Captures and blow-ups: on finally being able to read video recordings

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Abstract: Video recordings provide researchers with access to elements of the visual organisation of socio-spatial practices. And yet, given cultural geographies' interests in texts, one of the curious absences from these records up until very recently was being able to see what people in various settings were (or could be) reading and writing. This was, and is, often compensated for by photocopying documents or photographing environments in higher resolution in order to reconstruct what was legible to participants in those settings. Meantime, digital texts, even when being "read", were, and have become even more, mutable and ephemeral. This article explores the novel possibilities of, firstly, ever higher definition video cameras that capture the legibility of environments, sometimes down to the details of 12 point type. And, secondly, screen capture from computers and smartphones that records their tiny texts in their moment-by-moment display. From the combination of these two technologies of video recording it will sketch out how we might analyse the coordination, duration and spatialisation of practices of reading and writing things like maps, Facebook, supermarkets, medical records, children's homework, timetables and financial markets.

Keywords: methodology, writing, reading, documents, high definition video, screen capture,

The illegible

Fig. 1 Ride-sharing commuters trying out a new route to work, from (Laurier, 2013)

The long age of standard definition video is coming to an end. With their 500 vertical lines video recordings from the last thirty years were passably detailed yet if we compare them to the equivalent standard definition of photographic record that accompanied them through the second half of the twentieth century, a 35mm negative has the equivalent of 5000 (or so) lines of video. The 500 (or so) of standard definition video has been doubled to the 1000 (or so) of high definition (HD) and is likely to double again over the next decade to the 2000 (or so) of the lower end of ultra-high definition (which at the time of writing runs as high as 8000). In short, compared to still photography the world recorded on video was a fuzzy one and ran far behind that of photography and this is very likely to continue to be the case.

The low resolution of video has meant that a number of things that are visually available to people in the environments that we are studying have been at best hard, and more usually impossible to discern for social scientists using video to record what happens in those places. One of the most perplexing absences, given its centrality to social and cultural life, was that of texts. The bigger words on billboards, shop signs and posters could sometimes be read, but, unless shot in close-up, the lettering on forms, correspondence, computer screens and anything resembling the format of the document that you are currently reading, was rendered illegible. From the standard definition recording in fig. 1 (2nd frame) I was just able to make out "Eurocentral" on the road sign and thus realise that the passenger was reading aloud the name of the motorway exit they were about to take. Without that clue it might be that this was an area that she already knew the name of. If we imagine then what high definition cameras can offer for making records of places like city streets, offices, airports, homes and class-rooms then, it offers us a visual record that begins to approach the visual availability of the environment, its objects and its texts for their inhabitants. It is not just HD video that offers us this possibility it is the increasing possibility, as we shall see, of capturing the screens that people are reading and writing on. As screens become as common as paper for the

display of text it is on, in and around them that we will also be studying our everyday and workplace literacies.

With the capacity of high definition video and screen capture to record legible details in mind, I want to mark out some of the possibilities they offer for analysing reading and writing practices as they happen. These practices are not reading and writing as metaphors of other activities, immensely productive though those have been in social and cultural geography. Nor are these the reading and writing practices of our intellectual forms of life, central though those are to our self-reflection and intellectual craft. These are the ubiquitous and overlooked occasions of reading and writing that we use to make sense of social settings, in terms of organising them and also of organising ourselves in them and of accomplishing all manner of work and play (Watson, 2009). It might, then, be writing a reminder on a post-it note or reading a parking ticket, texting an invite to a meeting or checking the price of frozen peas, replying to a Facebook update or reading a motorway sign (as in fig. 1). These are the kinds of events that analysts of video recordings have frequently been able to registere were caught in their recordings but were illegible and often lead to hours of conjecture over quite what might have been written or read. The kind of conjecture that had little to do with the straightforward legibility of the letters and numbers at the time and were an enjoyable distraction from trying to understand and describe the activities in question.

Geographies of reading and writing really

While the words were blurred in the video recordings of the last thirty years, cultural geography and many other forms of social inquiry, in the meantime, remained seriously, intensely and extendedly interested in textuality. From a theoretical moment when texts were at the forefront of our concerns (Philo, 1991), captured usually by Derrida's phrase 'there is nothing outside the text', to an ensuing proliferation, dispersal and escape into studies of more varied discursive lives (Philo, 2011), the ideas of reading and writing undergird cultural geography. Simultaneously studies of literal reading and writing practices, readers reading books (or road signs or policy documents) writers writing letters (or menus or lists) were and continue to be rather scarce. The three exceptions to this have been historical geographies of the book, literary geography and recent work on comics.

Historical geography, despite its readers and writers having for the most part, departed, has provided the most substantial collection of studies of print culture, such as how 'writing travels' (Ogborn, 2002) and 'the geography of reading' (Livingstone, 2005). For the historical geographer recovering the "the local and social construction of textual meaning" (Keighren, 2006: 527)527 requires the careful examination of marginalia, letters, diaries and more, that provide traces of how books and other texts were read. Moreover it also requires situating them in the midst of the practices that they were used in. Ogborn (2002), for instance tracks the journeys of letters, journals on board ship to show how they are enmeshed in 'kingship, captainship and intercultural translation' p167.

While always concerned with reading, literary geography only infrequently ventures into trying to detail what happens when texts are read by readers other than academics (Hones, 2008). It has drawn upon reader reception theory to mark out a more general field of influence of particular books but also 'to understand how the book was received, interpreted and read by its various audiences' (Sharp, 2000). Dittmer's (2010) recent studies of comics have drawn upon literary geographies and turned their attention to the audience and their varied readings to a more unusual form. Comics, or more specifically manga, was also the focus of Leslie Gallacher's (2011a; 2011b) investigation into the alchemy of reading. Her approach drew on Livingston's ethnomethodological inquiries into reading. Gallacher shared literary geography's desire to return to what an ordinary reading might be compared to the work of literary criticism. Beset by the difficulties of studying those ordinary readings as they happen, she found a proxy in the online discussion forums

maintained by fans of manga, thereby reconnecting with the solutions found by historical geography in those surrounding texts that provide materials to reconstruct readings.

Outside of geography, and looking at literacy rather than literary practices, Barton and Hamilton's (1998) influential study pursued the ordinary reading of a wonderful variety of texts from recipes to street signs. This it did through an ethnography of a town in Lancaster: interviewing local inhabitants, collecting their documents and observing their reading and writing practices wherever they found them. The practices they studied were activities like: mothers helping children with homework, small businesses keeping their accounts and a retiree writing his memoirs. They did not use video recordings, nor should they have, but what we can begin to imagine from their study is the diversity of settings where we find members of communities reading and writing. Moreover we might also begin to anticipate some of the complexities of using video in those settings.

Ethnomethodological studies of reading and writing

> "Tattoos, autographs, text messages on mobile 'phones, bus tickets, pay slips, street signs, time indications on watch faces, chalked information on blackboards, computer displays, car dashboards, company logos, contracts, railway timetables, television programme titles, teletexts, t-shirt epigrams, "on" / "off" switches, £10 notes and other banknotes, passports and identity cards, cheques and payslips, the Bible, receipts, newspapers and magazines, road markings, parking tickets, computer keyboards, medical prescriptions, birthday cards, billboard advertisements, maps, Hansard, graffiti on walls, music scores, church liturgies, drivers' licences, birth, marriage and death certificates, voting slips, degree certificates, book-keepers' accounts, stock inventories, cricket scoreboards, credit cards – these and countless other items that involve written language and diagrammatic forms indicate the immensely pervasive, widespread and institutionalised place of texts in our society." (Watson, 2009: 7)

The wonderful list of worded and diagrammatic things that preface Watson's ethnomethodological study of texts is also by extension a scholar's treasury of reading and writing practices. The newly acquainted reading tattoos, celebrities writing autographs, mothers reading text messages and tourists reading bus tickets, club members writing the cricket scores and hotel receptionists reading credit cards. In Watson's book he concentrates on the professional textual practices of the social sciences rather than the long list of other possible reading and writing practices with which he begins. While this might then seem to take his work away from reading and writing, ethnomethodology is indifferent to principled distinctions between the methods of the social sciences and the methical nature of other settings. Indeed it a project of ethnomethodology is to remind the social sciences of that is share languages as a resource with other members of society but tends not to investigate that central feature of its inquiries.

The relationship between a document and the lived work of writing the document has long been of interest in ethnomethodology. In the 1970s Garfinkel used a video recording of Stacy Burns typing a document to teach his student about the asymmetric relationship between a text and the lived work of writing it (Lynch, 1993; 2012). When the final document is compared to the video recording of the typing, the work that created could at best only be glimpsed or conjectured over. What is not often commented on is that Burns was required to say aloud what she was doing and what I would like to note here for the purposes of this paper then is not so much Garfinkel's analytic point which still stands but my interest in the way his demonstration had to be done. Burns was required to comment on what she was doing firstly because there was no other party to her work that she might need to make clear what she was doing. In fig. 1, one commuter makes the other commuter aware that she has read the sign by saying what she read there 'Eurocentral'. There is a second reason for the commentary though, quite what Burns was typing was not visible on

standard definition video so Garfinkel remained reliant on her providing a commentary on her actions to make available "mistakes and erasures, and changes in direction of ongoing passages" (Lynch, 2012: 166) because they were very hard to discern from the recording.

Practices of writing and reading have continued to be of interest in ethnomethodology. They begin from Garfinkel's recommendation to examine the lived work of those practices. In studying environments where documents are being dealt with by two or more parties they no longer required their subjects to read aloud because they anyway making available their courses of action to the others present. However the second problem of illegibility has remained. The solution to the illegibility of documents in the video recording has been to make or find copies of the documents that the people were using to then reconstruct what they could see. In the research that I have undertaken with Barry Brown on map reading this has then meant: for a journey made by tourists in a car, buying copies of a large format road map; for a mobile salesperson, buying a London A to Z; and, for pedestrian tourists, an Edinburgh city guide.

Using the latter case as an example, a group of tourists are gathered around their city guide trying work out where to find a building they want to visit. Our copy of the city guide helped us to make sense of the numbers that Fran is saying in fig. 2, line 8:

7. **Tourist1:** Where's six?

8. **Fran:** Six is (.5) ----------------------
((tourist1 takes away index finger and shifts to holding the book)) fifteen. Five. Six. Castle hill (1.5) High Street

9. **Barry:** Castle hill is [just there] ((points at street))

Fig. 2 A group of tourists navigating with a map in a guidebook, from (Laurier & Brown, 2008)

There is a map inserted into the city guide with numbers attached to items of interest. '6' is one of the buildings that the tourists want to visit on the basis of an earlier recommendation. Having found the number 6 on the small map, Fran then reads aloud the nearby street names. In response to the street names the other members of the party then start looking around for them.

There are two important elements that differentiate what was recorded here from Garfinkel's tutorial on the lived work of writing a document. The first is that while the activity of reading aloud recurs what we come upon here is one of the uses of reading aloud in practices other than tutorial experiments. In the early part of line 8, while Fran reads aloud the numbers, she is making available that she is working through them on the map until she finds '6'. Having found '6', her reading aloud of the street names does something else. In this case it is then reading aloud names of streets that can be heard by her companions as names to then match to the surrounding streets. The 1.5 second gap after 'Castle Hill', left there for a possible response from one of her companions either through having read it on a street sign earlier or spotting it now. Receiving no response to "Castle Hill" she then shifts to an adjoining street name on the map "High Street". Meantime Barry has been scanning around the street signs and has located "Caste Hill" which he then shows to the group. The second departure from Garfinkel's original study is that the relevant details of the text are being

configured through gestures as well as talk (at line 8, Fran has been pointing at the map but then removes her finger to open up, what is only a small map, for inspection by others).

What is clear from both examples is that elements of what reading and writing practices consist of and what they are doing within, and as part of courses of action is available even without *post hoc* viewers being able to read what is being read and written. However accessing the textual details of writing and reading practices involves either detours through Garfinkel-type experiments (see also (McHoul, 1982)) or access to the copies of the documents that were being read at the time. Neither of these are always possible to do and so it is also common enough that researchers simply abandon trying to make sense of what is happening when it happens in relation to an illegible text.

Writing and reading digital texts

The second item on Rod Watson's avalanching list of textual entities is a text message on a mobile phone. Were he writing now, it might have been a Tweet or a Facebook update. We are all too familiar with the the substitution, extension and transformation of texts into digital formats that has occurred over the last twenty years and has accelerated with the spread of cheap screens into all manner places that would once have had paper or other materials with printed text. Some of the earliest ethnomethodological studies were of the shift from writing on paper to typing on a keyboard in doctors in medical practices (Greatbatch, Luff, Heath, & Campion, 1993). Digital texts make the recovery that I have just described above more complex and, as often, impossible because they are all the more mutable, updatable, editable, reconfigurable, location sensitive and individually tailored.

Despite the near impossibility of retrieving the digital documents as they were presented at the time, screen capture has been available for recording what is on-screen on single-screen computers In fact it has been available for researchers for longer than HD video, yet it has not been all that heavily used to study what people do on computer screens (Meredith & Potter, 2013). It offers the possibility of catching the appearances of textual materials on screen as they are being read and written, and as they change. Meredith and Potter's study used screen capture to show that, and how, instant messages are edited before they are sent and equally how new messages come in while initial messages are still being typed. In an earlier study Gardner et al. (2010) used screen capture to allow them to study literacy practices of secondary school pupils creating Powerpoint slides and websites. They collected a remarkably large corpus of over one hundred students at work over the two years of their study. The software collects the audio synchronised with what is visible on the screen. In fig. 3 two pupils, Suzanne and Anna, are working on a Powerpoint slide. Suzanne asks if she can correct a mistake she spotted. The transcription of what is happening is complex because not only does it register the features of speech (pauses, rising tone etc.) but also the operations of the mouse and the keyboard (striking letter keys, the enter key, moving the mouse, highlighting with the mouse etc.) Suzanne is the pupil operating the keyboard but as part of their set-up to do the task together, Anna has the mouse.

```
           Keyboard (A)    i m (.) p a c t _ o n _ t h e _ e n (.) v i r (.) o n m
  7    Suzanne:       [Can I f _ix:] something up?
           Keyboard (A)    [ e n t ]
  8                    (0.8)
  9    Anna:          Go ahea-
  10                   (1.0)
  11   Anna:          Oops:[:
           Cursor (A)              [ ↕
  12                   |--(0.5)--|
           Cursor (A)      ↕ ↕ ↕ ↕ ↕
  13   Anna:          [Spell ↑ing:_ , .h]=
           Cursor (A)      [↕ ↕ ↕ ↕ ↕ ↕ ↕ ↕]=
           Mouse (S)       [↖ ↖ ↖ ↖ ↖ ↖ ↖]=
  14   Suzanne:       =[Yea:h, ]
           Cursor (A)      [↕ ↕ ↕ ↕]
           Mouse (S)       [ ↖ ↖ ↖ ↖]
  15a                  |--------------(5.3)---------------|
           Keyboard (S)   ⅂✧    ↗ ⨥(1.3) e / (0.5) /       – e – (0.7)
  16   Suzanne:       °·hhh Their ↑i_mpact- ↑ on the environment°=
           Mouse          ✧↘↘ ↘ ↘ ↘ ↘ ↘ ↘ ↘ ✧←←←←←←←←←←←✧
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Fig 3. Two school pupils working on the same computer, one operating the mouse and the other the keyboard from (Gardner & Levy, 2010)

Suzanne's request (line 7) to correct a mistake is made while Anna is finishing typing a sentence. The mistake, not visible to us in this part of the transcript, is that Anna typed 'there' instead of 'their' at the beginning of this sentence. At line 11 Anna's 'oops' marking that she has noticed what she takes to be the mistake identified by Suzanne. Immediately after 'oops' she then begins to use the keyboard to move the cursor toward the trouble source (end of line 11 onwards). A little bit later in line 13, Suzanne also tracks the mouse toward 'there' on the screen. At line 15, she clicks the mouse shifting the cursor to 'there'. Anna had not yet reached 'there' through the keyboard. What Suzanne has done then is wrested control from Anna. Gardner et al. only have access to that shift of control from Anna to Suzanne because they have the screen recording. Without the recording, that wresting of control would be lost, as indeed would be the fact that despite Anna having given Suzanne permission to make a correction she began the moves toward making the correction herself on identifying a candidate error on the Powerpoint slide.

If we compare Meredith & Potter's study of instant messaging on Facebook with Gardner's study there is a salient difference in terms of the visual availability of the screen. In Gardner et al.'s study there is only one screen which both pupils are looking at. For Meredith & Potter there are (at least) two screens (for the two main parties in each case). The additional difficulty then for anyone studying internet communication such as Facebook or instant messaging or video conference is that it then may require capturing multiple screens and swapping between them depending on whose

perspective on the situation the analyst is examining. Moreover with the proliferation of screens where within one practice the members may swap between multiple computer screens (e.g. in video editing, or stockbroking etc.) between smartphone, tablet device and smartphone (e.g. sending a tweet about a soap opera, while watching that soap opera on TV and using the their tablet to read the soap review).

There are two further major difficulties faced in using screen capture to record writing and reading practices which may account for the relative paucity of studies using it. The first being that it requires installing the software on to the computer(s) of the person(s) you aim to study. They may not have the institutional rights to do this nor the technical capacities and indeed they may also worry that it will slow the performance of their computers. Certainly drops in performance or crashes caused by screen capture were the major concern of video editors that I was researching and, that along with their multiple screens, lead to my not attempting to use it on their devices. The second, abiding problem, is that it involves coming to agreements about how the researchers using screen capture can protect confidential or sensitive materials that may be recorded during the research. These problems recur from studies in medical settings where confidential patient information is on screen to home settings where sensitive personal information appears on Facebook entries. In fact the latter may be all the more complex because postings and other texts constantly appear from other parties that are not participants in the research and have not given their permission to be recorded (Meredith & Potter, 2013).

Using screen capture does not then mean that video recording is no longer necessary. The most obvious missing element is the gestures that are made upon and toward the text that is on screen (we will see more of that later). Let us begin first with the wider ecology though within which reading and writing practices are occurring. A helpful example of this is Mondada's (Mondada, 2011) study of a call centre where she loos at what happens both, on-screen as the operators look things up, but also around the screen such as the operator taking out a fold-out paper map to consult it:

```
106              (2.#3)
   im              #im.1
107 OPE          a *h:::/ mais m:: euf:/ d'accord okay\# *parc` que y a y a la
                 ->*relève la tête, s'éloigne du bureau-*reprend la carte-->
   im                                                #im.2
108              rue [roland de gau#densé]
   im                              #im.3
```
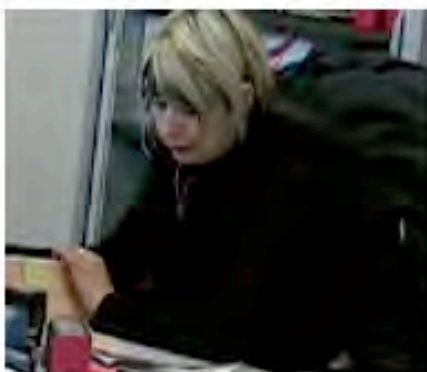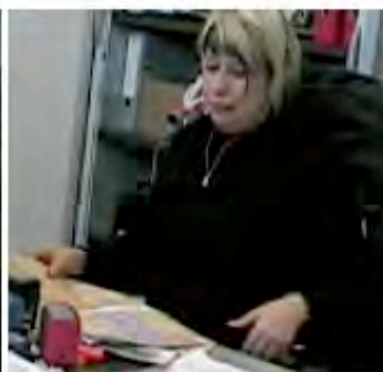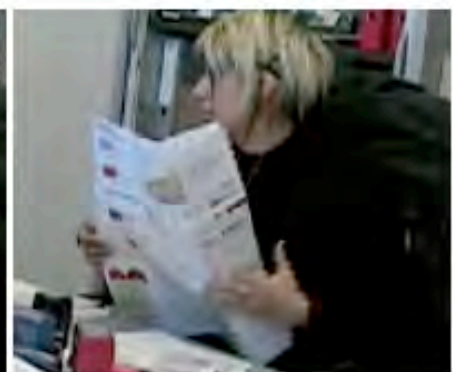

image 1   image 2   image 3

Fig. 4. Call centre worker dealing with a request for assistance. From (Mondada, 2011: 411) *(Translation of the arrowed section "moves back her head, reaches into the desk and takes out the map")*

In this case then, we have a call centre worker shifting from working on-screen to deal with a customer's problem to then consulting a paper map. Screen capture would obviously fail then to capture the reading practices as they shift from screen to paper but the video does then alert the researcher to this shift. The researcher can then obtain a copy of the map to follow the reading practice from screen to paper and back again.

Video recordings of the bodily elements of gaze, posture and movement can also help confirm what is happening in terms of reading and writing. In Christian Licoppe's (2010) study of managers at their desks being interrupted by instant messaging and mobile phone calls, he uses the video to help discern the nature and extent of the interruption. In fig. 5 Licoppe has used picture-in-picture to overlay the video recording on top of the screen capture. What seeing the screen allows us to gather is what the instant messaging window has been brought to the top as the central focus of attention by the manager. While this is useful in determining that the manager is not doing anything else on screen the details of her level of engagement with the screen or whether she is undertaking another task off-screen (as was the case with the previous example) is not available.

Licoppe notes that the screen capture reveals that the 'typing' icon for the recipient of her instant messaging is activated. In other words, it is visually available to the manager that she is being replied to but quite how long the reply is and when it will arrive is still unfolding. The visibility of a reply being composed is one of the new resources that internet communication provides for us and thus trying to understand how it is then drawn into the practices of managers (and others) is certainly of interest. What the video then adds for Licoppe is that during that 'composing' icon, the manager does remain engaged in the instant messaging:

> For sixteen seconds after sending the message "go back to sleep," she stares at the screen, and most of this time is spent in a position of expectation, her chest and chin tilted forward. This corporeal and attentional orientation displays the fact that she is "waiting for" the answer, and is completely absorbed in that waiting. p297
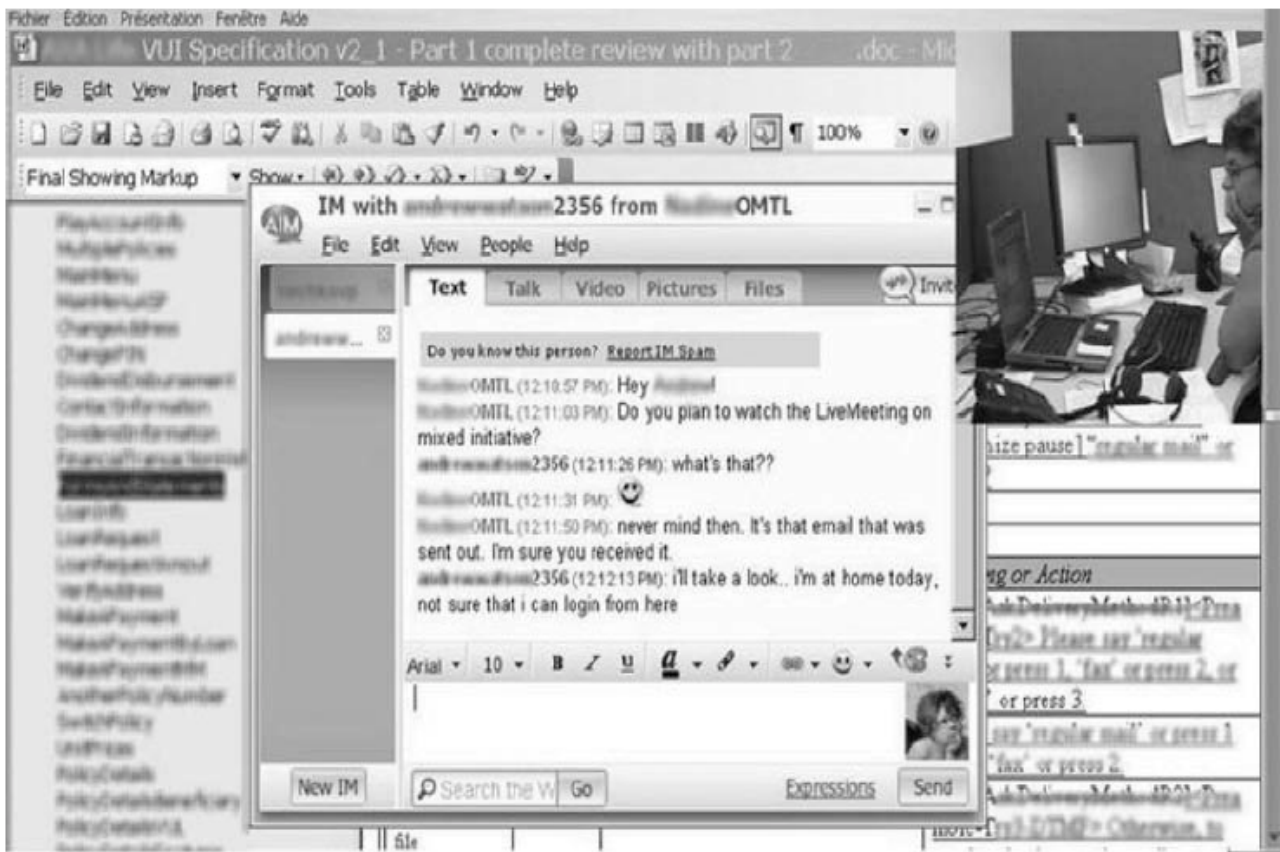
Fig. 5 Managers communicating through instant messaging. From Licoppe (2010: 296)

Licoppe goes on to describe more of the details of her conduct around the screen to then provide the evidence to go beyond saying that the manager is paying attention to the instant messaging to show that she is involved in it. It has become a form of focused engagement. Drawing on the same combination of video recording and screen capture he is then able to differentiate this from other episodes of instant messaging use which are unfocused engagements.

What we have seen here then is what screen capture can offer us in recording the real-time practices of reading and writing texts that are themselves often also changing their appearance in real-time. However we have also come up against the complexities of following those reading and writing practices as they shift across between digital and paper documents and across multiple screens. HD video provide not only for helping trace reading and writing across those media but also for registering the embodied aspects of reading and writing. What you might have noticed is that the writers and readers we have been studying are in relatively immobile settings. There are greater obstacles to recording textual practices once readers and writers are moving around.

Readers-writers-walkers-talkers

Perhaps the most renowned metaphorical account of reading the city was Michel de Certeau's (1984) 'The Practice of Everyday Life'. Looking at the pedestrian making their way through the city as a reader of a text helped reveal how pedestrian practices made the city meaningful. What however of pedestrians reading-really in the city streets? To begin with de Certeau's original object, recording walking in the city with a camera that follows the same walkers has always been challenging because there is no obvious vantage point for recording from. In film and television production it requires either cameras on dollies or camera crews with special rigs that allow them to track people as they walk around. Turning to the literal texts that walkers are reading and writing, recording smartphone

screens has proved, in the past, to be non-straightforward because smartphones' computing capacity was fairly limited. Fortunately current generations of smartphones are now offering the possibility of screen capture and this means that we can then draw upon the techniques described earlier.

In recent collaborative research between Barry Brown, Moira McGregor and myself we have been using small HD camcorders, lapel microphones and screen capture to try and examine the relationship between urban pedestrian mobility and reading and writing practices (Brown, Laurier, & McGregor, 2013). The two camcorders are on lanyards on the participants. The lanyard set-up has two advantages: the first being that the cameras are not too distracting for the participants and others; the second being that their visibility in waterproof bags on the chests of their wearers makes the fact of recording accountable to others. Other researchers have used augmented spectacles (similar to Google Glass) which can be distracting to the wearer (because they are either replaced their current glasses or require them to wear glasses). They also raise privacy issues (similar to Google Glass) because it is not visible that their wearers are using recording devices in public places (hence their other name as 'spyglasses'.

While the lanyards then have a number of advantages over augmented spectacles they nevertheless raise a more fundamental one for examining reading and writing because they fail to capture the heads and faces of the participants. What this admittedly limited set-up does provide are a number of other useful details. Firstly we can see when and where the participants are walking (and slowing, speeding-up etc.). Secondly, we can see the general orientation of the participants toward one another. In fig. 6 they have not only stopped walking but also both have turned toward slightly toward another while one looks up whether Joni Mitchell is Sami on her iPhone. Thirdly, we can see and differentiate between screen gestures which are operating the iPhone and gestures which are for the other walker.
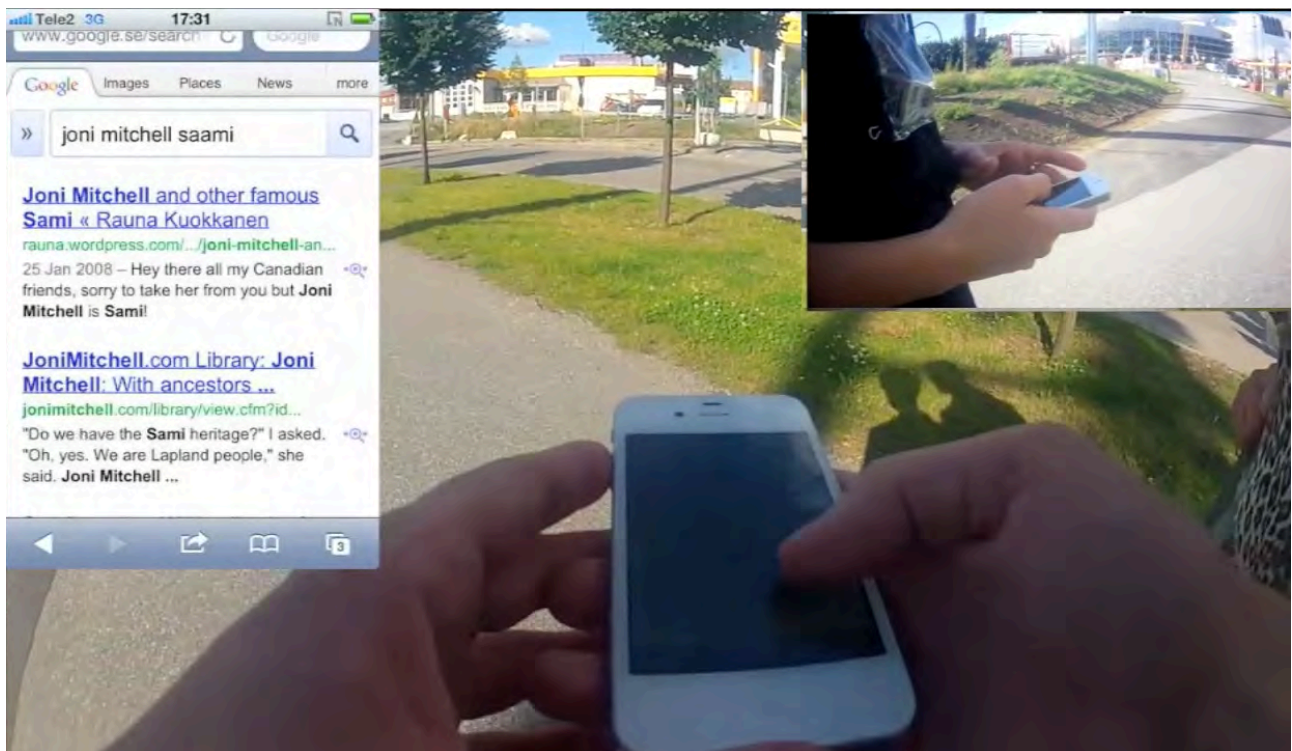
Fig. 6 Looking information up on the web while walking, from unpublished research by Laurier, Brown & McGregor.

The gestures made across the screen in combination with the ongoing talk between the participants are central in making intersubjectively available what is being read by each party on the screen. In fig. 7 we see what is happening just after the screen grab in fig. 6. The walker with the iPhone (A) scrolls down the screen, scanning across the search results. She picks out sections to read aloud and thus make relevant to the other walker. One of these is 'Lapland people', written below the result headed "Joni Mitchell and other famous Sami". At line 361 in fig. 7, A not only says 'Lapland people' aloud but adds 'Lapi', a substitition into a related term showing a form of understanding. The other walker (B) without the iPhone provides a receipt of this bit of reading aloud at line 363. With the gross bodily movement of A and B recoverable the video we begin to have an insight into how the reading aloud then also provides the opportunity for B to come closer and potentially join the reading of the screen. Her question at line 367 accounting for a move toward A as an action of finding out what it is that A is reading that claims Joni Mitchell to be Lapi. Moreover 'Wikipedia' as a category of reference text indicating that A may be doing a more serious and temporally extensive search that justifies both stopping their walk and also help from B.
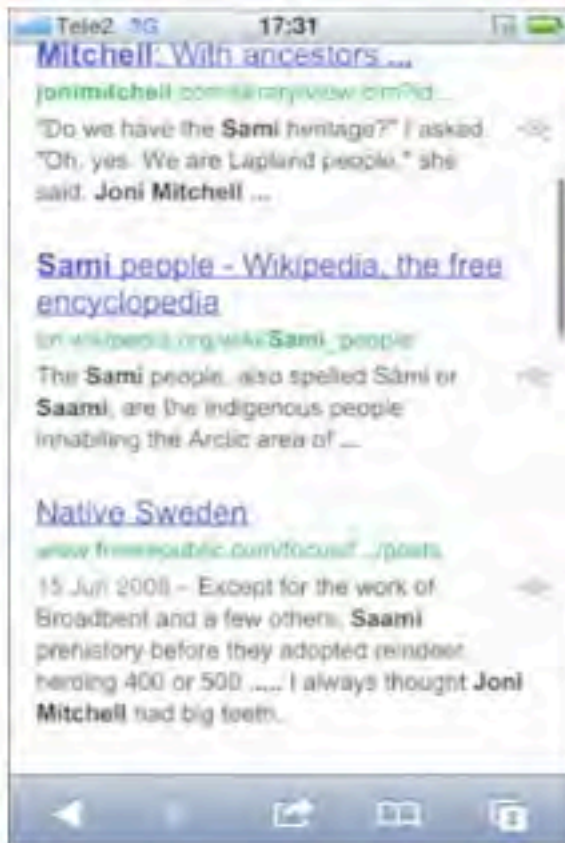
```
358
359
360
361    A:      "Lapland people". Lapi
362
363    B:      Uh-huh
364
365    A K:    ((still slowly scrolling and reading))
366
367    B:      Is this- are you on Wi- Wikipedia
368    B:      ((steps closer to A & iPhone))
369
370    B:      "Sami people"
371
372    A:      "I always thought Joni Mitchell had big teeth"
373
```



```
374
375
376    A K:    ((thumb traces sentence across screen))
377
378    A:      Okay. We don't- Ff. Yah
379    A:      ((waves other hand and turns away from B))
380
381    B:      [So if you're looking in Wikipedia ((smiling voice))
382    B:      ((turns away and begins walking))
```

Fig 7. Scrolling search and then tracing out a sentence.

At line 370, the reading aloud of the screen continues. Because we have the screen capture we can see that A is only picking out elements of each entry, something that B cannot yet establish without visual access to the iPhone screen. At line 370 B does though make apparent that she also can now see the screen as she joins in by reading aloud the Wikipedia heading. A's reading has meantime moved further down the screen which she then makes available by reading aloud the quote toward the bottom of the screen (see capture of screen at line 358, fig. 7). The camera also captures how A draws B's attention to what she is reading aloud by tracing underneath the sentence with her thumb (lines 373-376). Equally with the lanyard cameras we are also able to then see that having completed hear web search for the time being A initiates the recommencement of their walking by turning away.

Tiny cameras and screen capture of handheld devices offers a series of promising possibilities for studying how reading and writing are done on the wing. For instance, how we gather knowledge, in this case relevant to the small talk between the walkers, but it equally it might be the consultation of maps and guides (like Yelp etc.) which are relevant and will reshape the walking itself. It could also be receiving texts, taking and/or showing photographs, checking train times and the many other forms of information and communication that flow through smartphones.

Writing and reading with pens and pencils

While screen capture allows us to now pursue writing with keyboards across a variety of settings and as part of particular practices, it may seem that we will then have to ignore the continuing use of writing with pens, pencils and paper. Many of the early video studies of the arrival computers were premised on examining them in comparison to pre-existing pen and paper based systems. For instance, in medical consultations the ecology of the desktop computer meant that doctors were making less eye contact and only minimal verbal responses to patients compared to consultations that used pen and paper (Greatbatch, Heath, Campion, & Luff, 1995). In most of these studies however what was actually being written in relation what was being said and done on a moment-by-moment basis was lost. As with typewritten text, high definition video when set-up at an appropriate angle and distance can however allow us to read some of the hand-written materials that are visually available to the parties to the events. It also offers the possibility of blowing up the nib-ular gestures and tracings of these implements which are relevant to the unfolding action.

In an effort to bridge the divide between paper and digital documents there have been a number of forms of, from the computing side, tablets and styluses and, from the paper side, augmented paper and smartpens. These then allow for a similar set-up of camcorders and document capture as we have seen above for typewriting. Steve Wright (Wright, 2012) at the University of Lancaster has brought them together very neatly in studying beer brewing competitions. He replaced the judges' pen with smartpens and printed the forms onto the corresponding paper, then he placed capsule microphones on the table between the judges and a camcorder on a tripod on one side. In fig. 8 we have a screen grab of the form as it is being filled out. It has final text in grey shadow and in darker form we see the text that has been written so far. The real-time recording of the writing is synchronised with the audio and video recordings.

What Wright's techniques offer us is access to the lived work of finding flavours as an objective matter. We have the document itself with its many pre-established categories for the flavours, aromas and mouthfeel expected to be found in beer. The recordings also provide us with access to the talk between judges that precedes, accompanies of succeeds circling 'hops', 'esters' or 'phenols'. It is not just talk that we can investigate because we also see when the beer itself is supped, for how long it is supped and when it needs to be supped again. Wright himself when giving a talk on the work of beer tasting brings the beer along too because of course while these technologies of

recording capture the documentary, verbal and embodied work of the judges, the beer itself is missing from these recordings.

Fig. 8 Judges writing tasting notes on a scoresheet, from (Wright, 2012).

Wright's studies of tasting are an appropriate way to finish because they underline how HD video and screen capture orient our analysis toward the audio-visual aspects of reading and writing. We risk missing the banana in the beer that was so redolent to the beer tasters if reliant only on these forms of recording. As with all forms of recording, the original reading and writing event has passed and we are using the video to re-cover it. In trying to bring as much of it back as we can to see how it happened we also cover it with our new inquires.

Concluding thoughts

Through using screen capture and high definition video recordings, I hope I have offered a sense of how we might return to studying a world that remains resplendently and gloriously organised, and lived through, reading and writing. To depart from and return to, to recover and uncover, that wordy world by recording practices involving reading and writing, as they happen. These are not then fixed texts but texts as they are used, produced, amended, repaired, read aloud, gestured over, consulted and more. By using these recording techniques texts are captured with a sense of their duration and with a grasp of their timings in relation to other courses of action. In bringing both duration and eventfulness to texts these methods help us also shift from concentrating on a more hefty discourse analysis to a more fleet-footed analysis of unfolding courses of action. Where the former seems still to carry an idea of the pre-formed, the given and totality, the latter asks us to orient to how writing and reading are locally accomplished by the members of particular settings.

Alongside these more conceptual issues, capturing documents in their temporal evolution becomes all the more central to understanding textual media now because while paper remained relatively stable and documents could be borrowed for later reconstruction of what was being read and looked at, screens displaying text change, shift, update and so on, often on a moment-by-moment basis. Trying to study the texts that constitute Facebook and Twitter are perfect examples of this since unlike older web-pages they are not stable for sometimes longer than a few seconds or minutes. Or, to use another common situations, while we type a search request into a search engine, the suggested text ahead of us flickers with possibilities and the text below out search redraws and reformats itself. As the nature of texts changes so dramatically it is hard to imagine a better time to be studying practices of reading and writing.

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