In June last year I was excited to participate in the Blast Theory and Hydrocracker production *Black Antler* in Chatham. This immersive event was to be in a 'secret location'; I was instructed on purchasing the ticket to make my way to Chatham and told that I would receive a series of texts with instructions as to where to go and what to do once I arrived. It appeared that having a working mobile phone was going to be a crucial requirement for participation. The day of the show had been busy, protracted, and generally hectic. I'd left home in Whitstable around 7am, and had been involved at a research symposium in London. On finishing work I realized I had my phone battery was low, so I headed into the Westfield shopping centre intending to use one of the mobile charging lockers but, just my luck, every locker across the three floors of the centre was either occupied or broken. I was concerned because if I could not charge my mobile phone, then possibly my means of access to the show would have disappeared. Would I be able to participate at all in the magic of that evening's performance? I hoped the train down to Chatham might be one with electrical sockets, but no, not that peculiar day. The malevolence of the technology gods must have been momentarily distracted, and I had just enough remaining power to receive the text from Blast Theory telling me where to meet. At this point my phone died, but on arrival at the meeting point I managed to find other participants, explained my situation, and tagged along with them. Luckily, participation in the show eventually entailed working in pairs, and we only needed one working mobile between us.

On the train home, as I reflected on the show that actually turned out to have little to do with mobile communication and a lot more to do with face-to-face role-play, I could not help but dwell on the fact that my evening's theatrical engagement had nearly been scuppered by the uselessness of my depleted mobile. Without electricity, my phone was nothing but a solid, static brick. I had never thought about my phone in this way, as an inadequate inanimate object, and I spent some time on the train thinking about my relationship with not the media but the machinery of the phone. What do you think of when you consider what your phone actually means to you? Do you perhaps think of the photos it has taken and stored, the voice-memos you have recorded? Or Whatsapp, Facetime, Instagram, email, Messenger, Snapchat, Spotify and some variation of Candy Crush? Or do you think of the physical object that allows you to access these platforms, that relies on electrical charge and without which is a very expensive and shiny paper-weight? In its state of inanimation, my phone had become separated from me, disconnected from the assemblage through which I exist, no longer purposed to mediate; neither intermediary or mediator (in the sense meant by Bruno Latour) (2007: 37). For me to interface with my phone, it must first interface with a power socket. Without electrical energy, the object itself gives and transmogrifies nothing: while software affords engagement, without keyboard, keys, buttons or plug-ins, the physical object affords very little.

While it now seems obvious, I have rarely considered the materiality of this device as a physical interface with the affordances of sleekly hidden buttons and some kind of invisible interior components. I suspect I have been conditioned not to notice the hardware, but instead to be mesmerised by the self-proclaimed magic of the device. Indeed, Apple's latest advertising slogan for the iPhone 7 is that it is "practically magic" and the word 'magic' re-appears and is reinforced in many Apple advertisements. The first iPad advertisement in 2010 opened with Jony Ive, the then senior vice president for design explaining: "When something exceeds your ability to

understand how it works, it sort of becomes magical”. The 2012 iPad trailer opens with the lines “we believe technology is at its best, when its invisible, when you’re conscious only of what you’re doing, not of the device you’re doing it with - the iPad is the perfect expression of this idea, it is just a magical pane of glass”. At the end of the 2013 iPhone 5s advertisement, Jony Ive states “Technology is at its very best, at its most empowering, when it simply disappears.”

The 2014 advertisement for the iPhone 6 does focus partly on the hardware specs, with Jony Ive opening the ad with the line, “A truly great product is ultimately defined by the integration of its hardware and software”. However, perhaps this strategy proved less effective than the suggestion of sorcery, for the promise of ‘magic’ was back with the iPhone 7, which seemed to be touted as practically magic in everyway. On the whole, Apple products have been consistently painted as little white boxes full of magic. The wireless Apple keyboard with recharchable batteries is marketed as the ‘Magic Keyboard’, the mouse is Magic, as is the trackpad, and at the launch of the iPhone 7 and 7 Plus, Airpods were introduced as ‘magical headphones’. Apple staff members serving clients in shimmering glass temples of worship are called geniuses, implying that you have to be a genius to understand the workings of their products (and if you were to take a look inside your apple product yourself, you would inevitably void your warranty).

Apple’s advertising strategy would seem to have been inspired by one of sci-fi writer Arthur C Clarke’s ‘three laws’, which were intended to offer means of evaluating claims about scientific progress. Clarke’s third law states, “Any sufficiently advanced technology is indistinguishable from magic” (Clarke 1973: 21). Magic is magic because it precipitates events that defy explanation; it obscures the mechanisms by which it is produced. ‘Sufficiently advanced technology’ similarly leaves its user mystified by the mechanics of its production, mesmerizing the user with the content it produces whilst leaving the user mystified as to the processes of production. Clarke is not the only fiction writer to link magic and technology: C.S Lewis describes the relationship of ‘serious magical endeavour’ and ‘serious scientific endeavour’ as being like ‘twins’. In his book *The Abolition of Man* he links magic and ‘applied science’ (technology) as a result of their pursuit to dominate the natural world: “For magic and applied science alike the problem is how to subdue reality to the wishes of men: the solution is a technique; and both, in the practice of this technique, are ready to do things hitherto regarded as disgusting and impious (1947: 88).” The notion of magic implies the ‘super-natural’: forces beyond scientific understanding. Technology for Lewis is, like magic, a means of exercising power over the natural order.

Magic suggests achievements gained by mysterious means, of hidden or complex machinations producing inexplicable effects beyond the understanding of mere mortals. Technology too is, in the eyes of Apple, at its best when its machinery is hidden, when it ‘exceeds your ability to understand how it works’, and when the technology simply disappears. This trend towards invisible technology seems to align with a wider trope of immateriality; since the telegraph first transcended space and time, the possibility of overcoming the constraints of physical existence have occupied our imagination, epitomized in the cyberpunk fiction of the 1980s and its visions of uploadable consciousness and unconstrained cyberspace. It is also reflective of the push towards dematerialisation, a concept within economics and design that champions the use of less materials through efficiency, savings and reuse.

While dematerialization is a crucial step towards improving sustainability and decreasing environmental impact, the claims of invisibility and magic made by companies such as Apple serve to obfuscate the technology and enforce distance between the user and the hardware. As I write this, the early advertising for the iPhone X has just been released, and while the term magic has yet to be suggested, the advertising insists on the de-materialism of the phone: Jonny Ive explains that the iPhone X is Apple's response to a ten-year mission to "create an iphone that is all display, a physical object that disappears into the experience".

While William Gibson's visions of mind-uploading and telepathic hologram projection may indeed yet to come to bear, media materiality persists. As Mark Crossley explains in the introduction to this collection, "Media *must* manifest themselves physically in some form, to bring to ground and capture our ephemeral or illusive creations." Our digital technologies and information-processing machines, indeed information itself, require physical forms to house and transport them, and enable human interaction. Despite the push towards dematerialisation and the lure of immateriality, media still require material instantiation. Lev Manovich asserts, "Although the word "information" contains the world "form" inside it, in reality it is the other way around: in order to be useful to us, information always has to be wrapped up in some external form" (2008: 335). Indeed, as the 'internet of things' continues to expand its territory, the material dimension of the digital has become more varied and pervasive, as household objects become digitized and potentially mediatized.

This chapter will explore the various ways in which theatre works both with, and against, this recognition of media materiality and the object-ness of media technologies. The traditionally material world of theatre has long embraced technology-enabled mystery, staging media spectacle to wow and amaze. Christopher Baugh, in the introduction to his 2005 book *Theatre, Performance and Technology: The Development and Transformation of Scenography*, which provides a comprehensive history of stage technologies and scenic machinery, explains that stage technologies have frequently been used not just as means to an end but as "ends in themselves":

> "For example, the intense pleasure of the 'now you see it, now you don't' moment as a special effect takes place; the inexplicable transformation of one location to another in the baroque theatre; the flash of 'lightning' and accompanying sound effects when Mephistopheles appears as if by 'magic' on *Walpurgisnacht*, have all been reported as significant moments in the history of theatre and performance. (Baugh 2005: 1).

Contemporary intermedial theatre continues to embrace the 'now you see it, now you don't moment' enabled by digital technologies. Sound and visual special effects create ever more realistic 'lightning', and with image projection technologies having moved dramatically beyond the 18th Century 'magic lantern', the contemporary stage is populated with animated and filmic imagery creating virtual scenery and augmenting reality.

The following sections explore the aesthetics of magic and materiality as manifest in various contemporary theatre productions. While high-tech productions such as the RSC's *The Tempest* at the Barbican in 2017 represent a 'mixed reality aesthetic', productions such as Daniel Kitson's *Analog.UE*, Simon McBurney's *The Encounter*,

and *Charleroi Danses: Kiss and Cry*, eschew the ‘magic’ of digital media and stage the materiality of media technologies. It is suggested that the specific intermediality and affirmation of the material in such productions manifests a distinctly ‘postdigital aesthetic’ as articulated by theorists such as David Berry, Michael Dieter and Florian Cramer. It is argued that these productions represent a rejection of the fetishisation of the new that has been associated with digital culture, and in the following analyses, various ‘postdigital strategies’ for performance practice are identified.

Staging Media Magic

The potential for intermedial theatre to stage the ‘magic’ of media technologies is epitomized in the RSC’s production of the *The Tempest* (2017) directed by Gregory Doran at the Barbican. With projected scenography, the production manifests a kind of augmented-reality or virtual aesthetic; the technical achievements are thrilling and cleverly realize the magic enacted by the characters within Shakespeare’s play. Characters appear in both live and animated form, with the seemingly 3D projections displayed on hanging, concentric, circular, moving sheets of gauze, that are at times almost invisible, so that the imagery projected appears as if floating without material instantiation. Ariel of course is a magical, winged, sprite, and in this production he is able to manifest and control a projected double of himself, conjuring an ephemeral avatar bathed in sparkling light that can fly and transform like the magical being of Shakespeare’s pages.

In the memorable banquet scene, Ariel summons an enormous and terrifying spirit, a devil-like harpy with bat-like wings, spreading flames as it swoops across the stage. A literal ‘now you see it, now you don’t’ moment amazes as the harpy appears to make the banquet magically vanish; before your eyes the food banquet table bursts into flames and completely disappears. As well as these mesmerising special effects, projection is used to completely transform the world of the stage. The play begins with a shipwreck; the stage is framed by the enormous wooden skeleton of the hull of the wrecked ship, and as the storm rages, reverberating sound and projection creates the illusion of the ship lurching and pitching as waves crash against it. As the ship floods and sinks into the depths, bodies of sailors float lifelessly in the middle of the stage, descending into the blackness. When Prospero reminds Arial of his imprisonment in a ‘cloven pine’, Arial’s digital sprite appears suspended mid-stage, encased within the tendrils of a tree, as images of reaching roots blend with the wooden husk of the ship to transform the stage into a lush, forest prison. The masque scene, Prospero’s play within a play, paints the stage awash with rainbows and starry lights, fields and flowers, and an opera-singing goddess hovers above the stage in a ten-foot-plus-high skirt that is vividly decorated with images of fruit and feathers.

More than a couple of reviews of the production have understandably used the phrase ‘digital wizardry’ to describe the onstage effects (see for example Hemmings (2017); Paulson (2017); Runcy (2016); Taylor (2016). The spectacular visuals, whilst inevitably requiring a material surface for projection, still seem to appear out of the ether, as if by magic. As you watch, you quickly come to realize the connection between the movements of the actor Mark Quartley (Arial) and the movements of the projected hologram sprite, but it is not foregrounded and easy to overlook. The show is the result of the RSC’s two-year collaboration with information technology

company Intel and The Imaginarium Studios, which was co-founded by Andy Serkis and specializes in performance capture. The performer Mark Quartley, playing Ariel wears a body suit laden with 17 miniaturised wireless sensors that track his movement, so that his movement triggers projected animation that he can manipulate in real time. The technology also involves real-time facial capture, with a camera capturing Quartley's facial expressions and feeding them to the computer system which reproduces them on the harpy. The production also uses sophisticated projection mapping, employing optical motion-tracking cameras and software and 27 projectors to project imagery as if wrapped around the actual material set. This technology is at its most impressive when the cameras track the performers' movements during large, celebratory dancing scene and trigger small projections onto moving, hand-held drums; each performer holds a drum on which is projected the face of an individual wolf, together creating the effect of forming a rabid pack.

The projection of the three dimensional holograms and particularly the facial tracking technology is cutting-edge, which is in keeping with the Shakespearean historical context and the tradition of the Jacobean masque. The designer Brimsom Lewis explains, "In Shakespeare's day, all the technology available in the 17th century would have been used to create a one-off, huge spectacle…They'd use candles to focus and reflect light, use live animals and their own forms of automation. We're not grafting this stuff onto the play – it was asking us to find new and exciting ways to present it" (in Dawood 2016). Jacobean court productions of the time used all effects available, including fireworks and thundersheets to represent a storm, wind-machines, trapdoors, aerial rigging, and trickeries of candle light. The RSC's production follows in a tradition of using the latest technology to produce huge spectacle, visual trickery and theatrical magic.

In order for this spectacular scenography to ensnare, fascinate and mesmerise, the technology remains hidden; the digital scenography hides the mechanics of its production and places the actor amidst an intangible but vivid environment that is unbound by the laws of material instantiation. Alongside other productions using motion capture, 3D projection mapping, and computer generated animation such as the National Theatre's production of *The Curious Incident of the Dog in the Nighttime* (2014) and other productions designed by the award-winning media company 59 productions such as The Young Vic's *The Life of Galileo* (2017) and The National Theatre's *Emil and the Detectives (2014),* Gregory Doran's *The Tempest* deploys an aesthetic of mixed (or even virtual) reality, in which seemingly magical imagery appears alongside and even interacts with the physical performers and material stage-world. The means of the magic, the computer hardware and software, the projection technologies, and often even the surface of the projection are largely unseen so as not to distract from the phantasmagoria.

Media Materiality

There is danger in accepting a perception of media as 'magical' and technology as best hidden. Software's obfuscation of the mechanics and materials of media may be understood as problematic for various reasons. Firstly, as media archeology is revealing to us, the persistence of hardware implicates various economic, environmental, and human costs. Representative of the 'material turn' within media studies, which focuses on the materials and technologies that enable media content

rather than on the content itself, as well as championing an emerging branch of environmental and ecologically concerned media studies, Jussi Parikka, in his 2015 book *A Geology of Media,* asserts, "The design culture of the new hides the archaic materials of the planet (137)". Parikka interrogates the alternative materialities of technical media culture and reminds us, "Media work in and through bodies, or more widely, through materials and things" (93).

While hardware may be obscured by digital software and the interface, the digital remains bound to concrete, material form. As Parikka warns:

> "It is of course true that we are often catered the idea of hardware as disappearing or perhaps always already immaterial – that the digital does not carry a weight but is the sum of its mathematical transactions in topological dimensions without a topography – but this is just blatantly wrong. ..It is not immaterial – even if it disappears from before our eyes" (2015a: 215).

For all their appearance of magic, media technologies function through very tangible elements such as circuits, power supplies, storage and voltage differences (57). Parikka is particularly concerned with the way in which natural resources are mobilised in the production of media; to ignore the material-basis for media is to ignore its implications for natural resources, ecology, labour, and waste. It is also to overlook the interaction between media materiality and human embodiment, and to negate a key element in the feed-back, feed-forward loop between human and media bodies.

The materials that constitute the physical hardware of media technologies are often upstaged, even obscured, by the wizardry of the media interface. The various layers of visible surface content keep us further and further from the hardware and computational machinery that fade into invisibility. In 1995, Friedrich Kittler wrote an essay titled "There Is No Software' arguing that human generated texts have vanished, existing only in the cells of computer memory. Twenty years later Lev Manovich asserts there is nothing but software; that software has taken command. He asks, "What about the physical materials of different media?" and answers "that in the process of simulation they are eliminated" (2013: 201). Software simulation, he suggests, "replaces a variety of distinct physical materials and the tools used to inscribe information" (2014a: 201). But while software inevitably plays a crucial role in our media interactions, software code is reliant on broader technical, cultural and material formations that facilitate it. Software obscures hardware, but it depends on 'hard' materials and tools, so rather than 'replace', it hides them. At its most basic, there is still a reliance on electricity, silicon and other essential materials.

A further problem with denying the existence of hardware is that it limits user knowledge, choice and potential creativity. As media archeologist Lori Emerson suggests, it 'denies access to digital tools for making thereby predetermining choice'. Emerson claims that the breathtaking technological feats of our devices deliberately divert our attention from how closed they really are and stifling user agency and creativity. In her book, *Reading Writing Interfaces*, Lori Emerson emphasises the material basis for media, asserting, "'The dream in which the boundary between human and information is eradicated is just that, a dream the computing industry rides on as it attempts to convince us that the dream is now reality through sophisticated sleights of hand that take place a the level of interface" (2014: x-xi). With the advent of so-called interface-free devices, what's at issue, suggests Emerson, is what is

revealed through what is concealed. Contemporary marketing continues to tout "natural, intuitive, invisible, and even 'magical' interfaces' (2014: 4) that supposedly provide us with a more direct and fundamentally better way to engage with computers. However, while the interface enables access, it also acts, in Emerson's words, "as a kind of magician's cape, continually revealing (bits of information etc) through concealing and concealing as it reveals" (2014: x).

Emerson takes issue with the principles of 'invisibility' and 'user-friendliness' as deployed in the media industry as deliberately bending the truth in their implication that this very specific understanding of user-friendliness is indeed the only possible one. This promoted notion of the user-friendly device is problematic, Emerson claims, because not only does it promote "the way in which the hardware/software is now utterly black-boxed but its closed architecture is being marketed as a feature" (2014: 3). The sleek, compelling surface of the interface serves to distance the user from accessing the underlying workings of media. When the prioritization of transparency actually obscures the physical materials and tools, we become consumers and not producers of content. The desire for invisibility, Emerson suggests, "turns all computing devices into appliances for the consumption of content instead of multifunctional, generative devices…" (2014: xvii), turning users from active producers of content into passive consumers.

Artists, writers, and theatre-makers, are potentially in a strong position to question the magic of media. While the theatre has always staged the amazing, using the most sophisticated technology to create mesmeric effects and produce illusionary environments, there are also intermedial productions that reveal, rather than conceal, the mechanics and materiality of media, drawing attention to the media object. While *The Tempest*, following in the footsteps of Jacobean masque and Restoration spectacular, presents an aesthetic of mixed reality and media magic, these productions place the media object centre-stage and make clearly visible its processes of mediation. The focus of the remainder of this chapter is not on the staging of digital effects but on the staging of what Lars Ellestron has called 'the material modality' of media technologies; on the technical media themselves, rather than on their perception. Technical media, according to Ellestrom, are the physical basis for media communication; "the technical media of distribution of sensory configurations or technical media of display" (in Mark's introduction)".

Various recent theatre production have exhibited a dismissal of 'digital wizardry' and embraced the low-tech, the analogue, the ordinary, exploring how media objects and tangible technologies are staged, engaged and deconstructed. These works, rather than showcasing what Ellestrom labels the "qualified medium" of, for example, film, instead stage the video camera and its component parts, the screen and the projector. The emphasis here is on media form rather than on informational content; on the physical presence of technology (machinery, equipment) and the media modes, rather than on the processes or patterns of meaningful mediation. While theatre may not be in quite the same position as Lori Emerson's digital literature to directly tackle the invisibility of digital interfaces, like digital literature, theatre and performance can, to quote Emerson, "embrace *visibility* by courting difficulty, defamiliarization, and glitch" and stand "as an antidote to ubi-comp and this receding present" (2014: xviii). One area of performance manifesting an insistence on the materiality of media, through the use of a notably analogue aesthetic, is the field of audio theatre, which

involves the use of sound technologies to place auditory experience at the heart of both the form and content of the performance. It is not just that these works are using analogue rather than digital technologies, but that they are doing so in a way that makes visible the often hidden mechanisms of media and that reassert the physical materialities of media objects onstage.

Staging Media Materiality

The use of analogue audio tech in performances such as Daniel Kitson's 2014 show *Analogue* stands against the seduction of the wonder or magic of digital media. In *Analogue*, Kitson uses 40-something large cassette and spool-to-spool tape players that at the beginning are piled on top of each other at the back of the darkened stage. In a work that owes much to Beckett's *Krapp's Last Tape,* Kitson never actually speaks directly to the audience. Instead, he carries and drags each of the rag-tag audio-players to the front of the stage, plugs them in and presses 'play', before heading back upstage to repeat the process; we hear him talk for nearly an hour and a half without seeing him speak a single word. Kitson travels back and forth lugging cumbersome sound equipment in a race to place one machine and press play on the track just as the previous track finishes.

The recordings, which obviously have to be played in a specific order, weave together various narratives, our interpretation of which are influenced by what we see; as the stage slowly becomes a sculptural mess of interwoven extensions leads, tape machines and slide-projectors projectors showing dusty family photos, so we start to connect the various threads of narrative. One strand involves an elderly man called Thomas who, in 1977, is seated in his garage recording his memories at the request of his wife Gertie. Another introduces us to Trudy, a callworker, who has heard one of Thomas's tapes and is keen to hear more. Kitson also weaves through his own reflections on being a single man in his mid-thirties and his process and thinking behind the show, including ruminations on the need to preserve moments for posterity.

Some of the machines are enormous and clearly heavy; Kitson must set them up, plug them in and battle the clunky mechanisms, navigating, cords, plugs, spools, tape, and play-buttons in order to produce sound. It is a repetitive performance of human exertion and places emphasis on the sweaty materiality of the body just as much as on the scratchy analogue recordings and dusty objects onstage, and there is a clear visual connection between human labour and media output. The machines whir and whine, with a different sound quality to every single one**.** We can hear the frailty of the analogue tape, as it clicks and stretches through the machines, adding a dramaturgical connection to the frailty of Thomas's memory and a reminder that these clunky mechanical objects are machines for recording and mediating memories. While the stories are evocative and engaging, the machines take centre-stage, each individually lit to ensure the audience not only hears but sees the means of mediation. The stage and lighting remediates the media objects, and it is their performance, rather than Kitson's that is presented. Kitson beavers away with a torch between his teeth, very much a stage-hand rather than a performer.

Another audio theatre production that places technological media centre-stage, and emphasizes the materiality of both the body and media objects, Complicite's *The Encounter* combines old and new media to mix and layer live and pre-recorded sound accessed via headphones. Simon McBurney is the only visible performer in a sparse and almost entirely functional stage space, and he performs a two-hour feat of dynamic storytelling using live binaural sound created using a dummy-head on stage with microphones in each of its ears (the Neumann KU100), various other microphone onstage, foley effects, pre-recorded binaural sound, and cinematic background music. He begins in stereo sound introducing us to the various microphones and loop pedals, and explains how binaural sound works: "here I am somewhere in your head', he says, before 'walking from one ear, across the electrified pate of our brain, to lodge behind our frontal lobe'. He offers a preface about the nature of the 'common imagination' and the way we all regularly discover that what we think to be real is in fact a story. He tell us that the function of stories are for the listener to enter into the consciousness of the protagonist, and in the ensuing tale that McBurney weaves, the use of binaural sound places each audience member at the centre of the protagonist's world and sonically renders their immediate environment.

The environment is the Amazon rainforest. The story McBurney brings to life is about the American photographer Loren McIntyre and his encounter in 1969 with the Mayoruna tribe, as recorded in the book *Amazon Beaming* by Petru Popescu. McIntyre becomes lost following the tribe, and lost within the tribe, as they undertake a mind-blowing and body-altering search for the 'beginning', a time before everything known began. And McIntyre's encounter with the Amazon and its people is vividly constructed through sound (designed by Gareth Fry). McBurney, speaking to us mostly as a kind of narrator, skillfully uses materials he has onstage to create the sounds of the jungle. Slowly shaking a large water bottle around the dummy head creates the sounds of a river lapping around us, a crackling crisp packet becomes the cackle of the jungle fauna, and by trampling a pile of old recording tape, McBurny creates the sounds of crunching leaves underneath our feet.

As the production blends the live and pre-recorded, so the themes explore the experience of time. At various points, McBurney's voice comes to us from the past, recorded six months ago in his flat, to speak to the live McBurney. Another pre-recorded voice, the Oxford Professor Marcus du Sautoy, explains that the perception of the linearity of time is an illusion, and explains different models of time; the Mayoruna tribe have a cyclical understanding of time, and believe that theirs is a journey back to before time. McBurney moves between narrating the story, which is of long-past events made immediate through McBurney's world-building, to playing documented conversations from his past off his phone, for example, with his daughter in his flat that are also of the past, but a different past.

As the protagonist of the story, Loren Mackintyre, enters into the Amazon rainforest, the stage lights fade so that the stage actions are less prominent, less dominant over the world of the auditory, but our eyes soon adjust, and the performance of McBurney and the media onstage is never concealed. You can control your own degree of immersion; while the sound is immediate and pervasive, you choose whether or not you want to look at McBurney and the mechanics of the sound production, or let your vision become unfocused and tune in to the world created through the binaural sound.

As in Kitson's *Analogue*, the aesthetic places emphasis on the performer's physical efforts and the presence and individual materiality of the media onstage. The objects of mediation are clearly displayed and there is interest in seeing the different microphones behind the variations in tonal quality. Many of McBurney's descriptions are of things happening to the protagonist's body, cut skin, burning feet, breath, dehydration, eating, indigestion, which draws our attention to both his and our physicality, and as McBurney's exertions lead to sweat and heavy-breathing, the labor of his efforts in creating the fictional environment is made ever more visible. Though clearly explained to us, there is undoubtedly audio trickery through the use of binaural sound. However it is clearly effort, and not magic, that brings us the sonically rendered story-world.

Moving away from the arena of audio-theatre, Belgian couple filmmaker Jaco Van Dormael and choreographer Michele Anne De Mey's *Charleroi Danses: Kiss and Cry* also makes prominent the physical objects of mediation, this time in the form of the camera. Headlining the London International Mime Festival at the Barbican in Febrary 2017, the production draws on film-making, dance, puppetry, and storytelling to create a show that stages the live creation of analogue visual effects. Above the stage hangs a large screen, onto which is projected the live feed from the onstage cameras, which are continuously worked by numerous camera operators who also double as stage-hands and puppeteers. The stage is full of moving cameras, cords and detailed little models on tables that appear as a film-set in miniature. The story is told by the performers Michele Anne De Mey and Gregory Grosjean using only their hands filmed in close up, which perform sophisticated choreography and interact with the miniature sets and doll's house props in a way that suggests dancers' bodies and evoke emotional and material worlds.

The focus on the dancing hands develops dramaturgically from the narrated story at the heart of the production. Giselle, a lonely elderly woman remembers her five past lovers; the first, the most memorable, lasting only briefly when she brushed hands for a matter of seconds with a boy on a train. The hands then become the medium for communication, expressing the flirtation of early love, the comfort and intimacy of developed relationships, the elation of dancing, the anger of rejection and the desolation of abandonment. The hands waltz, ice-skate, swim through cloudy water and swing from trapezes accompanied by music, atmospheric sounds and voice-over narration. Images of Giselle, suggested by a tiny toy figure sitting on a bench, evoke a powerful sense of nostalgia, and the oscillation between Giselle in the present remembering the past, and images evoking her memories, reinforce a thematic concern with the interrelation of time and memory.

The audience is faced with both the live creation of the film, and the film itself; the techniques and tricks used in filming-making are exposed, and while the audience's attention is split between stage and screen, it is the relationship between the two that is most revealing. In one early moment, the screen shows a speeding train from the perspective of a passenger, whilst onstage we see a working model train pootling about its model track; the screen image shows the feed of the camera attached to the train, revealing the function of the camera to frame perspective. There is undoubted artifice; the performers literally use smoke and mirrors to create the onscreen effects. However, the labour of the performers, stage-hands and camera operators in the process of image-creation is emphasised, and the enabling materials, objects, media

and technology are ever-present. In one particularly memorable moment evoking the sadness of a failed relationship, the screen shows hands dancing a complex, intimate choreography, but while the screen shows only the seemingly disembodied hands, onstage we see the two black-clad bodies attached to the hands dancing a complex, full-bodied pas de deux. While the screen-image is compelling, the staging of the process of its creation and the bodies and technology implicated adds visual interest, and works dramaturgically to reinforce the constructed nature of memory, time and perception.

These productions reclaim the often, invisible materiality of the machine and explore the physical presence of media technologies. They undermine the 'magic' of media, presenting the output of technological media not as magical, but as fundamentally embedded in material forms and human labour. In all three productions there is an emphasis on revealing how the media work both in their mediation of sound and imagery, and at the level of mechanics. At the beginning of *The Encounter* McBurney specifically introduces us to the workings of the onstage tech. In *Analogue* it is significant that we can see and not just hear the tape moving across from one spool to the other, the operational mechanics clearly displayed. In *The Encounter* and *Kiss and Cry*, the audience is presented with both the media product and the process of its production, positioning the audience not just as passive consumers of content, but as having to choose between focusing on the immediate media output or on the mechanics of its production. In *Analalog.UE,* while we do not see Kitson recording the tapes he plays to us, the process of recording is presented as part of the story, with both Kitson and the character Thomas explaining the context and thinking behind their recording of the tales on the tapes.

Performing A Postdigital Aesthetic

These works do not just present media objects but stage the performance of the mediating process, of the technical medium's "distribution of sensory configurations (Ellestrom). The practice of the theatre revealing the mechanics of media production onstage is of course nothing new; it has been a feature of the work of various postmodern theatre companies such as the Wooster Group who have frequently used television sets onstage to thematise processes of mediation and communication in a televisual society. In light of the seduction of today's digital media, the choice to eschew the vast array of technology on offer, or instead, to focus not on what such technology can do but on how it works, how it takes up space, how it affords interaction, how it conveys meaning, aligns such contemporary productions not just with a postmodern aesthetic, but a *postdigital* aesthetic. The term postdigital has been used across various areas of discourse and developed a multiplicity of meanings. Most notably for this discussion, the postdigital has been invoked to describe a condition of contemporary society in which the magic of media technologies has faded.

In their edited book *Postdigital Aesthetics*, David Berry and Michael Dieter explain, "The postdigital 'includes a shift from an earlier moment driven by an almost obsessive fascination and enthusiasm with new media to a broader set of affectations that now includes unease, fatigue, boredom and disillusionment" (2015: 5). Florian Cramer, writing in Berry and Dieter's edition echoes this definition, explaining, "the term 'post-digital' can be used to describe either a contemporary disenchantment with digital information systems and media gadgets, or a period in which our fascination

with these systems and gadgets has become historical…" (2015: 13). I would hesitate to suggest that any of these artists discussed are disenchanted with, or opposed to, the digital; the digital is, as Florian Cramer reminds us, 'routine or business as usual'. While we may indeed, as Matthew Causey argues, now think digitally, and while "Artists and researchers of postdigital culture are fully embedded in the aesthetics and ideology of the digital " (Causey 2016: 432), a theatrical postdigital aesthetic is manifesting in the works discussed here in a way that promotes an understanding of media as materially grounded and that counter narratives of media wizardry.

In his article *Perspectives on the postdigital: Beyond the rhetorics of progress and novelty* (2016), Sy Taffel helpfully maps the various definitions ascribed to the term postdigital, which he explains refer to:

> (1) a return of the analogue or move beyond discrete samples, (2) the revelation of seams and artifices within the otherwise smooth spaces of the digital, (3) the historical phase of technocultural development occurring after the digital revolution, (4) the rematerialization of digital technology and its integration into urban environments and (5) a way of escaping the fetishisation of newness and upgrade culture. (325).

In the theatre productions discussed here, these definitions of the post-digital are deployed as some of the strategies used for performance; these productions engage with analogue technologies, reveal artifice, rematerialize media, and eschew the fetishisation of the new that is typical of digital culture.

The most obvious postdigital strategy manifest in these works is the revival of old or analogue technologies that emphasise, instead of disguise, media mechanisms. Cramer links the post-digital to ideas like the 'off-internet' and 'neo-analogue', and likens the postdigital to the 'contemporary maker movement', referring to a contemporary sub-culture focused on technology-based 'DIY'. *Analog.UE*, with its junk-shop aesthetic and second-hand analogue tape-players, which Kitson explains took a year of gathering from eBay, can particularly be linked to a neo-analogue aesthetic. In *The Encounter,* McBurney uses an array of different standing microphones, is particularly industrious with a loop-pedal, and uses materials in a manner for which they were not originally intended; McBurney's foley effects use water bottles, crisp packets, and videotape creatively to suggest other objects. The most astounding element of *Kiss and Cry* is the simplicity of the film-making strategies it uses to create its projected imagery, and the doll's house furniture and sometimes mis-matched figurines lend the aesthetic a DIY look.

Like the post-digital more generally, *The Encounter* and *Kiss and Cry* combine old and new media. McBurney draws on different devices, including his mobile phone, to achieve different functions and qualities, which is a strategy Florian Cramer identifies as being particularly postdigital. He refers to the 'post-digital hybridity of old and new media, and explains 'postdigital choice' as involving the use of the most appropriate technology for the job rather than defaulting to the latest and most dazzling digital device: "Young artists and designers choose media for their own particular material aesthetic qualities (including artifacts), regardless of whether these are a result of analogue material properties or of digital processing" (Cramer, 2015: 24). McBurney uses different microphones for the different quality of the sound they

produce, and brings together the remarkably low-tech with the high-tech live binaural sound and headphone system.

In postdigital artmaking, according to Cramer, there is a tendency "to focus less on content and more on pure materiality, so that the medium, such as paper or celluloid, is indeed the message – a shift from semantics to pragmatics, and from metaphysics to ontology." While all three productions involve visceral story-telling using narration and imagery, the specific materiality of the medium, from scratchy magnetic tape to sophisticated video-cameras, is exploited, emphasising the ontology of the medium. In all three productions there is an emphasis on revealing how the media work. At the beginning of the *Encounter* McBurney specifically introduces us to the workings of the onstage tech. In *Analogue* it is significant that we can see and not just hear the tape moving across from one spool to the other, the operational mechanics clearly displayed. The mechanical is staged as an aesthetic event, every click, whir and turn a part of the performance. The slide projector images that Kitson presents are often blurry, with the image off-centre on its projection screen, which contributes to making visible the elements involved in the process of mediation. In both *The Encounter* and *Kiss and Cry*, in staging both the means of mediation and the media product simultaneously, the audience are not only invited to make clear connections between the media content and its material basis, but also to identify the processes behind achieving sonic and visual trickery.

None of these media mentioned here produce content without human intervention, whether it be pressing buttons, determining camera angles, providing sound and visuals for cameras and microphones to mediate, or physically moving devices across the stage. A further postdigital theatre strategy in these productions is the emphasis on human labour in preparing and operating media. Kitson and McBurney end their solo performances sweaty and clearly exhausted, but while McBurney's efforts are largely towards the creation of sonic content, Kitson's are limited only to the transportation and operation of the tape-players and slide projectors. There are times when the machines falter and Kitson has to return to a machine more than once to correct the playing mechanism and, on at least one occasion, restart the recording. While in *Kiss and Cry*, the two dancers provide the on-screen choreography, alongside them are a team of camera operators and stage-hands who move according to their own choreography to ensure particular shots, manipulate props, maneuver machinery and cables, and operate lights.

It is not the focus of these works to explicitly engage with digital interfaces or software; perhaps future performance will see the hacking, deconstruction and reconstruction of digital devices. However, in the way that *Analog.UE, The Encounter* and *Charleroi Danses: Kiss and Cry* dismiss the fetishisation of the new, and through the productions' emphasis on materiality, mechanics, and human effort, they stand against the perception of the 'magical' media device. By employing post-digital strategies such as deconstructing, simplifying and repurposing media, and emphasizing media materialities, physical objects, human labour, and machinic operations, theatre may perhaps stage a resistance to the misdirection of media magic, the growing obscurity of media mechanics, and our apparently increasing and commercially prevalent willingness to be guiled into illusory acceptance of convenient software-mediated realities.

Practical Ideas:

1. Media Tales Version 1

Select one of the media objects you engage with and investigate the vital components of the hardware. Undertake research into the material and minerals that make up the medium's different components. Where do these materials come from? How are they manufactured? Who are the people and what are the processes involved in their production? Find the potential stories in the manufacture of the media object and use these as the basis for generating written or devised performance. Tell the story of your media device and of the people and materials involved in its production.

2. Media Tales Version 2

As in Version 1, select one of the media objects you engage with and investigate the different components of the hardware. Think about what will happen to the device when you replace it? Where will its components end up? Research the life and death of such media objects and tell the story of its elements once they leave your possession. What further impact will they have on the world?

3. No Signal

Use a live-streaming platform such as Skype or FaceTime to connect with someone in a different space. While a live connection can work smoothly, there are inevitable interferences, lags, frozen pixels, jumps etc. Rather than seeing these 'disruptions' as a negative disturbance, try to find them; embrace the lag, the freeze, the jerky, the pixelated. Try different gestures and degrees of movement. Work with both dialogue and physicality to explore the aesthetic of the glitch. How can you replicate this aesthetic through movement, through voice? How can it be used creatively?

4. Machine Music

Source any analogue media technologies you can get your hands on. These may include overhead projectors, tape players, slide projectors, film projectors, dictaphones, typewriters. Discover the various sounds these machines make as they function, both deliberately crafted sounds (for example, playing back recorded sounds) and the incidental sounds of the machinery. Explore the potential dramaturgy of these sounds; how do the sounds of the machine articulate their function (or not)? How do the sounds work thematically? Aesthetically? Sonically? Develop a performance in which the functional sound of the machines takes centre stage. Make a point of plugging the machines into an electricity source, of not hiding the process of starting up the machine or unwinding cords; make the material and mechanical processes a feature of the performance.

5. Push the Button

For this exercise you will need to develop some text; tell a story, recount a significant event, or use some existing dialogue. How many different forms, formats, media interfaces, audio-devices, can you use to record and play-back your speech. Some examples might include different phone-based apps, digital or analogue dictaphones, old cassette tape machines, or answering machines. Record short bits of text across these devices and experiment with playing back the recordings; you may choose to keep the order of the text the same or experiment with the order. As in the previous exercise, play with making the material and mechanical processes of the media an aesthetic feature, plugging in and powering on the devices, making visible the

opening of software programmes, of unwinding cords, pressing buttons, and rewinding tracks.
Development: Think about the dramaturgical implications of the different media materialities in relation to the story content. Analogue tape is fragile, like the memories it records. It deteriorates with repeated use. Digital code enables endless repetition. Media may evoke dramaturgical connotations relating to nostalgia, intimacy, ephemerality, or issues around privacy, authenticity and temporality. Work to contrast or connect the dramaturgical implications of the media with the details of the text.
Variation: The same exercise could be undertaken with visual recording devices, or a combination of both.

6. Digital Gestures

Media devices afford a variety of physical interaction (even voice-activation can be thought of as a physical interaction). Different physical and vocal gestures are used to activate, to instruct, and to engage with media devices. Select a particular device you regularly interact with and deconstruct the gestures you use in your interaction with this device, using them as the basis for improvised movement (using a background soundtrack may help with this). Try performing with and without the object. Think about varying pace, scale; allow gestures to manifest as small and massive, in the tiniest of body parts, and throughout the whole body. Work from the specific to the abstract. Develop your improvised movements into rehearsed choreography for performance.

7. Rethink, Remake

Can you get your hands on a redundant computer? Tablet? Smart phone? Or even an old tape player, answering machine, video recorder. Take it apart slowly and carefully. Consider the components in terms of weight, texture, sheen, colour, shape. Rearrange, reconnect and remake, based on aesthetic principles of your choosing.

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