

9. Third places in the ether around us: layers on the real world

Dmitri Williams and Do Own Kim

INTRODUCTION

The 2016 US Presidential election will be remembered for many things, but for sociologists and communication researchers, the most glaring aspect will no doubt be the mainstreaming of the idea of ‘filter bubbles.’ Heavy partisans – whether conservative or liberal – used social media to find comfort in the notion that sensible people agreed with them. Our technological systems were only too happy to comply, supplying the country with an endless stream of agreement from within the tribe and vilification for those outside. Knowledge of these filter bubbles became common in the aftermath (Hess 2017), but they were of course not new phenomena. Political scientists had been sounding alarm bells about ‘cybercascades’ (Sunstein 2001) and ‘cyberbalkanization’ (VanAlstyne and Brynjolffson 2005) since the Internet became a public space, with several noting negative correlations (Kraut et al. 1996; Nie and Hillygus 2002) between time spent online and anything resembling the good stuff we associate with social capital (Coleman 1988).

Surely this was Oldenburg’s worst nightmare: a technology that took our already weak social connections and fragmented them into homogeneous, siloed-off, angry echo chambers. And while it’s easy to see red (or blue, depending on your political persuasion), it’s usually an oversimplification of things to look at a new technology as purely good or purely bad.

We start from the point of view that neither a Luddite nor a utopianist perspective is going to do anything other than (ironically) confirm our false assumptions and feelings about technology. Histories of technology teach us that their effects require time and distance to be seen clearly, and in their proper context (Pinch and Bijker 1999).

Theories of computer-mediated communication are a lens to help us find that context, and to absorb the fast pace of change that whips past us daily. Indeed, whenever you read this chapter, it will probably feel out of date to the extent that we focus on any modern technology. Better then to

figure out the theory, and the criteria, to decide on how new technology should be viewed as either helping build or destroy the structures and benefits of third places.

This chapter attempts to do that with the following steps: First, we briefly review Oldenburg's criteria, with a focus on his framework of architectures and physical neighborhoods. Second, we introduce concepts from computer-mediated communication and political communication that directly mimic these ideas for non-physical places. Third, we revisit recent technologies for test cases. Finally, we attempt to use this framework to bridge to new and emerging technologies with a neutral, but critical eye. We introduce the concept of 'layering,' which is simply looking at everyday spaces, places and functions, and asking what happens when their elements are changed by new media. Our conclusion is that some technologies can help third place development, while others can hinder it. A rough generalization is that there are many mixed effects. Looking forward, we envision a society where technology layers information on top of our regular lives. The extent to which these layers will be built in support of third place functionality will have a large impact on our communities and quality of life.

THE ARCHITECTURE OF THIRD PLACES OFFLINE

Oldenburg's (1997) third places are those that do not fulfill the space or the role of our traditional first and second places – home and work. In his view, it is critical to have a place outside of those two for a healthy life and a strong community. In a sense, this is not a new idea, and scholars have for a very long time been pointing out the importance of mixing with others out in the public sphere (Habermas 1998). However, Oldenburg's critique came in a historical moment when our civic institutions seemed to be under attack by the twin forces of media and urban planning. Putnam is probably the most well-known example of those arguing that media have displaced our critical, human, social interactions, documenting that for example, the time spouses spend watching TV comes at the expense of the time they talk to each other (Putnam 2000). Both he and Oldenburg have focused on the immense zoning and urban transformations that radically changed community life in the twentieth century. As cities birthed more private suburbs, our boisterous cheek-by-jowl communities were increasingly replaced by separate, quieter, and often homogenous neighborhoods. Mixed-use spaces were increasingly zoned away in favor of strictly commercial or residential uses. The upshot of all of this was an increase in personal space at the expense of daily conversations and

regular, serendipitous interactions with people unlike ourselves. For those fleeing to the suburbs, comfort and privacy increasingly drove out noise and interaction. It's a stepping stone to a science fiction future in which we don't interact with each other at all unless it's mediated – a scenario depicted in Asimov's (1957) *The Naked Sun*, which doubtlessly was written in reaction to the Levittown movement and rise of television. The argument isn't that people changed their preferences or needs, but that we architected and zoned ourselves away from each other, not realizing the social price we were paying for our convenience and luxuries.

What's implicit in this argument – and in the balance of this chapter – is that architectures drive behavior (also see Chapter 1 this volume). Some readers and scholars may take issue with this highly structuralist approach in that it gives short shrift to human agency. However, it's inescapable that the same people placed into a differently architected neighborhood will behave differently. For example, a neighborhood with porches will have more interactions than one without. A neighborhood where residents can walk to a grocer will have more interactions than one that requires cars regardless of how personable they were before moving in.

The stakes in this dynamic are extraordinarily high. Our social capital – whether it's the 'bridging' kind that gives us access to new ideas and people, or the 'bonding' kind that gives us strong social support – is critical to our lives (Putnam 2000). And more recently, demographers have discovered an irrefutable connection to our actual health. In a comprehensive review of the world's healthiest and longest-lived communities, Buettner (2015) has found that longevity is directly tied to community. Although the food eaten in these 'Blue Zone' areas gets the headlines, Buettner takes care to point out that these communities are all marked by strong social ties, and often by the kinds of rituals and places that Oldenburg called out as essential.

Table 9.1 provides a quick review of the criteria of ideal third places. As we consider the impact of new media technologies, these same criteria should be adapted and applied. Just because a new technology isn't in a bar or coffee shop doesn't mean these criteria can be, or should be, ignored.

As we move into an ever-more technologically mediated future, we assume that our human needs are unchanged, although our awareness of the effects of technologies isn't always strong. We want love, connection, opportunities, and human contact. And since we collectively haven't given up our suburbs, our cars, and our zoning laws, it stands to reason that our unmet needs are not going away. In other words, despite the supply changing, the demand remains. So, do new technologies meet those needs? We need frameworks to think this through.

Table 9.1 Oldenburg's third place criteria (1997)

Characteristic	Definition
Neutral Ground	Third places are neutral grounds where individuals are free to come and go as they please with little obligation or entanglements with other participants.
Leveler	Third places are spaces in which an individual's rank and status in the workplace or society at large are of no import. Acceptance and practice is not contingent in any prerequisites, requirements, roles, duties, or proof of membership.
Conversation is Main Activity	In third places, conversation is a main focus of activity in which playfulness and wit are collectively valued.
Accessibility & Accommodation	Third places must be easy to access and are accommodating to those who frequent them.
The Regulars	Third places include a cadre of regulars who attract newcomers and give the space its characteristic mood.
A Low Profile	Third places are characteristically homely and without pretension.
The Mood is Playful	The general mood in third places is playful and marked by frivolity, verbal word play, and wit.
A Home Away from Home	Third places are home-like in terms of Seamon's (1979) five defining traits; rootedness, feelings of possession, spiritual regeneration, feelings of being at ease, and warmth.

FRAMING THEORIES AND ONLINE ARCHITECTURES

Computer-mediated communication (CMC) has a raft of theories that might help us connect the third place idea to new technologies. We focus on two related theories as most applicable. The first is the simplest: media richness theory (Daft and Lengel, 1984). It posits that humans convey a wide array of cues in our face-to-face communication. When we interact we have the content of our speech, but also the tone of that speech, and a host of non-verbal cues such as our posture, eye contact, facial expressions, etc. Communications media that convey those cues well are considered 'richer,' while those that are unable to convey them are 'poorer' (Walther, 2006). In a case of extremes, Skype video would be on the richer side, while texting would be on the poorer side. Face to face communication (FTF) is the gold standard, with the most cues.

The second theory, and the most cited and supported in the CMC literature, is SIDE or the 'social identity model of deindividuation effects'

(Postmes et al. 2001), which focuses on how we get cues and act in mediated situations. In other words, it predicts how we will act and feel when those cues are removed. The premise of SIDE is that whenever we enter a social situation we look to others for models of how to behave. If we enter a loud party with dancing or a quiet library, it's the actions of others that tell us how we should act. SIDE takes this concept online where these social cues are often weaker or fewer. Its main hypothesis is that the few cues we do see become more powerful because they are all we have to go on. We are 'deindividuated' by circumstance, and become less individual and more reliant on social proof and the actions of others. And online or not, we are still humans who want to feel connected, included and together. So, we will seek those few cues we can find, and they will have an outsized influence on our behavior. This is especially important for groups of people trying to emotionally connect, or to accomplish some task (Altschuller and Benbunan-Fich 2010). Evidence of this is that many online functions that aren't intended to form communities do so anyway, as is the case with many bloggers (Dennen 2014). Now we consider how different communication technologies do or do not provide those cues.

This is where 'architecture' comes back into the picture. Obviously in places that aren't the 'real world,' there can't be real architecture, even if sometimes a virtual place mimics a real one. Instead, we are focusing on architecture as an analogy. In what we might call the 'social architecture' of an online place, it isn't the walls or the doors or the zoning laws that push us into some actions and not others. Instead it's the code of the technology that enables or prevents behaviors. This code is the online equivalent of those forces – in an online place, a wall may not be a real wall, but it still prevents you from 'moving' freely across an area.

Lessig (1999) was the first to crystallize this idea, noting that the code of an online place was essentially its law and its architecture (more recently, see Couldry and Hepp 2016). If the code allows you to talk to anyone, you can. If it allows only some people to talk to only some others, that's the way it is. Likewise, it may allow you to – or prevent you from – flying, sending files, talking verbally, identifying yourself, or a thousand other things. Lessig's idea that 'code is law' is value-neutral, and is often applied and enforced by engineers and developers who are not thinking about Oldenburg, social capital, filter bubbles or life offline. Much like builders and architects, their choices have ramifications on the social lives of those who use their products. And, arguably, computer programmers as a group are less aware of the social implications of their design choices than architects. Thus, there are frequently social architectures coming out of their code that enable or stymie community entirely by accident. Conversely, there are also those sets of code that are the carefully considered result of

developers or governments who want to encourage or prevent a particular behavior (Gillespie 2017). Lessig invokes the ‘Great Firewall of China’ as an example of a set of code that regulates information, access and behavior for an entire country. It is his fear that such architectures have and will become tools of control (Lessig, 1999).

Most architectures aren’t quite as obvious, or political, but they still impact behaviors. Many scholars have begun investigating and critiquing these fundamental structures and algorithms as awareness of these potential impacts has become more apparent (Ananny 2016; Napoli 2014) and as the lack of visibility into the code becomes a problem (Ananny and Crawford 2016).

EARLY INVESTIGATIONS INTO MEDIATED SPACES

So, how do new places compare to the classical in-person experience? It’s tempting to paint with a broad brush, but we should instead be very careful to consider the features and affordances of each place as potentially different. Video games and virtual worlds, for example, may seem like all one kind of thing, but each can have radically different social architectures. One early example of research into such worlds provides an example.

Steinkeuhler and Williams (2006) investigated two early virtual worlds specifically focusing on their third place characteristics. These are large-scale always-online games called ‘massively multiplayer online games,’ or ‘MMOs’ for short. Newer generations of these games persist today as an active niche in the extraordinarily large and profitable medium of online gaming. To have some context for the impact of gaming, consider that as an industry in 2017 it drew more than 250 percent more revenues than the movie business (Games, 2017) and now rivals or exceeds the worldwide revenues of all sports (Taylor, 2017). Drawing on a wide array of ethnographic, experimental, survey and data-based methods, Steinkuehler and Williams concluded that these places had strengths and weaknesses compared to their equivalents in Oldenburg’s ideal ‘real world’ places.

Most obviously, these online games fell short on the physical and the intimate aspects of the in-person tavern or coffee shop ideal. To put it simply, if you can’t physically hit or have sex with a person in a virtual space like you can in a real one, it changes the stakes in any interaction. The costs and benefits are simply different. Thus, the depth of relationships that were formed in these games were initially relatively shallower than in the corresponding ‘real’ place (although it is notable that even here the authors found real, substantive relationships form, some of which even lead to real-world connections and marriages). On the other

hand, these game places offered the opposite of the ‘zoning’ effect that Oldenburg argued transformed the country. By removing the barriers of space, travel and inconvenience, virtual worlds created massive analogs to the corner tavern. In his framing, a game must be thought of as a tavern with tens of thousands of patrons inside, all with similar interests, but less likely to share their demography. Even the most idealized third place in Oldenburg’s thinking was subject to some form of demographic clustering in the real world. Yet in a cheap online space, the only barrier to entry tends to be interest. Thus, there is potentially more mixing than in a traditional third place, even as it falls short on some other criteria. What’s more, these game places are competitive and fulfill the ‘leveler’ function that Oldenburg valued. Games are almost always meritocracies, and so wealth and status rarely make a difference (Shen 2014). As Herz (1997) put it bluntly but eloquently, ‘It didn’t matter what you drove to the arcade. If you sucked at Asteroids, you just sucked.’ Games can mix CEOs with janitors, men with women, Jews with Arabs, children with adults, and on and on, in ways that real-world places rarely do.

At least initially, these relationships were seen to lack depth. We normatively assume that is a bad thing, but let’s be value-neutral for a moment. Depth is also value-neutral. Deep affinity and deep hate both require depth. With relatively poor media, we see fewer cues, and so depth takes longer to occur. Relationships are instead built on personalities and common interests (Schwämmlein and Wodzicki 2012), and can form where they wouldn’t otherwise form offline. The term ‘discrimination’ applies here: When you don’t have all of the cues, it is much harder to discriminate. As those cues are introduced, or architected in, players learn who the people are and the relationship deepens. Deep doesn’t automatically mean good. Bridging and bonding can both increase. It can reinforce stereotypes at the same time as it can introduce people to diversity of thought and demographics (Hansen et al. 2015). In an echo of SIDE theory, Kim (2011) found that groups coalesce better when they hide their actual identities in favor of uniform conformity.

More advanced work following those early studies has delved deeper into the social architectures of game places, finding the ones that promote better identity politics and community. For example, Harrell (2010) and Harrell and Harrell (2012) have created and studied systems that play with representation as an architectural feature.

This is a quickly evolving area, in which new technologies and companies are sprouting up and altering social architectures all the time. For context, we have moved through what Couldry and Hepp (2016) call the ‘mediatization’ phase, where technology has become ubiquitous and intertwined in our daily lives. What was at first merely mechanizing communication

later moved to electrify it and most recently and impactfully to digitize it. This digital phase has been rapid and seemingly total. Communication has become so mediated that what was once considered to be standard is now just part of a larger, digitized mix. Online communication is no longer a supplement but an essential and basic part of relationships, making face-to-face one of many modes we must take seriously.

Couldry and Hepp's framework suggests that our relationships with space and place have profoundly shifted, and will continue to. To paraphrase their thinking, it is as if there is a set of layers now imposed upon reality, each of which has social and third place implications. These layers can be rich with connection and opportunity, or the equivalent of gated communities: 'Just beneath the spatial surface of everyday reality are developing new topologies: networks that link one set of persons into certain possibilities for action, but cut off another set of persons from those same possibilities' (Couldry and Hepp 2016 p. 99).

LAYERS

Today, you can occupy a multitude of on- and offline places through a variety of devices and media platforms concurrently. You can snicker at your friends' constant exchange of quips on social media, co-watch your favorite show with hundreds of anonymous others online in the comfort of your bed, or scroll through shopping apps before purchasing a new laundry detergent at your local supermarket. It would not be an exaggeration to say that we can now be theoretically anywhere and everywhere yet never exclusively somewhere. In other words, technologically enhanced connectivity enables us to shift among multiple information and social layers. Thus, the question of how new technology will affect communities and human interaction is not only a question of what new off- or online places will be created, but what their confluences will mean. Couldry and Hepp (2016 p. 90) argued, 'within . . . a context of deep mediatization and the media manifold it is meaningful to ask "where people are" with and through media.'

The rise of social media 'detox' practices – such as the phone stack game in which the first one to lose to the urge to check one's phone (usually stacked among others in the middle of the table) during a group activity is required to pay the bill – illustrate a growing understanding of the power and potential threats present in this context of deep mediatization. With the help of communication technology, one can experience total transportation to virtual social environments or radical re-encoding of the one's situated physical environment. Are these new layers a social good or

an ill? Some argue this technologically-enabled accessibility is beneficial for social networks (K. Hampton et al. 2011; K.N. Hampton et al. 2015) while others like Turkle (2012) warn against the dawning of being ‘alone together.’

Adding onto the complexity, breakthroughs in Augmented Reality (AR) and Virtual Reality (VR) technologies take us even further down this road of complicated multi-existence. How can we unpack this through the lens of Oldenburg’s third place? One starting point could be to re-approach ‘reality’ through an analogy of layers. This begins with the presumption that reality is not a fixed, monolithic space. Depending on who you are, how you experience it, and how you interpret such past, present, and future experiences and expectations, ‘reality’ can be infinitely redefined. In other words, reality can be understood as a gestalt of layers that are connected by its interpreter/re-presenter (self) as well as the web of interpreter/re-presenters (the society). The benefit of this frame of thought is that it does not impose normativity on one type of experiences over another; they are layers. Offline interactions are no more ‘real’ than online or any other mediated interactions, and no one person’s experiences should be more or less ‘real’ than those of others. Under this perspective, even if there exists some form of ‘real’ reality, it will forever be evasive to human beings. Thus, the central concern becomes what has been experienced how by whom. Simultaneously, because the layers can coexist and are connected, it puts emphasis on the communicative processes that occur both within an individual and among collectives. In order to unpack all of this, we must first identify which layers are involved and then analyze how these layers are structured in relation with one another.

To discuss how this conceptualization may help with our task, let us start stacking from the basic layer all humans co-occupy: the layer of physical reality. Humans necessarily exist through bodies that are situated in a material context no matter whatever mediated reality or interpretive reality we have access to. This is an ineradicable tie unless a Science Fiction-like future of eternity in circuits awaits us. In other words, we, as beings that live with bodies, are bound to the imminent physical reality and its material conditions. This means physical location and its accompanying material conditions (still) matter. On the flip side, this also means we can meaningfully analyze ‘where people are’ by grounding the metaphysical concept of reality on physical reality.

Are our third places bounded to the physical realm? As we’ve noted, they can exist beyond it, but we should also consider the converse: can layers turn physical spaces that weren’t third places into them? Consider Oldenburg’s classic first and second places of home and work. New communication technologies are already layering information into these

places, enabling office workers to be mixing with others elsewhere, or family members at the kitchen table to be mixing in Minecraft. This offers the ability to give access to groups and places that weren't possible, even in our idealized notions. Consider the Habermasian coffee house, allowing for the mixing of merchants and the exchange of ideas. It's all well and good if you were a male merchant, but not for the majority of people. Yet with layers, the exchange of that coffee house need not be tied to class, place, or involve coffee. Liberated from the confines and velvet ropes of society, what matters would be to be able to create and make accessible third place layers, and pay attention to the ways they can affect physical reality, which is one layer all human beings necessarily have to share.

The notion of layering, and anchoring of the layers through the material layer can ease the task of understanding both existent and emerging communication technologies regarding different spaces. For instance, AR and VR are often grouped together because they both deal with technologically mediated reality or realities. However, as Williams (2016) argued, AR and VR experiences are qualitatively different. In VR worlds, the user 'leaves' their immediate surroundings and 'goes' somewhere else. On the other hand, AR, by definition, provides layers that are to be placed on top of one's immediate surroundings. In short, VR attempts to maximize the immersion component of media experience whereas AR aims to fully acknowledge and utilize the imminent surroundings of the user. For example, AR has been applied in factories to augment assembly instructions for workers (Levy 2017) and by furniture companies to help the customers test the look and feel of their products in their home or office without requiring the actual product (Castellanos 2017).

In contrast, VR can flourish in fields that require complete and persuasive transportation from the immediate reality. For example, VR has been used to alleviate pain and fear in surgeries to decrease the use of anesthetic drugs Marchant (2017), as well as in campaigns to raise awareness through vicarious experience such as Amnesty International's interactive 360-degree video that captured the devastation from bombing in Syria (Nudd 2016). However, because VR can convincingly transport the users to a different layer, it may also increase the weight of returning to one's physical conditions. This may be what will make VR's trajectory different from AR, as the latter attempts to use our local, physical spaces. Thus, it is possible to speculate that VRs, whether social or non-social, can be successful in a different context than ARs, which has the better capacity to fit into our everyday lives. Do third places need to be physical or present? As noted above, prior work suggests not. However, the code, mechanics and the intent of the developers always plays a critical role. VR developers will need to work harder to leverage third place characteristics

(see Chapter 8). And, thus far VR developers have not been focused on the social side of their experiences.

One strategy to think about new technology through Oldenburg's third place would be to focus on specific layers. For instance, one approach would be to reevaluate whether certain physical places that has been deemed as third places continue to qualify via Oldenburg's criteria. However, a more fruitful task would be to consider two or more layers at the same time. A seemingly disintegrating community in a singular layer may be vibrant on a second, or when two or more layers are considered in conjunction with one another. No new technology makes these issues as unavoidable as virtual and augmented reality.

APPLYING LAYERS: VR AND AR

Virtual reality (VR) is the use of graphic technology to transport your mind somewhere else while your body stays in one place. It is currently used with a headset or goggles. While it has great potential for immersion, it's less clear if it is an inherently social technology that would help recreate third place conditions. The immediate applications of VR include travel, fantasy, games, and of course pornography. Some developers are passionate about VR's potential for social connectivity (Brightman 2017), but the lessons from MMOs suggest that the relative lack of depth of relationship will be similar with VR because it keeps people highly mediated and at a physical distance. There is also the base issue that VR goggles block eye contact and make simple movements in space dangerous, rendering any social interactions virtual-only. In contrast, Williams (2016) finds augmented reality (AR) to be the technology with more potential for recreating Third Place functions. AR is technology that adds some new information on top of what you see in daily life. It's an exact fit for the concept of layers. At the time of this chapter, AR layers are largely filtered through phones, using their cameras to see real space, but with new information superimposed on it. This allows for mixed reality experiences, which have a broad array of potential applications. For example, theme parks have added AR features to thrill ride experiences, dating applications allow people to see those nearby who are interested in relationships (Blackwell et al. 2015), shoppers can 'see' what furniture would look like in their home (Martindale 2017), foodies can overlay restaurant reviews on eateries as they walk past (Roberts 2016), and tourists can overlay guides as they explore a new city (Simpson 2017) (Figure 9.1). All of these concepts make sense for businesses looking to capture interest and guide consumers to clients (Barrett 2017). And, there is little doubt



Source: iStock by Getty Images.

Figure 9.1 An AR app, using a phone as a window into overlaid information

that employees with AR filters could be more productive, with so much information at their fingertips (Gavish et al. 2015; Levy 2017). We might imagine that as phones give way to glasses (e.g. Google Glass), that we will eventually see this technology more seamlessly embedded through implants or contact lenses (Figure 9.2).

But will this technology be social? If we follow Lessig's provocations, there is a potential tension between forces that will seek to capture our attention and redirect it for commerce and those forces within us that will seek to use it to connect with each other. And of course, by layering actual imagery on top of reality, there is immense potential for change, both good and bad. The technology could be used to block or alter real-world objects or people. The code will matter, and the choices made in it will have legal, ethical and social implications. 'It could mean the difference between truly helpful tools – that provide time saving guidance through daily tasks – and new art forms, versus highly distracting and confusing experiences that create greater tensions and barriers within communities' (Ranen 2017). Consider a filter bubble that would visually block out stimuli you find politically, socially, or religiously undesirable (Metz 2017). On



Source: iStock by Getty Images.

Figure 9.2 *Augmented design making layers appear literal*

the positive side, consider how AR could foster the kinds of connections that MMOs did, but with more substance because they would occur in real places. While it is still subject to the kinds of discrimination we see in any rich environment, AR could turn any location into a third place. A park need not be just a park – it could via AR become an Athenian agora, a beachfront, a trivia show, or (in a nod to Putnam) a giant bowling alley. This opens up the potential for layers to augment not just what we see, but how we can connect with each other through technology.

What will always be critical will be the values that are knowingly (or accidentally) coded into the experience. As Lessig used a constitution as his guiding light for good code, so too will AR developers need to have a set of values to help them create architectures and experiences that bring us together rather than separate us. Oldenburg's criteria are an excellent fit as a North Star for these creators. If AR experiences can layer in these values, then our third places can expand from those handful of nostalgic corner taverns to literally anywhere. What will be critical will be a new kind of media literacy in which everyday people are aware of the value encoded into their technologies. There is reason to be skeptical that everyone will know, or care, but educating ourselves and others is the very role of the people who are likely to read a chapter like this.

REFERENCES

- Altschuller, S. and Benbunan-Fich, R. (2010). Trust, Performance, and the Communication Process in Ad Hoc Decision-Making Virtual Teams. *Journal of Computer-Mediated Communication*, 16(1), 27–47. doi:10.1111/j.1083-6101.2010.01529.x.
- Ananny, M. (2016). Toward an Ethics of Algorithms: Convening, Observation, Probability, and Timeliness. *Science, Technology, and Human Values*, 41(1), 93–117. doi:10.1177/0162243915606523.
- Ananny, M. and Crawford, K. (2016). Seeing Without Knowing: Limitations of the Transparency Ideal and its Application to Algorithmic Accountability. *New Media and Society*. doi:10.1177/1461444816676645.
- Asimov, I. (1957). *The Naked Sun*. New York: Doubleday & Company.
- Barrett, B. (2017). In Facebook's Future, You Live Through Your Phone. *Wired*, April 18.
- Blackwell, C., Birnholtz, J., and Abbott, C. (2015). Seeing and Being Seen: Co-Situation and Impression Formation Using Grindr, a Location-Aware Gay Dating App. *New Media and Society*, 17(7), 1117–1136. doi:10.1177/1461444814521595.
- Brightman, J. (2017). VR Criticism 'A Little Unfair,' Fargo, July 13. Retrieved on July 20, 2017 from <http://www.gamesindustry.biz/articles/2017-07-13-vr-criticism-a-little-unfair-fargo>.
- Buettner, D. (2015). *The Blue Zones Solution: Eating and Living Like the World's Healthiest People*. Washington, DC: National Geographic Books.
- Castellanos, S. (2017). IKEA Readies Augmented Reality App for Shoppers, Using Apple Tech. Retrieved on July 19, 2017 from <https://blogs.wsj.com/cio/2017/06/21/ikea-readies-augmented-reality-app-for-shoppers-using-apple-tech/>.
- Coleman, J.S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94, S95–S121.
- Couldry, N. and Hepp, A. (2016). *The Mediated Construction of Reality*. London: Polity.
- Daft, R. and Lengel, R. (1984). Information Richness: A New Approach to Managerial Behavior. *Research in Organizational Behavior*, pp. 191–223. Homewood, IL: JAI Press.
- Dennen, V.P. (2014). Becoming a Blogger: Trajectories, Norms, and Activities in a Community of Practice. *Computers in Human Behavior*, 36, 350–358. doi:10.1016/j.chb.2014.03.028.
- Games, N. (2017). Nielsen Games 360 report 2017. Retrieved on October 24, 2017 from <https://www.nielsen.com/content/dam/corporate/us/en/reports-downloads/2017-reports/nielsen-games-360-report-2017.pdf>.
- Gavish, N., Gutiérrez, T., Webel, S., Rodríguez, J., Peveri, M., Bockholt, U., and Tecchia, F. (2015). Evaluating Virtual Reality and Augmented Reality Training for Industrial Maintenance and Assembly Tasks. *Interactive Learning Environments*, 23(6), 778–798. doi:10.1080/10494820.2013.815221.
- Gillespie, T. (2017). Governance Of and By Platforms. In J. Burgess, T. Poell, and A. Marwick (eds), *Sage Handbook of Social Media*. London: Sage, pp. 254–278.
- Habermas, J. (1998). *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society*. Cambridge, MA: The MIT Press.
- Hampton, K., Goulet, L.S., Rainie, L., and Purcell, K. (2011). Social Networking Sites and our Lives. Retrieved on August 22, 2017 from <http://cn.cnstudiodev.com/>

- uploads/document_attachment/attachment/46/pew_-_social_networking_sites_and_our_lives.pdf.
- Hampton, K.N., Goulet, L.S., and Albanesius, G. (2015). Change in the Social Life of Urban Public Spaces: The Rise of Mobile Phones and Women, and the Decline of Aloneness Over 30 Years. *Urban Studies*, 52(8), 1489–1504. doi:10.1177/0042098014534905.
- Hansen, M., Fabriz, S., and Stehle, S. (2015). Cultural Cues in Students' Computer-Mediated Communication: Influences on E-mail Style, Perception of the Sender, and Willingness to Help. *Journal of Computer-Mediated Communication*, 20(3), 278–294. doi:10.1111/jcc4.12110.
- Harrell, D.F. (2010). Designing Empowering and Critical Identities in Social Computing and Gaming. *CoDesign*, 6(4), 187–206. doi:10.1080/15710882.2010.533183.
- Harrell, D.F. and Harrell, S.V. (2012). Imagination, Computation, and Self-Expression: Situated Character and Avatar Mediated Identity. *Leonardo Electronic Almanac*, 17(2), 74–91.
- Herz, J.C. (1997). *Joystick Nation*. Boston: Little, Brown and Company.
- Hess, A. (2017). How to Escape Your Political Bubble for a Clearer View. *The New York Times*, March 3. Retrieved on September 12, 2017 from <https://www.nytimes.com/2017/03/03/arts/the-battle-over-your-political-bubble.html>.
- Kim, J. (2011). Two Routes Leading to Conformity Intention in Computer-Mediated Groups: Matching Versus Mismatching Virtual Representations. *Journal of Computer-Mediated Communication*, 16(2), 271–287. doi:10.1111/j.1083-6101.2011.01539.x.
- Kraut, R., Patterson, M., Lundmark, V., Kiesler, S., Mukhopadhyay, T., and Scherlis, W. (1996). Internet Paradox: A Social Technology that Reduces Social Involvement and Psychological Well-Being? *American Psychologist*, 53, 1011–1031.
- Lessig, L. (1999). *Code and Other Laws of Cyberspace*. New York: Basic Books.
- Levy, S. (2017). Google Glass 2.0 Is a Startling Second Act. *Wired*, July 18.
- Marchant, J. (2017, 2017/01/31/). Virtual Reality Can Make the Pain of Surgery Easier to Bear. *The Atlantic*, January 31.
- Martindale, J. (2017). Ikea Shopping Experience Will Be Augmented With AR App for iOS 11. *Digital Trends*, July 19.
- Metz, C. (2017). The Rise of AR Will Recreate Your Filter Bubbles In the Real World. *Wired*, April 20.
- Napoli, P.M. (2014). Automated Media: An Institutional Theory Perspective on Algorithmic Media Production and Consumption. *Communication Theory*, 24(3), 340–360. doi:10.1111/comt.12039.
- Nie, N.H. and Hillygus, D.S. (2002). The Impact Of Internet Use On Sociability: Time-Diary Findings. *IT and Society*, 1(1), 1–20.
- Nudd, T. (2016). Amnesty International Unveils Incredible VR Experience Showing the Devastation in Syria. *Adweek*, March 14.
- Oldenburg, R. (1997). *The Great Good Place: Cafés, Coffee Shops, Community Centers, Beauty Parlors, General Stores, Bars, Hangouts, and How They Get You Through the Day*. New York: Marlowe & Company.
- Pinch, T. and Bijker, T. (1999). The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other. In W.E. Bijker, P. Hughes, and T. Pinch (eds), *The Social Construction of Technological Systems*. Cambridge, MA: The MIT Press, pp. 17–50.
- Postmes, T., Spears, R., Sakhel, K. and deGroot, D. (2001). Social Influence in

- Computer Mediated Communication: The Effects of Anonymity on Group Behavior. *Personality and Social Psychology Bulletin*, 27, 1243–1254.
- Putnam, R.D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Ranen, M. (2017). We've Not Thought Through the Legal and Ethical Disruption of Augmented Reality. Retrieved on December 17, 2018 from <https://shift.newco.co/2017/10/26/weve-not-thought-through-the-legal-and-ethical-disruption-of-augmented-reality/>.
- Roberts, D. (2016). How Pokémon Go could have a big impact on Yelp. *Yahoo Finance*, July 29. Retrieved on July 20, 2017 from <https://finance.yahoo.com/news/pokemon-yelp-nintendo-augmented-reality-000000062.html>.
- Schwämmlein, E. and Wodzicki, K. (2012). What to Tell About Me? Self-Presentation in Online Communities. *Journal of Computer-Mediated Communication*, 17(4), 387–407. doi:10.1111/j.1083-6101.2012.01582.x.
- Seamon, D. (1979). *A Geography of the Lifeworld*. New York: St. Martin's Press.
- Shen, C. (2014). Network Patterns and Social Architecture in Massively Multiplayer Online Games: Mapping the Social World of EverQuest II. *New Media and Society*, 16(4), 672–691. doi:10.1177/1461444813489507.
- Simpson, C. (2017). Meet Bixby: Samsung's Vision For The Future of AI. *Gizmodo Australia*, March 30.
- Steinkuehler, C. and Williams, D. (2006). Where Everybody Knows Your (Screen) Name: Online Games as 'Third Places.' *Journal of Computer-Mediated Communication*, 11(4), 885–909.
- Sunstein, C.R. (2001). *Republic.com*. Princeton, NJ: Princeton University Press.
- Taylor, H. (2017). Global Gaming Revenue on Par with Sports at \$149bn for 2017. Retrieved on December 17, 2018 from <http://www.gamesindustry.biz/articles/2017-11-28-global-gaming-revenue-on-par-with-sports-following-2017-estimates>.
- Turkle, S. (2012). *Alone Together: Why We Expect More from Technology and Less from Each Other*. New York: Basic Books.
- Van Alstyne, M. and Brynjolffson, E. (2005). Global Village or Cyber-Balkans? Modeling and Measuring the Integration of Electronic Communities. *Management Science*, 51(6), 851–868.
- Walther, J. (2006). Nonverbal Dynamics in Computer-Mediated Communication, or:(and the Net:(s with You,;) and You;) Alone. In V. Manusov and M. Patterson (eds), *The Sage Handbook of Nonverbal Communication*. Thousand Oaks, CA: Sage, pp.461–480.
- Williams, D. (2016). Community is the 'killer app' missing from virtual reality. Los Angeles Times, December 27. Retrieved on August 29, 2017 from <http://www.latimes.com/opinion/op-ed/la-oe-williams-virtual-reality-20161227-story.html>.