

Technē/Technology

The Key Debates

Mutations and Appropriations
in European Film Studies

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Technē/Technology

Researching Cinema and Media
Technologies – Their Development,
Use, and Impact

Edited by Annie van den Oever

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Performativity/Expressivity: The Mobile Micro Screen and Its Subject

Nanna Verhoeff and Heidi Rae Cooley

Informed by a tradition of cinema and visual culture studies on the one hand, and science and technology studies and new materialism on the other, we mobilize Peircean semiotics in order to theorize new media technologies and related practices. Our question is, in what way performativity and subjectivity are central to an understanding of technology. It is our contention that it is in performative and expressive inscription that technologies have cultural, social and historical embedding and meaning. In the following we will explore how the dispositif of mobility, and the fluid spatio-temporality of emergence that we see as underpinning a visual regime of navigation, require that we acknowledge that technologies, practices, and subjects are in a particularly dynamic relationship.

Mobile Subjectivity: Navigation and Findability

In hand and “on,” the mobile micro screen defines subjectivity in the digital and mobile present. Not only is it a “window” through which we see, touch, and navigate the world, but it is also a recording device by means of which we document, “share,” and understand ourselves as present within our surroundings. Its real-time touchscreen interface invites us to approach the world through layers and streams of data. Concerns for location (i.e., where-ness) and destination become central. And because our devices are nearly always on and connected – cellular service, wi-fi, Bluetooth – our movements, even our gestures, register us as locatable to innumerable others – human, technological, and institutional.

In order to grasp more fully the status of mobile subjectivity, it is crucial to think in terms of performativity (as opposed to use) on the one hand, and expressivity (as opposed to self-expression) on the other. Specifically, our aim is to bring together questions about navigation and findability, which we see as fundamental to the current moment in which a rapidly changing landscape of new technologies of mobility opens onto equally dramatic shifts in the construction and articulation of subjectivity. In this regard, the mobile micro screen functions as a site for thinking about processes of inscription. Inscription, as Bruno Latour has explained, refers to “all the types of transformations through which an entity

becomes materialized into a sign, an archive, a document, a piece of paper, a trace.”¹ What is more, inscription defines how behaviors between human and nonhuman actants stabilize over time and how, as a result, actions become routine and by extension also invisible. We grow accustomed to the ways in which technologies shape our interactions and transactions; in the habit of regular use and everyday practices, we forget what this might mean.² In light of this mutual inscription of mobile technologies and practices, we are specifically interested in understanding the implications of mobile technologies for subjects who are constructed in the process of negotiating technological affordances, performative agency, and the expressivity that making use of these technologies brings about.³

In what follows, we explore the navigational use of the mobile screen. The possibility for the interaction in real-time across temporal registers in augmented reality and navigation apps means that subjectivity is constituted in the act of navigation. Technology affords and constrains how we relate to our surroundings, yet it is in the relation with her surroundings that the subject is positioned. The mobile subject emerges within an ensemble of her physical location and the mobile micro screen interface, her potentially ever-changing geographical location (whether or not en route toward a specified destination), and the various data that she accesses and disseminates along the way. The moment of this articulation plays out through the performativity that is the expressivity of mobile screen practices. We contend that the conditions of mobile subjectivity brought about by performativity and expressivity abides by the twin logics of navigation and findability.

Mobile Subjectivity	
Performativity	Expressivity
Mobile technologies (affordances + practices)	
mobile subject (relations + experiences)	
Indexical deixis (present or future)	Indexical tracing (that-has-been)
Performative acts	Expressive acts
Destination	Where-ness
Navigation	Findability

Fig. 1: *Diagram of the mobile dispositif of navigation.*

Augmented Reality: Navigation and the Index of Destination

Because individual agency is materialized through an articulation of the mobile user being active and present “on-grid,” her physical interaction with the screen, and the streams of data she produces (intentionally or not) in the process, we posit that mobile screen practices always take place within a mobile dispositif.

This Foucauldian concept has been taken up and developed in French film theory by Jean-Louis Baudry and Christian Metz to provide a theoretical construct of what is often translated in English as the cinematic apparatus, and helps us to analyze the material and spatial specificity of the arrangement within which screens operate and the subsequent construction of screenic subjectivity.⁴ Preferring the French term with the Latin root of *dispositio*, which emphasizes the power of “position,” we use *mobile dispositif* in this context to refer to the spatial, yet mobile arrangement comprised of technology, screen content or image, and subject, according to which the process of “screening” takes place.

For our purpose here we take the navigational interface of augmented reality as the *mobile dispositif par-excellence* in the digital present.⁵ Augmented reality, or AR, refers to a digital mobile interface by means of which “data from the network overlays our view of the real world.”⁶ Commercial smartphones and tablets today boast AR functionality. In fact, as Jason Farman has argued, AR has become a “key technology” for extending, or expanding, the meaning of a place through site-specific data overlays that appear on screen in real-time.⁷ Not surprisingly, many AR applications populate the smartphone’s real-time image with commercial information, such as the locations of and reviews for local restaurants or stores. However, other uses for the technology exist. For example, a number of applications present historical and archival information and imagery so that one can experience – touch, even – the past, as it is plotted in the present. Like a living avatar in a game, the mobile screen subject simultaneously navigates on- and offline space. She moves through the city from screen “pop-up” to “pop-up” in a manner much like a treasure hunt. While embedded in the software, the activation of geo-located information on screen in AR requires the navigator to move. AR interfaces show a little map on screen in the form of a compass-like circular “radar” image or perspectively oriented grid to indicate the various points of interest (POI) around the user according to proximity. It is only when in the vicinity of a POI, and turned in the right direction that the screen displays the location-specific, geotagged content. This makes the image itself a destination, and navigation becomes a tracking of that information.

American Pragmatist Charles Sanders Peirce provides a perspective for interpreting how the mobile subject, with device in hand, “on,” and raised for viewing information overlays on the AR interface is constituted in the process of meaning-making. His theorization of indexicality supplements Latour’s notion of inscription and allows us to describe more precisely how mobile subjectivity manifests in the digital present. Significantly, Peirce identifies two categories of indexicality: a trace from the past and relational deixis in the present. This logic of classification allows us to account for both the directional gesture that AR invites, if not necessitates, as well as the digital traces that mobile connectivity produces.⁸ The affordances of the mobile micro screen – portability, connectivity, location-awareness, and AR functionality, in particular – make it possible to

interpret indexicality as producing a multi-layered temporality, one that includes the future and possibility-oriented temporality of destination as a third category of the index. This is because the device tracks where one has been in relation to where one is going, at the same time it registers text-messaging, image-sharing, and other social-networking practices, not to mention the various data proliferated by Internet searches and mobile application diagnostics.

Looking at the widely familiar apps that feature augmented reality and/or navigation at this moment of writing, such as Layar or Wikitude, we see that when a mobile phone user lifts her device and directs its screen-lens toward some object, she enacts deixis: she points, and thereby, establishes a relational presence of subject and object. The real-time image appearing on-screen frames a referent that is only here and now – in the moment of the instance of framing. The user and her display occupy – identify – the presence of each “now,” “here,” and “there” in its passing. As film theorist Mary Ann Doane has indicated, deixis is the “purest form” of Peircean indexicality. Proceeding in the manner of a pointing finger, or the “this” and “there” of language, deixis only exists, that is, it only signifies, in the now of its happening. It “evaporate[s]” in the very moment of its production.⁹ This is precisely the kind of indexicality at work in augmented reality applications that overlay the real-time image with information by combining the user’s gesture with GPS system-oriented data.¹⁰

We propose the moment of AR’s mobile screen gesture to be an index of destination. Not an indexical trace of the past – some that-has-been, e.g., the photographic image – deixis only has a shifting referent in the present. Yet, in navigation this present is invested in the future of “going somewhere,” triggered by markers that have been plotted and tagged with GPS coordinates within the spatial field. This scripted trail, organized in and made operational by the programming software and AR interface, harbors a future trace of the forward movement of navigation. This necessitates a different thinking about the screen and its image. Not committed to an end result or a fixed visual representation that might serve as a verifiable document, the AR interface produces an index of emergence – a temporally layered and dynamic product of, and tool for, negotiating place in the present with respect to both the past and the future. AR establishes a set of relations among the here-and-now of the present, the traces that indicate past itineraries or movements through space (e.g., GPS coordinates), and the future, or some destination, toward which a subject is moving in a haptic, performative engagement with space and time. This navigation is in essence a performative cartography, underpinned by a “techno-logic,” that simultaneously “gives birth to both space and subject.”¹¹

“You Are Here”: Findability and the Indexical Trace of Expressivity

While the performative cartography that is practiced by means of the AR interface is produced in the act of deictic gesture, it simultaneously produces indexical traces.¹² Beyond the oily residue of one’s fingers on the touchscreen surface, GPS coordinates and GSM cell tower data track the participant. This is because the moment of deixis coincides with and, in fact, requires the smartphone’s location-awareness functionality. At each moment the device registers location-based information. Our movements through a space are recorded and mapped so as to enable site-specific information in the time of one’s movements. The resulting artifacts, recorded as metadata, constitute an index-symbolic relation that documents a device’s “having-been” in a particular place at a time so-recorded.¹³ Not unlike light “touching” the photographic medium, electromagnetic waves strike a receiver and “stamp” a location into a file. We attribute to such metadata the evidentiary properties we assign to the photograph. We believe that this information “points back” to a time and place.

More than indexes in this conventional sense, these traces of where-ness are likewise evidence of the expressivity of performativity of AR navigation.¹⁴ Expressivity, here, does not mean self-expression. It does not refer to any self-aware, autobiographical “I” who intends to document her movements. Rather we propose that mobility itself is expressive of subjectivity. When one pauses and for how long, where one shifts direction and with what frequency: these instances of change within the navigational context communicate moments of attraction or attention that transpire in the immediacy of the moment before conscious decision factors in. In other words, the manner by which one inhabits the present and the momentum of navigation are expressive of an articulation (i.e., assemblage) between a mobile subject and her device. In the case of augmented reality, when deixis inspires interaction with and movement with respect to the touchscreen, the mobile subject’s engagement expresses. The impulse to find the next locative pause, the inclination to screen information overlays on a real-time image, the desire to pinch and swipe the augments that appear onscreen all “speak” through the pause, the gesture, and the resumption of mobility.

The “you are here” icon that specifies a mobile subject’s location underpins the cartographic act of navigation, which unfolds in a sustained present that is always positioned toward a future as a possible destination. And because AR’s layering transpires according to a person’s location as registered by satellite and wi-fi connectivity and GPS tracking, it confronts users with, while simultaneously allowing them to forget, the fact that their devices are both navigation devices and tracking devices. As a consequence, “you are here” renders the mobile subject not simply locatable, and the map/screen navigable, but also calculable and therefore findable. Here, we distinguish between locatability and findability, wherein locatability involves specifying a stable and stationary position or loca-



Fig. 2: Connecting to the past in the present via the AR of Ghosts of the Horseshoe (December 4, 2012). Pictured: Dr. Susan Courtney and undergraduate AR programmer Andrew Ball. Image: Heidi Rae Cooley.

tion, while findability names the capacity to access and recombine data about location.

As a logic that underpins governance, findability requires coordinated investments in both locatability and navigability such that shifting patterns of movement and relation, for example, across people, objects, and information, can be identified, followed, and interpreted, and, more importantly, anticipated. Navigation, as a practice of moving through space in relation to site-specific layers of data, produces patterns that can be quantified and used to predict other possible movements. In this way, the mobile subject is always a site of relay, a point of measure, assessment, comparison, and prediction. Because the mobile subject – her navigation through both place and information – is tracked, “patterns of use” always ensure that persons are findable within a population (of people and data) as well as across a physical terrain.¹⁵ This is how navigation and its correlate findability make governance possible. The affordances of the mobile micro screen mean that the techniques of governance are always already implicit in routine practices of mobility.¹⁶

In this regard, the triangulation of tracking, tracing, and monitoring as pertains to navigation matter. The tracking inherent to the project of findability in-

vests in where-ness (Where is x at any given moment?). Relatedly, tracing, crucial to navigational technologies of destination, concerns outlining trails of movement (What is/was x's itinerary?). And monitoring, an extension and intensification of surveillance, insists on a continuous following (i.e., observation) of mobile entities in the present (Where is x and what data is x proliferating in this and all other – past and subsequent – moments?). While monitoring is not our main concern in this article, it is relevant to mention, insofar as it is the ongoing condition of monitoring that enables tracking and tracing. In the next section, we consider two examples in which tracking and/or tracing figure prominently.

Tracking and Tracing: Between Where-ness and Destination

To conclude, we offer two case studies that exemplify both the twin logic of navigation and findability and the distinction we discern between tracking (searching: the analysis of “where-ness”– location specific and in the present) and tracing (following: the analysis of movement in a trail history, whether it is already the past, or transpires in present, or heads into a future). While the two projects differ substantially in terms of their goals, both revolve around the principle of digital navigation as performative deixis – a making visible in navigational movements through space – and the subsequent layering of past, present, and future. Both raise the question of “where” and “when.” Both suggest a status of the image which is emergent in the connection between past and present. Moreover, they position an “I” that is the center of that deictic transaction. They reflexively address How?, in our use of technology, we situate ourselves in relation to past, present, and future.

Our first example is a critical interactive called Ghosts of the Horseshoe currently under development at the University of South Carolina.¹⁷ Ghosts intends to demonstrate how the deixical gesture as inspired by the AR interface might open onto moments of empathic identification, or in Peircean terms, intellectual sympathy. Featuring the “Historic Horseshoe,” the app draws participants into relation with history and historical figures by turning the mobile micro screen into a “window” onto the past in order to bring to visibility the unacknowledged history of slavery that made possible the physical site that many take for granted. As participants traverse the grounds, the app tracks them. At designated locations, it announces the “presence” of a datapoint or augment. In the case of AR functionality, the overlays on the real-time image respond to gesture and touch in order to “fill in the gaps” where institutional history falls short and a general lack of awareness predominates. One might confront an historic photograph of a building, whose degree of opacity varies with the swipe of a finger to reveal how the physical structure before which one stands has been modified. One might encounter the three-dimensional rendering of an architectural “skeleton” of an outbuilding (i.e., slave quarters) that no longer stands. One might come

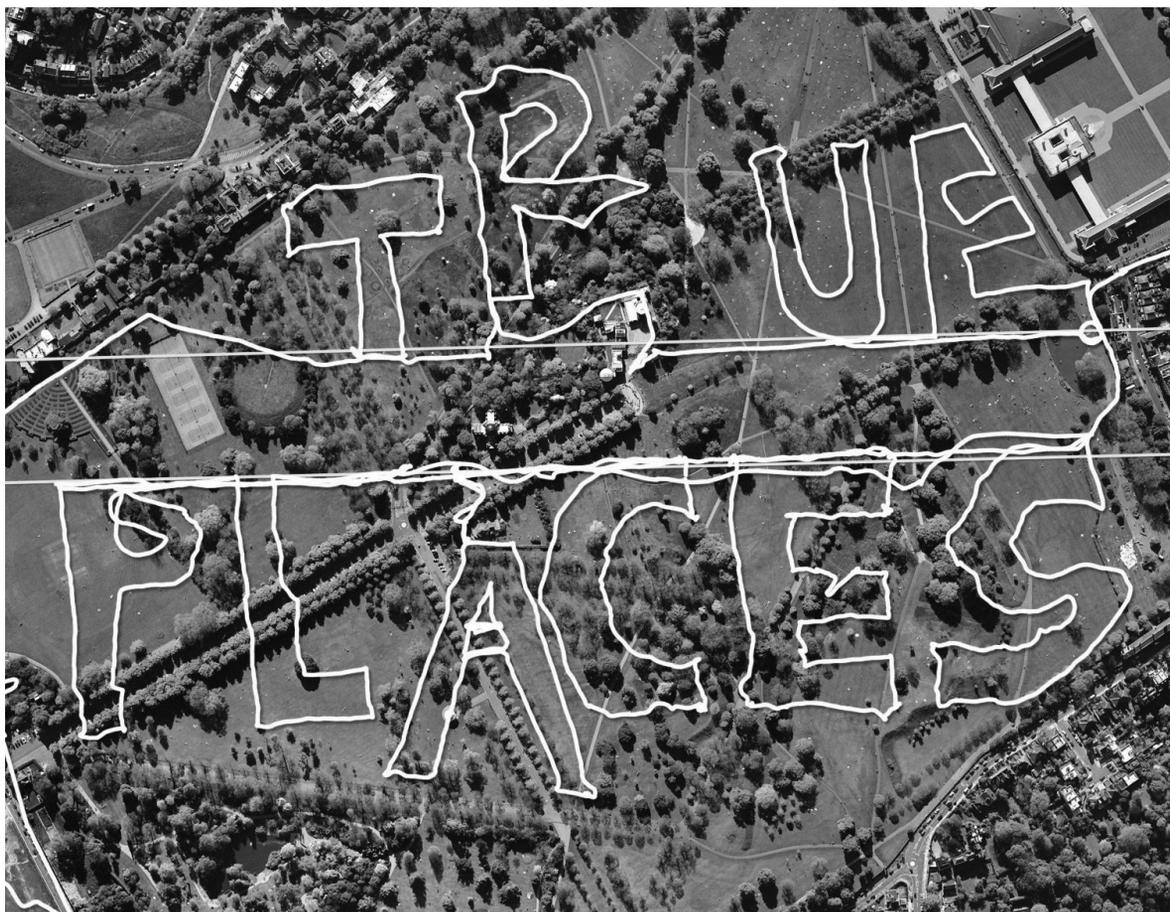


Fig. 3: Detail of Meridians, GPS drawing by Jeremy Wood (2006). Image: Jeremy Wood.

across a textured brick augment, which upon touching, activates an audio recording of the ambient sound of brick-making or the voice account of slave life informed by archival records and performed by a professional slave interpreter.

Ghosts uses the affordances of locative screen technologies in order to transform everyday mobility into an embodied experience that might facilitate a deeper empathy with a past that otherwise is regularly overlooked. For example, it is not just that one imagines in the abstract the work of slaves forming, firing, and carrying bricks and, subsequently, building a wall. Rather, one becomes capable of comprehending in situ and through the “lens” of AR the daily labor done by slaves to create the wall that stands physically before her today. In the process, she relates to the built environment differently. She “sees” a division of labor rather than just an old wall. *Ghosts of the Horseshoe* imagines that at the intersection of a continuously refreshed real-time image, the here and now of a user’s deixical relation to her surroundings, and the geo-coordinated ghostly encounter we might find the condition of possibility for thinking differently about a physical

place and the work of history as these intersect in the present. The hope is that such experience might encourage mobile subjects to take responsibility for a legacy that is embedded in a seemingly ordinary landscape.

While this case works with and critically interrogates how we can be reconnected with a complex and layered past, we shift our focus to a work that seems to reverse this directionality: one that uses navigation to inscribe the present with a past whose traces reveal the technology for navigation to be one for recording and writing.

An exemplary GPS artwork is *Meridians* by Jeremy Wood (2006) which shows an aerial image of recorded traces of navigation by GPS superimposed on the landscape, much like a palimpsestic drawing of movements within the landscape.¹⁸ The words that these movements compose are a phrase from Melville's *Moby Dick*: "It's not down in any map; true places never are." The traces of past movements performed by the artist, walking with a GPS device, make up the superimposed lines that shape the words layered on the aerial image. Paradoxically, the artwork emphasizes the ephemerality of movement, while the words can only be expressed by making the emergent "happening" of physical movement readable by the "drawing" of lines. Performativity and expressivity are conflated. For, the artwork makes clear, visual representation, indeed, "needs" the indexicality of the trace as a residue of what was before a deictic present, slanted toward the destination in the future. Tracing, then, is the recovery in the present of the movement in the past toward the future – like a residue of navigation – unlike tracking, which entails the search for presence at a specific time: the pinpointing of position. As such, tracking is about where-ness – albeit in the successive "points" within a trajectory; tracing is about the articulation of the trajectory itself – the line that is established in the movement between the points. The question the GPS drawing raises, then, is about the difference between movement and writing, and stillness and "reading" in the close connection between performativity and expressivity.

What makes these two cases comparable-yet-different is how both track-and-trace the movements of the mobile subject. In both cases, meaning evolves through a present that is future-oriented. The first opens onto a definitive albeit polemical past – a history whose material remains constitute the present site of traversal, or mobility. The second reveals that we leave trails all of the time because of the devices we have in hand. The first takes advantage of this but does not explicitly comment on it, although the trails participants produce appear on the historical map interface. Similar to Melville's poetic observation that "it's not down in any map," the maps of the campus do not "speak" the history that *Ghosts* mobilizes. The lines that appear on the *Ghosts'* map are perhaps less "significant" – literally, they do not signify – than the lines in *Meridians*, but they do suggest/invite possible destinations. *Meridians*, on the other hand, does not directly invoke the (traditional) map. Instead, it does invoke innovative mapping

practices that are implicit in the association with the satellite-view layer that is so significant for digital cartography (made widely known by the Google maps interface) and that the tracking-by-GPS as tool signifies. What is communicated in each instance, however, is substantially different because the first privileges tracking and the second foregrounds tracing.

As social anthropologist Tim Ingold has suggested, a notion of space as being a container for movement and “holding” our presence is a fallacy of the logic of inversion. His “contention is that lives are led not inside places but through, around, to and from them, from and to places elsewhere.”¹⁹ In a similar vein, our argument in this essay has been that it is really in the connection “between the dots,” within the flow of movement, in the performative act of navigation, that mobile “presence” and subjectivity is created. The rather nostalgic phrase by Melville, indeed suggests that the “map” or image could never harbor the subjective, lively presence of being and going. What is lost is the “true” place – of history and change – that is emergent in practice. Mobile technologies are fundamentally embedded in that logic, a logic perhaps also expressed in Emerson’s famous words, that life is a journey, not a destination. This perhaps somewhat poetic philosophy, we hold, is underpinned by the fundamentally material semiotic logic of the mobile micro screen.