of classrooms, glancing casually through the windows that border the corridor. In one class I noticed a female student sitting idle, apparently txtng on her mobile phone. Did the teacher notice, or was he tactically ignoring? Was it the heat that defeated everyone? Does it really matter anymore? The computer network of the school is extremely slow: does this justify students using other networking methods to get at information, or do students just not use their phone for the purposes of studying?

Extract 8.4 (Observations)

There is a clear tension within educational fields around mobile technologies as private and personal devices, and the desire and duty of educators to monitor student activities. A mobile device offers students a form of escape from the panoptic gaze of the educational institution, but this very move is enormously disturbing for many educators and parents. Tom asserted that it was his device, and a teacher had no right to take it or look through what was on it, reflecting the very personal nature of these devices at the level of identity. When discussing the fact that he had sometimes had pornography on his phone, he stressed the privacy involved:

CT: I mean, what I mean is … taking it to an official step: if a teacher found that on your phone and they deleted it…?

T: I'd go nuts, 'cause that's my … that's my phone and no one else…

CT: I mean, they would of course comment that you brought it to school and…

T: But they're not allowed to go through your phone 'cause that's private, confidentiality.

The fact that the way certain texts held on mobile technologies might be interpreted as breaching school rules, is positioned by Tom as less important than the invasion of privacy that such a discovery would involve. A number of participants in this project for instance spoke of fight videos being circulated on phones (generally using Bluetooth), which the teachers were unaware of simply because they were held on private devices which teachers did not have access to. It is the wider publication of such video texts on the internet that results in wider knowledge of the event, and in an increasing number of cases, legal reprisals or sanctions for those involved. However, when not publicised on the internet, such illicit texts were held in private devices, and therefore, beyond the monitoring gaze of adults.

In examining mobile technologies in educational fields, the concern is with collective cultural patterns of the student group, but also with patterns of individual variation within that structure. There were instances related throughout the study of 'pranking' or 'txtng' whilst in class, something unapproved by school authorities (see section 6.6.2). The practice of 'txtng' or being 'pranked' in class, only presented as a problem when particular modes had not been managed in a way that matched the actual practice to the structural demands of that particular classroom. However, due to the prevalence and pervasiveness of mobile technologies in all of the participants' lives, the disjuncture between in and out-of-school was emphasised. At the peer group, such SMS and pranking was a valued form of communication among some social groups, giving it a degree of symbolic value at the peer group level. However, this prestige did not translate across the classrooms, where the system of distinction around legitimate literacy and appropriate behaviour was administered from the top-down, rather than emergent from experience. This dislocation, around the symbolic value of mobile literacy practices at home and at school, needs to be considered when thinking of educational futures.

A quintessential example of these different value systems is one which has emerged in the contemporary panic over apparently falling literacy standards; in this case, txt language, especially where it appears in school work, is held up as the example (see sections 3.2.2 and 7.6.1). Crystal (2008), Carrington (2005) and Goggin (2006) discuss one such example in the exam answer of the Scottish teenage

girl. Erin offers an example of someone who admits that this slippage between genres – between txt and essay – does occur for her at times:

> Yeah, sometimes I do … my SAC[24] today … and I reread it and I had so many 'things' …*[laughs]*… I had to go and scribble them out and write correctly.

> Extract 8.6 (Erin)

It is these instances that feed into debates about the negative effect of SMS on literacy standards. We don't often get told about students like Jennifer, Josh and Brad, who said they did not have a problem with this issue. But as was discussed previously, SMS as a particular genre has purposes, audiences and rules (see section 3.2.2). The interesting thing about Erin's comment, is that she indicates that these errors are mistakes that she recognises, not deliberate attempts to use that form of language because it is all she knows. Indeed, she self-edits such language *out* of formal essays.

Aside from the written modes associated with mobile technologies, and how they may be interpreted differently, as a physical object these devices also convey a meaning which can be counterproductive to symbolic value in school fields. Whilst I observed students and young people using mobile technologies in the school yard, within classrooms they were less obvious, and often hidden. This division is exemplified by the myriad of observations of students walking and looking at their phones both before and after class and school. As a particular example of this difference between symbolic value systems, separated by the classroom door, there was a student leaving detention mid-lunchtime:

> A female student has just left the lunchtime detention room. The next time I see her, as she exits the building at one door and I at another, she has her phone out and as she walks away, appears to be txtng. Is she txtng about her escape from the detention room?

> Extract 8.7 (Observations)

---

[24] SAC (School Assessed Curriculum) often took the form of tests under exam-conditions, though other forms were possible.

Josh's experience builds on this, demonstrating knowledge of and conformity with, different fields, including the manner in which they position mobile technology use as part of social practice. He spoke about how at his workplace (Target, a department store chain), mobile phones are not to be taken out on the work floor – the very appearance of one of these devices conflicted with the rules governing behaviour in this particular field. As such, a mobile phone, as objective cultural capital, must be embodied in a very different way from in the school yard. In fact, Josh read the positioning of mobile phone use across institutional fields in much the same way, talking about the visibility of devices being a negative, or at the very least, a subject of negotiation with those in positions of power. The very visibility of a mobile phone (effectively the embodied version of its objective cultural capital form) has a detrimental impact on prestige across some fields – including school classrooms - which did not translate into symbolic capital. In these fields then, the physical absence of mobile technologies as objective cultural capital, results in a form of embodiment which transforms effectively into symbolic capital. This is a curious moment, in that the embodied cultural capital is only effectively transformed into symbolic capital through its physical absence. The classroom walls of Riverton High came to physically represent a change of field, which rewarded only particular literacy practices: once participants left the space, mobile technologies were quickly plugged into ears and held in hands, ready for use.

8.2.1 Symbolic Capital & Punishment

Predominantly throughout the school, the use of mobile devices within classrooms was positioned as a loss of symbolic capital. Whilst the majority of students abided by this rule, at least on the surface, failing to manage the multimodal nature of mobile technology use could result in a breach of school classroom rules. This resulted in punishment; the prescribed version was for the device to be confiscated, typically at the teacher's discretion, with multiple offences requiring a meeting with the school principal.

Of the participants, Tom was the only one who seemingly regularly had problems with his phone being confiscated. In one class, this occurred on a regular basis:

CT: I can't remember if you said you'd had yours confiscated or not?

T: Arr, yes I have actually. I get it confiscated in maths sometimes. But I get it back.

CT: How many times?

T: A couple. Probably twice a week maybe.

Extract 8.8 (Tom)

Tom's troubles with the school rules regarding mobile phones was reflective of difficulties he had with the school environment overall. He was in trouble at times for misbehaviour, and during the unit of study I taught his class for this research, he proved to be significantly disengaged from classroom learning. However, as discussed previously (see 7.7.2), he had engaged in uses of his mobile phone which were valued at the cultural level, even if it was only for himself: recording his video of his bike crash, and pranking others in class.

Other students had instances where their mobile phone had also been confiscated as a form of punishment, both in and out of school. Bailey described having her phone confiscated as 'the worst two days'. She mitigated the apparent severity of this statement by relating an anecdote about a friend who had her phone confiscated for two weeks: 'She *really* overreacted ... she just kind of got really annoying'. Bailey also had her phone confiscated on occasion by her parents when she overused it, and it seems that this was an experience shared with her peers, such as Sarah's enforced disconnection through her parents confiscating her phone (see section 6.4). Erin related a slightly different experience as her phone confiscation, was unrelated to her usage patterns. Rather, the phone was taken from her by her parents as punishment for being 'rude' to them. Mobile technology usage doesn't just result in a loss of symbolic capital or the inability to realise it, but can also result in punitive measures. The removal of a device – of objective cultural capital – from an adolescent is used not just as discipline, but as direct punishment.

> Mobile phones can also be a nuisance. With loud noisy ring tones that can be irritating to other people if you have loud and noisy ring tones or if someone is chatting away loudly on public transport. The very things that can be most convenient to us can e very annoying to the person sitting next to us.

Figure 8.2: Extract from Josh's Informative Writing assignment, under the heading 'Not so useful uses for mobile phones'.

8.3 Symbolic Capital & Multimodal Constellations

Significantly for education, specifically pedagogy, it is the modes of performance that emerge as significant for mobile literacy, rather than any concern over linguistic skills. Aural, gestural and spatial modes all play a significant role in the successful negotiation of symbolic values associated with proper school behaviour, and the ideal student, whilst maintaining practices and behaviours that align with a habitus formed in the more technologically-saturated world beyond the school gates. This all involves an understanding of the potential offered by various devices and their affordances, something demonstrated in Josh's informative writing assignment (Figure 8.2): an awareness of the multimodal nature of mobile phone use, and how this can impact on social standing. He suggests that inappropriate use can be trouble across social situations, not just in school.

The following sub-sections draw on student voices to explore particular mobile literacy configurations in reaction to the objective structures of the school field. The literacy practices involved take the form of 'multimodal' texts, from the perspective of the 'everyday literacy paradigm' (see section 3.1.2). Enthusiastic students sought out possible uses, both in and beyond the school, both for entertainment and education. Some of the participants also demonstrated a concern for abiding by school rules, and tailored their mobile use appropriately. There were however situations where authorised use was permitted. Two positions which typify the vexed position of mobile technologies within schools are considered: their

surreptitious use whilst performing the role of a 'good student' (secretly txtng in class); and the intentional construction and consumption of texts and identities that write against those valued at the school level. Finally, I examine the productive potential of mobile literacy practices through student voices about their use.

8.3.1 *The Enthusiastic Adolescent*

In their personal lives, beyond educational contexts, all the participants engaged enthusiastically with a rich range of text types. Whether it was Brad playing free games on his CDMA phone, Tom recording videos of stunts on his phone, Peter playing his PSP when travelling, Rebecca and Jennifer taking and sharing photos with friends, Josh circulating a compromising photo of Owen, or the pervasive listening to music on iPods or other media players: in their everyday lives, the participants read and wrote complex texts. In terms of the relevance of these various, multimodal literacy practices for formal education, there was a relative absence of possibility. Student were enthusiastic about these technologies, even if in a kind of resigned and weary fashion, but this typically didn't translate to situations analogous to formal learning, rather, it was akin to Nixon's (2005) concept of 'cultural pedagogy'.

There was one significant instance that suggested possibilities for mobile literacy practices. As has been demonstrated throughout, Bailey typified enthusiasm in her attitudes towards mobile technologies, if not necessarily demonstrating expertise. Her use of the camera on her phone to take photos of objects and architecture that she found interesting, presented an example of personal learning and multimodal reading/writing using her mobile device. That this was in a pursuit of a personal interest in design did not translate into her school work, where she still positioned their use as unrelated to formal learning. However, her use of a range of technologies, including a PDA in her life outside of school, pointed to their educational potential. She indicated that she regularly used her PDA to jot notes, draw and access the internet at home. Inside the classroom, she adopted strategies that enabled her to engage with her mobile technologies for non-learning purposes: she demonstrated how she could secretly SMS, and said that she worked effectively

when listening to her iPod, talking of it creating a 'zone' where she was more focused.

> Yeah … oh, mobile technologies are a massive, like, impact and such a massive resource in my life because, well I don't know any different. Like, whereas my parents, they know how to live without a TV – I'm not saying I'm a TV fanatic 'cause I don't even watch TV much – but, you know, I … like, they know how to live without mobile technology, but I just … I couldn't see a life without it. It's so demanding and so important in everyday life.

<div align="right">Extract 8.9 (Bailey)</div>

The result of this enthusiasm was her use of a range of mobile technologies for personal purposes. The fact that these personal uses also included self-directed learning and pursuit of personal entertainment is significant in that it presents a possibility for how to engage students in using these technologies productively for learning. Bailey's taking and collection of photographs of 'design' elements she liked – a chair, sign or architecture – point to learning opportunities which are interwoven with social practices, where effective mobile literacy involves managing this interweaving of learning opportunities with social practice and everyday life.

8.3.2 Being the 'Good Student'

Some of the study participants demonstrated a desire to be seen as good students; polite, attentive and studious (see Goldstein, 2008). This is linked to individual student dispositions regarding schooling and the behaviour expectations that field engenders. As part of this role, mobile technologies were typically managed in accordance with school rules and teacher expectations, either consciously and conscientiously, or through a congruency between school expectations and individual student dispositions related to the process of inculcation. A large grouping of the students, including Jennifer, Bailey, Erin, Sarah, Josh, Brad and Owen, expressed this conforming identity. Jennifer's particularly useful for considering the role of mobile literacy for compliant students, as throughout the

study she demonstrated a particular concern for being seen as polite in her social interactions.

Jennifer explained her personal belief as part of the performance of her wider identity:

> J: I just don't want…I don't want to come across as being rude or annoying people, 'cause I know how much it annoys me.
>
> CT: What do you think of people who do though … who don't care though?
>
> J: I think it's rude. Like, I don't want to come across as a hypocrite and get angry at people, and then do it myself.

Extract 8.10 (Jennifer)

Jennifer's concept of politeness relies on using appropriate modes and mediums for the 'articulation' and 'interpretation' of meaning (Kress, 2003). She indicated that she turned her phone off during Ms Higgins' class in order to avoid the possibility of being contacted, as even a vibrating phone can make a noise.

Jennifer demonstrated throughout interviews a concern with manners, in particular the use of modes and mediums appropriate for the context. Although in the following instance she is talking particularly about social manners, this knowledge illustrates her awareness that the success of a literacy practice is influenced by the relationship between the context and medium of communication. Such understandings governed her overall behaviour, both in and out of school:

> J: I think that's rude. And when you're talking on the phone really loudly and stuff, and … .nah … I reckon that's rude.
>
> CT: So, would you … accept a sensitive phone call in public?
>
> J: It depends who it was and stuff, but I would wait and say: "Call me back."
>
> CT: I mean, if you got a call for someone, and they said: "I've got a real big problem I need to talk about this" and it was some really sensitive issue … what would be your first thought?

J: Probably … I'm not going to be able to concentrate on
            that now … if you're in a public place, because there's
            too much other stuff going on. So: "Ring back" or "I'll
            ring you back when I can" or something.

<div align="right">Extract 8.11 (Jennifer)</div>

Here Jennifer reflects on what Fortunati (2005b) calls the 'backstage' coming to the front, and avoiding the public performance of private issues, and the further disintegration of that distinction. However, one can also imagine situations where the inability to concentrate in a public environment might be an appropriate reason for the person to be called back. The essence of this point concerns the 'affordances' of particular modes (Kress, 2003). Managing the demands of the different communicative practices adolescents may engage with concurrently, results in a division of attention, or 'multitasking', as Bailey and Jennifer called it (see section 7.6.2, Extract 7.9).   In such situations where the rules of etiquette are tacit and based on an individual's understanding of their position within the social group and the rules by which the social capital is maintained, gained and advanced, dispositions towards rudeness are a matter of personal preference.

When asked to summarise her attitude toward mobile technologies and what she personally did with them, Jennifer drew attention to the need for individuals (herself) to be self-reflective with regard to their use of mobiles across different situations (see Extract 8.1). Whilst it must be questioned to what extent her concern about 'rudeness' was a result of the focus of the researcher and her participation in the project, it still remains that, all through the study, she was the only participant who consistently expressed a personal regard for being thought of as 'rude'; in this way demonstrating a knowledge of the need for individuals to be aware of the contextual variants associated with the use of mobile technologies across fields as diverse as school, family, private and public areas. Effective engagement with mobile technologies in the classroom field was a matter of prioritisation of attention towards different literacy practices, and the effective management of a range of modes, with regard to their particular 'affordances' (Kress, 2003). Jennifer, as a representation of the 'good student', prioritised her attention to class, relegating communication with mobile technologies to the realm of her social life, where she still managed to 'multitask' adroitly.

8.3.3 *Authorised Usage Patterns*

In certain circumstances, the use of particular mobile technologies was permitted. Erin's use of her diabetic device – or 'glucometer' as she called it – was obviously permitted in the school grounds for medical reasons. However, predominately within the school, use of mobile phones within classrooms was not encouraged and teachers were asked to support this policy. All contact between students and others was to occur through the official school channels, that is, through the school's General Office. Mobile phones in particular were positioned as detrimental to the integrity of the classroom field, in that they offered the potential to disrupt the strict rules of time and space which governed lesson times and directed instruction.

There was however more flexible room for student use of iPods, which was left more fully to the teacher's discretion. Whilst there were school rules to govern mobile devices in classrooms, the application of these rules was left to individuals:

> The mobile phones have always been banned in class I think, but now I think the iPods and stuff have been too, but teachers still let us, most of them.

<div align="right">Extract 8.12 (Jennifer)</div>

This negotiation around the use of iPods occurred when students were undertaking school work in class. The advantages of this practice for individual student ability to focus on their learning was of course varied, with Bailey at one extreme, saying it helped her focus, and Brad at the other, who said it distracted him (see section 8.5). This leaves potential for teachers and students to negotiate individual learning approaches which are productive.

Whilst there was general compliance with classroom rules about mobile technology use – primarily as a result of students not wanting to have their devices confiscated – this was not the end of the story.

8.3.4 *Performing the 'Good Student'*

Although there was the general appearance of 'attentive silence' (Goldstein, 2008) and studious work from many students, this did not always reflect their actual reality. The small size of these devices, held at the level of bodily hexis, meant that at times they were used, whilst a performance was concurrently articulated, which gave the impression of a 'good student'. A key component of this is the use of technical and performative elements to give the impression to any external 'reader' that the student is not doing what they actually are doing. At the most basic level, this meant obscuring as many modes related to the mobile technology and its use as possible.

In order to play the role of a good student, individuals had to make use of a range of multimodal resources in order to maintain an appearance fitting that role. This bears a similarity to Fortunati's (2005b) examination of mobile phone users on Italian trains, where she worked with Goffman (1959) in developing the notion of the 'stage' upon which individual performances are intentionally and unintentionally presented. The shift here involves a consideration of modes not typically associated with literacy – namely aural, gestural and spatial designs – and the multimodal interaction between all elements (New London Group, 2000). The particular design of the school field influenced the design of these modes associated with the bodily hexis in a fashion designed to obscure mobile usage: this included setting the phone to silent (sound), allowing minimal body language to display usage (gesture), and making use of furniture and lines of site to obscure usage (spatial). Fortunati (2005b) would talk of this as a student maintaining a performance on their 'stage' that successfully hides the backstage: they perform attention to their work, whilst also directing it towards their private communications.

All students in this study admitted to sending an SMS in class: it was the quintessential way in which mobile technologies were used counter to the symbolic value system of the classroom. Figure 8.3 presents a screen-shot of Bailey demonstrating her ability to write and send an SMS without looking at the screen. The spatial positioning of the screen – held down and next to her leg – allowed her to glance down at the screen, without having to look in a substantially different

Figure 8.3: Bailey's secret txtng demonstration: Bailey illustrating her ability to SMS without looking. During the recording of this video she was looking away, and even after she made a mistake, deleted it and continued, all without glancing at the phone in her hand.

direction from where her workbooks would be located on the desk in front of her. However, in this demonstration she made a point of not looking at the screen in order to demonstrate her aptitude: a memorised tacit knowledge of the keypad akin to being able to touch-type. The small size and mobility of these devices is precisely what allows users to position them in different spaces in different ways in order to write an attentive identity not necessarily reflective of reality. Tom indicated that he was intending to take this ability to secretly txt to a new level:

> I can txt without looking, so it's pretty easy. I'm still trying to
> learn to txt in my pocket.

<div align="right">Extract 8.13 (Tom)</div>

In such a case, the device becomes invisible, but requires substantial skill and practise to execute.

Performance of the role of a good student was linked to habitus and dispositions towards schooling in general. Although all students admitted that they used SMS in class without teacher knowledge, Bailey and Tom's rehearsed and refined practice reveals the multimodal complexity of this duplicitous performance. The use of multimodal design to write a different identity required a knowledge of

the structures of particular fields: in the first instance, whether a particular kind of performance was required for symbolic capital, and secondly, which value system was important to the student at that time. The successful execution of performing the 'good student' when using mobile technologies, required the 'articulation' (Kress, 2003) of particular aural, gestural and spatial designs, and the use of particular modes for meaning-making.

8.3.5 Breaching the Boundaries

All social fields are regulated by social conventions, rules and laws, many of which these students traversed throughout their everyday lives. At times, the temptation to use mobile devices overruled conformity to the requirements of a particular field. This did not just concern secretly txtng in class, but more significant breaches of expectations of behaviour for the 'ideal student'.

The most significant example of this was students txtng in class, discussed in all interviews and observed by the researcher (see section 8.3.4). Although there were some classes where students would simply not risk it (both Jennifer and Bailey mentioned Ms Higgins class for instance), the practice of breaching rules was not an aberration, but common amongst study participants. For instance, I observed Erin secretly txtng in the feared Ms Higgins' class, and asked her about this risky behaviour. Her response was simply: 'Yeah, I haven't been caught yet, so that's quite good'. I also observed students obviously txtng, out in the open, in the class of another teacher, who appeared not to regulate the behaviour (see Extract 8.3). Breaching school rules then takes the form of an inaccurate match between a particular usage pattern and the structural demands of a particular field: but this also extends beyond the classroom, to breaching social norms and expectations.

Having recently turned 16 during the school year, Tom was one of many of his peers who had got his 'L' plates and was learning to drive. He was therefore now engaged in negotiating legal requirements about mobile technology use, which make illegal the use of mobile phones when driving. However, the temptation of his phone was too much for Tom on at least occasion:

CT: You've got your licence … your L's now?

T: Oh yeah … no txtng and driving anymore.

CT: So how do you avoid that?

T: I actually read my message last night when I was driving. I just didn't tell Mum.

CT: What was she doing? Sitting in the seat asleep beside you?

T: Nah … I sort of … I was driving and I had my phone like that... *[Demonstrates holding his phone down next to his right thigh and looking at the screen]*

CT: *[laughs]* You can't honestly … she didn't notice?

T: Nah!

Extract 8.14 (Tom)

Significantly, in the process of circumventing the surveillance of rules, Tom made use of gestural and spatial modes. It is important that even during the interview, he physically demonstrated how he held the phone to read the message, indicating the value of that mode for effectively completing the task. His experience draws attention to the 'affordances' (Kress, 2003) of gesture and the human body, in obscuring certain behaviours whilst performing others, in order to maintain prestige, in this case, as a competent learner driver. The fact that this mother apparently did not pick up on this practice, further points to the value of social interactions in structuring habitus towards mobile technology use: in this case, tacit approval of the behaviour, despite legal requirements. Although this example doesn't fit specifically into the school context, it does demonstrate how different modal configurations can be used to circumvent structural requirements of particular fields, in this case, legal requirements for driving a car.

With regard to the school context, Tom was the only student in the study to express enthusiasm for pranking for the purposes of entertainment (see section 6.6.2). Whilst his peers in this study primarily interpreted 'pranking' as something they used for functional purposes, Tom's immediate understanding was of this concept referring to 'pranking for fun'.

T: I done it this morning in an exam.

CT: In an exam?

T: Yep. I'd finished and the other mate did so I looked down and pranked him. I had put my name on private. He went up and told the teacher I'd been pranking, but he didn't have any idea, that it was me, because I had put my number on private.

CT: Aren't you supposed to put your phones at the front of the room?

T: It was only a P.E. exam.

CT: So that was just to get him, or just to irritate him?

T: Oh, just a bit of fun.

CT: How did your name come up 'private'? Did you actually make sure you hid your number?

T: Yeah. It says send caller ID and I put 'no'.

CT: Okay.

T: So it comes up as 'unknown' [private].

Extract 8.15 (Tom)

It's clear from the planning that has gone into the prank (hiding his number), that the particular intention was to disrupt exam conditions, without getting into trouble himself. In essence, he was using the capabilities of the technology to write a particular identity for himself against educational structures.

Best represented by Tom, literacy practices based around resistance and defiance are those which recognise the constructedness of 'school literacy', and breach the distinction between appropriate in-school and inappropriate out-of-school practices. It is these practices that help to produce negative reactions to combining mobiles and youth, and relate predominantly to individual dispositions to prioritise forms of cultural capital in the form of literacy practices which are not valued in school contexts. This is not to suggest that they are not complex and rich multimodal texts, demonstrating sophisticated social literacy practices.

8.3.6 Designing Possibilities

> I did notice the other … when was it? I was ... riding my bike home and I noticed I pulled my phone out just to check and it's like: "What am I doing? What if a car comes or something!" So, yeah, I just put it back and it was just like: concentrate! *[laughs]*

Extract 8.16 (Brad)

Brad's momentary realisation of the incongruence of txtng while riding a bike signifies a moment of understanding about the importance of situational factors on mobile technology usages. Whilst his realisation was from his personal life, an understanding that different situations demand different usage patterns was characteristic of students who critically thought about their usage patterns. This was also demonstrated through use of device features.

An important approach to understanding adolescent use patterns in school environments is to think about the capacity to critically read and understand the demands of a particular social situation. This is complicated by the capabilities of particular technological devices, directed by individual beliefs and preferences towards different fields. The students in this study all understood the structural demands of the classroom field, though chose at times to ignore, or use this knowledge to circumvent the system. While all students unanimously indicated in the first interview that these devices were banned in classrooms, further discussion and examination revealed usage patterns in classrooms were more nuanced and considered than simple obedience. There were particular teachers singled out whom students understood to be very strict on the issue: Ms Higgins was identified by Bailey and Jennifer explicitly in this respect. However, other classes were far more flexible with teachers much more relaxed about mobile technologies: Tom and Peter's automotive classes, and Bailey's Visual Communication class. iPods and MP3 players were also technologies that were used with the permission of particular teachers.

One instance of this was reading a class in terms of the teacher who took it, and whether or not that teacher would permit quiet and unobtrusive mobile technology use. Whilst some teachers had a reputation for being inflexible where mobile technologies were concerned, others were more lax in their application of this

school rule. Indeed, my observations revealed multiple instances of students txtng overtly within a classroom, whilst the teacher did not interrupt this behaviour. Another instance was students listening to their iPods not just at a teacher's discretion, but as a result of their own preferences as well. As was mentioned in terms of cultural capital, the listening to music on iPods was a symbolically valuable and socially cohesive part of social practice (see 7.6.2). However, participants had different personal attitudes to their use during private study (see 8.3.3 and 8.5).

Perhaps one of the most productive practices emerged through Erin's final interview, where she demonstrated an effort to utilize her mobile technologies for learning. The significance of her situation was that she had gone from having an older model phone, to receiving numerous gifts over Christmas, including a new phone, iPod and laptop. Her critical engagement with these new technologies included considering how they could be used productively in her learning:

CT: Now this … and what about the iPod? When do you use that?

E: I use it a lot, but also with my phone I check the weather … you can check the weather for free … yep. But my iPod I use in class, in technology. *Mr Dillon* plays music and if we don't like the music he's playing, I listen to my own.

CT: So the wires don't get in the way or…?

E: No. I sort of have it in my pocket and down my jumper or something … so the wire's aren't in the way at all for woodwork or … whatever else … yeah.

CT: Okay, you've also … yeah? Sorry?

E: Oh yeah, I use it on the bus a lot … 'cause it's a long trip in and out and then, for some classes, they've done recordings of … like, I've asked the teacher if I can listen to what they're saying if it's SAC preparation or something and then I put it onto my iPod and re-listen to it and …

CT: So which classes do they do that in?

E: Chemistry … I've got to ask about Chemistry, and Technology: *Mr Dillon* will say something and I just record what he's saying.

CT: So do you record it on that *[indicating the iPod]* or…?

E: Oh no, on my phone, but then I download it from my phone to the laptop and then put it into iTunes and then onto my … [iPod]

Extract 8.17 (Erin)

Here Erin demonstrates not just adherence to the rules of the classroom field, through the hiding of iPod wires, but also an effort to use these technologies in a productive way to enhance her own learning. It represents an expansion of her setting the language on her older model phone to Indonesian in order to practice the language. This is a vital point for understanding mobile literacy practices: that they occur at the personal, and often immediate, level. They offer a platform for delivery of learning opportunities to large groups, but the points of 'interpretation' and 'articulation' of meaning (Kress, 2003) using these devices is the level of bodily hexis. Our students are typically accepting of content created and consumed via mobile devices in their daily lives, because they seek it out individually. Yet it is at this level that individual qualities – including devices, skills, beliefs, attitudes to learning – can influence a student's ability to envision and design educational uses of their mobile devices.

8.4   Symbolic Capital & Modal Preference

The specific structure of Riverton's school and classrooms contributed to the development of participant preferences for certain modes, particularly connected with making any use of mobile devices invisible. Therefore, choice of modes and mediums for communication was determined by their capacity to be invisible to surveillance. Classroom rules that dictated for students to turn phones off or have them on silent, sought to deal with the possibility of how devices may augment the classroom reality, through the particular 'affordances' (Kress, 2003) of aural aspects of mobile phones. Relevant modes were selected as they linked to social practice and the performance of a particular student identity for an audience. In this respect,

gestural, spatial and aural elements were particularly significant, as well as the multimodal configurations.

Within the classroom field, gestural modes were used to make mobile technology use invisible. This included txtng without looking, maintaining a posture that suggested engagement with the lesson, eye-contact, and where one's hands were positioned. Despite some of my observations uncovering instances of obvious mobile phone use in class situations, far more prevalent was that which I did not see, as admitted by all participants. Even Jennifer, who always attempted to play by the rules, admitted that she had done so on occasion. Gestures, as part of the performance of a student identity, play a role in structuring mobile usage patterns.

The use of spatial design in mobile literacy practices was also significant for effective meaning-making. Primarily, this related to the use of spaces and objects to display or perform a particular identity. In secret txtng for instance, the phone is held out of the line of site of any observers, using objects and parts of the body to obscure the screen. Students also routinely shaded the screens of their phones or other devices, to ward off glare from sun or lights, and be able to see the screen. Students also sought out quiet spaces (including verandas, under trees and vacant classrooms) in which to sit, talk and listen to iPods. As Bailey said, she would not simply break out dancing in public when listening on her iPod to her favourite song, as she was aware of the space she was in. Spatial design, as part of an understanding of the ideological structure of fields, is a vital part of using these technologies as social devices that accompany people on their daily travels.

The affordance of the aural mode in the form of phone ring tones or SMS tones makes it a particular text for rewriting the structure of the classroom field. The practice of pranking is demonstrative of this: when used for functional purposes (micro-coordination), such as pranking parents in order to be called back, the sounds acts as an alert to prior understandings. However, there was another use particular to classrooms, centred around entertainment – of a form of 'hyper-coordination' (see section 6.6.2) – in the form of disrupting the classroom field. Pranking friends in classrooms was designed to get the individual into trouble with the teacher. Whilst many of the participants indicated that they did not do this – positioning the practice as childish – Tom did because he thought it was 'funny'. Because the practice of

pranking requires the audible feature of a mobile phone, it was also dependent upon the recipient not making use of technical features of their device to appropriately deal with the potential disruption that could be caused by the uncontrolled aspect of the 'mobile field'.

The use of txtng to communicate in class illustrates how an understanding of the 'affordances' (Kress, 2003) of particular modes allows students to use mobile technologies in class, and combined with the technical knowledge and ability to turn the phone onto silent/vibrate, yet maintain their symbolic capital as a good and attentive student. This is only, of course if they are not caught! But the qualities of SMS as a medium – short messages, cheap, and most importantly, silent – allow for digital notes to be passed around and between classes (and even schools and home), whilst maintaining the façade at the level of bodily hexis, that this oft illicit activity is not occurring. This is also a situation that reveals the dual-structures of prestige that young people need to negotiate within schools and educational institutions (and legitimately so at times). Whilst the ability to txt and be constantly contactable by certain people is important at the level of the peer-group, at the level of institutional prestige, the ability to work quietly and independently, and pay attention to a specified task, is what wins value.

An understanding – either tacit or explicit – of the advantages and disadvantages of particular modes and mediums of communication is vital in the process of transubstantiating embodied cultural capital into symbolic capital or prestige, across different fields. The contradictory position of mobile technologies in the symbolic value systems of adolescents and schools, creates points of conflict around related literacy practices.

8.5   Mobiles, Symbolic Capital & Educational Potentials

Different modes for the 'articulation' of meaning have different symbolic value at the classroom level. These values are determined by the different fields that mobile technologies augment and restructure, with advantageous and disadvantageous results. Generally speaking, traditionally literacy practices still dominate school curriculum, pedagogy and syllabus: this does not bode well for

mobile technologies which, as illustrated in the previous chapter (see chapter 7), are used to articulate meanings across a range of everyday modes.

There were limited opportunities for the educational use of mobile technologies at Riverton High. As the pedagogical approach was largely conventional, and ICTs per student were limited, the status quo regarding mobiles in classrooms prevailed. There were however some instances of educational possibilities that were suggested with regard to literacy practices. Whilst there was one VCE class using iPods to convey class materials, richer potentials actually emerge from the everyday practices of the study participants. There was Erin's use of a foreign language on her mobile phone and her recording of Chemistry class notes for later play-back and study (see section 8.3.6, Extract 8.19). Then there was Bailey taking photos of 'designs' that she liked. Even Peter's creation of 'Jackass' type videos and Tom's recording of a failed bike-jump (see section 7.7.2) on their mobile phones suggests educational potentials for these devices, particularly as they speak to new and emerging practices of literacy.

The first possibility was suggested in Erin's first interview, and related to second language learning. In this instance, she had changed the language on her mobile phone in order to practice her Indonesian. This had the added role of serving as a kind of security for older model phone (only Indonesian speakers were able to use the phone). Her second significant practice – recording a teacher's instructions during a Chemistry class (Extract 8.19) – illustrated the power of personal technology usage patterns for personal learning. She connected in a way with the subject which was productive for her learning, making a point of recording class instructions of particular importance, so that she could review these ideas later via audio, as opposed to reading written course documentation. This is not to suggest that class notes are best delivered in either fashion, but that empowering individuals with personal digital technologies can enable them to pursue learning through methods effective for themselves.

Pursuing personal learning in personal ways was something Bailey was familiar with. Whilst she understood – at least tacitly – the value of mobile technologies for learning, this did not translate to school use (see sections 5.3.1 and 8.3.1). Her access to multiple mobile technologies, including a laptop and a PDA,

were used for learning outside of school, where she pursued her interests in design as a career. She was not permitted to bring them to school, as her father feared theft, positioning this as a field which was not conducive to the use of personal technologies. Indeed, whilst the school have various desktop PCs and two class sets of laptop computers, students did not use personal computers during the school day. Productive uses of mobile technologies for recording ideas, capturing images and researching were thus relegated to the home field for Bailey (where she had an internet connection) rather than at her school, where one expects learning to be based.

Aside from their content, Peter's recording of fooling around and Tom's video of his bike-jump crash involved sophisticated literacy skills (see section 7.7.2). Aside from visual literacy (framing, focus, distance, etc.), there was also a need for narrative and even dialogue. Tom was proudest of his first bike-jump video, as the crash was more spectacular (see Figure 7.8). Likewise, when fooling around in Physical Education with oversized inflatable balls, Peter repeated the recording three times, each time viewing the footage before trying again (Extract 7.15). In both instances there was a concern for the 'quality' of the video as entertainment, for aesthetic qualities, the story they told, the laughs they evoked. These discrimination skills are linked to concerns for purpose and audience, which are just as important in the 'traditional literacy paradigm' (see section 3.1.1).

There were divergent views regarding iPod use in class, related to individual abilities to 'multitask'. These attitudes should be understood, not as a dichotomy, but rather, as a continuum of attitudes. With regard to listening to iPods when doing school work, at one end we have an opinion represented by Bailey, and at the other, one represented by Brad.

> When I'm listening to music I, you know, get in a zone and I
> don't have any distractions from other people.

Extract 8.18 (Bailey)

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> No, I just can't seem to concentrate when I have it in, trying to do
> work.

Extract 8.19 (Brad)

What is apparent from these extracts, is that the use of iPods *while* studying – differentiated from *for* studying – is variable at the individual level. Educators cannot simply assume that all students want to, or are able to, listen to music when they do private work. Personal music players offer a tool for teachers to help students monitor their own behaviour, and remain on-task when learning. But this practice does not work for all students, thus the advantage of *personal* devices. Importantly, whilst some students may not use mobile technologies *while* they are studying – iPods specifically here (Brad) – this does not mean that they are unable, or opposed to using them *for* learning.

But we must not simply assume that all students want this and that it works for everyone. As this research demonstrates, the 'tyranny of place' still exists, though in more muted forms, through differential access to technologies, services and infrastructure, and the structuring power of certain fields. Socioeconomic, geographical, cultural factors, and individual habitus can all impact on usage patterns with regard to these technologies.

Measured in terms of the symbolic capital of the school as institution, mobile literacies have limited value. Indeed, the multimodal structure of mobile technology use and the different texts created are often ones of covert and secret usage. Riverton literacy practices of the 'everyday paradigm' (see section 3.1.2) reveal that highly multimodal design constellations, involving gesture, spatial positioning, and the absence of sound, are important in the covert use of mobile technologies. Although there was anecdotal evidence of iPods being used in just one class for the delivery of content, richer literacy potentials for mobile technologies were not encouraged. The use of class-sets of laptop computers in some classes suggested some movement in the direction of wireless access, but more personal technologies were treated as just that: personal and not to do with learning. In terms of ideologies of learning and pedagogy, mobile devices were placed outside considered approaches, and were relegated to the position of silent and invisible items in classrooms.

Whereas participants collectively demonstrated pragmatic attitudes towards the economic influences on mobile technology use, reliance in terms of social

capital, and an acceptance and interest in terms of cultural capital, the symbolic capital associated with their use within school fields was the point at which individual habitus became important. Whilst overall there was a desire to be conforming students – if only to avoid having a device confiscated – individual beliefs and attitudes were important. These included dispositions not just towards mobile technologies, but towards formal schooling. Students perceived by teachers as 'good' students (Jennifer, Bailey, Brad, Owen) were more likely to express attitudes of cooperation with school rules than students perceived as disengaged or trouble makers (Tom, Peter, Beth, Jo).

Despite only having their mobile phones for a couple of years on average, the study participants voiced common narratives of growth, maturation and changing attitudes to their use of these devices. That changes in behaviours and literacy practices occurred over such a short period of time is demonstrative of the 'mobile habitus' (Kress and Pachler, 2007; see section 4.4.4). Inculcation is not something therefore that is relegated to some unconscious past, but something that is continually emerging: whilst the habitus may be 'more structured and structuring' in adults, adolescents find themselves in a time of more fluid change, amplified by the accelerating changes in society and culture around them. Moore's law suggests not a gradual technological change, but geometric growth (Greenfield, 2006). In negotiating their social interactions – between emancipation and mobile supervision (mobile parenting) – adolescents present us with an example of emerging habitus: one that is unstable and required to engage in constant change and adjustment, sometimes as a conscious effort.

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In this chapter, the interpretation of mobile literacies at the institutional level has been considered in terms of symbolic capital as prestige. The lack of symbolic capital associated with mobile technologies in schools presented a particular challenge for the study participants, for whom the use of these devices was very

valuable at the peer-group and family level. Symbolic capital was understood in terms of it being the 'interpretation' of 'articulated' meanings (Kress, 2003) using mobile devices. To examine this relationship, I traced the experiences of the study participants through the school field as 'multimodal constellations', considering particular collections of literacy practices that suggested a certain habitus towards the relationship between education and mobile devices. There were examples of: enthusiasm, being the good student, authorised use, *performing* the good student, breaching boundaries, as well as designing possibilities around education and mobile devices. These profiles were structured by other forms of capital, but primarily related to the way that meaning was embodied by a particular student in the educational field of Riverton High. Student attitudes toward schooling and the use of mobiles varied with individual habitus, specifically their attitude towards maintaining the 'digital divide' (Buckingham, 2007) between their lives at home and school. Their attitude toward formal schooling was a key factor in mobile literacy practices in that field.

As they typically resulted in a loss of symbolic capital, the mobile literacy practices at the classroom level were specifically designed to be invisible or concealing. Where the participants were involved in using mobile devices in classrooms, this was either by negotiation of the use, or through the use of multimodal design elements (including absent-sound, gesture and spatial elements) to enact performances that *appeared* to conform to individual teacher expectations. Even in the midst of ideological oppression, the ubiquity, pervasiveness and flexibility of mobile literacy suggest educational possibilities. While the relationship between different forms of capital and mobile technologies structures literacy in particular ways – resulting in different practices, modal and medium preferences – the 'interpretation' of those 'articulations' (Kress, 2003) and their transformation into symbolic capital at the school level did not encourage innovation toward learning. The participants found ways to work within and around the rules, negotiate individual use patterns and express their identity beyond the classroom. Rich literacy practices are occurring, but they mostly occur outside the focus of formal learning.

9

Conclusion

The image of a student, lying in a park in the sunshine (perhaps during school hours), watching video of a chemistry lab demonstration, or a history program on Ancient Greece, or a philosophy presentation on Kant, or an instructional video on basketball rules, or any other disciplinary or inter-disciplinary based topic, and then taking a comprehension test at the end, is not a fantasy. We increasingly have the technology. The role of educational professionals is to provide the resources and support. Currently there is very little choice, where educational programs are concerned: in the absence of such approaches, students use mobile technologies primarily in terms of a 'cultural pedagogy' (Nixon, 2005). If our students are given options – instead of between Britney Spears, *Jackass* and *The Simpsons* – between a music video, a TV program, or a video for school (learning), at least they have the option to learn, anywhere, anytime.

When I first conceived of this research into the relationship between mobile technologies and literacy, my understanding of the latter concept was significantly limited: the presence of 'u' and 'c' and '8' in formal English essays gave me some clue, but that was about it. My encounter with the NLS perspective altered this (see chapter 3). A rich world of textual landscapes and intricate literacy games around

new technologies emerged. This research has engaged with that field of literacy that permeates everyday life, specifically focussing on our interactions with mobile technologies in this process.

This research pursued a challenge throughout exploring the limits of the emerging structures of literacy around technological and related social developments, seeking to answer the question: 'How are we to understand literacy as it pertains to mobile technology use?' (see section 1.2.2). This concern has formed a key focus for this research: searching out and theorizing the limits of just what literacy involves: what modes, mediums, texts, communications, performances and processes. What this study has revealed is the intimate extent to which meaning-making practices are tied to the level of everyday social practice and bodily hexis, both in terms of physical and digital identities. The use of these apparently innocuous devices is not just linked to the social practices they are involved in – like a communal computer – but very tightly to the individual body and its passage through space. These are individual devices, extensions of the self, as Katz would call them: 'machines that become us' (2003a). The expanded potential of communication options that these devices open – both as 'articulation' and 'interpretation' (Kress, 2003) – restructures the potential of any space, recasting it as a platform in a divergent dialogue connected to the invisible digital world, overlaying the real world. Their use as elements of public performance (Fortunati, 2005b) requires a reconsideration of the value of different modes involved, and investigation of the 'logic' of these new methods of meaning-making (Kress, 2003). The use of these powerful technologies in the many corners of social life, and the possibilities that these communication practices engender (even as potential), extends the 'everyday literacy paradigm' (see section 3.1.2) deeply into the practices of everyday life.

In working amongst adolescents as a teacher – both as a part of this research, and my professional career – the intricately patterned and socially-integrated structure of literate mobile technology use is constantly demonstrated. The participants in this study were nothing atypical or strange among their contemporaries as depicted in the media, research literature, and other social commentary sources. Their experiences present a series of experiences of the impact

of mobile technologies on everyday life, the potentials they offer for meaning-making, and how the participants negotiated the vexed position of these technologies within their school.

9.1   The Scope of the Study

This study demonstrates that mobile technologies present an important shift of focus for literacy scholarship and education, for which focused research and examination is needed. While research into new and emerging literacies connected to technologies has advanced substantially, I have argued that mobile technologies, in freeing certain modes and mediums – semiotic resources – from a dependence on place, present a substantial change to communication practices at the micro and macro levels. Possibilities are presented for coordinating social interactions in real time, augmenting reality with additional information, distributing knowledge previously held in one's memory to the microchip on a phone, choosing between asynchronous and synchronous, verbal, visual, written and symbolic communication modes for different situations (both for the sender and recipient). These practices constituted part of the topography of adolescent use of mobile technologies. In its connection with social practice, I have taken literacy to relate to the use of mobile technologies at the everyday level, asking: 'What is effective mobile technology use?' (see section 1.2.1).   These devices present significant challenges for understanding what literacy is in a contemporary and emerging sense.

The impact of mobile technologies throughout society has been aided in a large part by their commodification and re-construction as instruments for communication, rather than technological computing devices. Whereas computers are largely seen as 'computers', with the technical connotations therein, mobile technologies are still largely perceived as 'phones' or 'music players' or 'cameras', not as the computational technologies that they are. The shift has moved to functionality and purpose, as opposed to process. This research has therefore not been concerned so much with how technical components of these devices relate to literacy – technical literacy – but rather, with the social and cultural dimensions, and only then, how technical knowledge informs capabilities and competencies in being

mobile literate across diverse fields. The adolescents at the heart of this project had little concern or interest in the technical details of the devices they used so intimately, but rather only how these could be used. Capability with the use of predictive txtng features was variable at the individual level, but did not cause emotional or identity disturbances: significantly for literacy though, it did have an unintentional (and unconcerning for the participants) impact on language usage, reducing the amount of complex 'SMS-language'. Utility and ease became an important feature of literacy practices, in so far as it structured individual preferences and attitudes towards these technologies as technical devices. Students were indeed observed swapping and sharing devices throughout the school yard, indicating the importance of the design of mobile technology interfaces for accessibility and intellectual ergonomics, but also, that technical capacity has only limited relevance for mobile literacy as a concept. This is not to say that it is fully removed, and those who demonstrate insightful or functional use of technical features may be considered highly literate where these technologies are concerned. But it must be stressed that technical capability is only relevant in so far as it supports effective engagement in social practices.

The structure of the study positioned me appropriately within the school field: whilst I was a teacher, I was only a temporary one at that, a guest. Whilst I was therefore expected to implement school rules, the 'constructedness' of this position was evident by the topic of my classes, along with the subsequent interviews. In an English class, novels and newspaper articles formed 'real study' and whilst the unit met outcomes for curriculum requirements, the relevance of the subject matter for literacy in particular, escaped most students. For while some volunteered knowledge about the meaning of text messages, 'proper' use of mobile technologies was positioned as a consideration of etiquette, functionality and 'not getting into trouble'. Participants did not lock into concepts of the meaning of usage patterns, but rather, understood proper use as a negotiation of functionality and individual expression across spaces structured by particular rules and expectations. This aligns with cultural and folk beliefs that proper mobile technology use is about manners and etiquette, not a matter of formal literacy practices. I take issue with this perspective: effective mobile technology use is about the nuanced, knowledgeable, and reflective

use of these technologies across varied fields. It is not a matter of abiding by rules – students text in class despite the rules – but rather, it's about the effective negotiation of systems of exchange, so that mobile technology use is symbolically valuable for an individual as opposed to detrimental. This involves careful consideration of a range of factors, an understanding of the demands of a particular field, and how mobile technologies change and augment that field (as 'mobile fields'), and subsequent 'articulation/s' that are 'interpreted' in beneficial ways (Kress, 2003).

This research provides a structure for understanding mobile literacy, with the interpretative framework contained in the structure of the dissertation. Whilst a new literacy studies perspective is applied – positioning literacy as everyday, multimodal and highly contextual – these practices are unpacked in relation to their role in social practice generally, understood as a system of exchange. I have used this system of exchange formulated by Bourdieu (1977), throughout the chapters on economic, social, cultural and symbolic capital; I have examined the resources for exchange that students use to negotiate mobile technology use and school-based fields.

9.2   Mobile Methods & Meaning

Because mobile technologies are in a continuous state of technological development, negotiating and understanding the meanings associated with their use is an enormously complex process. By engaging with this subject I have therefore engaged with an unstable and fluid field, where meanings are in continuous state of emergence. I have been, right from the beginning, aware of the anachronism inherent in my work, and as such, consciously directed it towards 'mobile technologies' as a heterogeneous concept characterised by the shared (yet somewhat elusive) concept of 'mobility' (see section 2.1): the device needs to be able to be used on the move, without being overly onerous or intrusive as a physical object.

The constant change in this field of research is clearly indicated by advancements in mobile technology culture, which occurred during the course of this research, but at a point where the effects could not be examined within the field of study (i.e. amongst Riverton teens). These developments include (but are not limited to): the use of twitter and microblogging on mobile devices, the release of the iPhone

and iPad, ethical issues around mobile phone photos and filming, and the development of location-based services based on GPS. In response, this research examined the underlying patterns and structures, to avoid being constrained by temporal limitations, but rather to speak to prevailing trends. The use of 'Bourdieu's sociological toolbox' (see section 4.3), enabled an exploration of the dynamic structure of social relations and contexts, as they related to literacy. In this way, Bourdieu's theories build on the 'everyday literacy paradigm' to connect meaning-making practices even more intimately to the topologies of daily life (see section 1.2.3).

The ethnographic method applied throughout this research has been flexible, based on the development of a critical ethnographic heuristic, whereby the experiences of the participants have been examined in tension with influential factors that seek to structure their behaviour in certain ways. Upon first entering the field, I thought this would be limited to cultural trends (fads), peer pressure and school rules, but I did not consider the impact of economic factors at the micro-level of communication (how contract structures could influence communication preferences). I owe much in this process to works on 'critical ethnography' (Madison, 2005), Willis' 'ethnographic imagination' (2000) and Kenway, Kraack & Hickey-Moody's concept of 'mobile ethnography' (2006). In combining these with the theoretical perspectives of Pierre Bourdieu – himself an ethnographer – I have sought to deepen the theoretical rigor, though examining the underlying trends and structures. Whilst traditional ethnographic methods of data collection were used – interviews, observations, artefact collection – tracing the impact of mobile technologies across multiple fields was an ethically and pragmatically vexed issue. However, by selecting the school as a focus environment for the study – a shared space for many adolescents – stability in the examination process was achieved.

I owe a significant debt at this point to the theories of Pierre Bourdieu. I was unsure initially what attracted me to his theoretical framework of habitus, field and capitals, but found his articulation of the relationship between individual agency and social structures enormously useful for exploring how mobile technologies are used in specific contexts.

The ground is shifting beneath this relationship; mobile technology use has become so pervasive that whilst their use doesn't equate to legitimate literacy under the 'traditional paradigm', it has increasing importance as a functional skill beyond the scope of the classroom. I have intentionally engaged with the concept of 'culture as a verb' (Heath & Street, 2008), as something that is done, rather than something that exists somewhat external to human experience. This perspective bears a clear sympathy for studies of mobile technologies and other emerging trends, where meanings are in a state of emergence, not just at the theoretical level, but at the daily mundane level of individual life. This gives further vibrancy to the notion of cultural capital, not as something that is ever achieved, but something that needs to be constantly realised through appropriate 'articulation' and 'interpretation' (Kress, 2003). Literacy then, is central to the process of culture.

9.3   Emerging Mobile Literacies

This research has taken a broad and inclusive approach to the application of an 'everyday literacy paradigm', examining the intricate weaving of mobile technologies into the social lives of individuals (see Cope & Kalantzis, 2000; Jewitt, 2005; Kress, 2003; New London Group, 2000; see section 3.1.2). Mobile literacy as a form of multiliteracy, specifically tied to mobile technologies and their use, is linked intimately to the level of everyday social practice, and as such, its structures and meaning emerge from the collective efforts of individuals motivated by their own desires and dispositions. Whilst this presents a challenge to educational authority over defining literacy, in and of itself, it presents a dynamic and fluid form of meaning-making which cannot be separated from context. A sensitivity to symbolic capital – negotiation of the conversion of different forms of capital into prestige at different levels and amongst different groups – and how it changes across different spaces and situations, is at the heart of effective mobile literacy.

Literacy as it concerns mobile technologies fits within a 'pedagogy of multiliteracies' (New London Group, 2000) and the 'everyday literacy paradigm' (see section 3.1.2). Mobile literacy is concerned with the negotiation between modal elements within the context of a particular situation. The inseparability of mobile

Capital	Mobile Techs	Literacy	Texts
Economic	Cost factors structure access to mobile technologies.	Cost-minimisation influences use of cheapest content.	SMS, pranks
Social	Mobile technologies are used for and among social groups.	Practices structured by the social relationships concerned.	SMS, photos
Cultural	Discourses of convenience, entertainment and constant contact permeate their world.	Variety of written, visual, hybrid, intertextual and rich texts created and consumed.	SMS, photos, videos, music, devices, performance, games
Symbolic – peer level	Use of mobile devices is valued and encouraged as part of interaction and 'being' an adolescent.	Emergent patterns of practice, based on tastes and dispositions, linked to individuals and different groups.	SMS, pranks, photos, videos, music
Symbolic – school level	Limited or negotiated usage patterns, based on centralised control.	Performances designed to obscure individual usage patterns.	Performance

Table 9.1: Summary of Riverton mobile literacy practices.

literacy from social practice is the reason for the relevance and usefulness of Bourdieu's forms of capital (Bourdieu, 1986) in exploring how literacy is a negotiation around value systems (see 1.2.3).

The relationship between mobile technologies, literacy practices and social exchange elements, was complex and dynamic. Table 9.1 presents an overview of the structure of 'mobile literacy' among the study participants, reflecting their experience of their wider adolescent culture in Riverton. As was seen throughout the analysis, with the interrelationships between data and different forms of capital, the division of the experiences of participants into these categories creates artificial structures, suggesting positivistic relationships. However, I realise and stress that the situations are far more complex and dynamic than this table or the structure of

this analysis might suggest. Rather, this theory presents guiding principles for understanding mobile literacy practices rather than a prescriptive structure.

This outline (Table 9.1) summarises the relationship between particular forms of capital, and how they impact on mobile technology use. This use is understood as literacy, and the 'texts' that emerge from this practice. The intimate connection between mobile literacy and context means that different forms of capital structure individual actions and attitudes in an integrated fashion. It is significant that the mobile texts acknowledged as having symbolic value at the school level are highly limited. Ironically, the performance text is generally structured to present the individual as complying with school rules, which restrict mobile technology use at school. In essence, the symbolic value system of school resulted in the repression of mobile literacy practices and the emergence of a multimodal genre of pretense. The varied text landscape exhibited through the 'articulation' (Kress, 2003) of cultural capital suggests the rich potential that mobile literacies could offer for formal education. Despite their interdependent nature, different forms of capital did have significant impacts on mobile- based meaning-making practices.

The structural impact of economic factors were heavy on the use of mobile technologies, to some extent not unexpected for adolescents, who traditionally have limited access to finance (see chapter 5). But what was significant was the ways in which contractual knowledge not only influenced preferences for certain forms of communication, but the structures of these communications. Low or zero cost was associated with high-volume SMS, use of Bluetooth, pranking and the sharing of devices: in such situations, the structure of the message was determined by economic imperatives. Pranking remains one of the most significant ways of avoiding costs, for whilst it's free, the actual content of the text is minimal, but its narrative is written in the social relations around it.

The social relations further structure mobile literate practice, in that particular practices became favoured or linked to the maintenance of social capital (see chapter 6). Aside from the cost issue, there was a social expectation of txtng, or communicating in ways that did not burden others with excessive costs. Identities were connected with social networks, further signifying engagement with digital texts (and physical objects) as something meaningful for the development and

maintenance of social capital. There was an expectation of collaboration and reciprocation in txtng, pranking and the sharing of mobile devices and digital texts. Most importantly, because mobile phones in particular are tied to connections between people who generally already know each other, a significant weight of meaning of the actual digital text is held in common between author and audience, as prior understandings or social arrangements. All signify the importance of social considerations when articulating and interpreting meaning around mobile technologies.

In examining cultural capital, I intentionally focused on the 'articulation' of meaning (Kress, 2003) that was valued as a cultural discourse, specifically at the level of the peer-group (see chapter 7). The increasing ubiquity and social expectation of connectedness, as well as consumer culture and adolescent propensities for mobile technologies, formed a backdrop for this discourse. What was important at this point was to identify that student use of mobile technologies constituted a rich system of literate exchange that educational and institutional systems were only just beginning to value.

The negotiation and awarding of symbolic capital is the most pertinent and important feature of both the concept of mobile literacy, and its potential for education (see chapter 8). It is here that the fourth central question of the research was addressed (see section 1.2.4). This is where the capacity to be 'literate' concerning mobile technologies is problematic, based on the different systems of symbolic capital whereby school and out-of-school literacies are understood. The notion of 'legitimate' literacy practices is a construction, and the result of symbolic violence against 'illegitimate' perspectives of literacy (cf. Carrington and Luke, 1997). It was examined how students made use of different modal combinations – including non-participation – to negotiate the value systems around mobile technologies at school.

An understanding of mobile literacy considers choices of mode and medium enabled by mobile technologies – the texts of communication – and how these are continuously negotiated in relation to economic demands (see chapter 5), socialization expectations (see chapter 6), cultural discourses (see chapter 7) and the symbolic values associated with particular institutions, in this case schools (see

chapter 8). The adolescents of Riverton at the heart of this project provide a case study in how this negotiation occurs, and while individual dispositions play a part in influencing behaviours, there are patterns of practices linked to their particular local experience. In line with a Bourdieusian perspective, individuals exercise their personal agency, but only within structures enabled and permitted by the prevailing fields of their social interactions.

Whilst this theoretical perspective – developed through the examination of capital, the articulation of the 'mobile field' and the focus on the importance of habitus – allowed an exploration of practices across a range of social situations, through the examination of social resources and systems of exchange, the shared context of the study adds a degree of predictability in examining mobile technology use. Physical locations, such as isolated rurality, structure different forms of access to, and articulation of different technologies, resulting in patterns of behaviours. Such practices bear significance for emerging trends in data-storage, where 'downloading content' is a continuous aspect of some device features: many iPhone Apps for instance, require network access in order to function at all. As computing power is increasingly shifting away from being located on devices, issues such as problems with network access require detailed consideration.

The prevailing importance of the individual level – habitus – was a centrally significant feature of how mobile literacy unfolded throughout this study. Whilst there were patterns of practice around mobile technologies, attitudes to particular constellations of communication structures were, in the end, determined at the individual level. Significantly for schooling, individual attitudes and beliefs about the importance of mobile technology use – for a range of reasons – had patterns amongst peer groups, but we must avoid making generalising statements based on this. The personal nature of these technologies has been linked to emotional attachment (Vincent, 2005), and demonstrates the intricate role that they play: they are used in many different facets of an adolescent's life, resulting in a feeling of indispensability.

9.4   Mobile Possibilities

There is an increasing gap between school-based literacies and everyday literacies: this was clearly evident from both the research literature and the field. For educational potentials we must consider current practice and the position of educational institutions and structures to respond to these productively.

The students themselves in this research did not articulate any educational possibilities for mobile technologies. Whilst this was to be expected to a degree – they were not educators after all – the fact that English teachers in the school also positioned these devices as outside of 'authorised' education, meant that potentials were ignored instead of interrogated. While the use of iPods for content delivery offers some potential for development, it is still primarily as a means for transmitting information, rather than an innovation on pedagogy. Innovations in place-based learning or 'just-in-time' pedagogy were not explored: this is aside from literacy considerations. It appears that whilst there is no curriculum imperative to deal with the literacies around mobile technologies (and emerging technologies generally), whilst novels and articles and poems are still positioned in the centre of literacy curriculum, the position of mobile technologies will remain peripheral.

Mobile technologies and the literacies associated with them are complex and necessary practices for the emerging world of work and learning. Literacy needs to be freed from its reliance on the linguistic, and discussed instead as a constellation of different elements that result in effective communication. The linguistic retains importance, but its position at the centre of meaning is increasingly supplanted by contextual meanings. A text message '? U' means nothing without an understanding of the situation, of the relationship between the participants; knowledge of the intertextual constellations that give the text its full meaning. Mobile literacy brings multimodality – affordances of, divergences and congruencies between modes in the creation of meaning – into the classroom. Just as students secretly sent SMS' in class, so body language becomes a consideration of literacy, as does putting a phone on silent, what to and not to take photos of, and who to send different files to. Literacy is explicitly tied to lived experience, and its effects immediately relevant to users. Mobile technologies revealed themselves as more than just tools of and for literacy; instead, they have become an extension of the ways in which identity can be

written. In understanding multimodality in this respect, individuals write identities for themselves across educational fields, and the effectiveness of this relates to the ability of that individual to appropriately match their multimodal constructions to school expectations.

The real challenge for education concerns matching everyday literacy practices around mobile technologies to established schooling practices: the fit is mismatched and not productive of promising results. This may be interpreted as putting the horse before the cart: after all, there is limited evidence that mobile technologies would actually be efficacious for learning in themselves. The vital point is that mobile technologies are becoming an increasingly integrated and necessary component of both personal and professional lives. If schools are to adequately prepare students for such worlds of work and living, then the driving necessity to rethink the relationship between pedagogy and effective student engagement, using relevant literacy practices, increases.

Such changes in educational practice involve a shift in power-relations around the definition of literacy, as everyday practices develop relevance. The inclusion of SMS-language on exams is a start, but tokenistic uses of mobile-based texts do not fully deal with the complexity of meanings inherent in the use of these devices. These instances add legitimacy to mobile-generated languages; the difficulty is that the rules of interpretation are not determined by the authorities who set the exam. Emergent meanings and practices challenge beliefs that educational authorities hold the mandate on what good literacy looks like. Such contests are highly political, but need to be resolved in ways that accommodate literacy practices relevant for emerging technologies and futures.

9.5   Conceptual Contributions of this Study

Throughout the conduct of this research, a number of concepts have been developed to advance the methodological and theoretical structure of the study. These conceptual contributions to knowledge represent a development in theoretical frameworks, and an 'articulation' of meanings (Kress, 2003) and practices specifically sensitive to the use, study and exploration of mobile technologies. The

usefulness of these concepts extends beyond the scope of this study, and they offer a framework for articulating the fluid and dynamic relationship between emerging technologies and their impact upon society and culture.

9.5.1 Digital Travellers

An important feature of this research at both the methodological and theoretical level has been an effort to develop connections with young people where mobile technologies are concerned, whilst also paying homage to the diversity of their individual experiences (see section 2.5). A connection between these adolescents and technology could not be denied – they were born into a world rich with technologies, and most of them were engaging with a range of ICTs on a daily basis – but definitions that flattened the variety of their experiences under an overarching, generalising and stereotyping concept were only useful in a limited respect. The development of the concept of the 'digital traveller' was in some sense inevitable,

The concept of the 'digital traveller' was useful for positioning students, their experiences and literacy practices as something not 'different' but connected to the rest of society. This is not to deny their position as 'digital natives' (Prensky, 2001a) or 'cyberkids' (Holloway and Valentine, 2003), for such perspectives play an important role in explaining their naturalistic acceptance of technologically-saturated everyday lives. Indeed, all of the study participants were in some way 'digital natives': at a base level, they all demonstrated a naturalistic acceptance of mobile technologies, but more importantly of change. Drawing on concepts such as the 'cyberflâneur' (Kenway and Bullen, 2001) and 'mobile habitus' (Kress and Pachler, 2007), the 'digital traveller' offers a nuanced and dynamic method for interpreting and articulating a diversity of relationships to new media and technologies. This concept is based on an understanding of digital devices as a ubiquitous part of everyday life, so the focus shifts to the varieties and degrees of difference within that shared paradigm.

The evidence of these 'digital travellers' extends throughout this research and beyond its scope and pages. Whilst all the adolescents of Riverton engaged with

mobile technologies, the intensity of their experiences and the structure of their attitudes towards them were enormously variable, down to the level of individual dispositions. The ACMA's (2007b) division of attitudes to technologies into behaviour patterns was useful in understanding engagement with mobile (and other) technologies as a continuum of intensity (see section 2.5.2, Table 2.2). Whilst some participants were enthusiastic about their technologies, or uninterested, what prevailed was a simple acceptance and pragmatism about their importance and use. Where new devices offered new potentials for literate practice some participants used them, but this was always understood as part of a continuum of development, and was not an opt-in or opt-out situation. 'Digital travellers' experience technological change and it is this very change that becomes a constant. The patterns by which individuals engage with emerging technologies write their journeys.

The 'digital traveller' concept offers a dynamic and flexible way to pursue studies and theories that consider the shared spaces and experiences of technological culture and society. In accepting similarities, this approach opens up richer and more nuanced possibilities for building connections between groups, as opposed to identifying and categorising them. It is a demystifying and collaborative concept, that unfolds and moves with technological development and change, providing an explanatory framework that traces variations and developments in individual experiences as well as enabling comparisons between groups. It unifies experience, whilst simultaneously individualising it.

9.5.2 *Mobile fields*

In working with the notion of a 'mobile ethnography' (Kenway, Kraack & Hickey-Moody, 2006), along with Bourdieu (1977; 1991), I found myself following the trajectory of different devices through the lives of my participants, and myself. I followed the discourses and patterns of practices as they pertained to use of mobile devices across different spaces and situations: I followed the 'mobile field'. The development of the concept of the 'mobile field', drawing from Bourdieu's concept of 'field' (1977) and Katz and Aakhus' 'apparatgeist', (2002c) was a vital step in developing a common heuristic concerning understanding these devices across

different uses. Mobile technologies are understood as generating a 'field', a particular set of structures concerning behaviours, actions and discourses, which structure human behaviour in certain ways. They intersect and cross school, public and private spheres, offering the potential to traverse between them or escape them entire.

The concept of the 'mobile field' proved useful in exploring how mobile technologies are positioned within schools as institutions, but also speaks to other contexts. In a methodological sense, it enabled me to follow the mobile ethnography of this technology use, through an examination of how the features of these devices and their use augments different fields: this was approached through the reflective use of observations and interviews. So whilst mobile technology use across inanimate and non-purposeful spaces – such as the school yard and hallways – was generally obvious and unrestrained, the formal structures of classrooms were significantly disturbed by the non-productive use of mobile technologies in terms of learning. The concept of potential again became important, when thinking of mobile literacy.

Most significantly, 'mobile fields' point to the importance of managing the *potential* changes their use can have on traversed and intersecting fields. Mobile literacy involves an understanding of 'mobile fields' in the sense that one needs to be aware not just of the way a device and its use can disrupt or alter a field, but that it has the possibility of doing so. A phone may ring, an alarm go off, music on headphones may be too loud, a ringtone or image on a phone may be offensive or disturbing to other people. This illustrates the need to be aware of the potential meanings a mobile device can embody. The fact that all students in the study indicated that they generally kept their phones on silent when at school, and always in class, is illustrative not just of adherence to school rules, but of student awareness of loss of symbolic capital as a result of the possibility of their particular 'mobile field' disrupting the traditionally structured classroom.

As society and education moves to an increasingly technologically-saturated world – where concepts such as 'everyware' (Greenfield, 2006) and 'HyperReality' (Tiffin and Terashima, 2001) bear more likeness to reality than theory – the concept of 'mobile field' offers a perspective from which to discuss the impact of semi-

autonomous technology. In other words, 'mobile fields' incorporate the 'spirit' of technological devices (Katz and Aakhus, 2002c) into social theory, weaving with the actions of human social agents; tracing the crossing and intersections with other fields not as an equal equation, but a dialogic process of mutual augmentation.

9.5.3 *Monopoly-Membership Dynamic*

The 'monopoly-membership dynamic' resulted from the intertwining strands of economic, social and cultural capital (see sections 5.7, 6.5 and 7.4 respectively) in the specific Riverton context. This was one feature that emerged early in the study, and stood out as a significant structuring influence on mobile usage patterns. It was cheaper to communicate with people on the same network (economic demands), resulting in a social pressure to conform if one didn't wish to be ostracised or marginalised (social capital). Further, the network with the most extensive and reliable network in the area (Telstra) was preferred both on a pragmatic and historical basis (cultural capital).

The result of the 'monopoly-membership dynamic' was not necessarily a saving of money – indeed, no evidence was obtained for this and it was not a focus – but rather, resulted in SMS-based communication exchange that students referred to as 'chatting', blurring the distinction between face-to-face and verbal communication, with asynchronous text-based communication. What became important in defining the focus of such exchanges was not the form, but the emotional or functional connection. Thus, whilst the majority of students were connected to the Telstra '1-cent-txt' plan, they gave little on-going thought to accumulating costs, seeing the communication as cheap. It also resulted in self-confessed short txts, with single-focus content, but a high exchange rate of texts. Whether or not the accumulative value of these large number of 1-cent texts would be above or below a lower number, but with more content in each message, at a higher cost, could not be discerned from this data, but offers a potential avenue for further investigation into the structural impact of individual awareness of contract costs on written language structures.

The 'monopoly-membership dynamic', whilst specific to this study, speaks to the way in which market forces, geographic features and infrastructure can influence the development of particular communities of practice. No doubt different arrangements would be found in other locations, creating different constellations of practice. Yet there may also be communities with shared experiences (such as other rural locations) to which this concept may speak.

<div align="center">✶✶✶✶✶✶</div>

Mobile and other emerging technologies have the potential to significantly restructure how we understand education and literacy. This study offers an overview of the field and argues for a way forward deeply embedded in understandings of social dynamics and structures. It proposes a theoretical model for understanding mobile literacy to inform future research and study into related fields. It is based on a world of continuous change and dynamism, resulting in a perspective which is fluid and flexible, descriptive but not prescriptive. In working with flexible guiding principles, this study enables change and development, rather than falling prey to it.

Our contemporary students inhabit worlds increasingly pervaded with mobile devices and possibilities for meaning-making. It is nothing special or significant for them to be traversing a landscape of constant technological change and development. By contrast, educational adoptions of emerging technologies have been measured and careful, scrambling to keep pace as the external world races ahead. The experiences of the study participants and many people around the world point to a necessity for theories that explain a system in a constant state of change, but with emerging structures and patterns of individual agency. Mobile technologies are already here, in our classrooms and the corners of our conversations. They are not going anywhere except more places with us and our students. It is time that they found a productive place in our curriculum and pedagogy.

Literacy has shifted, from the voice to the written, from the page to the screen, and now out into the big, wide world. A theory of mobile literacy provides a window into these intricacies, moving with practices and discourses, tracing texts and identities, elaborating possibilities and potentials. The voices of adolescents warn of the increasing ideological distance between their home and school lives, and suggest the possibilities offered by new technologies. To traverse this gulf is a complex endeavour that educators and scholars are inexorably drawn to: it presents an evolving landscape rich with challenges, rich with potential.

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Appendices

Appendix A

English Unit of Study Outline: Informative Writing Task

Appendix B

Blank Worksheet 1

Appendix C

Loosely-Structured Interview Questions

Appendix D

Worksheet 1 – Bailey

Appendix E

Worksheet 1 – Jennifer

Appendix F

Worksheet 1 – Owen

Appendix G

Worksheet 1 – Sarah

Appendix A

Mobile Technology & Me
Unit of Study – Year 10

Abstract:
The aim of this unit of work is for students to critically reflect on their own use of mobile technologies in the context of a society/culture that increasingly encourages people to be connected everywhere, anytime. Students will articulate their own opinion on how mobile technologies should be used in the Australian context, drawing primarily on their own experiences as consumers of this technology.

Duration:
3 weeks (13-14 lessons, depending on fortnightly cycle of classes)

Aims of Unit:
- Students to develop a critical understanding of their own use of mobile technologies.
- Students to develop an appreciation of the issues and concerns that surround mobile technology use in society.
- Students to reflect on their use of mobile technologies and articulate an opinion about their use (context).
- Students to demonstrate an understanding of multimodal communication methods.

Outcomes

Student outcomes will be based on the new Victorian Essential Learnings Standards (VELS), Level 6, using an assessment rubric common to the school (attached). This same assessment structure is used in the school for all writing tasks completed at a year 10 level.

Criteria evaluates the following:

- Sustained and consistent narrative
- Features of the selected form (multimodal, informative writing)
- Complexity of ideas
- Sequencing of ideas
- Punctuation, spelling and grammar
- Fluency and appropriateness of the language (in this context, language is interpreted in a multimodal manner – written, image, sound, etc.)
- Planning and editing

It must be pointed out that this assessment criteria is only for the evaluation of the informative writing piece as a component of the student's school curriculum. Any mark or achievement at this level will not have an effect on the saliency of information for the purposes of the research project. Rather, the research project will examine the opinions expressed in the pieces as student reflection on their own lived experiences of these technologies.

Structure of Unit of Work

Lesson	Activity	Outcomes – Data Collected
Pre	Initial outline of project – distribution of Explanatory Statements and Consent Forms	
1	Introduction to Research Project	
2	My Mobile Technologies *(see attached work sheet)*	Poster
3	Critically Evaluating Mobile Technologies – advantages and disadvantages	
4	Mobile Issues & Rules – examine a recent issue in the media about mobile technologies.	Short Piece of Writing – argumentative
5	Multimodal Communication & Forms of Informative Writing (Students to bring an example from home: magazine, web page, etc.)	Informative Writing Paragraph – how to do a particular activity on their phone or iPod
6	Introduction to Informative Writing Work Requirement, including a Review of Assessment Criteria	
7	Research and Referencing – the Internet	*Observations*
8	Work on writing task	*Observations*
9	Work on writing task	*Observations*
10	Work on writing task	*Observations*
11	Final lesson on student Informative Writing Pieces.	Submission of Work Requirement
12	Debrief Session	Submission of Work Requirement

- Adjustments may be made to this teaching schedule once individual class timetables have been taken into account. Influences may include the days on which students have double-lessons, times of day of lessons, other school commitments (sports days, etc), room allocations and access to ICT for student use.

- Each lesson in which students will be working on their informative pieces of writing will begin with a short activity or review of issues student may like to consider.

Work Tasks (copies collected as data)

1. **Worksheet 1** – students use collage or draw their relationship to mobile technologies around a picture of a generic human figure.
2. **Issues Response** – a short point of view piece on an issue related to mobile technology use by young people.
3. **Informative Writing Piece** – a multimodal piece of writing addressing the topic: "How to use mobile technologies properly." This is a Work Requirement and needs to be completed as part of student assessment.

Informative Writing Work Requirement – Year 10

How to use mobile technologies properly.

Task:
You will be required to complete an informative piece of writing, drawing on class discussions, as well as your own experience and knowledge, about how *you* think mobile technologies should be used. Remember to consider not just your own beliefs, but rules and laws related to the wider society.

'Multimodality' – Communication is more that writing.
Modern day informative documents generally contain a mix of writing and images. You will be required to make use of different forms of communication: this means you need to use writing, pictures, images, diagrams, flow charts, etc, to get your information across.
Select images carefully – remember the old saying "A picture is worth a thousand words."

Length & Structure:
Your piece of writing should be around 4 pages in length, including pictures or images. If you are able to write more than this, you are welcome to.
You may also write this piece in other forms: a pamphlet, a web page, a short instructional video. Please discuss this with me first.

Referencing
If you use information from other sources (books, web pages), you need to make sure that you reference properly. We will review how to do this in class.
For web pages, you need to include that date that you accessed the information.

HINTS:
Below is listed some questions that you might want to consider when planning and writing your piece. You are not expected to answer all of these questions – just select some and focus on explaining your ideas fully, using pictures where relevant.
- What sort of mobile technologies are there?
- Where/when is it dangerous to use mobile technologies?
- Where/when is it illegal to use mobile technologies?
- What sort of things can go wrong with mobile technologies?
- When should you make phone calls?
- When should you send SMS?
- Are there rules about writing SMS?
- When should you take photos/video with your camera?
- When is it not a good idea to listen to your iPod or mp3 player?
- List the features most mobile phones now have. Which ones are useful? Which ones do you never use?

DUE DATE: Friday, 21st September, 2007

If you have any questions at any stage, about this assignment, please ask me for help: that's what I am here for!

Appendix B

WORKSHEET 1: MY MOBILE TECHNOLOGIES

Around the stick figure below draw or list the mobile technologies – and other technologies – you have access to, both at school and outside of school.

Please include the following details:
- *Mobile technologies YOU personally own (include brand names and uses).*
- *Mobile technologies friends or family own.*
- *Other technologies you have access to (not mobile techs).*
- *Draw connections between different technologies and explain how they link up.*

Appendix C

Loosely-Structured Interview Questions

Introduction

To be read to students at the start of each interview.

The date and time is _____ and I am interviewing _____[pseudonym]. I would like to thank you for agreeing to participate. Your comfort and honesty is important for this research, but I would just like to remind you that:

At any stage you can refuse to answer a question for whatever reasons you wish;

You should try to protect the identities of other people involved where possible – no names, or use fake names instead of real names;

If you don't want to reveal or discuss certain information you don't have to;

The interview will run for 30 minutes, but if you need to leave early for any reason, just tell me and you may do so,

I cannot offer the protection of confidentiality, where issues of abuse or danger to the student is revealed.

Interview 1

Base Line Questions

Age?

Rural/Town?

Mobile Technologies owned? Brands? *Take photographs of mobile technologies*

What other technologies do you use? PC? Digital TV? Pay TV? Laptop? Game console?

Mobile and other technologies you have access to? (Not your own?)

Usage

How do you use your mobile technologies?

Which mobile technologies do you use?

What features of your mobile technologies do you use the most?

How often do you make phone calls? To whom?

Why do you use SMS?

Why do you use _____? *(insert specific device)*

What do you like most about _____? *(insert specific device)*

What do you use your mobile technologies for? *Discuss specific devices.*

When do you mostly use mobile technologies? Home? School?

Do you use your mobile technology to organise things with friends? Give an example of when you did this.

Rules

What rules or guidelines govern how you use your mobile technologies?

School rules?

Family rules?

Laws?

Work rules?

Are there any rules among your friends about mobile technologies? What are they? Who decides them?

Give examples for each of the above…

Identity

How important are your mobile technologies to you?

Why did you pick the mobile technologies that you have?

Do you personalise your mobile technologies in any way? How?

How important is it to personalise mobile technologies? Ringtones?

Covers? Decals? Backgrounds? *Take photos/videos where relevant.*

What costs are involved in using your mobile devices? How do you get money for this?

How useful are your mobile technologies?

Is it important to be up-to-date with the latest technologies? Why?

Future Possibilities

How do you think mobile technologies will be used in the future? How will YOU use them in the future?

How could you use mobile technologies in schools?

What do you think mobile technologies will be used for in personal life?

Describe what features you think mobile phones will have in the future?

Are you concerned that mobile technologies are dangerous? Health risks? Violence?

When will you get a new mobile phone/iPod/MP3 player? How will you decide what to get?

Interview 2

Further Base Line Questions

Family Structure? Siblings?

Parent Occupation and Work?

Hobbies?

Friends and Activities with them?

Recent Activities?

Usage

Do you have special ways of using mobile technologies?

Are there rules about using SMS among your friends? What are they? Who decides?

Do you use 'pranking'? What do you use it for?

Do you use 'phone clubs'? Why? Why not? What costs are involved?

Do you use mobile technologies for school work or for friendships?

Can you think of a situation where using a mobile phone was important for a friendship? For safety? For family?

Have you customised any buttons or other features on your mobile technology? Examples?

Management

What are the advantages and disadvantages of using mobile technologies?

What don't you like about mobile phones? How do you manage these difficulties?

When do you use mobile technologies the most? At school? At home? Other places?

Who do you communicate most with using mobile technologies?

What do you do when you can't get reception on your mobile phone?

How do you decide what songs or podcasts to put on your phone/iPod/MP3 player? How often do you change this?

Reading and Writing Texts

What features on your mobile technology do you use the most?

How fast can you type an SMS? Video record demonstration if relevant.

Do you use predictive text? How do you use it? Demonstrate and video record if relevant.

Do you take photos? Of what? What do you use them for?

Do you take videos? Of what? What do you use them for?

Can you access the Internet from a mobile device? What do you look at? What do you use this feature for?

Can you access email from a mobile device? What do you use this for?

How do you organise songs on your iPod/MP3 player?

How fast can you locate a song?

Identity

I would like to further explore how important mobile technologies are in your life and in the lives of people you know (parents, peers).

Is it essential to have a mobile phone? What about an iPod? Who says this? Media? Family? Friends?

What sort of people don't have access to mobile technologies?

What do you think of people who don't have a mobile phone/iPod? Peers? Parents and relatives?

Have any of your mobile technologies ever been taken away from you (confiscated)? How did you feel? What did you do to cope?

Interview 3

Further Base Line Questions

Recent Activities?

What have they thought of the interview process so far?

Have they been thinking about mobile technologies more often or not?

Cultural Literacy

What things influence the decisions you make about your mobile technologies?

What mobile phone do you own? Cost?

What mobile phone plan are you on? How did you decide on which one to sign up for?

Do you own an MP3 player? An iPod? How important is it to own one of these devices?

Is it important to have specific brands? Are some better than other? What makes them better or worse?

Where do you get information about mobile technologies? Media/Advertising? Friends? Internet? Stores?

Technical Literacy

What type of mobile technology do you have? What technical details do you know about?

Is it important to know about the technical details of a mobile technology? Where do you get this information from? Instruction manual? Internet? Trial-and-error?

What's the difference between digital, CDMA and Mobile Broadband?

Where can/can't you get mobile reception?

What features of your mobile technologies are the most useful?

What features of your mobile technologies could you do without?

Can you access the Internet on your mobile phone? Do you know what language it uses? WAP? GPRS? Do you know what these mean?

What do you do if something goes wrong with your mobile technology? How do you know if it is broken? Who do you contact?

Usage

I would like to explore how mobile technologies are used for both private and public purposes.

Do you share information on mobile technologies with family and friends?

What sort of things on your phone are private? What sort of things do you share?

How do you share information on your mobile technologies? Do you send files, or just show the screen to another person? Email? Posting on YouTube or MySpace?

Do you use your mobile technology in class? Is this allowed? What do you use if for? How do you avoid getting in trouble for it?

Do you use your mobile phone to enter competitions or vote on television shows? How often? Describe when you do this?

Information Management

What sort of files do you have stored on your mobile technology?

Do you spend time organising photos, videos, music, contacts on your mobile devices?

What sort of things do you upload onto your phone/MP3 player? How do you do this – direct via phone or using a PC?

How often do you delete information off your mobile devices? How do you decide what to delete?

How do you save money, or cut back on costs of using your mobile devices?

If you can access the Internet using your mobile phone, how do you decide which websites to go to? Who recommends them?

Interview 4

Interview 4, conducted with only one participant (Erin) was modelled on Interview 3 (above), but was more organically structured, and progressed as a discussion with the participant. As Erin's access to mobile technologies substantially changed over the summer holidays (between interviews 3 and 4), her answers to similar questions were often different.
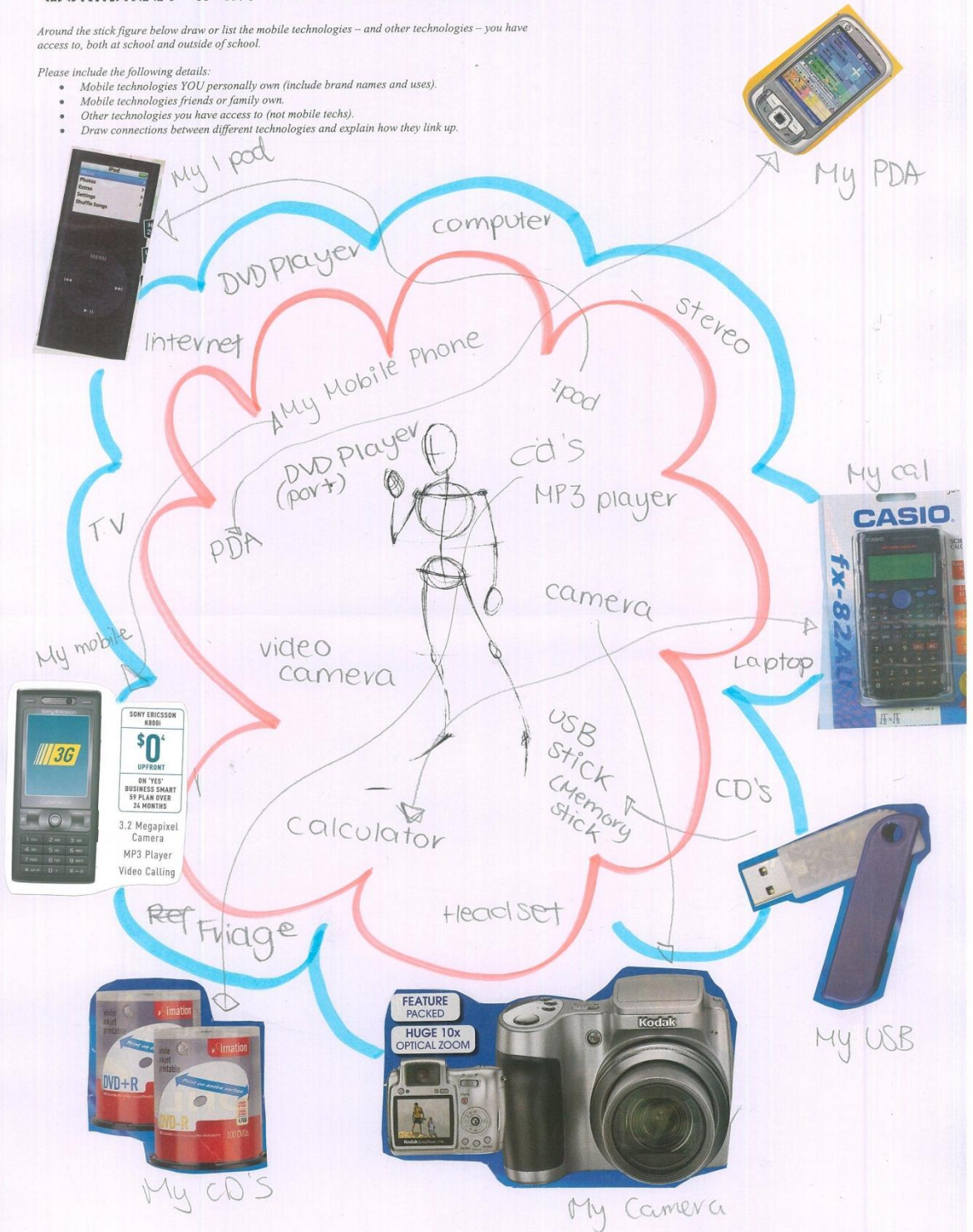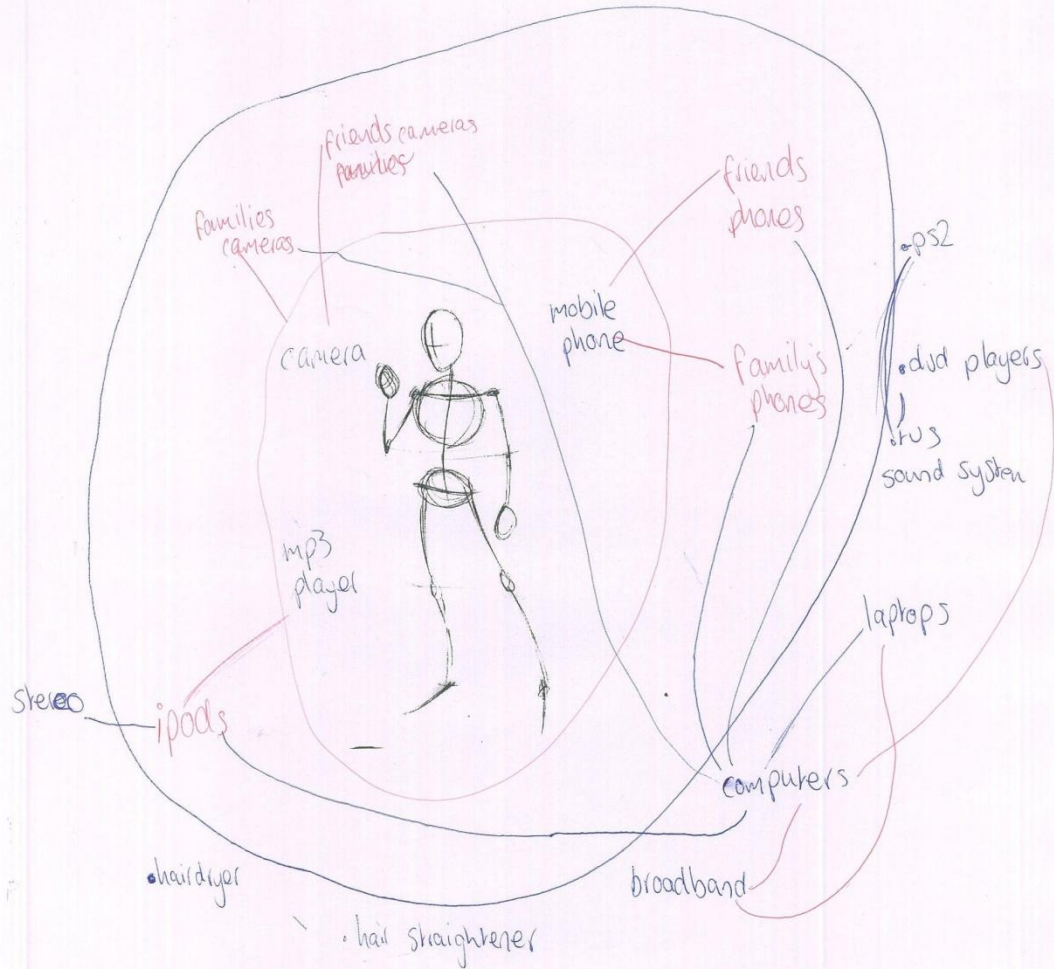
Appendix D

WORKSHEET 1: MY MOBILE TECHNOLOGIES

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- *Other technologies you have access to (not mobile techs).*
- *Draw connections between different technologies and explain how they link up.*

My I pod

My PDA

DVD Player

computer

stereo

Internet

My Mobile Phone

Ipod

DVD Player (port)

CD's

MP3 player

T.V

PDA

My cal

camera

Laptop

My mobile

video camera

USB Stick (Memory stick)

CD's

calculator

Head set

Ref Fridge

My USB

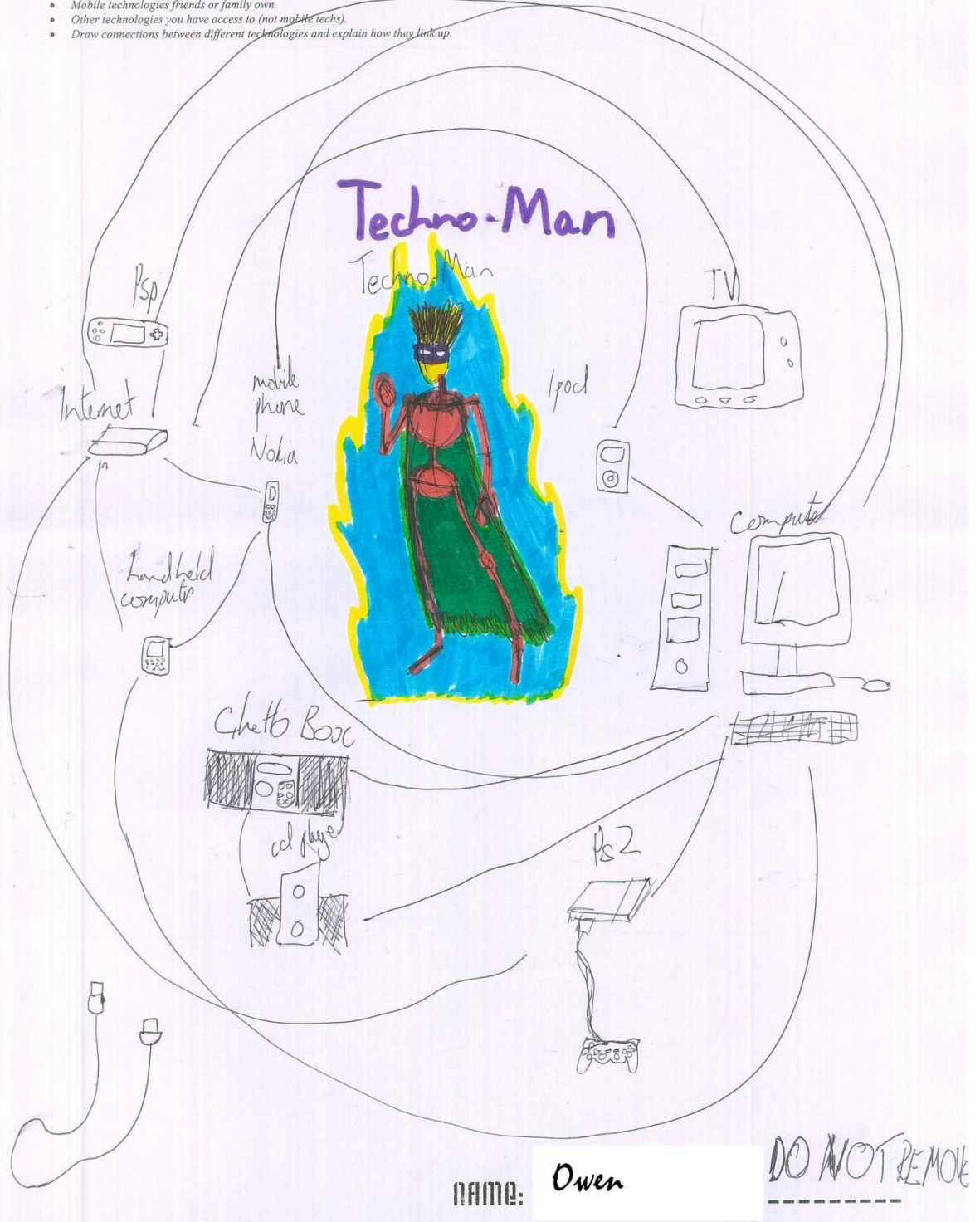My CD's

My Camera

NAME: Bailey

Appendix E

WORKSHEET 1: MY MOBILE TECHNOLOGIES

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- *Draw connections between different technologies and explain how they link up.*

NAME: *Jennifer*

Appendix F

Appendix G

WORKSHEET 1: MY MOBILE TECHNOLOGIES

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- *Other technologies you have access to (not mobile techs).*
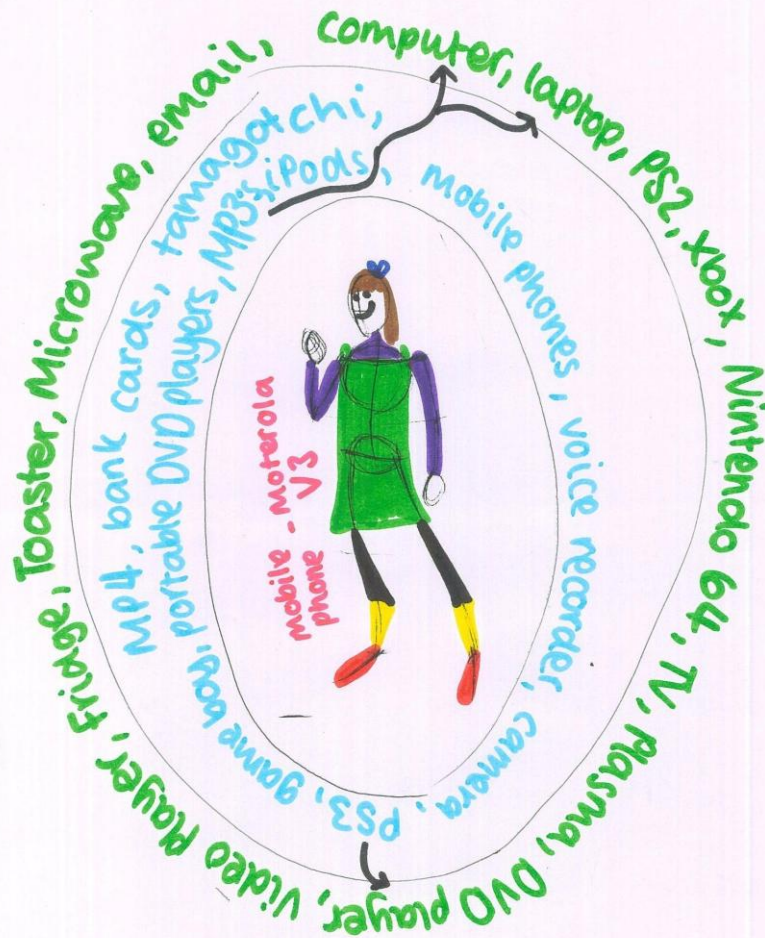- *Draw connections between different technologies and explain how they link up.*

computer, laptop, PS2, Xbox, Nintendo 64, TV, plasma, DVD players, PS3, game boy, portable DVD players, MP3s, iPods, mobile phones, voice recorder, camera, tamagotchi, email, Microwave, Toaster, fridge, video player, MP4, bank cards

mobile - Motorola V3 phone

NAME: Sarah