What do Pokémon GO and virtual flamingos add to a liberal arts college campus? In our Introduction to Media and Society classes, students study socio-spatial intersectionality through augmented reality and locative gaming, then use an augmented reality app to mark, annotate and intervene in their offline social spaces. The students are asked to think through the ways that the hypermediacy of the augmented reality world opens a space for commenting on their experiences of everyday spaces, particularly spaces on campus that evoke resonant social meanings such as gendered bathrooms, public art, dining halls, and athletic facilities. For instance, what socio-spatial issues are raised by the fact that fraternities on campus can host parties but the sororities cannot? How can they imagine changing the unspoken but visible race and class segregation in the campus dining hall? What assumptions do they have about the building that houses the counseling center? When students’ spatial, sensual, and critical senses are turned on their own location in the world, we see them begin to approach issues like race, class, gender, and sexuality with new, informed attention.

By teaching students about augmented reality, we are working toward demonstrating to them that space is, as Jason Farman says, a “co-production” (2012, 85). When we invite students to produce an augmented reality version of their local environment – the college campus – we hope to make material for them the stakes of being community members. For many students, academic work seems like a study of concepts that are abstractions. It is our contention that experiencing abstraction as local and material makes space for them to make emotional, sensual, and, above all, critical connections between ideas in the classroom and lived experience. For example, we teach at a small liberal arts college that has a coordinate system: there is a women’s college and a men’s college. One student project uses augmented reality to uncover the history of a sculpture that has a contentious past which evokes the colleges’
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gendered split. Using Aurasma, the students linked archival documents, faculty interviews, and footage of the sculpture to the sculpture itself. The augmented reality “aura” that they created discusses the sculpture’s significations around gender difference and draws into question the ways that campus culture has both embraced and critiqued the coordinate system. This project articulates specific issues about the ways that space is weighted with gendered meaning and allows people who are not in the class to access the students’ research and commentary when they are in the space of the sculpture itself. Experimenting with augmented reality leads students to think more deeply about the ways that they inhabit and understand their local world.

In preparation for the hands-on augmented reality project, students study Kristin Lucas’s feminist conceptual art installation flARmingos (that’s flamingos brought to life with Augmented Reality) alongside the conventional commercial augmented reality game (developed through collaboration between Nintendo and Google subsidiary Niantic) Pokémon GO. The comparison of the two asks students to think through the ways that participatory media engages with and responds to embodiment, immediacy, and location. Ultimately, the contrast invites students to apprehend and contextualize the ways that mobile technologies both foreclose and open up socio-spatial relationships for engagement and critique. In this chapter, we discuss the conceptual underpinnings that we expect our students to uncover through the study of flARmingos and Pokémon GO and share details about our lesson plans and hands-on project guidelines. We begin by describing flARmingos because it stages the critical terms we introduce to the students in this assignment sequence. We then lay out the stages of the assignment sequence as we speak about the theoretical and critical underpinnings of each step. At the end of the chapter we provide a summary of the steps of the assignment, along with a few recommendations drawn from our experience.

Lucas’s flARmingos project uses mixed reality and augmented reality to engage users in the world of flamingos and the larger ecological realities of twenty-first-century environmental crises. At flARmingos installations, participants learn about flamingos by engaging in an augmented reality dance with virtual versions of the real thing. The dance is meant to stage “kinship from an ethical distance” and to go “beyond a human-centered worldview into a more fluid ecological discourse, through the use of technological embodiment” (Engadget 2017). Participants begin their experience with the scents of a wetlands habitat. Smelling dirt, earthworm, ocean, and salt air sets the stage for the moment in which participants use an iPad to populate a virtual habitat with flamingoes and to read and learn about flamingo
habitats, mating rituals, and status as an endangered species. A participant in the installation describes the scene by saying,

> The birds are intentionally simplified and boxy: The animation is a little bit scrappy, making the rendered creatures look a lot like puppets. Occasionally, they interact as a flock. They walk around each other in similar patterns, and once the mating rituals begin, the excessive dance moves are *almost* in sync.

(Smith 2017)

The scrappy, boxy animated birds within the virtual habitat reflect Lucas’s project’s DIY aesthetic. As it is described here, the animated birds’ glitchy dance, its failure to be perfectly in sync, makes the experience *more* verisimilar instead of less. The rough edges of Lucas’s work reflect not only her commitment to an anti-corporate, feminist aesthetic, but a sensitive engagement with the messiness of non-digital realities. Further, the animated birds dance with a slightly different choreography from another; each bird becomes individual. In the augmented reality stage, participants wear HoloLens headsets so their movements become flamingo movements and they see themselves in a flamingo habitat, surrounded by other flamingos. While non-flamingo viewers look on, participants wearing the headsets are invited to follow the choreography of the virtual flamingos in a mating dance, accompanied by a score composed of archival recordings of flamingos. In this way, participants experience not just being and moving as a flamingo, but being a flamingo *in a flamingo habitat*, surrounded by other flamingos. As the material in her interactive display suggests, flamingos “have been pushed out of their natural habitats due to ecotourism, overpopulation and sea-level changes,” which has led to “declines in their population” (Trout 2017). Dancing with fARmingos gives participants the uncanny experience of embodied disembodiment, of the “ethical distance” between the endangered species and us. As Lucas says,

> representations of flamingos out here by far outnumber the actual bird. The flamingo is a bit of a cultural icon for us, and there’s sort of a flatness to an icon. It’s really hard to approach or to get much further with the images – it’s difficult to penetrate the image of the flamingo.

(Trout 2017)

Going further with images is the goal of using augmented reality apps in the classroom. As we will demonstrate here, augmented reality and its partner, locative gaming, introduce students to social critique as a tactical practice for the use of participatory platforms. As Patricia Zimmermann and Dale Hudson note in their book-length study of locative media, we can see and use augmented and locative digital media to “dislodge assumptions”
about the material world (2015, 5). In our classes, we study Lucas’s flAR-mingos to teach students how they can see the everyday with a difference and how they can use augmented reality to make critical interventions into their everyday worldview. Lucas’s installation begins with a sensory evocation of place: smelling the wetlands before learning about their endangered status invites users to make a sensual and affective connection to the stakes of anthropogenic climate change. Though climate change is arguably something we feel every day, the idea of it largely remains an abstraction. Inviting students to make embodied, sensual connections to abstract ideas can make those ideas concrete. In the case of flARmingos, the embodied experience of augmented reality makes material the precarious stakes of being in the twenty-first century. Like the users who gain an empathic understanding of the plight of the flamingo by becoming a flamingo, students who explore the social and cultural meanings inherent to their own campus spaces can gain knowledge, empathy, and critical awareness by exploring the ways that their non-virtual worlds appear in virtual space and vice versa. We saw this in the student project that confronts gender difference by annotating public art on campus. Readings and exercises that complicate the notion of being in space and experiencing social space in augmented reality and locative gaming explicitly engage students’ ability to see critical intervention as a technique for the production of knowledge and to see themselves as producers of culture.

Theorists of augmented reality and locative gaming describe the user experience as one that allows for concurrent, different realities that are tied to discrete locations. Erin Stark, for example, notes that “hybrid reality, location-based, pervasive games support alternate ways of seeing the everyday” (2015). As media studies students are typically comfortable thinking and talking about representation, the idea of concurrent realities is not outside their knowledge base, even in an introductory course. What they may not yet understand, however, is representation’s potential for polysemous meaning and cultural critique. The first step in our assignment introduces them to our primary texts. We ask students to play Pokémon GO, to watch videos of flARmingos, to read interviews with Lucas, and to write reflective pieces about these experiences. The relationship between representation and reality, between icons and climate change, that Lucas describes flARmingos as encompassing maps easily onto recent critical scholarship about Pokémon GO, an app with which many our students are familiar. As Katie Salen Tekinbas notes in one of the essays we assign, “pervasive games like Pokémon GO force us to look beyond the rules governing the play inside the game, to the social and cultural codes governing the context in which the game is embedded” (2017, 36). Providing students with critical context for the ways that augmented reality constructs its relationship to space is a crucial part of this teaching module.
The second step in our assignment sequence asks students to describe the ways that everyday spaces can be “political.” After posting this question and asking students to write and discuss how they define both “everyday space” and “political,” we introduce them to Zimmermann and Hudson’s contextualization of the political stakes of locative media. Zimmermann and Hudson trace the difference between space and place, saying “the Internet might be promoted as a virtual space, but it is experienced as a virtual place.” By talking about virtual places, Zimmermann and Hudson “localize and politicize” notions of space: they point to the ways that minoritized and criminalized groups experience “airport terminals, train stations, and bus terminals.” “If place is the production of social relationships between objects” they say, “then locative places suggest contestation and dissent are bound to locations that might be physical, geopolitical, emotional, or nomadic” (2015, 12). By foregrounding this series of critical key terms, we are able to emphasize to the students that they already participate in the co-production of space – and, as they already do this, they are empowered to intervene in that co-production. In this way, we can begin to frame mobile technologies as potential socio-spatial catalysts.

As we noted earlier, we work to engender critical engagement with issues of space and mobile technologies via readings on *Pokémon GO* (and its precursor *Ingress*). The third step in our assignment sequence asks students to read critical essays about augmented reality and locative gaming. We are helped in this task by the crowdsourced #PokémonGO syllabus, a robust living document that was started by University of Illinois-Chicago communication professor Adrienne Massanari et al. (2018). Much like the #Lemonade syllabus or the #BlackLivesMatter syllabus, the #PokémonGO syllabus is a collaborative construction built by academic and non-academic scholars: the heterogeneity of its construction is one of its strengths. As Cassius Adair and Lisa Nakamura note in their essay, “The Digital Afterlives of This Bridge Called My Back,” the collaboratively produced syllabi “explicitly focus on the intersection of identity categories such as race, gender, and sexuality with digital pedagogy methods, pointing out the co-constitutive nature of technology, identity, and the social space of the learning environment” (2017, 258). The work of Massanari et al. is modeled after critical participatory scholarly projects that are “explicitly motivated by social justice aims, inspired by queer and antiracist activist frameworks to use the digital to bridge institutional and community knowledges” (Adair and Nakamura 2017, 258). We have built our project to model this framework.

Analyses of locative gaming (rather than, say, conventional social media) foreground the ways that they can imagine themselves using “thin screens to determine the location of significant sites in the material landscape” rather
than becoming “absorbed in the screen and disconnected from the physical world” (Stark 2015). We remind the students of the scrappy, slightly off-sync birds of flARmingos and the way that glitchy representation keeps the viewer aware of the multiple realities that they are experiencing. We can then situate this contradiction within the distinction that Bolter and Grusin make between the immediate and the hypermediate. They say,

If the logic of immediacy leads one to either erase or to render automatic the act of representation, the logic of hypermediacy acknowledges multiple acts of representation and makes them visible. . . . The logic of hypermediacy multiplies the signs of mediation and in this way tries to reproduce the rich sensorium of human experience.

(quoted in Farman 2012, 79)

Comparing the socio-spatial and political meanings that inhere to Pokémon GO to flARmingos helps students to see ways that mobile technology can function as a social catalyst as well as the ways that locative media can expand their understanding of the ways that the “social” functions in participatory culture.6

Locative games like Pokémon GO, which emphasize embodied participation in social and cultural spaces, evoke some of the transformative powers of the DIY ethos. As Zimmermann and Hudson note, “A hacker ethos of ‘taking things apart’ emerges when digital media transcends the limitations of screens to engage audiences as participants” (2015, 13). Lucas’s piece engenders interspecies empathy through transformative play. The participatory experience afforded by augmented reality, as opposed to virtual reality’s singular immersivity, for example, allows users to experience and remain conscious of two places at once. Folks who have participated in flARmingos note that the HoloLens experience, which does not block out your ability to see reality (as a virtual reality headset would) gave them a much stronger sense of the way that the imaginary habitat interacts with everyday life. As Stark notes,

When elements of everyday life are made apparent through some means – a game, for instance – they become visible and noteworthy. One’s attention is directed towards an object, situation, structure or behavior that is, usually, so commonplace that it has become part of the background. Instead, it occupies two spaces at once. Holloway and Hones have discussed the phenomenon “of objects that are commonly encountered as simultaneously mundane and extraordinary, and thus as doubly coded in single contexts.”

(2015, 155, quoting Holloway and Hones 2007, 556) AuQ12
The simultaneous experience of the mundane and the extraordinary which is rooted in a particular location is precisely the axis of interaction that we want to foreground for our students. Thinking about ways that attention can be drawn to objects within that location and the ways that those objects can be polysemous are key learning objectives for this lesson. Students already grasp the centrality of attention to discussions of mobile technology; it is easy to link that intuitive connection to include the notion of the double coded and its potential for revelation.

Two of the most instructive stories about how augmented reality gameplay can intersect with issues of social justice come from analyses of encounters by Pokémon GO players. Tekinbas discusses the ways that “issues of accessibility, privilege and race [are] raised by the game” (2017, 34). By asking students to think about the ways that neighborhoods can function as racially segregated spaces, we ask them to “learn about the limits of mobility and the ways in which pervasive play comes to be embedded in society” (Tekinbas 2017, 35). The first-person accounts of racial menace that Tekinbas addresses in her essay are illustrated with a long citation from a blog post about “how to play Pokémon GO as a black person.” The list of hints, like “dress cute” and “walk a dog” and “bring a non-black friend if you can,” is sobering in its specificity (2017, 36). We have found that this list is useful for generating discussion about ways that cultural signification works in public places: it provides a catalyst for asking students to think about how their own coded attire and activities make space for them on our own campus. The students read Tekinbas’ essay along with Edmond Y. Chang’s multi-media essay “Pokemon Go, Queer Spaces, and Queer Contact.” Chang’s essay uses the example of “Poke-activism,” a culture jamming incident where Pokémon GO players designated the notoriously hateful Westboro Baptist Church as a Pokémon gym inhabited by a “cheerfully chubby and bright pink Clefairy named ‘LoveIsLove’” (2016). The queering of the anti-LGBT space suggests that “the mobile app and ‘augmented reality’ game has become a catalyst for movement, behaviors, bodies, relationships, and shifts in public and private spaces all mediated by a digital game” (Chang 2016).

The fourth stage of the assignment invites students to augment their campus environment using Aurasma. We challenge them to use the examples of the Westboro “poké-activist” action and the descriptions of politicized spaces from Hudson, Zimmermann, and Tekinbas to help them forge interventions into their campus spaces. Our assignment sequence is meant to catalyze a shift in the way students interact with their campus through the construction of a hypermedial augmented reality experience. The essay by Erin Stark, which we assign as part of this sequence, uses the language of “cultural heritage” to describe the type of socio-spatial code that we talk
about with our students. While writing about Ingress, Stark notes the way that players of augmented reality games “contribute to the curating of an alternative cultural heritage in a manner that is more democratic and conceptually fluid than traditional heritage frameworks will allow” (2015). Stark is referring to sites that are not typically recognized as “cultural heritage” sites, like street art locations or sites of struggle by underrepresented populations. We deliberately teach this essay about cultural heritage shifts with the essays about poké-activism and racialized spaces to lay bare for students the complexity and double-coded ambiguities of scholarly discourse about how gaming interfaces mediate socio-spatial relations. Augmented reality projects also offer students an opportunity to intervene in the established social meaning of spaces and places, to curate new meanings, and to transform the local – to make possible, visible, and tangible the potential for transformative change in their local environment.

To summarize, our assignment sequence has four main components: encountering flARmingos and Pokémon GO as primary texts; defining critical terms and beginning to write and think about how everyday space is political; reading theory about locative media and critical essays about augmented reality and locative gaming; and applying what they have learned in a hands-on project that asks them to create an augmented reality interface for the college campus. In writing this chapter, we have relied almost exclusively on the readings and screenings we assign our students as our sources. Each element of the assignment sequence includes casual, reflective student writing. We typically collect and comment upon these writings, but do not give a grade until the final project is turned in. We ask students to keep a running list of key terms from the readings, and, as our introductory course includes a series of quizzes, we include these terms on the quizzes. We are lucky to have a supportive information technology team on campus, so we turn to them to help our students learn how to use Aurasma, the augmented reality program that they use for the final project.7 The students work in groups when creating the augmented reality campus location, but we ask them to write their own short essay that describes and contextualizes the choices made by the group. A portion of that essay includes reporting on the group work experience. We schedule a session approximately a week after the Aurasma stage is due so that we can explore the campus together and reflect, as a group, on the interventions made by their classmates.

When we ask students to annotate and augment sites on campus, we are asking them to become “actively embroiled in the curation of a sense of place by highlighting significant sites and artifacts, and in turn play a part in writing the cultural heritage” of their campus (Stark 2015). The assignment sequence is designed to encourage students to dislodge their assumptions about locative media and the spaces in their everyday world. We want to
push them to look beyond the image, to see the potential political power of polysemy and difference, especially when it is experienced simultaneously and through the use of technological embodiment. By drawing inspiration from both conventional games and avant-garde installation art, we model for them the significant affordances of augmented reality and locative media for commenting on and responding to issues of embodiment, immediacy, and the local. We frame the assignment as an opportunity for intersectional intervention, but, ultimately, we hope the readings make clear to them the rich potential for making material their observations about socio-spatial meaning and to provide them with tools that they can use to foment critical interventions into their local environment.

Notes

1 We are speaking about students within a very particular location, our college campus, where the student body is predominantly white and wealthy; we do not mean to suggest that students do not have material experiences of society, or that they have not experienced sensual and critical apprehensions of concepts like race or class, but in our experience with this particular student body, we have found that much work needs to be done to translate academic discussions of ideas like race, class, and gender to real-life applications.

2 We were using the free augmented reality program Aurasma, which can be found at: www.aurasma.com/. The program was recently purchased by Hewlett-Packard (HP) and is now called HPReveal.

3 When we first taught the course, students could only access flARmingos through online reviews of the project and a few YouTube videos; since then Lucas has developed an app for iOS that allows users to populate their local environments with flARmingos. We will integrate the new app into our courses in the future.

4 At least it does on our small campus in upstate New York – obviously teaching this lesson in Puerto Rico or New Orleans would provide a more embodied context.

5 The #PokémonGO syllabus includes: links to scholarly literature that theorizes mobile technologies and gaming; discussions of the business of app-making; laws and policies relating to locative media; information about censorship and restriction of locative games; news articles about the phenomenon; tutorials for gameplay; links to communities of gameplay fans; and teaching resources like activities, discussion questions, course objectives, and so forth. Our use of the syllabus focuses on the scholarly literature and accounts of race, gender, and sexuality-based obstructions encountered during gameplay.

6 Students tend to be awake to the contradictions of mobile technology; they are often quite articulate about their relationships with their mobile devices. They frequently express a very understandable anxiety about the ways that their lives are mediated by their phones. Reading scholars who theorize the relationship between mobile technologies and local realities can help make their experiences of their screen use more nuanced.

7 We believe, however, that the ability to teach one’s self new technology is an important skill for twenty-first-century learners, so we would be equally happy to instruct the students to learn the software on their own.
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Works cited


