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# Digital spaces, material traces: How matter comes to matter in online performances of gender, sexuality and embodiment

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## Abstract

This article argues that in order to cultivate a more thorough understanding of how gender, sexuality and embodiment come to ‘matter’ in digital environments, it is necessary to reconsider the notion of the virtual as it relates to everyday reality, in addition to rethinking the digital in relation to our common conception of materiality. To develop such an understanding, the discussion is organized around three sections. The first section addresses the notion of ‘virtuality’ by arguing that empirical inquiries into new media cultures should expand their conception of the ‘virtual’ beyond its common associations with digitally mediated environments, in order to properly recognize the materiality of everyday digital practices. The second section focuses on how ‘virtual’ performances of gender, sexuality and embodiment become materialized in digital space. Finally, the third section addresses gender performance and embodied memory in relation to the archival properties of internet platforms that feature user-generated content. It is concluded that the virtual plays a constitutive role in the materialization of gender, sexuality and embodiment in both digital and physical spaces. Rather than approaching digitally virtual images in terms of disembodied information and signification, we should continue to ask how they *in-form* and are *in-formed by* the volatile and intractable matter of gender, sexuality and embodiment.

## Keywords

digital spaces, embodiment, gender, materiality, sexuality, user-generated content, virtuality

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As long as the human subject is envisioned as an autonomous self with unambiguous boundaries, the human–computer interface can only be parsed as a division between the solidity of real life on one side and the illusion of virtual reality on the other, thus obscuring the far-reaching changes initiated by the development of virtual technologies. (Hayles, 1999)

Am I really all the things that are outside of me? (Animal Collective, 2009)

This article is based on a set of empirical case studies that were conducted as part of a recently completed research project on the performance of gender and sexuality in participatory web cultures. Together, the case studies have demonstrated how online articulations of gender, sexuality and embodiment are intricately interwoven with people's physical embeddings in everyday life, as well as the new media technologies they employ to extend daily experiences into digital locales (Van Doorn, 2010a, 2010b; Van Doorn et al., 2007, 2008). In what follows I will discuss some theoretical inferences based on the outcomes of the research project, which suggest a new way of understanding how gender, sexuality and embodiment come to 'matter' in digital environments. In order to develop such an understanding, the discussion is organized around three sections. The first section addresses the notion of 'virtuality' by arguing that empirical inquiries into new media cultures should expand their conception of the 'virtual' beyond its common associations with digitally mediated environments, in order to properly recognize the materiality of everyday digital practices. The second section focuses on how 'virtual' performances of gender, sexuality and embodiment become materialized in digital space. Finally, the third section attends to gender performance and embodied memory in relation to the archival properties of internet platforms that feature user-generated content. I conclude the article by suggesting some potential avenues for future research on the gendered and sexual dimensions of new media use.

## Reassessing the 'virtual'

The notion of the 'virtual' has generally evoked associations with 'virtual reality', 'cyberspace' and other informational environments. However, this particular coupling of 'virtuality' and 'cyberspace' remains haunted by a retro-futuristic imagery of sluggish bodies that are stuck in front of a computer screen (or attached to a head-set), while disembodied minds are able to roam around in a virtual realm of abstract and decontextualized information.<sup>1</sup> This spectacular conception of cyberspace, which owes its existence to William Gibson's novel *Neuromancer* (1984) and gained considerable credence within scholarly and popular writings on internet culture during the late 1980s and early 1990s, offers a take on the 'virtual' as an illusory datascape that radically differs from the reality of physical existence. While many studies in the field of new media and digital culture have since discredited this view by demonstrating how 'virtual life' on the internet is neither disembodied nor decontextualized (Bakardjieva, 2005; Baym, 2000; Campbell, 2004; Jenkins, 2006; Liestøl, 2004; Munster, 2006), the idea of the digitally virtual as somehow separate from the material conditions of everyday reality has nevertheless persisted in much of the literature. By privileging the link between the virtual and digitized information, simulation and representation, the relationship between virtuality and

materiality in everyday life continues to be an underdeveloped subject in much new media scholarship. I therefore contend that, in order to properly address and make sense of new media practices such as online socialization and user-generated cultural production, it is necessary first to reassess the notion of the virtual before situating it within the context of digital spaces that are at once 'materially real, socially regulated, and discursively constructed' (Hayles, 1999: 291).

The term 'virtuality' has often been used to signify either the opposite or a lack of 'reality': a state of unreality or absence. However, the concept of the virtual has been more positively figured in the work of authors such as Marcel Proust, Henri Bergson and Gilles Deleuze. In Proust's work, memories are virtual: 'real without being actual, ideal without being abstract' (cited in Shields, 2003: 25). For Bergson (2005), too, the virtual denotes the nonmaterial properties of human memory, which itself does not function as a container from which we can randomly draw past experiences, but rather consists of 'memory-images' that have to be 'actualized' by means of perception in the present moment to become effectual in daily praxis. In this process, both the memory-image and the situation in which it is actualized are transformed through their encounter. As such, memory, as virtual image, is an inherent component of the present and, consequently, the future. Deleuze, building on Bergson, conceives the virtual image as 'pure recollection': a temporal realm that is innate to everyday reality (Ansell Pearson, 2005). Moreover, Deleuze argues that the virtual, as a 'plane of immanence', is a site of generative potentiality that is delineated through actualizations in daily life (Deleuze, 1988, 2005).<sup>2</sup> Instead of treating the virtual as unreal, these authors have thus approached virtuality as an integral part of reality. Memories, hopes and affects are essential and productive elements of our daily 'real' lives, although they are not *actually* present in any tangible sense. Thus, rather than opposing the virtual to the real, we can follow Deleuze and Bergson by contrasting it to the concrete, which is materially *actualized* in definite forms. This distinction can also be recognized in the formal definition of the term 'virtual'. According to *Webster's Third New International Dictionary* 'virtual' stems from the Latin term *virtus*, which translates as strength or power. It is defined as 'relating to, or possessing a power of acting without the agency of matter; being functionally or effectively but not formally of its kind'. As such, the virtual can be understood as an immanent and immaterial form of agency or potential: effectively but not formally or materially existing within the interstices of everyday life.

From the above it becomes apparent that the virtual does not solely pertain to electronically mediated or digitally produced images and experiences, but has a much longer and richer history. In relation to 'virtual' imagery, Anne Friedberg has argued that 'before the digital age, there was virtuality – painterly, photographic, cinematic, and televisual – and its aesthetics and visual systems cannot be reduced simply to information' (2006: 11). Prior to the digital image, mirrors, paintings and photographs populated our phenomenal lifeworld and produced mediated representations in a 'virtual register' (2006: 11). Thus, instead of being a contemporary media-specific property, the virtual reveals itself as a transhistorical ontological category that inhabits many different media and other technological objects (Friedberg, 2006; Lévy, 1998; Shields, 2003). Following these insights, Friedberg distinguishes the virtual image as:

any representation or appearance ... that appears 'functionally or effectively *but not formally*' of the same materiality as what it represents. Virtual images have a materiality and a reality but of a different kind, a second-order materiality, liminally immaterial. The terms 'original' and 'copy' will not apply here, because the virtuality of the image does not imply direct mimesis, but a transfer – more like metaphor – from one plane of meaning and appearance to another. (Friedberg, 2006: 11, italics in original)

Although Friedberg is explicitly careful not to conflate the virtual with the digital, instead emphasizing its historicity and scope, her definition nonetheless provides a useful framework for thinking through the performative practices that shape, and are shaped by, the networked digital environments that make up the worldwide web. In the context of these digital spaces, questions concerning the (im)materiality and ontological status of the virtual are particularly pertinent. Platforms such as Internet Relay Chat (IRC) or MySpace are 'digitally virtual' spaces in which the virtual is not only an inextricable part of users' everyday reality, but also becomes harder to separate from the materially concrete. While users may not be physically present in these spaces, their virtual presence takes on a 'different kind' of materiality in the form of digital text or images, which are supported by the 'digitally material' architecture of MySpace profiles or IRC channels (boyd and Heer, 2006; Manovich, 2001; Senagala, 2001; Slater, 2002; Taylor, 2002; Van Dijck, 2007). This suggests a convergence of the virtual and the concrete in digital space, in which the 'immaterial potential' of the virtual is materially *actualized* in the form of digital objects (textual, pictorial and cinematic). In this sense, the performative practices in digital spaces such as weblogs resemble everyday physical experiences in their simultaneous incorporation of virtual and concrete elements to make sense of daily life. As Shields has argued, the digitally virtual is 'embedded in the ongoing life of the concrete' and forms 'an important extension of the notions of reality and the context of action' (2003: 79).

### **Actualizing gender, sexuality and embodiment in digital space**

Now that the status of the virtual and its relationship to digital and physical spaces have been addressed, we are in a better position to understand how 'matter comes to matter' in online performances of gender, sexuality and embodiment. To start with, it presently makes sense to conceive of gender and sexuality as partly 'virtual' phenomena: they are not concrete, materially existing entities but rather constitute a variety of events, affects, ideals and regulatory norms that are repeatedly *actualized* in material-discursive practices. In the same way, embodiment can also be understood to include a vital virtual component, since the experience of one's material body depends on a multitude of *incorporeal* (e.g. psychological, cultural, artistic and spiritual) practices and thus cannot be located within a stable 'natural' body (Colebrook, 2000; Lim and Browne, 2009). Instead, embodiment always exceeds the body, never being fully self-present to it. This is, of course, one of the central arguments in Butler's theory of gender performativity, although her conception of the performative remains restricted by a framework based on negativity and linguistic signification (Butler, 1993; Colebrook, 2009). A similar model has been outlined in more pragmatist cum Bourdieusian terms by McNay (2004), who perceives gender and sexuality as 'lived social relations' that have to be continually renegotiated.

My own research has examined how these ‘lived social relations’ extend into digital space, where they are renegotiated within, and made possible by, hybrid assemblages of embodied users, cultural discourses and new media technologies. These assemblages produce digital configurations of embodied gender and sexuality that qualitatively differ from actualizations in physical space, while at the same time retaining an intimate relationship to one another.<sup>3</sup>

One study (Van Doorn et al., 2008) focused on the ways that participants employed the text-based digital environments of IRC to invoke various textual incarnations of their gendered and sexualized bodies. When examining these practices, it is crucial to notice how these specific performative practices only become possible through their embedding within the socio-technical assemblage of embodied participants, IRC software, computer hardware, and discourses concerning gender and sexuality. Consequently, it is of equal importance to underline that the media technology that facilitates the interactions on IRC becomes an integral part of how users experience their bodies, gender and sexuality. These ‘virtual’ experiences extend beyond their conventional associations with the embodied spaces that are created and inhabited by the physical body and move into the textual space of IRC, where they produce digital ‘bodies of text’. These bodies cannot be understood as mimetic textual copies of the ‘real thing’, but rather work to transfer embodied articulations of gender and sexuality ‘from one plane of meaning and appearance to another’ (Friedberg, 2006: 11 – see quote above). In this sense, the text that appears on IRC acquires an agency of its own, as participants effectively and affectively interact with one another’s textual incarnations, rather than experiencing ‘immediate’ contact: the medium *is* the experience here (Van Dijck, 2007).

Other case studies have similarly demonstrated that the assemblage of embodied users, new media technologies and cultural practices, or what Manovich (2001) has called the ‘cultural interface’, fundamentally shapes the ways that users perform their embodied gender and sexuality in digital space. In my study of a ‘micro network’ of Dutch queer MySpace friends (Van Doorn, 2010a), I concluded that the performative practices that constituted this particular social network could only be accomplished *because* they incorporated the network technology offered by MySpace, which emphasizes the material aspects of any ‘durable’ performative act (Latour, 2005). At the same time, the network technology was shaped by these performative practices, as the members of the friends group mutually articulated their digitally material connections through various forms of affective exchange, like swapping ‘gifts’ in the form of poems and digital photographs. These exchanges, which were overflowing with gendered and sexualized affection, were crucial to the delineation of the network structure and one could thus argue that they produced the digital network as such. By virtue of being included in these ‘flows of affection’, the individual friends are able to perform their membership of the group and write each other’s ‘digital body’ (i.e. their user profiles) into being. Unlike the textual bodies constructed on IRC, these multimedia bodies consist of an amalgamation of (hyper)text, digital photos and appropriated webcam images, making the link to their physical counterparts more visually explicit. Yet, like the textual body on IRC, the multimedia body on MySpace conjures up an ‘iconic presence’ that is not just a copy of the absent ‘real’ physical self but exerts a sense of differential agency within the network (Belting, 2005). It is through the combination of textual and ‘pictorial’ comment

exchanges that the friends experience and perform their embodied affection for one another, producing digital conceptions of the gendered and sexualized self/other that are highly specific to the socio-technical assemblage from which they arise. In this assemblage, gender, sexuality and embodiment are *reconfigured* by the novel ways in which they can be visualized and enacted, which allows users to perceive them as virtual practices of becoming rather than concrete properties rooted in a stable physical body.

The MySpace study is an apt illustration of the boundary-crossing potential of social processes that interlace media technologies, cultural/discursive practices, and embodied users, which all figure as actors that shape one another within a network that extends from physical into digital space and back again. These practices suggest that it is becoming increasingly difficult to separate bodies, gender and sexuality from the technological networks that give them form and meaning. Conversely, media technologies cannot be apprehended without accounting for the embodied and gendered use cultures that imbue them with significance by mobilizing them within larger everyday networks – both virtual and concrete. This, then, poses serious questions concerning the notions of (gendered) human subjectivity and its boundaries. Where does the human body end and technology begin? If the experience and performance of gendered bodies can extend into spaces other than our physical environments, where is embodied subjectivity located? Is it enough to speak of a singular ‘human agency’? Given the inextricable relations between humans and machines, here represented by new media technologies, it might be more useful to think in terms of ‘distributed agency’, which recognizes agency as a *process* that is allocated to human as well as non-human actors who depend on each other for their respective efficacy (Bennett, 2005; Van Dijck, 2007). Moreover, it might be productive to approach online social practices as belonging to a larger assembly of everyday post-human activities. Here, gender and sexuality do not solely belong to the territory of a sovereign human body, but can be ‘deterritorialized’ by actualizing their virtual potential in digital space (Deleuze and Guattari, 1987; Munster, 2006; Wegenstein, 2006). This does not imply an anti-human perspective, let alone signal any ‘end of humanity’ or ‘death of the body’, but merely acknowledges the ways in which the ever-increasing amount of technological mediators that surround us have radically expanded our experience of what it means to be ‘human’ (Haraway, 1997; Hayles, 1999; Thrift, 2007; Verbeek, 2005).

In contrast to the MySpace study, however, the other case studies indicate that the complex new ways in which gender, sexuality and embodiment are reconfigured within contemporary socio-technical networks do not necessarily entail a break with their traditional and essentialist articulations. Even though user practices on IRC (Van Doorn et al., 2008), YouPorn (Van Doorn, 2010b) and Dutch weblogs (Van Doorn et al., 2007) are deeply embedded in the media technologies that grant them their shape and durability, they remain ardently attached to conventional notions of gender, sexuality and embodiment. In other words, disconnecting gender and sexuality from their ostensible foundation in a physical and singular ‘human’ body, by reassembling their possible configurations through digital media practices, does not automatically result in subversive performances. It is exactly the immaterial, distributed agency of gender and sexuality as reiterated regulatory schemes that enable their normative persistence and ‘reterritorialization’ through a circumscribed set of actualizations in both physical and digital space.<sup>4</sup>

As I have argued in my study of user-generated amateur pornography on the video-sharing site YouPorn, the immaterial agency of a widely circulated commercial 'pornoscript' delineates the ways that gender and sexuality are visualized in the uploaded video clips, by prescribing which sexual performances are to be displayed on screen and how they should be filmed. Rather than mobilizing interconnected media technologies such as video cameras, webcams, editing software and the YouPorn platform to produce and distribute alternative visualizations of sexual bodily practices, this particular socio-technical network is predominantly employed to perpetuate a scopic regime in which gender and sexual pleasure are firmly tied to a heteronormative body. To be sure, the large amount of 'remediated' content (Bolter and Grusin, 1999) on YouPorn makes it unlikely that the 'performers' appearing in these clips are also the ones who edit the videos and upload them to the platform database. Yet what matters here is that they are all interconnected within the extended network of humans, technologies, discourses and material practices that eventually produces the imagery of 'real amateur sex' available through the YouPorn interface. I want to stress the importance of this network, which integrates both virtual and concrete components that range from gender norms and pornographic conventions to the use of particular tools and settings, in order to visually construct a heteronormative view of gender and sexuality.

Normative gender schemes also play a pivotal role on IRC and Dutch weblogs. While both platforms facilitate the creation of user-generated content, their technological capacities and user practices radically differ, bringing forth different performances of gender and sexuality. At the same time, my research has demonstrated that these performances similarly reproduce a traditional gender discourse that functions as a foundation for making sense of the interactions and representations of self in digital space. In the case of Dutch blogging practices, the combination of the blogs' technological affordances and the creative ways these were employed by the authors resulted in heterogeneous performances of masculinity and femininity, which were accomplished through the incorporation of different (hyper)textual and pictorial artefacts. Nevertheless, the authors adhered to a conventional understanding of embodied gender identity, which they extended into the digital spaces of their weblogs. This reliance on traditional gender schemes thus coincided with the use of the weblog as an autobiographical technology, which limited the potential to reconfigure common articulations of gender and embodiment.

Although the text-based channels on IRC lack the digital graphic objects available to weblog authors and their main purpose is to facilitate real-time interaction instead of reflective diary writing, the 'virtual' agency of gender and sexual norms was similarly materialized in these spaces. In my study of two channels, one populated by gay men and one featuring 'straight' men and women, users constructed textual bodies that often conjured up a stereotypical image of their ostensible physical selves. While the embodied identities written into being in the 'gay' channel extended heteronormative notions of masculinity, its patrons still rejected any attempts to transgress commonly accepted norms concerning the gay male body and its sexuality. These shared ideas about the 'correct' formations of gender and sexuality produced cohesive yet dynamic social bonds, which were effectively *actualized* through the creation, delineation and maintenance of the two digitally material IRC channels. This again underscores that it is indispensable to account for both user practices and technical affordances when investigating new media cultures.

## Intersection: Boundary work

Aside from being 'virtual', these digital spaces are interspersed with material traces of embodiment in the form of various textual, pictorial and cinematic artefacts that are employed to articulate gender and sexuality. In this way, everyday (inter)actions are *materialized* in digital space. From the discussion above, a paradox arises: on the one hand, these digital actualizations of embodied subjectivity reconfigure the way that gender and sexuality can be visually articulated, reassembling their relation to one another and the bodies with which they have traditionally been associated. Consequently, the everyday performative practices that take place in the various platforms featuring user-generated content ask us to reassess the boundaries between the virtual and the material, the social and the technical, as well as the increasingly porous borders between gendered bodies and media technologies which mutually shape each other's formations. On the other hand, these same practices request that we do not forget about the perseverance of conventional norms concerning gender and sexuality, which different use cultures utilize as organizing principles to make sense of their digital performances. In spite of the 'prosthetic potential' offered by the media technologies that embed users in their everyday lives, the notion of bodily integrity and the boundaries it necessitates are far from becoming irrelevant in digital space (Wajcman, 2004). On the contrary, my research suggests that the majority of contemporary users mobilize the socio-technical possibilities of these platforms to reinforce, rather than experiment with, established boundaries that designate the 'appropriate' place for bodies and technologies, leaving the changing conditions of embodied gender and sexuality largely uncomplicated.

Ultimately, it would be a mistake to favour either cultural norms or technological affordances as the 'dominant agency' in these online practices. My research has also made clear that the performance of gender, sexuality and embodiment through user-generated content is often a highly contingent accomplishment, in which cultural norms are not re-enacted in any straightforward manner. Instead of being transparent intermediaries, new media technologies act as 'mediators' that translate common cultural notions in different and unforeseen ways (Harman, 2009; Latour, 2005). In turn, as cultural practices adopt new media technologies, they continue to redefine their very function and identity. More than 30 years ago, Raymond Williams (1977) characterized a medium as a 'material social practice'; a set of techniques, habits, tools and conventions (see also Mitchell, 2005). Perhaps it is useful to apply this same definition to gender, sexuality and embodiment, which can equally be comprehended as ongoing performative practices that involve the incorporation of both material and virtual components. In these processes, the aforementioned boundaries will repeatedly be crossed, but this does not mean that the borders will soon become obsolete.

## Body, media, memory – gender performance and the networked archive

Authors such as Belting (2005) and Wegenstein (2006) have also questioned the boundaries that delineate the human body, asserting that this body is itself a 'living medium'; a productive site that mediates between the public and the private, the personal and the

collective/cultural, and between the discursive and the material. One particular location where these 'opposing' spheres are negotiated is the embodied memory, in which their mutual encroachments are continually worked out as people interact with, and attempt to make sense of, their socio-material lifeworld. As such, memory is never merely private/personal or public/cultural but mediates between these spheres as it appropriates and invests itself in objects that 'externalize' memories, transforming them in the process. It could thus be said that embodied memory is extended through the everyday practice of producing 'mediated memories'. According to Van Dijck, mediated memories are 'the activities and objects we produce and appropriate by means of media technologies for creating and re-creating a sense of our past, present, and future selves in relation to others' (2007: 170–1). In the past, these memory objects mainly consisted of photographs, home videos, diary entries and other analogue media artefacts. Like the embodied memory to which they are connected, these objects continually straddle the line between intentions of private/personal use and the possibilities of sharing them with a larger public/cultural realm. However, with the advent of new media technologies and the concurrent digitization of media objects, the scale on which these tensions are played out and the possibilities for their incorporation into communicative practices have dramatically increased. Contemporary web-based platforms that facilitate the distribution of user-generated content are profoundly reassembling the interconnections between embodied memory, media technology, communication and (gender) identity formation (Van Dijck, 2007).

In fact, the online performances of gender, sexuality and embodiment that were central to my research project simultaneously function as digital memory objects (textual, pictorial and cinematic) that could only be utilized in the case studies because they were stored in networked databases and made accessible through their respective 'cultural interfaces'. In the case of the Dutch weblogs, this cultural interface evokes the functionality of its analogue predecessor, the diary, facilitating the creation of online 'diary entries' in the form of blog posts. At the same time, however, this is where the analogy ends, since the specific socio-technical assemblage of the weblog generates practices different from those connected to the traditional diary. As became evident, the Dutch bloggers perform multifaceted gender identities as they communicate personal experiences to an imaginary audience of readers. The weblog thus constitutes a mutable archive containing multiple digital memory objects (distributed as blog posts), which concurrently feature as the performative resources for the articulation of embodied gender in digital space. On a weblog, more than in a diary, private/personal recollections of gendered experiences become publicly/culturally mediated memories whose entanglements with the materiality of digital media technologies (re)shape the way bloggers remember, and thus retroactively experience, their gendered and embodied selves (Van Dijck, 2007; see also Sturken, 2008; Van House and Churchill, 2008).

These tendencies become even more pronounced on MySpace, especially with respect to the communicative and affective aspects of mediated memories. The networked MySpace profiles in the study discussed above can be understood as an assemblage of online archives containing the gendered and sexualized performances of a particular group of Dutch friends. In this respect it is telling that some group members ironically used the comments they left on their friends' profiles as reflective diary entries, in which they wrote about their feelings for other members or reviewed a joint night out. These

practices illustrate how these friends are engaged in the collective/connective performance of shared memories, whose virtual presence is actualized in the various digital memory objects that are distributed throughout the network (e.g. photos, poems and hyperlinks). This distribution assumes different formations as it is continually being reassembled within the 'flows' of mutual affection. The predominance of this group's affective practices suggests that 'technologies of the self' can simultaneously function as 'technologies of affect' that reinforce and demarcate social ties (Thrift, 2007; Van Dijck, 2007). Moreover, since the articulations of affect are so thoroughly mediated by the cultural interface of MySpace, one could argue that the group members are developing an affective relationship *with the digital technology itself*. The affective connection between self, medium and other in this network implies the instability of the boundaries between reflective writing and social interaction, gender performance and affective memory, and between being an author and an actor on MySpace. Finally, in addition to serving as a 'technology of the self' and a 'technology of affect', the study demonstrated how MySpace also functions as a 'technology of gender' (De Lauretis, 1987). By mobilizing social network technology to recollect and supplement their physical encounters, these friends materialize their collective/connective and affective memories in the form of shared memory objects, which are *concurrently employed* to articulate their embodied sense of gender and sexuality.

Due to their ephemeral quality, the 'real-time' interactions on IRC initially seem to be an unlikely setting for the production of mediated memories. Yet the possibility of logging entire chat sessions provides the conversations with a material sense of persistence and traceability. This option creates the opportunity for users to return to past conversations in order to ensure a sense of continuity while interactively constructing personal and collective identities through textual communication. Thus, instead of being strictly transient textual artefacts, these 'bodies of text' become more durable and are able to function as mediated memories in the process of (re)assembling the parameters of gender and sexuality within a shared narrative framework. Like the weblogs and MySpace, IRC merges practices of recollection, communication and gender performance, reshaping the way people materially experience and perform their past, present and future selves in relation to others. As discussed above, these performances are intricately tied to understandings of gender, sexuality and embodiment, which are in turn increasingly mediated by digital technologies. However, a crucial difference between IRC and the other platforms is that the textual conversations on IRC can only be logged on personal hard drives, instead of being archived in web-based, networked databases. This means that while the logged conversations can function as mediated memories for individual users, they do not allow for the recurrent and shared recollection and/or *alteration* of digital memory objects, which forms such a vital practice on weblogs and other social media applications. In contrast to these collective digital archives, IRC lacks a sense of distributed 'enduring materiality', which entails that users have to reproduce themselves and their spatio-temporal environment every time they enter a channel (Slater, 2002: 233).

These kinds of hybrid practices also evoke interesting questions regarding the relationship between embodied memory, technology and the notion of 'intimate citizenship' (Plummer, 2003). Plummer has used this sensitizing concept to make sense of the changing ways in which the intimate lives of people figure in the public/political spheres of

late modernity and vice versa. One of its main tenets is that there is an emerging field of intimate stories entering the realm of public life and that this emergence is crucial to the way that citizenship is articulated in contemporary Western societies. His emphasis on storytelling and personal as well as shared narratives evidently relates to the mnemonic practices discussed here. When a Dutch blogger writes about dealing with the aftermath of a mastectomy, or when a network of queer friends discuss their sexual exploits on MySpace, they are actively (although not always intentionally) disclosing intimate memories in digital spaces that occupy a liminal position between the public and the private. By sharing their stories in these spaces, they create mediated memories that become socialized as digitally material artefacts which are durable as well as mutable, reflexive as well as performative (Garde-Hansen et al., 2009; Van Dijck, 2007). In this sense, internet platforms such as MySpace open up new ways of engaging with digital storytelling and, consequently, with a form of intimate citizenship based on reciprocal relationships emerging through the shared production and distribution of mediated memories. While these memories remain firmly connected to embodied experiences of gender and sexuality, the nature of this connection is fundamentally contingent upon its entanglements with digital technologies. As such, these modes of digital storytelling can be understood as new forms of *bio-graphy*: the writing, or composition, of the time of life (bios). In this diffractive and ongoing process, anthropogenesis and technogenesis are conjoined in the production of gendered and sexualized intimacies whose coming-into-existence is a congealment of the organic and the inorganic, the virtual and the material, the spatial and the temporal (Garde-Hansen et al., 2009; Stiegler, 1998).

At this point, it might make renewed sense to consider gender as a medium: a 'material social practice' consisting of techniques, habits, tools and conventions (see 'Intersection' above). The strength of this particular conceptualization lies in its allusion to gender's 'originary technicity' (Mackenzie, 2002; Stiegler, 1998), which posits that the temporality of gender has always been conditioned by its technical support systems, or what Stiegler has variably coined 'tertiary retentions' or 'mnemotechnics' (Stiegler, 2009). In other words, the past, present and future of gender have been persistently externalized and inscribed into artefacts that participate in gender's (re)formations. Within the context of the 'continuous present' of the contemporary web (Hoskins, n.d.), whose networked archives are in a perpetual state of flux, the temporality of gender is experiencing a profound shift. As both Van House and Churchill (2008) and Murray (2008) have argued in relation to digital images, mediated memories are increasingly becoming 'less archival' and are instead treated as 'ephemeral and transitory', being co-opted into aesthetic and communicative practices that occur 'on-the-fly' (Hoskins, n.d.). This constitutes a plethora of 'real-time' feedback loops in which memory objects are continually scrutinized, shared, altered and updated in an 'expanded now' that is configured anew in each event of online sociality, taking form through the 'plastic' matter of digital artefacts. In this expanded now, the past, present and future emerge in a condensed and recursive circuit in which the temporality of gender becomes an object of perpetual technical rein(ter)vention. Consequently, the productivity of this incessant movement between temporal 'retentions' and 'projections' opens up new horizons for the digital performance of embodied gender and sexuality, by transforming the way that gendered bodies and sexual desires are sensed and made sense of: a transformation of their *duration* (Stiegler, 2003).

## By way of conclusion

In the previous three sections, I have developed an understanding of how gendered, sexual and embodied matters come to 'matter' in digital spaces. Through a reassessment of the notion of 'virtuality', I have argued that gender, sexuality and embodiment are partly virtual phenomena that have to be repeatedly actualized in order to assume their material shape in both physical and digital environments. Rather than approaching online performances of gender and sexuality as attempts at mimetic representation, I have suggested that the digitally material artefacts circulating in the networked environments of the web emerge as performative incorporations of situated embodied experience, whose entanglement with new media technologies enables new configurations of becoming gendered/sexual. This 'transductive' process (Mackenzie, 2002) of co-emergence within an assemblage of gendered bodies, cultural discourses and socio-technical internet applications consequently evokes important questions concerning the porosity of the boundaries between bodies, culture and technology. At the same time, however, the outcomes of my empirical research project have also indicated that institutionalized norms regarding gender and sexuality are both flexible and persistent enough to assure the reiteration of conventional bodily boundaries in digital space. The matter of bodily boundaries was taken up again in the third section, where it was posited in relation to embodied memory and its technological externalizations in the form of digitally mediated memory objects. These mnemonic practices returned us to the temporal nature of the virtual, while concurrently considering its spatial actualizations in the networked digital archive. In addition to permeating the boundary between embodied memory and digital technologies, the online production and distribution of mediated memories also complicates the distinctions between personal and cultural recollection, affective exchange and gender performance.

Despite the apparent paradox, then, it can be concluded that the virtual plays a constitutive role in the materialization of gender, sexuality and embodiment in digital (as well as physical) spaces. What these online practices generate is a convergence of the 'virtual image' of embodied memory, which is immanent to past, present and future experiences of everyday life without having any concrete properties, and the 'digital image' that materially incorporates this virtual image into a shared collection of archives. In this way, the temporal nature of the virtual image is spatialized and embedded within the mutable infrastructure of these digital archives. While this process of actualization effectively delineates the potentiality of the virtual image as 'pure recollection' (Deleuze, 2005), the very mutability of the digitally virtual image allows it to remain open to different formations that might take shape in the future. Rather than approaching the digitally virtual image in terms of its signifiatory value, we should thus continue to ask how it *in-forms* and is *in-formed by* the volatile and intractable matter of gender, sexuality and embodiment 'at the interface between technical and non-technical, human and non-human, living and non-living' (Mackenzie, 2002: 52).

## The road ahead: Future research

Finally, I would like to suggest some avenues for future research, particularly those potential paths and alleyways that constitute fruitful extensions of the matters of concern

raised in this article. First, future projects should advance the study of the interplay between the virtual and the material, as well as the physical and the digital, by investigating how people experience these elements in the various spaces they traverse and inhabit. These projects might examine how gender, sexuality and embodiment take shape in different material and social contexts, by tracing people's everyday movements in and between digital and physical spaces as diverse as offices, dance floors, Twitter, shopping malls, airport lounges and World of Warcraft. By extending its scope beyond the digital spaces of the internet, this research approach would be able to illuminate the connections between different forms of gendered (new) media use, while at the same time following the trajectories and practices of non-users. It is important to remember that there are still large numbers of people who are not included in the many digital networks existing on the internet, either by choice or not, and new research projects should not let these groups be eclipsed by the radiating popularity of online participatory culture (Wyatt, 2003, 2005; Wyatt et al., 2002). Yet even though the various digitally virtual spaces of the internet remain uncharted territory for most non-users, they nevertheless traverse many other networked spaces that are made up of both virtual and material life, which together provide the conditions for the situated performance of gender, sexuality, and embodiment. It is these situated performances, whose dynamics are perpetuated by a continuous flux of people, objects and events, that need to be thoroughly accounted for if we want to understand the complex and ever-changing ways in which gender, sexuality and embodiment are at once 'materially real, socially regulated, and discursively constructed' (Hayles, 1999: 291). The concept of virtuality, its relationship to material spaces and objects (both digital and physical), and their mutual shaping of everyday reality are indispensable pillars on which such accounts can be produced.

Second, in addition to tracing the daily flux of people and objects through networks of digital and physical spaces in order to examine the situated practices that arise from such movements, future research should also trace the gendered connections between cultural production, the design of digital/physical infrastructures, and corporate control. As I have noted elsewhere (Van Doorn, 2010; Van Doorn and van Zoonen, 2008), the production and distribution of user-generated content on the internet predominantly takes place on web platforms that are owned by multinational corporations. Similarly, physical spaces that formerly belonged to the public domain have become integrated into corporate spheres of influence, as in the case of the Sony Center on the Potsdamer Platz in Berlin. These issues of corporate ownership raise important questions about the ways that business policies regarding the design, planning and organization of spatial infrastructures are implemented on the level of everyday cultural production, and how these policies circumscribe the embodied performances of gender and sexuality in the spaces created for/by these practices. For instance, one could ask how gendered spatial relations are affected by specific limitations set on digital and physical environments, such as 'members only' access or other forms of spatial restriction, segmentation and control.

Third, a related question that might be pursued is how the architectural affordances of commercial spaces shape the kinds of cultural production that are encouraged and enabled, especially in relation to matters of 'free' or 'immaterial' labor and biopower (Hardt, 2005; Hardt and Negri, 2001, 2004; Lazzarato, 2004, 1996; Terranova, 2000). Such a question is particularly pertinent in the context of participatory web cultures

and the 'social media' applications on which they depend, which have prompted a digital economy centred around the commodification of user-generated content and the affective networks in which this content is circulated and thereby accrues value. It is this affective dimension of online cultural production and socialization that links this question of 'immaterial' labour to issues concerning gender and sexuality. As Hardt (1999) has argued, an important aspect of immaterial labour is *affective labour*, since human relationships based on care and reciprocity are crucial resources in a post-Fordist economic model of capital accumulation: '[w]hat affective labor produces are social networks, forms of community, biopower' (Hardt, 1999: 96). Given the mutually constitutive relationship between affective labour and reciprocal social relations, it follows that gender and sexuality figure as key components in the emergence of both. The question then becomes how user-generated affective networks and the gendered/sexualized multimedia artefacts they distribute on the internet become integrated in technological, architectural and economic structures of exploitation and control. In other words, future research should not only investigate how mediated memories are produced and employed in the online performance of gender, sexuality and embodiment, but should also ask who owns the digital archives in which these mediated memories take shape, in order to examine how these digital materials are mobilized to extract profits from affective user practices.

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### Notes

1. In this sense, the idea(l) of 'cyberspace' as disembodied refuge has followed a long historical trajectory that can be characterized by the desire to transcend the earthly trappings of the material world: from early Gnostic spirituality, via Romantic Idealism, to abstract art; the longing to free the 'spirit/idea' from its body has been a recurring leitmotiv for centuries of Western history.
2. Although the role of the virtual in the works of Bergson and Deleuze obviously calls for a more extensive discussion, such an elaboration is beyond the scope of the present article (for insightful assessments of both authors, see Ansell Pearson, 2001, 2005; Hansen, 2004; Massumi, 2002; Moulard-Leonard, 2008).
3. Here it is worth noting the lineage from the digital configurations of gendered and sexual embodiment discussed in this article to the new technological configurations of embodied experience made possible by film at the turn of the 20th century. The advent of cinematography instigated authors such as Benjamin (Buck-Morss, 1991) and Bergson (2005) to theorize this new media technology in relation to both its visual and visceral effects on human perception. For a highly original discussion of cinema and its reconfiguration of embodied time and space, see Deleuze (2001, 2005). For two contrasting discussions of the historical relationship between cinema and digital media, see Hansen (2004) and Manovich (2001).

4. This does not mean, however, that the virtual potential of 'becoming gendered/sexual' is exhausted by these normative actualizations. In contrast, the potentiality inherent in the continuously reassembled associations between gendered bodies, sexual desire and different (new media) technologies remains a vital source for new formations of 'becoming-other' in an ongoing process of 'spiral repetition' (Bennett, 2001).

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