Comobility: How Proximity and Distance Travel Together in Locative Media

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ABSTRACT Mobile phones are becoming increasingly location-aware: they use and share positioning data through networks, across space, and between friends. This paper introduces the term “comobility” to describe an emerging feature of mobile and located communication, and asks how increasingly popular locative applications are changing social and mobile experiences of place and proximity. This new sense of comobility, of being mobile with others at a distance, was produced and made visible in the collaborative creation-research of the author, in which art practice and social research co-exist in a mobile research methodology. Workshops and a performative walk are analyzed in relation to theories of proximate interaction, to reveal how aspects of face-to-face communication are extended through locative technologies.

KEYWORDS Locative media; Digital art; Research methods; Comobility; Research-creation

Imagine walking or driving through a city, travelling side by side with a friend or colleague. You talk about things that are not physically present, an event in the news or a film you have both seen. A mobile phone call momentarily makes a connection with another person, and the view from a bridge makes places in the distance visible.

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The sights, sounds, and smells of the city compete for attention with memories, ideas, plans, and speculations. Everyday journeys like this fold proximity together with spatially and temporally distant people, places, events, and objects. Absent and distant things are made present in thoughts and conversations, but now also through MP3 players, iPads, Kindles, laptops, cameras and mobile phones—the assorted devices that accompany us, which increasingly have GPS (Global Positioning Systems) or location-based services embedded in them. Through these technologies, people are beginning to become “comobile” with each other.

The term “comobility,” as used here, describes an emerging feature of mobile and located communication. This new sense of being mobile with others at a distance—comobility—is being both produced and made visible by a new generation of locative media applications that use GPS to allow users to find their geographical location and share it with others. This ability to share specific location data adds a new dimension to communication on the move, and brings some of the qualities of a shared walk to communication at a distance, weaving it together with proximity, absence, and presence.

In this article I describe an artist’s project and mobile application Comob first developed in 2008, with artist Chris Speed. Comob, the app, is an attempt to make visible the complex movements of groups of users, who are loosely connected together through this application, which allows them to experience proximity at a distance and on the move. In this article, I situate the app within the tradition of locative media, but also in terms of other everyday, more familiar mobile media practices. I introduce the term “comobility” to describe how proximity at a distance and on the move operates, via the app, in terms drawn from the theoretical reflections of Erving Goffman (1983), Boden and Molotch (1994), and John Urry (2002). I then go on to describe, in detail, my experience of using the app, as well as some of the observations from participants who used it at workshops and arts festivals over the past three years. I demonstrate how engaging in a hybrid research practice, combining technical design, artistic production, and theoretical reflection contributes to a more profound understanding of locative media and the paradox of proximity at a distance.

**Comobility as a response to locative media**

Comobility is in the awareness of the movement of others at a distance. Comobile interactions share some key features with face-to-face interaction, and are expanding the reach of being mobile with others. In the past decade, the use of GPS technologies has grown from military origins to become widespread in mobile devices. GPS in mobile phones and satellite navigation devices are used for finding nearby services, navigating from A to B, for location-based advertising, and to see where our friends are. Locative media applications began to appear in games and artists’ projects around 2002 (Tuters & Varnelis, 2006). *Can You See Me Now?* by the collaboration Blast Theory (2002), was one of the first examples of artists using live GPS locations. This artist’s urban game combined GPS and handheld computers to link players online to players on the street in a virtual game of chase (Benford, Anastasi, Flintham, Drozd, Crabtree, Andy, Greenhalgh, Tandavanitj, Adams, Row-Farr, 2003). The locative game Mogi became popular in Japan in 2003 (Licoppe & Inada, 2010), where GPS and location-based
services had first been integrated into cell phones in 2001 (Grajski & Kirk, 2003). Mogi was a treasure-hunt style game in which players collected geographically located tokens through their mobile phones, and were able to see and communicate with other players nearby. Since 2008, applications such as Loopt (2008), Foursquare (Crowley & Selvadurai, 2009), and Gowalla (2009) have become popular on smart-phones in the US and Europe, allowing users to see the current location of their friends and collect tokens and points for checking-in at popular locations. De Souza e Silva and Frith (2010a) call these applications Locative Mobile Social Networks (LMSN’s) to distinguish them from artists’ locative media projects and location based services that do not use social networks. LMSN’s, like Foursquare, are based around the idea of “checking-in” at a location rather than focusing on the journeys to get there; however, in games like Mogi or artists’ projects like Can You See Me Now?, participants are comobile and thus can observe that another user is getting closer and negotiate meetings and movements en-route (Licoppe, 2009; Licoppe & Inada, 2010). While LMSN is a compelling definition that focuses on the in-between—rather than the nodes—it does not capture the phenomenological, corporeal dimensions that such an experience instigates for users, in particular the awareness of the movements of others. It is this awareness of the movement of others at a distance that I refer to as “comobility.” And it is here where both communications and sociology may benefit from artistic appropriations, interventions, and experiments.

**Comob: Speculative software design for social research and art practice**

I became aware of comobility through a hybrid practice that combined locative arts and mobilities research, a melding of a creative arts practice, speculative design, fieldwork, and analysis; however, the journey of this paper, and this specific project, started in 2008 in a conversation about the state of locative media between artist Chris Speed and myself. At that time locative artworks could be roughly divided into those that annotated places and those that tracked movement (Tuters & Varnelis, 2006). Those that tracked movement often treated the GPS trail left by the user in Cartesian terms: as an individual on a solitary trajectory. These individual trajectories were sometimes aggregated to make collective maps, but these mappings were not produced collaboratively (Southern & Speed, 2009a). Yet, in reflecting on our own experiences, we realized that movement was a complex event, and that it could be thought of as a series of intricate movements woven together in an intertwined set of social relationships.

As artists we wanted to know what would happen if we used GPS to map social and spatial relationships together, simultaneously. To explore this question, and “test” this assumption, we designed an iPhone app called Comob that would map the spatial
and relational links between people in motion (Southern & Speed, 2009b). The basic idea was that in the app, small groups of people could see each other’s locations, overlaid onto a Google map or satellite image. Their individual positions would link with a line, and their usernames could be displayed beside their location. Comob differs from other LMSN’s like Foursquare in that it draws a visible line between people, and is used by specific closed groups for purposeful tasks rather than by wider social networks for ad hoc meetings.

Comob was used in nine workshops at arts festivals and conferences, including Futuresonic (2009) and ISEA (2009), Edinburgh College of Art, Designing Environments for Life, and Radiator Festival. In addition, I made two walks that were performative artworks using Comob to experiment with sharing my location with a distant and distributed audience, titled From Reservoir to Tap (Southern 2010a) and Walking to Work (Southern 2010b). The project is ongoing and a new version of the Comob app with a text chat feature will be released in 2012. The Comob workshops and walks were analyzed through audio and video documentation, field notes, iPhone screen captures, and feedback in discussions and emails.

During the workshops we invited participants to use Comob to negotiate proximity and distance in a number of ways: to facilitate individuals meeting each other in the city; to collaboratively map areas of subjective experience, such as noise pollution; to play games of chase; and to share walks at a distance. In addition to “testing” our app, participants reflected on these activities in open-ended group discussions in public spaces directly after the activity and in workshops later the same day. As an elicitation technique, participants were encouraged to annotate maps or to trace recordings of their GPS movements using a video projection as a guide. These workshops were staged as participatory art projects and were used to stimulate a conversation and to investigate responses to GPS through a combination of creative practice, exploratory situations, and participant observation. During the walks, the moving GPS locations of Comob users were projected into a central space at the conference or festival. The workshops and walks were devised in order to ask how art practice and mobilities research can travel together and inform each other.

Before returning to a discussion of the lessons learned from both trying out the application myself, and in these contexts, I would like to explain, in more vernacular terms, the idea of “comobility,” which has connections to other forms of practice in everyday life. The development of Comob and its use in workshops and performances both produced and made comobility visible as a phenomena. Four features of comobility can be retrospectively identified in the use of other technologies of mobility. I will suggest four examples of practices that provide a broader context, and frame of reference, for understanding comobility: the postcard, the micro-coordinated meeting, air traffic control, and a car ride.

**Prefiguring comobility**

*The postcard*

Firstly, the traditional postcard uses a geographical location as part of a sense of connection at a distance. On a postcard the image, the postmark, and the address indicate
the specific locations of sender and receiver. In the general “wish you were here” sentiment of the card it conveys “the idea that the people involved actually think of each other sensing both a presence and absence” (Kurti, 2004, p. 53). This sense of physical absence and virtual presence occurs through the act of imagining where the person is and in the commitment of time to writing and posting a card, which is then used to reciprocally imagine the writer on holiday, through the sharing of locational information in the image(s), texts, and postmark on the card. Like the postcard, one feature of comobility is that it adds a geographical location to a sense of live connection at a distance.

**Meeting on the fly**
The presence of the mobile telephone, a device we carry with us at all times and every day, has changed how many of us organize our time, and our meetings. Mobile phones let us “micro-coordinate” events, the time and place of a meeting can be modified en-route, partly because participants can verbally specify their current location even though they are on-the-move (Laurier, 2001; Ling & Yttri, 2002). Micro-coordination, which allows for a continual readjustment as a result of feedback and an awareness of others, is another precursor to our understanding of comobility.

**Air traffic control**
Thirdly, air traffic control protocols can be seen as a method of coordinating movement at a distance. A central person with access to an overview monitors the courses of multiple aircraft occupying the same section of airspace. The air traffic controller is responsible for ensuring that there are no disastrous instances of co-proximity. In contrast, the map involved in street level comobility distributes the overview into the hands of participants. With control of the interaction out of the hands of a clearly nominated controller, responsibility must be negotiated within interactions between participants.

**Driving with passengers**
The final example of a related practice that shares some of the features of “comobility” occurs when driving. A driver and passengers sharing a car maintain complex social interactions as they travel, engaging in conversation, conflict, and care of other passengers, that run in fits and starts, punctuating the journey (Laurier et al., 2008). This practice sheds light on the complex shifting of attention between locomotion, navigation, and social interactions that occur within situations of comobility.

These examples make clear that sharing geographical context can be important in negotiating the absence and presence of communications; that being able to communicate position on the move changes how encounters are arranged; that navigation can become a shared and negotiated responsibility; and, that locomotion, navigation, and social interaction often happen together through the same vehicle. Comobility brings all of these features together.

**Goffman: Responsive presence**
Theoretically, the idea of comobility is inspired by the ethno-methodological work of the Canadian Sociologist, Erving Goffman. In his work on the “Interaction Order,” Goffman defines social interactions as occurring between physically co-present indi-
viduals, describing this proximity as their “response presence” (1983, p. 2). This face-to-face domain of interaction enables communication through non-verbal modes, such as focus of attention, body talk, mood, ease, and wariness. The “evidential character” of being present enables others to read things like line-of-sight, intensity of involvement and levels of engagement in the interaction. Being in each other’s response presence also brings with it “personal-territory contingencies” (Goffman, 1983). By being co-present, bodies are made vulnerable to each other’s physical agency.

Goffman (1983) argues that where there is vulnerability there is also the potential for connection and for the display of “bondedness.” He calls these agencies the “enablements and risks inherent in co-bodily presence” (Goffman, 1983, p. 4). Goffman (1983) suggests that the interaction order may be reduced in other forms of communication, such as the telephone and mail, but does not go into any detail in analyzing those forms. In identifying Goffman’s sense of being “with” others in public places as “ambulatory or vehicular units,” sociologist Ole B. Jensen (2010) develops the idea of being “mobile with” proximate groups. He describes the locations and configurations in which “mobile with” situations happen, such as in airplanes, on escalators, at traffic lights, on busses, and in groups that form to go shopping, drinking, and socializing together. He goes on to extend “mobile with” to a sense of being linked-in-motion brought about by mobile technologies not available in Goffman’s lifetime. He concludes that “it seems that more and more of the networking in digital systems become mobile, meaning that the social agent to a large extent is becoming what he or she is whilst being on the move” (Jensen, 2010, p. 350). Comobility captures this sense of both being “mobile with” others that are linked-in-motion and “becoming with” a network of human and non-human interactions on the move.

Sociologists Deirdre Boden and Harvey Molotch (1994) refer to co-present interaction as “the fundamental mode of human intercourse and socialization” (p. 278). Their central argument in The Compulsion of Proximity is that in most situations co-present interaction is an upgrade from other forms of interaction, such as sending emails or making phone calls. They attribute this to a “thickness” in co-present interactions through factors including facial gesture, body talk, turn taking, and the commitment of sharing time and location, as well as the fact that these features are lost in other modes of communication. They also suggest, however, that co-presence is part of a wider sphere of interaction and that

[m]odernity is made possible not by the substitution of new technologies for copresence but by a tensely adjusted distribution of copresence and the more impersonal forms across individuals, tasks, places and moments. (Boden & Molotch, 1994, p. 278)

Sociologist John Urry (2002) takes up this discussion in relation to mobility, arguing that co-presence is still a significant motivation for travel as people strive for proximity in three ways: with other people in face-to-face interaction; with unique locations in face-to-place interactions; and with special events in face-to-moment interactions. Urry (2002) goes on to posit that there is the potential for some of the characteristics of co-presence to be found in virtual proximities through new technologies.
Virtual travel produces a kind of strange and uncanny life on the screen, a life that is near and far, present and absent, live and dead. The kinds of travel and presencing involved will change the character and experience of ‘co-presence’, since people can feel proximate while still distant” (Urry, 2002, p. 267).

Urry (2002) maintains that all interactions are complex combinations of proximity and distance, or absence and presence, and that some forms of proximity become entangled with the virtual more easily than others, particularly the experience of live events.

It is clear that different modes of communication in current usage are woven together in complex patterns, each mode affording its own benefits and problems. The incorporation of location and path data into locative media adds a new dimension to this mosaic and changes how virtual proximities come about. Goffman (1983) points towards a reduced form of the interaction order in distant communications; Boden and Molotch (1994) suggest that co-presence might be distributed; and, Urry (2002) talks of proximities entangled with the virtual; however, how this all happens through new mobile technologies is unclear, and it is to this question that we now turn.

In the next section I use examples from my own artistic research to attempt to untangle some of the complexities of absence and presence in comobile encounters. Instead of focusing on what is lost in virtual proximity, I describe how aspects of co-present interaction are retained and produced in comobile interactions and how this can help in understanding how they are produced.

**Experiencing comobility: Walking to work**

I will use the story of the performance “Walking to Work” (The Experimental Society, 2010) and examples from two workshops that took place prior to the walk to discuss how comobility was both being produced and being made visible.

*Walking to Work* was a performative walk from Huddersfield (UK) to Lancaster University (UK) in which Comob was (almost) continuously live and messages were exchanged via Twitter. Using Twitter introduced communication via short texts, alongside the shared location and movement data in Comob.

On Monday July 5, 2010, I stepped onto the street to start *Walking to Work* and opened the Comob app to find two people were waiting for me, “louisev” and “funkapotamus.” I adjusted the straps of my backpack to distribute the weight more evenly for the five-day and 78-mile walk to Lancaster and set off. Someone called “neil” joined us as I walked along a canal towpath and a passing cyclist said “morning.” It is a common practice on UK footpaths to acknowledge people you are passing, and both on the path and in Comob, proximate and distant greetings were made. We were beginning to be quite a crowd that was both absent and present through Comob. I was walking along the canal towpath, louisev was driving to work, funkapotamus was at the University in Lancaster, and neil seemed to be in a terraced house in London; however, as each dot appeared in the interface, they began to share the walk.

In what sense were we sharing a walk? In what sense was this distributed crowd comobile? Within Comob people became visually present in three ways. Firstly they are “locationally present”: the blue dot and username displayed in the on-screen satellite image show where people are physically present at a distance. The dot is understood to be indexical to an actual location, the representation of a person is read
as a reference to their actual location in the world, even though GPS is only accurate to about 3 metres at best, does not work indoors, and when users of Comob log out, a ghost of their location will remain in the interface for a number of hours. Participants in Comob workshops also suggested this sense of presence by referring to the blue location dots with phrases like “I knew where everybody else was.” The dot is indexical enough to be understood as a real and current location, despite its capacity for error. Secondly they are “temporally present”: a moving icon is taken to mean that the person it represents is currently connected to the Comob network, and there is a sense of a shared “now.” Thirdly they are “virtually co-present”: in the interface, their icons share a spatial relationship on screen, which is reinforced by the lines drawn between them.

**Possible meetings**

To know and track the location of another person can bring with it the anticipation of meeting a friend and the fear of being followed by a stranger; this ambivalence is often present in discussions of locative media. On the first morning of Walking to Work, I noticed that louisev wasn’t far away and was travelling in my direction. The movement of the icon indicated that she was temporally present, and I wondered if she was trying to meet up with me. In making participants aware of each other’s location, beyond line of site, the Comob interface extends what Goffman (1983) calls the “response presence” (p. 2), making them near enough, through the virtual map, to anticipate a response or an interaction. Sociologist Christian Licoppe (2009) has described in detail how recognising co-location in mobile phone calls and in the locative game Mogi leads to an expectation of upgrading to co-presence, and that negotiation is needed to ignore this expectation without being rude. Comobility extends the reach of co-presence and the distances within which a response is expected. This happened with louisev and at other times during the walk, but it wasn’t until very near the end that a participant used Comob to turn comobility into co-presence. They saw that my icon was approaching theirs and came to meet me. In this situation, comobility became useful for negotiating the uncertainty of precise location when “meeting up” on the move. This is the spatial equivalent of the “loose talk” that happens in proximate interaction. For Boden and Molotch (1994), “loose talk” is the informal chat of co-present everyday talk, where formal turn-taking and response formats need not be observed so closely. Loose talk can “collaboratively and simultaneously mould the ongoing interactions as they change the course and speed of conversational flow” (p. 268). A sort of “loose mobility” through Comob allows spatial interactions to be collaboratively and simultaneously moulded and negotiated, as course, speed, and location change.

In situations where “meeting up” is being negotiated, the movement of other participants is made evident in Comob. At its best, there can be “sustained, intimate coordination of action” (Goffman, 1983, p. 3). Goffman maintains that, in the interaction order, proximate members of a group are aware of the others’ presence and share a joint focus of attention. Comobility has the capacity to do this at a distance when it is used to negotiate meetings, and virtual presence in the interface is a shared focus of attention in order to achieve proximity; however, this evidence of location can also be used and perceived in less favorable ways.
When I arrived at Pendle Hill, in Lancashire, UK, the weather took a turn for the worse. I walked up the hill and into the cloud where both visibility was low and the mobile phone signal was intermittent. The satellite images in Comob showed a clear sunny day producing a strange disconnect between the anticipation of the map and the reality of the walk. Near the summit, a person suddenly emerged out of the cloud, he was already quite close when I noticed his dark silhouette approaching. I was surprised and felt momentarily vulnerable because there had been very little approach time to make any assessment of his purpose; this lack of detail with which to assess intentions can also be found in comobility. Goffman (1983) describes how proximate interactions always bring bodies, and thus instrumentality and vulnerability, with them: “there are enablements and risks inherent in co-bodily presence” (p. 4).

Figure 2: Cloud on Pendle Hill with Comob inset

In comobility, vulnerability is experienced because the response presence of participants is extended, making them available for interaction at a distance beyond one’s line of sight. This availability, that people can track each others movements from a distance, has often been perceived as “creepy” both in our workshops and in media representations of location based services (De Souza e Silva & Frith, 2010b). What is missing from this extended response presence is an ability to make an assessment of the other person visually, through appearance, gesture, intensity of involvement, and intent, that enables quick decisions about whether someone else might be a threat, as was possible in the face-to-face presence of Goffman’s (1983) interaction order, but missing on the clouded hilltop. On the other hand, when both participants make their location known in software like Comob or Mogi the mutual availability of comobility allows participants to take evasive action if necessary, by logging out or moving away, if something seems risky (Licoppe & Inada, 2010). If the person who comes into this extended response
presence is known, however, even by simple acquaintance, the virtual co-presence is experienced with anticipation of an upgrade to proximity. In reference to face-to-face interactions, Boden and Molotch (1994) argue “[t]his density of interactional detail of proximate encounters thus both engages and entraps us” (p. 259). By making individual locations available to others at a distance, participants responded by being engaged and fascinated by the connection but were also aware of the risks in sharing location data of entrapping participants in being watched or followed.

The thickness of dots and circles
A feature of the thickness of proximate co-presence is the ability to read sequential actions and to anticipate future moves of other people. Without it we would be forever bumping into people on the street instead of skillfully and intuitively sharing the space of the pavement (Ryave & Schenkein, 1974). Boden and Molotch (1994) describe features of proximity that give it this “thickness” that other media do not have, including meaning that is produced in interaction through context, body talk, commitment of time, turn-taking in conversation, and loose talk. They suggest that the richness of co-present interaction produces a feeling of knowing what is going on, but at the same

Figure 3: Comob Interface: Three stages of walking towards Greg

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time people are put “on the spot” because their actions are visible or detectable, features that are shared in comobility. Locative data initially does not seem to carry any of these thicknesses, but when a location marker regularly updates, movement, route, speed, and direction all become available at a distance. The blue dot in the Comob map interface indicates that “you are here” to the user, while blue circles represent the locations of other participants, or the notion that “they are there.” These crude icons could simply be said to suggest a latitude and longitude position if they are seen as static markers. Once they are on the move, however, they start to have a greater richness and depth than is initially apparent.

As the blue dots and circles move, Comob data becomes sequential, like conversations, with one movement following another. While body talk cannot be detected, movement on a larger scale can be interpreted, and it is possible to recognize charac-
teristic forms of movement, such as the differences between walking, cycling, and driving. In addition, virtual co-presence in the interface affords some geographic context to be read in the map or satellite image. Paths can be seen as they are made and future moves anticipated depending on what happened previously in their trajectory. While location and trajectory are made visible to other participants as part of a longer sequence of movements, they also make people accountable for their actions and inactions. In a workshop, during a “meeting up” exercise, one participant put another “on the spot” in a discussion saying “he was standing outside waiting for us to come to him,” when their original intent had been to meet mid-way between their locations. She could see that he had waited in one place. To creatively misread Boden and Molotch (1994), in order to extend their analysis of face-to-face interaction into the distance of comobility, “[t]his density of interactional detail of ... [comobile] encounters thus both engages and entraps us” (p. 259). Comobile encounters engage us in the sharing of virtual co-presence, and the possibility of meeting up, but entrap us by making us visible and therefore traceable.

Linked to this spatial sense of “knowing where you are” is a temporal sense of “knowing that you’re there,” and this is perhaps the strongest feature of comobility. Boden and Molotch (1994) suggest that a sense of commitment, of sharing time, place, and focussed attention is a feature of co-present interaction (p. 263). This commitment to shared live time is enhanced by an awareness of the technology as needing significant investment of time, battery life, data connection, signal strength and most of all attention to make it work. Inattention is felt through stillness; a GPS icon that is static for too long suggests disconnection, or stopping to do something else, although any perceived disrespect or disregard can easily be explained away by technical failure, battery life, or loss of signal.

These senses of locational and temporal presence are combined with virtual co-presence in the interface. At the beginning of the second day of the walk “Jammerjar” entered Comob from New Zealand. In a tweet he said, “You moved guess your walking!,” suggesting that he was reading the live and moving dot as representative of my temporal and locational presence. He then asked “Can you take a photo of the river - trying to imagine what its like.” In a tweet, I had mentioned that I was walking along a canal; however, Jammerjar refers to it as a river, suggesting that he was following my progress primarily in Comob, which does not label the water. There is a complex set of absences, presences, and emplacements here that is mediated by the Comob interface, satellite images, twitter texts, and photographs. The GPS link made me temporally and locationally present through movement and produced imaginative travel through the virtual co-presence of icons in the map interface. Jammerjar was using my walk to imagine being physically present in a place, or face-to-place in a vicarious experience of the walk (Urry, 2002). Another participant “mikh43” echoes this suggestion saying “some measure of interaction was possible at a distance that gave me a feeling of involvement in the journey.”

Comobility can be seen as a form of spatial, temporal, and virtual co-presence, but co-presence is not necessarily experienced smoothly and easily; rather, it is susceptible to error, failure, and disconnection. The progression of a walk through landscape could
be described as a flow of movement: “[a] path is to be understood not as an infinite series of discrete points occupied at successive instants, but as a continuous itinerary of movement” (Ingold, 2000, p. 226). Anthropologist Tim Ingold (2000) describes how this flow co-constitutes both walker and landscape through movement,

people do not traverse the surface of a world whose layout is fixed in advance – as represented on the cartographic map. Rather, they ‘feel their way’ through a world that is itself in motion, continually coming into being through the combined action of human and non-human agencies (p. 155).

However Ingold’s “continuous itinerary of movement” has different temporalities and must include the discontinuities that are co-constituted between walker, landscape, and technologies on the move. Sociologist Laura Watts (2008) notes that travel is often not a continuous flow, but a discontinuous series of breaks and pauses, of arrangements made during a busy day, waiting on platforms, phone calls made, and imaginings of distant destinations. The technical configuration of locative media is reliant on GPS readings at regular intervals, so the blue dots in Comob jump forward in tiny increments rather than smooth flows. A GPS receiver requires relatively clear “lines of sight” with four satellites in order to work smoothly, so how it is carried can alter the accuracy of its reading; in cities, tall buildings can create GPS errors as the line of sight to satellites is obscured, while in rural areas there are breaks in the coverage of communications networks that connect the iPhone to other users. Comobility, like travel, is not a smooth ride; rather, it is produced discontinuously with lost connections, breaks in signal and lapses of attention. In these disconnections, a sense of obligation to the connection and to the group was produced and made visible. What follows are two different cases of disconnection.

Towards the end of Walking to Work, in a relatively remote landscape, mobile phone network coverage was lost for what turned out to be 24 hours. During the walk, I had noticed when people logged in to Comob, and appreciated repeat visits, particularly from friends and acquaintances on the move. When there was no network coverage, the lack of signal interrupted this sense of connection. This was a performative art work in which there was an obligation to an audience through Comob, Twitter, and a projection in a gallery space. My disconnection from the network and subsequent “silence” in the work could have been read as a desertion from the project, a failure of the technology, a loss of power or a lack of signal. As the lack of mobile phone network persisted, I modified my route to regain a signal as soon as possible. By the time it returned, I had realized that the walk was a “series of disconnections with signal, people, databases, paths, feet, buses missed” (Twitter field notes 2010).

A sense of obligation to the group was also expressed in our workshops. In Dundee, several participants agreed that their availability in the interface meant a stronger obligation to the group task. On a cold, rainy day, when they would have otherwise given up, participants felt that they could not because others were aware of their location. There was nowhere to hide from the group or the rain.

A different sense of disconnection was experienced between the interface and the landscape. One workshop participant expressed that “the process of looking at the screen takes you away from the street.” This perception that using mobile media can
create a separation from proximate surroundings is well documented (De Souza e Silva & Frith, 2010b; Mazmanian, Orlikowski & Yates, 2006). At the end of the walk, I was also asked, “Did you not want to bother with it? And you know just try to keep walking and enjoying where you are.” This echoes Kenneth Gergen’s (2002) sense of “absent presence”; the idea that being involved with technologies removes people from proximate experiences. Comob and GPS technology were, however, entangled in the socio-technical experience of the walk, where navigation was held together by a GPS device, digital route plan, satellite images, maps, roads, fences, and legally constituted public rights of way. This complexity of the negotiation between absence and presence is expressed by another participant: “[I’m] remembering being outside and looking at the street, and trying to envisage where everyone else was.” This sense of negotiating attention between proximate and distant presences, between the street and distant participants, is a feature of comobility; attention can oscillate between navigation of proximate landscape, use of the satellite or map imagery in Comob, and attention to the movements of comobile participants.

Figure 4: The three spaces of “Walking to Work”: Conference installation, Twitter & iPhone app

Locative art
Walking to Work took place between participants using the Comob iPhone app, but was also projected as an installation at the Experimentality conference at Lancaster University. In discussing this location and by using the app on-the-move, the links between the aesthetic representation of connections and the experience of comobility can be described more clearly. While comobility is an observation about mobile com-
munication, there is, in addition, an aesthetic experience of a network of connections represented in Comob as a performed artwork.

The lines, that constantly shifted as participants with iPhones moved, could be watched and annotated by a new audience at the conference exhibition. Watching the progress of this set of points and lines strung out across a map suggested other associations. Without the specific reference of participation in the Comob interface linking their own location into the network, the symbolic nature of the lines was enhanced. The drawn quality of this abstract representation suggested to some that they were part of a socio-technical network of human and non-human actors that is necessary to produce comobility: people, satellites, GPS receivers, iPhones, mountains, blue dots, and mobile phone networks. They began to perceive the work as part of a “space of flows” as well as a “space of places” (Castells, 2004, p. 458). They described different kinds of possible connections between unknown moving participants. The lines could be interpreted as purely geometric or as full of emotional connection. As a representation, the way that people became a connected group with the software co-produced strong linear trajectories at times, and at others, a more complicated network. In reflecting on the walk as both art work and social research, it was possible to reveal this aspect of comobility: that a connection is produced both as a form of communication, but also as a live-performance at a distance, and in the symbolism of the visual representation.

An example from the walk is illustrative of these combinations of representational and symbolic networks. In a field near the end of the walk, I passed under the buzzing electricity cables from a pylon. Glancing at the paper map in my hand, I noticed the symbols for pylons and cables; and, looking back to the lines of the cables drawn through the sky, they reminded me of the physical infrastructure of electricity spread throughout the country. But the cables also became a reference to the straight lines in Comob, connecting me with people, and with infrastructures, signals, and currents. The lines of Comob are always also symbolic lines, never just clear indexical descriptions.

The work produces networks with participants, but also represents networks conceptually by drawing the lines. The Comob project, as analyzed through theories of proximate interactions, asks how it might be that local and distant relationships between individuals are co-produced with mobile technologies. It suggests that being mobile with other people at a distance can share some features of local and proximate interaction. As an artwork, however, the project also acknowledges that the drawn lines and links within Comob become symbolic of wider networks that link local positions and in which Comob is entangled.

These partial absences and presences compete for attention, entangling comobility and the artwork in a complex set of attentions to proximate, distant, and virtual presences, requiring skilled coordination of attention and availability. As illustrated in the description that began this article, an ordinary walk already involves many competing absences and presences; comobility shares this complexity of being in the world.

Conclusions
Comobility is a new sense of being mobile with others at a distance, an emerging socio-technical and located sense that is produced and made visible in interactions with increasingly ubiquitous mobile locative media. In re-visiting the sociology of proximate
interactions, I have looked closely at how new interactions are happening through locatable networks. Without this research-creation approach, using art practice, design, production, testing, and use of the software within the research process, it would be difficult to have such close access to the production of a phenomena such as comobility.

To summarize, comobility generates transformations around three forms of presence: locational presence, temporal presence, and virtual co-presence. It can be used to share time and attention with others at a distance, and to vicariously come face-to-face. In sharing a distant but temporal presence within an artwork, participants co-produce a performance of both their own location through their dot in the interface, but also of virtual co-presence. The implications of this for locative media suggest that audience participation in a live art event is not only as viewer at a distance, but also as a co-performer, through embodied movement. Locative artworks create new aesthetic experiences, but can also produce and reflect upon emerging socio-technical entanglements.

A “new interaction order” (Boyko, Buscher, Dant, & Moore, 2010) is emerging through mobile technologies used in public spaces, and it is essential to revisit Goffman’s (1983) work in detail in order to understand this constantly evolving context. The thickness of co-present interactions is being augmented by a new thickness that can be seen in comobile interactions as context that is read in geographical location; as movement patterns and sequential action that can be read in the live and unfolding representation of location; as commitment to shared time that is seen in temporal presence; and as the live coordination of loose mobility that is co-produced at a distance. This thickness adds a richness to distant communications that begins to undermine the assumption of “absent presence” as a secondary form of interaction. Comobility extends Goffman’s (1983) response presence by making bodies available for interaction at a distance, with both desirable and undesirable consequences. The new densities of interactional detail of comobile encounters thus both engage people in shared time and also entrap them in visibility. In using comobility, attention flickers between proximate and distant interactions as it combines the flow of live action with reflection and analysis in order to negotiate shared understandings of conditions on the ground. Absence and presence are being worked together to facilitate new ways of paying attention to, being aware of, and negotiating places and interactions.

As the global quantity of travel continues to rise, as mobile devices become more widespread, as cities become bigger, and as greater demands are put on dwindling oil supplies, it is increasingly important to explore ways of being face-to-face, face-to-place, and face-to-movement at a distance. In these contexts, comobility will become increasingly important. Digital media festivals, such as Electrosomg (2010) and Futureeverything (2010) have experimented with sustainable conference formats that bring audiences and speakers together at a distance. These formats, however, are more about “audiences” and “events” than about individuals “being with” each other or working together in groups. Skype and video conferencing are also popular for bringing distant friends, relatives, and colleagues together for chat, discussion, and negotiation. In contrast, comobility is found in the shared sociality of being side-by-side rather than the direct interaction of being face-to-face.
Comob, as a network, can connect users in distant locations; in Walking to Work, it was a network between several locations in the UK, Australia, and New Zealand, connecting the individuals’ local position with other distant locales. This sense of co-mobility, as a side-by-side form of shared mobility at a distance, adds to the possibility of social connection between distant local places; however, this is not a utopian vision of a connected future. As has been described throughout this article, proximity and co-mobility both engage and entrap.

By combining the experimental production of new social arrangements in art practice, and using the analytical frameworks of mobilities research, the Comob project has made visible an emerging sense of comobility that can now be used as a lens through which to analyze other locative media as they enter everyday use. Unlike the virtual proximity of mobile phone calls and video conferencing that are modeled on a face-to-face interaction, comobility is the side-by-side interaction of making a shared journey, as locative technologies weave together attention to proximity, distance, and mobility.

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Note
1. The New Interaction Order project in the mobilities lab at Lancaster University is exploring Goffman’s Interaction Order as “phenomena in flux” as mobile technologies proliferate on the street (Lancaster University, n.d.).

Websites
Lancaster University: http://www.lancs.ac.uk/fass/projects/new-interaction
The Experimental Society Conference: http://www.lancs.ac.uk/experimentality

References


