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Layering landscapes: Linguistic commodification and semiotic layering in United States' recreational spaces

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To the Graduate Council:

I am submitting herewith a dissertation written by Hannah Irene Soblo entitled "Layering landscapes: Linguistic commodification and semiotic layering in United States' recreational spaces." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in English.

Jessica Grieser, Lisa King, Major Professor

We have read this dissertation and recommend its acceptance:

Tanita Saenkhum, Derek Alderman

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(Original signatures are on file with official student records.)

**Layering landscapes: Linguistic commodification and semiotic layering in United States'
recreational spaces**

**A Dissertation presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville**

**Hannah I. Soblo
December 2022**

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Land Acknowledgement

The places where I researched and wrote this dissertation are Indigenous lands, including the Aniyunwiya peoples (now Eastern Band of Cherokee Indians, Cherokee Nation of Oklahoma, and United Keetoowah Band of Cherokee Indians), Tsoyahá peoples (Yuchi, Muscogee Creek), and Shawnee peoples in the southeastern Appalachians, and the Peoria, Kaskaskia, Piankashaw, Wea, Miami, Mascoutin, Odawa, Sauk, Mesquaki, Kickapoo, Potawatomi, Ojibwe, and Chickasaw Nations in the midwest. These lands continue to carry the stories of these Nations.

Abstract

In the process of linguistic landscaping, spaces are transformed into textual and semiotic representations linked to particular social uses, cultural meanings, and historic narratives. Recently, digital technology has been used to create additional layers of semiotic representation in linguistic landscapes. This dissertation investigates multiple layers of digital and physical representation at six United States' park spaces, with a particular focus on heritage tourism sites, and analyzes the social meaning and narratives of tourism constructed both by individual layers and within their relationships. Photo-based methods are used to collect data, both by documenting the representations of sites as filtered through the AR platform, Niantic's Pokémon GO, as well as through photographing the physical sites in-person. This process of ground truthing revealed the erasure of Indigenous histories, as well as amplification of eurocentric histories, which was perpetuated by both the physical and digital layer. The results also revealed a simplification of representations via the digital layer, as well as the role of corporate mediation in regulating space representation. These results are significant in revealing the role of augmented reality in portraying a particular sanitized and gamified version of the spaces. This project also suggests a need within linguistic landscaping research for more engagement with the interdisciplinarity of landscape studies as a whole, particularly, in a US parks context, for gaining a more precise and holistic view of the complex histories and contexts that are obscured by both physical and digital representations.

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Chapter 1

Cultural bias is recognised within all aspects of society today. Strategies, frameworks and ethics regimes have been established to acknowledge and counteract such bias, to create the illusion of culturally unbiased research and narratives; an illusion to the point that it is doubtful that a narrative can ever be unbiased. An author's choice of language and method of transmission automatically places [their] narrative within a cultural and social context. This is something openly acknowledged in this chapter—that the methodology and research reflects my cultural agenda or bias. I do not regard this as good or bad; it is just as it is. (Faulkhead, 2017, p. 483)

Across from where I write this, my refrigerator is covered in magnets from national park visitor centers: Shenandoah, Congaree, Mammoth Caves, to name a few. My coffee mug tells me about the daily lives of otters in Great Smoky Mountains National Park. If I were to take you on a walk with me right now, we would pass by city parks and apartment signs with names like Cherokee Ridge and Fort Dickerson, as well as the familiar signs of various gas stations, grocery stores, and more than a few pawn and loan shops and laundromats. Based on all this, you probably have some idea of where I am: the southeastern United States, what is the traditional land of the Aniyunwiya, Tsoyahá, and Shawnee peoples, what was once contested territory in the American Civil War, and what today is known by residents as the less affluent side of the city of Knoxville, Tennessee.

The names, signs, and images we pass by and surround ourselves with construct particular experiences of place, which we view through lenses derived from our social and cultural experiences of the world. To me, the names Congaree and Shenandoah on my

refrigerator make me think of the landscapes of these parks, of long walks, camping, and sunlight slanting through trees. To the Indigenous people whose traditional lands these are, and whose languages these names come from, there are different meanings. Our experiences of place are further constructed by the language and imagery we see every day, which are so ubiquitous in the landscape around us as to be invisible. Cherokee Ridge Apartments, the sign of which I drive by every day, does not merely use the name “Cherokee”; the entrance sign portrays a thin human figure on horseback, drawing on a homogenized image associated with the Indigenous ledger art of the Great Plains for meaning (see Image 1.1¹). The meaning: yes, the name Cherokee is meant to associate these reasonably priced 1-2 bedrooms with the Cherokee people, but these are a historicized and homogenized people, part of the history and aesthetic of this area, not present day rights holders with control over their name and portrayal.

Today, however, our experiences of place are mediated not only by physical, but also by digital portrayals. Before experiencing the in-person aspects of Cherokee Ridge, for instance, I did as most modern-day apartment searchers do and Googled it. I found the location and mapped the distance to various other places, combed through ratings and reviews from past residents, and scrolled through dozens of pictures. This experience of place is not limited to apartment searches, of course; it will be a familiar practice to many when choosing locations in an unfamiliar (or even very familiar) area, including restaurants, parks, hotels, theaters, and other attractions. Although I knew my Google Earth view of Cherokee Ridge Apartments might

¹ All images and figures referenced in this dissertation are in the “Dissertation Image Gallery,” a folder attachment to this dissertation. The image gallery is also online in [this](#) shareable folder.

not be entirely up to date, I, like many dedicated Google apartment searchers, considered it close enough to make a judgment call of whether to apply for a lease.

The way we experience space is mediated and constructed not only by the physical and digital signs, texts, and imagery that make up our linguistic landscapes, but also by the particular cultural, social, and experiential lenses through which we view them. Meaning is constructed constantly, both by and for us, by the content we choose to engage with, as well as by that which we pass by without a second glance. Often the most ideologically loaded and impactful of these linguistic landscapes are those that we pass by every day without thinking about, or the images that are so insinuated into our particular social experience of the world as to lose our critical attention. This, in my North American context as a descendant of European immigrants, is the case for the cave painting-like human figure on the Cherokee Ridge entrance sign, which is ubiquitous in symbolizing a time and people long past. Many academic disciplines discuss this construction of landscapes, including sociolinguistics, human geography, and rhetoric, all of which I will draw on in this dissertation.

This dissertation is also deeply rooted in my own experiences of the world, including my family history, cultural lenses, and ideologies. Even as I discuss the construction of narratives of belonging and exclusion of different cultural lenses and ideologies within the park spaces investigated, I indicate my own belonging to the particular traditions and ideologies of Western academia. This in itself forms a narrative or framework through which the findings are communicated. Like Faulkhead (2017), I do not view bias as a good or bad thing; it is simply unavoidable, and only negative if unacknowledged, obscured, or weaponized. I will take a moment here to introduce you to my own cultural and ideological background, not to center

my own experience but rather to alert you to the social, cultural, and experiential influences on what I noticed and considered significant in the spaces I visited.

I was born in South Carolina, the daughter of two scientists, teachers, and descendants of European immigrants to North America. Primarily in the late 1800s and early 1900s, my family came to North America from Hungary, Germany, Prussia, Switzerland, Scotland, and Denmark. As part of a wave of European immigrants to go through Ellis Island, many of their names were changed, and their national and cultural origins obscured in US recordkeeping. Some were given land in the rural midwest, homesteads that were part and party to the violence and forced removal of Native Americans from their homelands. In all my lines of ancestry, there is one with deeper roots in North America: a group of Scottish immigrants in the 1700s, who like many Scots settled in rural Appalachia, not far from what I considered my second home in North Carolina, or where I live now in Tennessee.

All these people led to my parents, who grew up in Michigan but moved to the southeast before I was born. My most distinct childhood memories are of the forests and mountains of the South Carolina blue ridge (the mountainous northwestern corner of the state), where it seemed my parents could name and tell stories of every plant, bird, or stone we saw, and taught (or attempted to teach) me to do so as well. Although not a botanist, ornithologist, or geologist myself, these experiences continue to influence how I view and interact with the world, personally and professionally.

This is the tradition of knowledge that I come from. It is grounded in a European science and worldview, in which humans impact (helping or harming) landscape, but are typically not seen as part of it. This is not the precise view of individuals, but rather an ideological

underpinning that colors how knowledge is communicated, how land management policies are carried out, and how the value of space and extra-human species is communicated. It is an ideology that colors my worldview, and is significant in this dissertation because it influences what I notice, document, and consider significant in the world around me, as well as how I interpret and analyze these experiences, ultimately leading to the presentation of research you are about to read.

The framework of linguistic landscaping is uniquely situated to show us the implicit biases written onto the landscape, to analyze the historical, social, and institutional contexts that have led to the representations of spaces as we see them. As a white scholar, this approach necessitates moving outside my own positionality to engage with scholarship and community representations with different and deeper understandings of the research sites. My archival work and the scholars I have engaged with gave me new perspectives on these sites and altered how I viewed them. This is a work in progress; the work of moving outside one's own positionality is always ongoing. My hope is that the research presented here and the framework of linguistic landscaping can provide a critical lens through which to view the constructed landscapes around you. Although I will be your guide through the research presented here, I invite you to make your own active (re)interpretation of the data, and see this project as the beginning of a conversation.

1.1 Theoretical framework

In the process of mapping, spaces are transformed into textual and semiotic representations linked to particular social uses, cultural meanings, and historic narratives. Language has always

been foundational to the process of mapping: naming, storytelling, and marketing all contribute to the construction and claiming of place. Recently, digital technology has been used to create additional layers of semiotic representation, part of what I term *semiotic layering*, that visitors are able to access for additional information or experiences related to a site. Digital layers include place names, reviews, descriptions, as well as particular mobile and location-based software—mapping, gaming, tourism, activist, or combinations thereof. Digital layering is significant because it has the potential to both reify and counter narratives constructed through hegemonic mapping practices. This project investigates the production of tourist spaces through semiotic layering in both physical and digital mediums.

I situate my research as a linguistic landscapes study, an area of sociolinguistics that focuses on the relationship between place, language, and sociocultural identities. Linguistic landscapes (LL) has been defined in a variety of ways in the last four decades, and I will give a brief overview of the movements here, with more detailed descriptions in the literature review. Linguistic landscape studies initially distinguished itself as a field growing out of interdisciplinary work and theories in the areas of dialectology and human geography, but by the mid 00's, LL had begun to redefine itself as a subfield of linguistics rather than a separate area. Landry and Bourhis (1997) defined the early field of LL, which typically investigated highly populous, multilingual areas. This early approach had a well documented urban bias, focusing in particular on highly multilingual urban centers, such as Hong Kong, Bangkok, and Toronto (Gorter, 2006; Hoffman & Walker, 2010). In these studies, the method of analysis was quantitative, reliant on categorizing discrete language codes and quantifying the occurrence of such codes in relation to each other within a given area. These language codes were the units of analysis; variation

within the same code was not typically categorized. It was generally assumed that the visibility and placement of particular codes within a given area was reflective of linguistic vitality, an assumption that was later questioned (Bagna & Barni, 2010). The attempted separation of LL as a separate subfield, rather than research area, potentially hindered the connection between research on LLs and a later movement of research in sociolinguistics investigating place as a factor in linguistic variation (Johnstone, 2009; Preston, 2013; Reed, 2014; 2018).

New approaches to linguistic landscape research have broken down the distinction between LL and the larger field of sociolinguistics, expanding the research methods and goals by investigating the social, historic, and cultural implications of emplaced linguistic and other semiotic resources (Nash, 2016; Puzey, 2016). This social strain of LL research makes the assumption that emplaced language is indicative of the larger language ideologies of an area and/or community. Researchers after the social turn of LL investigated for instance the impact of geographic information system (GIS) technology on rural communities (Sieber & Wellen, 2011; Woldermarian & Lanza, 2015), Indigenous and colonial mapping projects and conflicts (Cowell, 2013; Hunt & Stevenson, 2017), and rural tourism marketing (Baldwin et al., 2010). This work aligns with the concepts of standardized language ideologies and erasure (Milroy & Milroy, 1985; Lippi-Green, 1994; Irvine & Gal, 2000), enregisterment (Agha, 2005), and iconization (Johnstone, 2009) that are foundational to sociolinguistics, because it assumes that the constructed LL relies on particular features of language aligned with particular communities or characteristics for meaning. In other words, the LL can be reflective of and perpetuate language ideologies by relying on enregistered features of language. As I will propose in the

literature review and later in Chapter 4, linguistic landscaping in the U.S. parks context can be a form of erasure, which delegitimizes histories, claims to, and uses of these spaces.

In the social strain of LL research, social categorizations constructed through linguistic, imagistic, and other means become the focal point and unit of analysis. Increasingly, linguistic landscapes are augmented by and filtered through digital landscape representations. The blending of digital and physical semiotic layers has become more widespread with advances in technology such as mobile augmented reality (AR). Digital means of augmenting reality have expanded rapidly, with AR technology being used for a variety of purposes, which often overlap, including navigation, business ratings, citizen-science research, social networking, gaming, medical education, and other things (Azuma, 1997; Leaver & Wilson, 2016). Azuma (1997), in a seminal work describing the essential components of AR related to academic research, defined AR as a technology with three essential components: it “combines real and virtual”; is “interactive in real time”; and is “registered in 3-D” (2). Definitions have changed since Azuma’s to account for new developments in AR technology. The most significant definition for my research is Graham and Zook’s (2013) definition of AR as, “the material/virtual nexus mediated through technology, information, and code and enacted in specific and individualised space/time configurations” (95). The commonality between these media is that all rely on geotagged references to physical places within the application, which users can interact with in some way.

Despite the expanded scope of linguistic landscapes research, there remains a gap in understandings of the impact of digital representations of landscape. Linguistic landscapes research thus far has tended to focus on either digital or physical representations, with a much

greater emphasis on the latter. My work seeks to meld the digital and physical construction of spaces through the framework of *semiotic layering*. While other researchers have proposed the concept of layering as an effect of digitized geolocated information (Graham et al. 2012; LaPenseé, 2003), this research has been primarily in human geography and media studies, and represents a new concept for sociolinguistic understandings of place and language. With the layering of multiple semiotic representations, individual layers (digital and physical) create avenues for different representations of a space. For instance, digital representations may amplify the messages of physical sites through repetition, subvert in-person representations through constructing alternative meanings, and can even preserve former physical sites by persisting in representing objects no longer present (see, for instance, Westenhoff & Soblo, 2022). Though not physical, digitized representations in AR technology are still emplaced in real spaces and contexts; these representations make up localized maps of areas which are often available to a global audience. I theorize this as a layering effect, or semiotic layering, in which multiple layers of representation combine to construct an experience of place.

An example of how digital layers can alter site representation, previously discussed by Westenhoff and Soblo (2022), is The Rock at the University of Tennessee campus in Knoxville (UTK)². The Rock is a physical rock near the intramural fields on campus, which can be painted at any time, by any person, and is sometimes painted multiple times a day. While often the messages relate to school sports, The Rock has also been a medium for hate speech and the center of debate on the ethics of free speech on campus (see Hubbard, 2018). In the AR platform Pokémon GO, however (see section 2.2.3 for details), The Rock is represented only by

²See the livestream, <https://therock.utk.edu/livestream/>, for a current representation of The Rock.

a former facade of solid orange paint with the message “Wear Orange” (see Image 1.3.1). Text in the AR representation says: “Graffiti legal...Graffiti encouraged...University of Tennessee 1794.” There are two key messages here: one is an amplification of The Rock as a source of school spirit (through the photo chosen as the digital representation), at the expense of the other social uses of The Rock. The second is aligned with arguments for free speech without regulation: “Graffiti legal...graffiti encouraged” is text added to the site by the AR platform, which encourages any form of “graffiti,” without engaging with the larger narrative of free speech and ethics in the US, in which The Rock is involved. In this example, the representation of The Rock is flattened by the filtration of the digital platform. This has ramifications for different groups on campus, including safety of minoritized groups who were targeted by the racist slurs painted on its facade (for more on safety and Pokémon GO, see Tekinbas, 2017 and Westenhoff & Soblo, 2022).

My research extends the framework of linguistic landscaping by examining both digital and physical semiotic layers. The geotagged spaces of AR are represented with image, text, video, sound, or some combination of these, representations that serve to annotate that physical space, overlaying it with a digitized meaning. This meaning is digitally *emplaced* in that it is a deliberate construction of meaning attached to particular physical spaces, even though it may be accessed far from the actual site of origin of a piece of content. These digitally emplaced representation require an additional layer of governance, in that they typically recreate a feature that is present in physical space within a digital space. As these technologies become more ubiquitous, as Graham et al. (2012) propose, “everyday life in urban places is increasingly experienced in conjunction with, and produced by, digital and coded information”

(464). However, digitized layers of content are not ubiquitous or simultaneously experienced by all visitors to a place, but rather are individually experienced by users of different AR technology. The simultaneity between physical and augmented layers can lead individuals to experience places in increasingly disparate ways as they interact with various layers. Digital overlays of place mediated by AR technology construct additional semiotic layers, with the potential to contest or reify hegemonic narratives and representations of place.

1.2 Literature review

Research addressing the relationship between language and place is a historically interdisciplinary inquiry, including for instance sociolinguistics, human geography, geosemiotics, and mobile media studies. Research in sociolinguistics has taken a language-first approach to investigation, while research in human geography has focused first on place; mobile media studies and geosemiotics, meanwhile, are both disciplines that have arisen in response to particular aspects of semiotic representations of place, including but not limited to digitized and linguistic representations. My focus will be primarily on issues of language, investigating the historic, cultural, and social construction of place through commodification, erasure, and enregisterment.

Sociolinguistics has a history of addressing the relationship between language and place that predates the term “linguistic landscape,” and has continued alongside it, addressing for instance language diffusion (Milroy & Milroy, 1985), indexicality and iconization, (Johnstone, 2009; Silverstein, 2003), and language attitudes (Preston, 2013). The use of the term LL emerged as a descriptive for an independent field in the 90s, but by the 2010s had been

generally viewed as an area of sociolinguistics, rather than independent (Nash, 2016; Puzey, 2016). Although I use the term linguistic landscape as descriptive of this research area, I align with a more expansive view of LL research as addressing a variety of relationships between language and place, including those specifically described in research from the 90s, but also research conducted by earlier sociolinguists and researchers from other disciplines such as geosemiotics, mobile media studies and human geography in the 21st century (Blommaert & Maly, 2014; Mark et al., 2011). I use the more active term linguistic *landscaping* to describe this approach to LL research, which calls attention to the agents behind the constructed landscape.

In this section, I detail the relevant theories of linguistic landscapes that have contributed to my conception of linguistic landscaping and the layering of semiotic landscapes. This includes a brief historical overview of the origins of LL, first as a field then as a research area of sociolinguistics, as well as situating it within variationist linguistics. I then cover key concepts from sociolinguistics that can inform understandings of tourist landscapes, including enregisterment, iconization and linguistic commodification. Finally, I detail the key mediums and content of tourist landscaping covered in this dissertation, including digital mapping through augmented reality (AR) technology and issues of heritage tourism.

1.2.1 Defining linguistic landscape

An early shared interest in the language/place relationship emerged in dialectology and human geography in the early part of the 20th century, which eventually gave rise to early theories of linguistic landscapes (Chamber & Trudgills, 1998). These two fields diverged, however, in that spatiality was most significant to research in human geography and geolinguistics, but relatively

insignificant in sociolinguistics research (Britain, 2013). Dialectology contributed to a view of rural areas as spaces where little of interest to researchers happened, a view that continues in linguistic landscapes research today (Woods, 2011, p. 35). Woods (2011) describes the urban-centric approach of LL as “throwing the rural baby out with the traditional dialectological bathwater,” for instance (35). The move towards social understandings of language variation (*sociolinguistics*) in the 60s and 70s contributed to this urban/rural divide, as sociolinguists took a speech community approach to describing dynamic urban centers, “aspatially quantifying society,” while dialect geographers proceeded with more rural research, “asocially quantifying space” (Britain, 2013, p. 4). Following this distinction, the early field of linguistic landscapes distinguished itself as primarily concerned with the quantification of language varieties, their presence in urban centers, and how these factors reflected the vitality of the language varieties in question.

The tradition of LL arising from Landry and Bourhis’s (1997) seminal article followed the urban quantification model, generally investigating ethnolinguistic vitality based on the visibility and centrality of particular languages within a given area. This approach focused on publicly, purposefully displayed language, including commercial and advertising signs, government signs, street and place names, and road signs (Landry & Bourhis, 1997). It also entailed descriptions of the relative prominence of different items of text, such as that in different languages. This definition prevailed as the one used to distinguish LL as a discipline for about a decade, giving rise to several edited collections and special issues. Gorter (2006) in his edited collection, for instance, distinguishes the Landry and Bourhis tradition from the “loose sense of the word linguistic landscape,” which encompassed research on the social context of multilingual signs

(p. 1). He contrasts this with the *field* of LL, which is distinguished by the Landry and Bourhis definition. LL researchers also relied on the Landry and Bourhis model to distinguish *top-down* and *bottom-up* LLs, with the former describing the publicly available, usually government or industry created signs, while the latter described more ephemeral and/or unauthorized visible language (Gorter, 2006; Ben-Rafael et al., 2010). This distinction, along with the use of the Landry and Bourhis model in general, came under dispute in the last decade as researchers sought to reintegrate concepts from sociolinguistics into the theories and methodologies of LL, as well as to redefine LL as a subset of sociolinguistics itself (Ben-Rafael et al., 2010; Nash, 2016; Puzey, 2016).

New approaches to LL evolved due to the rapidly expanding means of communication, semiotic representations, digitized landscapes, as well as research in sociolinguistics that directly addressed place-based variation and language attitudes (Johnstone, 2009; Preston, 2013; Puzey, 2016). Ben-Rafael et al. (2010), for instance, contend that the linguistic landscape is “contingent on the nature of its linguistic, social, cultural, and political context,” which goes unacknowledged in the quantitative research that built from the Landry and Bourhis (1997) article (xii). The social, qualitative strain of LL research approaches emplaced language as social facts or phenomena, and understands the presence of language within a given space as reflective of prevailing language ideologies. In this tradition, the distinction between top-down and bottom-up language is moot, since all language is top-down in the sense that the actors emplacing the language are influenced by social, cultural, and historic ideologies relating to language use (Coupland, 2010; Jaworski & Thurlow, 2010).

Following the move to social understandings of emplaced language, LL researchers turned from primarily investigating asocial linguistic vitality through quantitative methodologies, to investigating the purpose behind emplaced language. This entailed a focus on the actors doing the placing. The investigation of language ideologies and the social nature of emplaced language led to a shift in the definition of linguistic landscapes, as a “facet of modern (socio)linguistics,” rather than separate research area (Nash, 2016, p. 380). It is this understanding of LL as a research area, and of linguistic landscaping as an actor-oriented expression of language ideologies, that I align with in this dissertation.

In its role as “facet,” rather than discipline, LL research has moved sociolinguistics towards a more nuanced understanding of the interaction between landscape and language by investigating why certain landscape features are named over others; are given proper or generic names; serve symbolic functions in representing human bodies, stories, and/or objects; and serve as functional limits or filters on how places are used and who is able to claim ownership of them (Cenoz & Gorter, 2006; Mark et al., 2011; Sieber & Wellen, 2011; Shohamy & Gorter, 2009; Woldermarian & Lanza, 2015). This research has become significant to studies of iconization and enregisterment (Agha, 2005; Johnstone, 2009), language commodification (Heller, 2010; Heller et al., 2014; Jaworski & Pritchard, 2005), tourism (Thurlow & Jaworski, 2010; 2014), and digital mapping (Graham et al., 2012; Malinowski, 2011), which I cover in the following sections of this literature review.

1.2.2 Iconization and enregisterment: Construction of communities and places

Insight into the social construction of place and community through language use can be gained from incorporating variationist research that addresses place identity into understandings of linguistic landscaping (Modan, 2007). For instance, Modan (2007) incorporates variationist research to highlight how place identity is communicated through discourse, as individuals in a community in Washington, DC align with particular identities linked to particular geographic locations within the city. Just like language ideologies, place identities are often so ingrained in the smallest details of interaction and day-to-day existence as to be invisible. Through its invisibility, place identity is reinforced, as the expected habits, interactions, and discourses of place “determine how we ‘live’ space by structuring our attention in particular ways that make some kinds of social action possible and other impossible” (Jones 2005, 153; see also Scollon & Scollon 2003). In variationist research today, place is increasingly acknowledged as a factor in social enregisterment alongside other factors such as ethnicity, socioeconomic status, age, and gender, which have been more commonly studied.

Enregisterment is the process of particular linguistic registers becoming widely recognizable and associated with speaker attributes in a particular social context. The term *enregisterment* is attributed to Agha (2005), and uses a linguistic register as the unit of analysis; a register is a particular style of speech, contextually linked to certain forms of social/semiotic capital. For instance, in the United States, high social capital has traditionally been ascribed to the Midwestern newscaster variety of English, which itself is linked not only with place, but with whiteness, maleness, and education. Enregistered varieties are always linked to certain social factors, which might include gender, race, and age, as well as place. Place-based factors

might include areas as large as whole regions or nations (for instance the use of “y’all” to index southernness in the United States, or “eh” tagging to index Canadianness), or extremely localized speech patterns on different sides of a city like Washington, DC (Lee, 2018; Vuolteenaho et al., 2019). Place, alongside other social factors, contributes to the perceived prestige of an enregistered variety. In the United States context, for instance, Preston (2013) demonstrates how Michiganders and Alabamans make evaluative judgments of locations linked to linguistic characteristics: Alabaman speech was evaluated as friendlier, but less correct, with the reverse being true for Michigander speech. Reed (2018), likewise, found that linguistic variation was important to Appalachian residents to their sense of alignment with Appalachia, making Appalachian-ness a place identity expressed through and marked by linguistic register. These enregistered varieties only have meaning, however, when all participants in a linguistic act (spoken, written, or otherwise) share the same enregistered forms and the same opinion of the social implications of these forms.

Place as a factor in enregisterment works similarly to other factors examined in variationist research: enregistered varieties develop through contrast, as particular communities of practice contrast their language variant to those of other communities, and socially position those other communities based on these contrasts (Modan, 2007, p. 298). These distinctions mean nothing to listeners unfamiliar with the enregistered variants being used; rather, enregistered variants are acquired through social learning, which influences individuals as they move to new places and pick up small distinctions in language variants along with social meanings (Lee, 2018). These distinctions can be reified in the construction of public space, reified by the material texts that mark and structure spaces (Ben-Rafael et al., 2010;

Jaworski & Thurlow, 2010; Shohamy & Waksman, 2009; Shohamy Gorter, 2008). Distinctions are not lost through immigration, but rather new distinctions might be acquired and former distinctions ascribed into new places. This can be seen around the world in places where particular languages or linguistic features are used to index a place-based identity, whether for locals, tourists, or both—such as “Chinatowns” in cities around the world (Leeman & Modan, 2009; Zhang et al., 2021) or the use of French in Canadian signage (Heller, 2003).

1.2.3 Linguistic commodification: Signs and symbols

The commodification of spaces through enregistered features of language occurs through digital and popular media representations, which distribute particular ideologies in the form of imagistic, textual, and other content. These ideologies are often implicit, relying on and reinforcing particular social perspectives through enregistered characterizations, while not directly addressing them in content. In this section, I describe the processes of enregisterment and erasure, as well as how these become commodified and spread through media, thus reifying and reinforcing particular ideologies. I focus in particular on a few interrelated types of media relevant to this dissertation, including tourist media and mobile augmented reality (AR) applications, and how these represent particular spaces and people to a broad non-local audience.

Linguistic commodification has contributed to standardizing enregistered language varieties and their implications for large numbers of people, as enregistered forms become solidified and easily distributable in the signs and symbols of media portrayals, including tourist texts. Alongside the construction of public space, communities are also constructed in the

language of public displays, which “appear to passers-by as ‘givens’ of the space” (Ben-Rafael et al., 2010). Just like socially enregistered variants themselves, emplaced language, despite being socially constructed and therefore dynamic and interactive, is taken for granted. The construction of place occurs through signs and symbols, in other words, the “cultural iconography [used] to construct meanings that run deeply through the national identity” (Baldwin et al., 2010, p. 3). Baldwin et al., and their contributing authors, demonstrate this construction through the example of Canada’s construction as a European nation centered on images of northern wilderness.

Social construction of places often hinges on distinctions in race, “specific kinds of skin [that] carry all sorts of interrelated, contradictory meanings,” essentialisms that represent “the historical product of social construction” (Baldwin et al., 2010, p. 4). In the Canadian context, race and national heritage were used to justify “a sequence of historical erasures and reorganizations” that produced national parks (Sandilands, 2010, p. 64). The process of *erasure*, as described in the linguistic sense by Irvine and Gal (2000), means the removal of obscuring of supposedly non-conformist or abnormal members of a speech community. There are three steps to this process: first, groups are distinguished by particular characteristics in contrast to other groups (these distinguishing characteristics can be described as being *iconic* or *iconized*); next, within-group distinctions are obscured or erased; finally, the oppositions between groups (in the form of *iconized* differences) become organized and collapsed, so that both large and small differences all become part of the same binary opposition or distinction between groups (this is known as *fractal recursivity*) (Irvine & Gal, 2000). For instance, Grieser (2022) describes the process of erasure in urban gentrification, as Black residents of a D.C. neighborhood

discursively distinguish themselves from new white residents, at the expense of intragroup distinctions (I return to these concepts in Chapter 4).

Enregisterment works similarly to *iconization*, and contributes to the process erasure. This is because the boundaries between social groups (as marked by perceived register) appear far more distinct than they actually are due to the named categories of social enregisterment. For instance, the use of the word “y’all” can mark a speaker as “southern” in a US context, regardless of any other feature of their language, socioeconomic status, race, etc. The enregistered category “southern” erases the gray zones in linguistic variation by allowing easy social identification of speakers based on minute aspects of speech.

In a North American parks context, a similar process of erasure to that described by Grieser (2022) can be seen in the distinctions made between Native American and European American histories. Native Americans in park signs are homogenized and historicized, obscuring within-group distinctions in favor of a large-scale distinction between their (historic) cultures and practices and (modern) European American cultures and practices. Research on the construction of Canadian parks as tourist spaces demonstrate how the iconization and erasure of “past” social groups is used as a tool to justify the conversion of the land into a tourist space (Sandilands, 2010). In doing so, the multiple heritages of a space are simplified into a particular narrative considered palatable to (particularly white) tourists. Distinctions between social groups that erase the nuances and details of history are reified through the plaques and tour guides providing visitors with a clear then and now distinction that obscures the construction process and violence behind it. For instance, the construction of national identity in Canadian parks relied on this strategy of distinction, legitimizing the claim of one culturally, historically,

ethnically specific group, while delegitimizing claims of the distinct "other" (Baldwin, Cameron, & Kobayashi 2010). The layers of linguistic landscapes, both digital and physical, can reify or contest the constructed claims to space. While this *layering* of spaces is always multiple, I will focus primarily on touristic layering, particularly in the areas of digital mapping and heritage tourism, in which particular enregistered characteristics of people and places are commodified for use in marketing and constructing landscapes, while others are erased altogether.

The layers of representation within a landscape are not necessarily negative or competing, but rather exist within the same sign, the same space, and construct different meanings for different visitors. For instance, Jaworski and Thurlow (2010) describe the city "as a festival of signs," the different layers of which express tensions between local and global meanings, and the "real" places of locals with the "imagined" places of tourism (p. 31). Their description of semiotic layering emphasizes the competition between layers, with the initial "mosaic of different texts" becoming overrun with touristic iconization and commodification. The commodification of spaces leads to simplified "global" meanings, which are spread through the repetitive imagery of tourism via tourist media, including postcards, guidebooks, and brochures, as well as memorabilia and, increasingly, social media posting. This is the case for well-known sites such as the Leaning Tower of Pisa, which is commodified via the repetitive images from tourist visitors of themselves, friends, or loved ones, "holding up" the tower from afar (Thurlow & Jaworski, 2014). The iconic representation of the tower overshadows the Pisa Cathedral, or Pisa, Italy, which form the broader geographic context. However, layering is not always so competitive in nature; semiotic layers may include different conceptions of particular signs or symbols within a space, with visitors interacting with multiple layers at once.

Pennycook (2010), for instance, describes the different simultaneous layers of signs as including pretextual (historic contexts), contextual (the physical location or persons indexed), subtextual (ideologies), intertextual (its relation to other signs), and posttextual (the meanings participants interpret from the sign). The construction of places through signs and symbols is always and necessarily partial; multiple layers can give voice and representation to communities not represented in officialized layers.

The layering of spaces is unavoidable, given the different meanings signs and symbols accrue over time and for different populations. In the modern context, there are increasing options for multiple signs and symbols to occupy the same place, with digital representations overlaid on physical spaces. For instance, Gendelman and Aiello (2010) point out that “layering as a semiotic resource is not tied to any specific form or material, but can instead be realized in various and even multiple modes,” including multiple layers of physical signs (think of billboards with signs posted on top of other signs) as well as other representations through multiple digital applications (262). The layering of multiple semiotic resources is exemplified in tourism, where multiple layers, using different communication strategies and modalities, are employed in constructing spaces of leisure and play (Thurlow & Jaworski, 2014). Particularly in the last decade, online mapping and location-based information tracking have opened up new possibilities for spreading particular narratives of place (Graham et al. 2013; Malinowski, 2011; Mark et al., 2011; Sieber & Wellen, 2011). Like their physically emplaced counterparts, however, digital layers are constructed through and with socially enregistered categories of language and communities. Which layer is emphasized is mandated not only by top-down marketing strategies, such as the production of historic signs for tourists in Sandilands’

research, but also through repeated interactions with and uses of space by individuals with various ideological alignments.

1.2.4 Tourist layers

Narratives of place are communicated through the language and imagery embedded in tourist media, with particular narratives taking precedence in the marketing of place over others. This might include enregistered variants of a language used in tourist media to characterize a region or people, or stereotypical imagery related to clothing or outward appearance. Faulkhead (2017) investigated the spread of narratives through media of and about Koorie peoples in Australia, finding that popular media spread simplistic and historicizing narratives of these Indigenous people through both language and imagery. Other linguists have investigated the iconization of particular speech styles that are then distributed through tourist media (Johnstone, 2009). Working in a North American tourism context, I focus here on the spread of ideologies through tourist media, and connect this to Lakoff and Johnson's (1980; 2003) concept of *conceptual metaphors*. Following this I describe in greater detail the narratives of heritage tourism, and the relevant media of spread (mobile augmented reality).

Modern day tourism is a product of globalization, the rapidly increasing mobility of goods, images, information, and people. Urry (2002) first pointed out that tourism has become the largest sector of international trade, something which continues today (see also Jaworski & Pritchard, 2005; Thurlow & Jaworski, 2010). Through tourism, places become restructured as "places of consumption...involved in producing distinctions of taste resulting from consuming, and anticipating the consumption of, an incredible array of goods and services" (Jaworski &

Pritchard, 2005, p. 22). The anticipation of consumption has been termed “the touristic gaze and imaginary” by Franklin and Crang (2001), who point out the influence of social media on repetitive tourist acts in a wide variety of locations. Repetition in semiotic representations of a place through social media is not new, only accelerated; the ‘postcarding’ of spaces—the reduction of spaces to singular images at particular points in time, which are spread via tourist media such as postcards (this is described more in Chapter 2), began far earlier in the construction of tourist spaces (Jaworski & Pritchard, 2005). Jaworski and Pritchard’s notion of ‘postcarding’ is significant as this same process of reduction of spaces to singular images through repetition is at work in the digitization of spatial representations, such as through augmented reality technology (see Westenhoff & Soblo, 2022).

Tourism is an important area for sociolinguistics since, as Thurlow and Jaworski (2010) point out, “tourism is a deeply ‘semiotic industry’ committed to the production, commodification and representation of culture and cultural *difference*; language is clearly an essential resource in this cultural production” (227). In the production of difference, or othering, tourism functions at Johnstone’s (2009) third phase of indexicality, in which a particular sign is taken as *indexing* a particular, usually geographically specific, identity, and is spread through local/tourist interactions and contrasted to other signs. In this way, language and images can be commodified in the form of tourist memorabilia like t-shirts and bumper stickers, and used to construct global meanings for specific locations and communities. Thurlow and Jaworski (2010) refer to this as the “tourist haze,” which takes narratives constructed from the “tourist gaze” (see Urry, 2002), and spreads them in the form of repetitive images and snippets of language, perpetuating the globalized meaning of tourist spaces. These repetitive

images are also part of what Peyton-Dyce (2017) terms the “politics of recognition,” which reify colonialism through portraying Indigenous cultures as static parts of history (p. 602). Repetitive images and language show up in a variety of physical tourist media, such as brochures, postcards, and guidebooks, but also in tourist acts, such as guided and self-guided tours, and social media posting (Jaworski & Pritchard 2005, p. 6).

The repetitive images and acts of tourism reinforce each other in a cyclical relationship, part of Jenkins’ (2003) *circle of representations*, in which the images of tourism produce particular perceptions of spaces that are then reproduced via repeated experiences, which many individuals engage in over time. In the example of the Leaning Tower of Pisa, for instance, seeing the social media posts of others can encourage visitors to take similar photos, and more visitors seen taking such photos normalize the practice on-site (Thurlow & Jaworski, 2014). Tourism, then, becomes a sort of “nexus of practice,” in other words, a set of “different, repeatable practices that are recognized as a specific genre of activity and the group of people engaging in the activity” (Thurlow & Jaworski 2014, 468). In rewriting spaces as *for* an international audience of tourists, these spaces become imbued with added layers of meaning. These layers can exclude locals, those who are unable to travel, or those whose travel is not for leisure (Thurlow & Jaworski, 2010).

The repetitive images and language of tourism serves also to position certain kinds of people as the visitors, while “others” are perceived as part of the attraction. In a North American context, this is especially true of Indigenous people, whose lives and cultures in tourist contexts are historicized and homogenized (Grimwood et al. 2019; McMahon et al., 2019). Grimwood et al (2019), describing Canadian constructions of tourist spaces, explain how

Indigenous ways of life are "fossilized" through their static representation in museums and other cultural sites. That tourists are invited only to engage with artifacts means they do not see the dynamic cultural practices (Lee 2017) which produced them. Indigenous people in North America are positioned by tourist spaces not only as part of the past and as a unified, homogenous group, but also as not having legitimate ownership over their territories. As Grimwood et al. (2019) and others have pointed out, this is due both to how they are described as homogenous and historic peoples, rather than dynamic, modern, and diverse communities, as well as to the reliance on eurocentric ideologies of space and ownership. These constructions of tourist park spaces serve to naturalize settler occupation of spaces (Cooke, 2016; Grimwood et al., 2019; Hernandez, 2022).

In addition to constructing people and communities in particular ways, tourism also constructs spaces in particular ways. Park spaces are described as "pristine," or "wilderness," for instance, utilizing a particular idea of nature as separate from humans and in need of protection or preservation (Hernandez, 2022; Kimmerer, 2013; Grimwood et al., 2019; Stevens, 2014). As a separate space from civilization, natural spaces are then available for a tourist audience of outdoor recreators (Grimwood et al., 2019). Of course, this pleasure-seeking audience is one primarily represented as being white, male, able-bodied, and heterosexual. This is possible because of conceptions of space ownership and settlement: a space is not considered to be part of civilization unless it is occupied by *permanent residents*—park spaces can be both wildernesses and tourist spaces because they are used by recreational, transient visitors, rather than permanent residents. The ideology of space ownership is also tied heavily to capitalism, in which spaces are valuable in as much as they are economically valuable, either

aesthetically or for natural resources; park spaces are economically valuable because of their aesthetic as *wilderness*. This conception does not reflect Indigenous conceptions of land stewardship and occupation (Hernandez, 2022; Kimmerer, 2013), but of course Indigenous conceptions are not typically acknowledged by tourist park spaces in North America.

The particular values and ideologies of western conservation³ are implicitly reinforced in the parks context through what Lakoff and Johnson (2003) call *conceptual metaphors*. A conceptual metaphor is broader than the traditional singular metaphor, which might relate one concept to another in isolation. Conceptual metaphors are reflected in the embedded, consistent linguistic descriptions of particular activities, experiences, and concepts. For instance, in a U.S. English context, a common conceptual metaphor is *Love Is War* (Lakoff & Johnson, 2003). A person might use this phrase, “love is war,” specifically, but more than this the conceptual metaphor is spread linguistically when, for instance, sexual partners are described as *conquests*, dating as *pursuit*, or that partners must *fight for* relationships. The conceptual metaphor, once linguistically embedded, lingers in a language so much that people no longer recognize an expression as a metaphor. In the context of conservation, a pervading metaphor could be *Conservation is war*. For instance, *invasive* or *alien invaders* are what nonnative species are called, civilization *encroaches* on natural spaces, and conservationists are portrayed as saviors of fragile native ecosystems and species (see section 4.3).

³ Conservation is a term deeply rooted in a western model of land stewardship. I therefore use the terms *conservation* and *preservation* deliberately to refer to this particular model; I use the term stewardship as a generic term referring to helping, healing, or otherwise having a positive human-land relationship. I describe conceptions of land stewardship outside the western conservation model more in section 1.4.6 and in Chapter 4.

The ideologies communicated by conceptual metaphors linger long after we cease to recognize them as metaphors, however, and take up contextually relevant images and expressions of the age for added meaning. Lakoff and Johnson (1980), for instance, describe then President Carter's description of the energy crisis as a war, and the subsequent uptake of this metaphor by news media. In this instance, the conceptual metaphor of the *energy crisis as war* naturalized and justified certain social implications, including the prioritization of energy production and sacrifices of the populace. The metaphor was spread not only through language, but through imagery as well; cartoonists used the image of a human wearing traditional Arab clothing as a stand-in for the "external, foreign, hostile enemy" of the energy crisis, for instance (Lakoff & Johnson, 1980). This is an example of how people, or in this case particular features and clothing of a person, can become *iconized* as a stand-in for a concept in a particular social context. In the US context, a figure in "Arab headdress" became a stand-in for the image of an enemy.

There is an *othering* effect apparent here, where features of a person can serve to mark them as *other*—that is, outside what is considered "normal" in the US—and lead them to be representative of an enemy. In some cases, *othering* might lead to people being considered less civilized, or less educated, or simply *worth less* than a "normal" US citizen. Faulkhead (2017) points out that while this *othering* has often been enacted through government separation policies, the divisions thus created linger in the social imagination via the creation of a "cultural standard" that is based on settler colonial ideologies. Although Faulkhead is working in an Australian context, her work and these points stand up just as well in a US context, where all populations are held to a cultural standard that is white, male, able-bodied, and heterosexual.

Within park spaces and other aspects of environmental tourism in the US, this standard is communicated through images of tourists, activists, and environmental scientists, which leave out any demographic outside the standard, notably Indigenous and Black Americans (Finney, 2014; Hernandez, 2022; O'Brien, 2015). The whitewashing of environmentalism, including environmental tourism related to park spaces, constructs exclusionary spaces where those outside the "standard" are viewed with suspicion and potential violence⁴.

Since conceptual metaphors can construct meanings and divisions, it is important that these metaphors are recognized so they can be altered. Hernandez (2022) points out that the framework for discussions of park spaces and conservation are inadequate, because they are so heavily reliant on eurocentric ideologies and thus are not sufficient for integrating Indigenous notions of stewardship. These differing ideologies are reflected even at the linguistic level; in many Indigenous languages, for instance, objects are described in animate terms that in English and related languages would be described as inanimate (in Potawatomi, for instance; see Kimmerer, 2013 for an example), and in other cases Indigenous languages are verb-based, focusing on relationships between a thing, whereas English and related languages are noun-based and predicated on ownership (in Cree, for instance; see McMahon et al. 2019 for an example). Although it is important that the conceptual metaphors governing space construction be altered, it is increasingly difficult to do so given the rapidity of media spread with digitized representations.

⁴ There are many efforts to change this, however; interested readers should see the activism of Corina Newsome, who, in the wake of the 2020 incident in Central Park where a birdwatcher was threatened on the basis of being Black, helped launch Black Birders' Week to advocate for representation of Black Americans in outdoor spaces.

1.2.5 Heritage sites and narratives

Linguistic landscapes are significant because these indicate what cultures, histories, and languages are valued through their visibility. These built forms also reify certain values, shaping habits and social action within space; these forms thus constitute “a living history of cultural meanings and intentions” (Low, 1993, p. 78). Place names, linguistic signs, and other semiotic symbols mark certain events, people, and community histories, imbuing places with particular values that can be recalled in social interaction (Basso, 1996; see also Modan, 2007). Although sometimes these values are explicit (such as naming sites after historic figures, or memorials to particular events), often there are implicit values communicated and reinforced in the language used to describe a place (such as the conceptual metaphor of conservation as war).

The ascription of value onto spaces has been noted in toponymic research; Mark et al. (2011) for instance, notes the different types of landforms named in different languages. European colonizers of North America tended to name mountains, while leaving lowlands nameless. The changing of place names via colonization in the North American context added new layers of meaning to a space, creating “visible evidence of the colonizer...a steady Europeanization of the landscape” (Raczak, 2010, p. 266). The connection between renaming, colonization, and social upheaval is apparent across North America. Cowell (2004) chronicles how renaming constituted a key strategy of the Colorado Geographic Society as they sought to conserve the “natural” spaces of the state, appropriating Arapaho names of both sacred and everyday locations, at times renaming and at times moving Arapaho names from one mountaintop to another, without reference or connection to the meanings of the names being moved. As in the Canadian context chronicled by the contributors to Baldwin et al.’s (2010)

edited collection, in the United States, colonial renaming practices became masked in the modern heritage tourism industry, which deals in both human and “natural” histories to construct spaces.

The added layer of meaning through renaming becomes a mechanism of social action through its manifestation in the physical linguistic landscape, naturalizing for visitors the colonial process of renaming in tourist spaces. Jaworski and Pritchard (2005) describe the impact of language on landscape as, “mak[ing] manifest our subject positions, allegiances and patterns of power and dominance” (127). Particularly in the context of “natural” spaces such as national parks, the symbolic use of language and other semiotic resources translates historically specific events and structures into time-ambiguous references to nature. Sandilands (2010) in her work in Canada demonstrates how the obscuring of history has accelerated recently, as parks are portrayed as ecologically significant natural spaces, rather than culturally or historically human spaces. The naturalization of colonialism is furthered by park signs, which construct a clear divide between “then” and “now,” indicating that the displacement of the original inhabitants of the area was not only inevitable, but beneficial (Sandilands, 2010). Linguistic landscaping in this context is a form of erasure, dehistoricizing the park and thereby delegitimizing claims to and uses of the space.

In the modern and historic context of national and other parks, a key conceptual metaphor used in excluding Indigenous people and other minoritized groups is of *conservation as war*. This metaphor focuses on the “natural” heritage of land as an aesthetic shared resource, which is both owned by (European, male, cisgender, able-bodied) humans, as well as in need of protection from (all) humans. In this section, I describe predominant metaphors of

conservation in a US context, as well as Indigenous understandings of stewardship that can provide a model for altering these metaphors.

Although in a western context conservation is a scientific field implied to be objective, it is rooted in particular ideologies, uses certain conceptual metaphors, and obscures Indigenous understandings of stewardship. In the context of national parks as sites of conservation, a war metaphor is used to describe the protection of valuable native species and combatting of nonnative invasive species, as well as human encroachment; this has been called the *fortress model* of conservation (Stevens, 2014). The fortress model relies on a binary between wilderness and civilization, natural and human landscapes, in which the conserved spaces must be guarded from human civilization in order to remain pristine and natural (Thornton, 2014). Often these lands are not actually uninhabited, instead being the homes of Indigenous and other people (Hernandez, 2022; Sandilands, 2010). This concept of conservation is culturally-bound in the western context, “created as a result of settlers overexploiting Indigenous lands, natural resources, and depleting entire ecosystems...Conservation did not exist precolonization” (Hernandez, 2022, p. 72). Conservation as a science and field helped justify the separation between humans and “nature” as well as the removal of Indigenous people from their homes in the 19th and 20th centuries.

Conservation is one system of stewardship that is historically tied to cultural erasure and physical removal of Indigenous peoples, which is constructed by and continues to rely on conceptual metaphors of war. In a parks context, however, this fact is often obscured because western conservation is the only model described by signs or other tourist media, and the

presence of Indigenous populations is deliberately obscured from the space in favor of constructing a tourist landscape (Colchester, 2004). Thornton (2014), for instance, describes the “cleansing and reenchantment” of Glacier Bay in Alaska as a site of natural preservation, which came at the expense of the cultural erasure of the Tlingits, who were removed and/or historicized within the space. Although many miles apart, this process of erasure of Indigenous peoples in favor of constructing the land as a “pristine” wilderness, open to pleasure-seekers, is the exact same as that documented by Grimwood et al. (2017) in Canada, and in the US in this dissertation (see Chapter 4). Imagery and descriptions of Indigenous populations are homogenized and historicized, and language positions them as past occupants, not current land/rights-holders, naturalizing a specific idea of North American “wilderness” at the expense of human occupants.

The nuanced problems with relying only on the western conservation model in the context of environmental science is complex and outside the scope of this dissertation. However, I will take a moment here to define this problem in terms of how it represents and constructs space within the linguistic landscape, particularly according to Hernandez’s (2022) definition of *ecocolonialism*. As aforementioned, western conservation relies on a binary between people and land; although humans can have a positive influence on ecosystems, they are still essentially separate, either helping or hurting. This idea of separation traces back to colonization, which still influences how we interact with our environment in the US:

Settler colonialism introduced ideologies and beliefs that nature is meant to provide us resources, to meet our needs...Indigenous peoples know that Western way of thought has also taught us that we are separate from nature. Nature is viewed for its value,

whether it is economic, or for its beauty, a beauty that is rooted in the Western notion of pristine wilderness. However, both values that we continue to place on nature and its resources continue to separate us from it. (p. 30-31)

These values are reinforced by tourist media, such as signs, trail maps, and brochures, which describe park spaces and their value for visitors. Indigenous communities and identities are jeopardized by ecocolonialism, because they are too often not given a voice in conservation policies that impact their relationships with land. Hernandez further points out that ecocolonialism is a feedback loop; the more it persists, the more deeply entrenched it is and the harder it is to change. Part of this feedback loop is the way ecocolonial concepts are represented, often unproblematically, to a broad audience via tourist media.

Some readers will point out that there are currently co-management and Indigenous land management policies in effect (for an example, see Zotigh, 2020). Although there have been some efforts to include Indigenous people in conservation practices and park management, in the US and elsewhere, we need to be careful when talking about *positive change*, because how this is defined depends greatly on the reference point. We should not be focusing here on improvement since the “bad old days” (Sandlos, 2014, p. 144), when ecocolonialism was introduced and took effect, but instead on how much these policies have been decolonized according to current standards, such as those set by the Indigenous Peoples’ Declaration to the Worlds Parks Congress (see Stevens, 2014). Change also needs to focus on system-level change, rather than at the individual level of particular park sites; Sandlos (2014) and Hernandez (2022) both point out how, although Indigenous people are included in conservations discussions, the boards and policies that carry out conservation practices are so

reliant on western ideologies of conservation that any meaningful incorporation of Indigenous knowledge is very difficult. These contexts are not sufficient because within a western scientific model, Indigenous knowledge is not considered equal to western science (Hernandez, 2022). It is worth pointing out that while Sandlos (2014) is working in an Australian context and Hernandez (2022) in North and South American contexts, their critiques are essentially the same.

Although systems-level change in conservation policy is not a particularly realistic goal for a dissertation, one system of particular relevance here that is part of this feedback loop of ecocolonialism is the language used to talk about conservation. Lakoff and Johnson (2003) have described how changes to metaphorical concepts can alter reality. For instance, in the colonial context, western European immigrants introduced the metaphor that “time is money” to many cultures, altering ideas about productivity (Lakoff & Johnson, 2003). Metaphors of land stewardship from Indigenous perspectives already exist, but are underutilized in conservation contexts. Kimmerer (2013) offers one example of the “Honorable Harvest,” which is based on kinship between humans and non-humans: “When you regard those non-human persons as kinfolk, another set of harvesting regulations extends beyond bag limits and legal seasons” (p. 183). Kimmerer (2013) and Hernandez (2022) both offer new metaphors for talking about nonnative species; Hernandez uses the term *displaced relatives* rather than *invasive*, for instance.

These metaphors of kinship, like conceptual metaphors of the English language, are embedded at the most basic linguistic level. Kimmerer provides the example of the Mohawk and Potawatomi words for cattail: “in Potawatomi, the word means “we wrap the baby in it”; in

Mohawk, it means that the cattail wraps humans in her gifts, as if *we were her babies*” (p. 238). These alternative metaphors are not merely linguistic shifts; there is a great deal of evidence for the positive results in terms of biodiversity and sustainability of Indigenous stewardship models (Hernandez, 2022; Stevens, 2014). Historically, too, Indigenous understandings of human relationships with land are far more the norm than the current western ecocolonialism of the North American context (Kimmerer, 2013). At the very least, these models of stewardship, in which the conceptual metaphor might be *stewardship is kinship* provides a legitimate alternative and addition to the western metaphor of *conservation is war* typically portrayed by park signs. Knowledge becomes obscured or lost when linguistic landscaping leads to a singular and simplistic portrayal of spaces and human relationships with them. These concepts will be returned to in Chapters 4 and 5.

1.2.6 Digital mapping

Digital media create further avenues for conceptual metaphors, along with the ideologies and values they communicate, to spread, which impacts how places are constructed through representation. In this section, I address the socially situated nature of emplaced augmented reality (AR) representations, as well as ethical considerations for AR design and its potential for positive and negative representations. I view AR as a digitally emplaced archive, which constructs landscapes in particular ways that sometimes reify, and sometimes counteract, the physically constructed landscape. In this section, I focus in particular on AR media as it represents heritage tourism spaces and relationships between people and place.

While the colonial mapping, or re-mapping, of spaces has been thoroughly researched in linguistic landscapes literature, the use of digital mapping tools in forwarding or erasing particular ideologies and languages has only recently been acknowledged. Hunt and Stevenson (2017) point out that despite the use of digital mapping to reproduce colonial relations, “techno-utopian accounts about the liberatory potential of the digital remain prevalent” (384). Similar to traditional (pre-digital) mapping, digital colonization relies on “flattened spaces that [are] mapped and claimed” in ways that reinforce the values of particular users (LaPenseé, p. 70). These values and ideologies are hidden behind screens, however, in the people and digital code constructing the maps. Graham (2009), investigating the codes behind digital mapping projects, proposes that digital mapping mirrors colonial mapping, in that “ranking and ordering systems...are based in the ways that the creators of the virtual dimension assign importance to place in the physical world” (433). Hidden in this way, digital mapping can not only flatten spaces—that is, narrow their representation to a specific cultural group in a specific time by obscuring other cultures and histories—it also reifies the cultural structures of western colonial assumptions (Cowell, 2004; Hunt & Stevenson, 2017; Malinowski, 2010).

Within digital landscapes, layered spaces may become spatially and temporally flattened, as homogenized content is targeted to particular interactants in a space. Geotagged content targeted to interactants on websites such as Google, including reviews, recommendations, and other information, contributes to this flattening by making information appear devoid of historical context. Graham et al. (2012) confirm this in their research on interactions of participants in a space with Google reviews: “The net effect is a flattening of the temporal dimension so that all relevant information is presented in the here and now” (p. 472).

Research on interactive media, including Google reviews, but also the increasing number of tourism and mobile augmented reality gaming applications, illustrates that the digital layer impact interactants' practices and habits within physical spaces (Freedman, 2015; Graham et al., 2012). These technologies forward particular ideologies and implicit values and meanings related to particular places, including who these places are for, what the appropriate uses include, and who and what is excluded and/or erased.

This is particularly true since digital representations, similar to many physical ones, are typically created by a small number of individuals in positions of power over the digital content, whose implicit biases are then projected onto physical spaces through these digital means (Graham et al., 2012). The creation and mediation of digital mapping technologies allow dominant ideologies to remain powerful, "rooted in material force, historical sedimentation, and contested social relations" (Hunt & Stevenson 2017, p. 373). In mediating the uses of place, augmented reality technologies construct implicit values and meanings for particular places, at times perpetuating the physical linguistic landscapes of these places, but sometimes leading to new, unique, or even transgressive uses of places. Although AR as a technology has been defined by Azuma (1997), the definition of AR that I will use here focuses on the function of AR to bring together material and virtual representations, mediated by the digital code, and influencing how individuals experience and interact with the world (for a more comprehensive definition of the social implications of AR, see Graham et al., 2012). Augmented reality includes digital mapping projects such as Google's *Street View*, tourism focused software like *Gaia GPS* and local guided tour applications, games such as those by Niantic and Foursquare Labs, site-specific review platforms, and many more (Davies & Innocent, 2017; Elwood & Mitchel, 2015;

Saker & Frith, 2019; Sicart, 2017). In all these cases, augmented reality serves as a digital overlay of space, adding layers of meaning alongside physical layers, and mediating the use and meaning of space.

Although augmented reality has gained notoriety in the last decade, the issues of equity of representation in AR mapping projects is not new. AR technologies impact representations and conceptions of landscape, and scholarly understandings of space can be advanced by investigating these digital representations (Marques et al., 2019; McMahon et al., 2019). This is because AR technology as a way of experiencing and representing spaces has increased rapidly; even in “wilderness” park spaces, Marques et al. (2019) point out that information is communicated more and more through digital means, resulting in representations of landscape that are “a hybrid of real and digital entities” (p. 194). In tourist spaces like parks, which are the focus here, AR technology has both the ethical challenges of traditional park representations like signs, brochures, and flyers, as well as challenges related to digital ethics. For instance, for ethical digital representations, developers and researchers need to consider data access, storage, and security (McMahon et al., 2019). As already noted, many parks in a North American context are already complicit in the erasure of Indigenous identity and history from the space; AR, whether representing these spaces as part of park management or from the outside, runs the risk of reiterating this erasure if it mimics physical representation.

As a media that collects and preserves represented items for future access, AR can be understood as a digitally emplaced archive. Unlike traditional archives, which take items and records to be housed in a central location, AR has the ability to keep represented items in place, at least within the digital layer, because it does not have the constraints of physical

preservation. This technology still faces the challenges of traditional archiving methods in its ethical implications, however; Gottlieb (2018), in exploring both traditional and AR archives in Australia, notes the role of recordkeeping and archives in colonialism in displacing and fragmenting stolen Indigenous knowledge. Even with digital archives, this continues to be a concern with how cultural artifacts are represented. Gottlieb (2018) proposes that any ethical AR design that seeks to represent a particular culture needs to engage in co-creative, reconciling research that engages those being represented as partners, in order to develop appropriate representation for different subject matter with different community members. Digital media face new ethical challenges related to access, particularly when engaging with minoritized communities, who should be given rights to how their knowledge and culture are represented, and to what audiences.

AR faces challenges unique to its digitized content and platform. Christen et al. (2017), for instance, documented their process of constructing an appropriate AR platform for the Warumungu community in Australia, due to the lack of available platforms meeting their needs. These needs included, “cultural protocol driven metadata fields, differential user access based on cultural and social relationships, and functionality to include layered narratives at the item level” (p. 1). They further noted that these needs were shared by other minoritized communities, and that others had additional needs related to privacy of content uploaders, kin-based networks systems, and differentiation between commercial and internal content. The commonalities, however, were the need for “flexible cultural protocols to manage the distribution, circulation, and reproduction of their cultural heritage” (Christen et al., 2017, p. 5). Their discovery, that existing commercial AR platforms were not sufficient for representing

Indigenous, or other minoritized communities, has been shared by other researchers (McMahon et al., 2019; Sieck & Zaman, 2017). Sieck and Zaman (2017) point out that the reason for this may be that most AR platforms were developed in western contexts, which cannot be sufficient for all cultural contexts. In response, McMahon et al. (2019) propose the need for researchers and developers of AR to develop decolonized archival models for AR platforms that challenge the traditional settler-colonial values embedded in many of these platforms.

Despite these challenges, AR still holds potential for constructing ethical representations of landscapes (Canciani et al., 2016; Gottlieb, 2018; Marques et al., 2019; McMahon et al., 2019). It enables site-specific archive building, creates opportunities for interaction between visitors and content, and enables users and communities to construct spaces themselves through representation. Although there are models of ethical AR design, these are primarily related to small-scale projects, and are less evident in larger commercial AR platforms. However, the widespread and increasing use of these platforms means that research still needs to address how they construct landscapes.

1.3 Research Questions

For linguistics landscape research it is important, moving forward, to meld understandings of the physical with the digital – to understand the space as it exists in the material world in order to understand the semiotic effects of its layering in augmented reality. It is important to remember, however, that places are never singular or stable. Rather, they are layered by differing ideologies, narratives, and images, and are experienced differently by different people,

as well as the same individual engaged in different activities, or at different times. Some of the most significant forms of layering for my research include the commodification of spaces through tourist marketing, digital mapping projects, and historicizing narratives.

To address these areas, including the semiotic layering of digital and physical representations, the linguistic landscaping of U.S park spaces, and the linguistic production of heritage tourist sites, my research is guided by the following questions:

1. What are the relationships between representations in digital and physical space, and what are the consequences for the social meaning and intended use of spaces?
2. In what ways do the digitally and physically emplaced semiotics of heritage tourism construct narratives of belonging and exclusion in outdoor recreation spaces?

In answering these research questions, I bring together understandings of physical and digital representation through the concept of semiotic layering, as well as discussions of tourist landscaping from sociolinguistics, human geography, Indigenous rhetorics, media studies and geosemiotics. I do so in the context of United States park spaces, including city parks, natural preserves, state parks, and a national park. In this section I outline the key contributions of this research to scholarship in sociolinguistics.

Sociolinguistic studies of tourism have investigated the production of experience through repetitive actions, images, and linguistic fragments emphasized in semiotic representations of tourist sites. This production is discursive in nature, producing space through the positioning of self and others as different. I connect this to the linguistic commodification process (Johnstone, 2009), which in the context of tourism can lead local linguistic practices to become simplified and detached from their original meanings. Despite this importance,

Thurlow and Jaworski (2010) further point out that studies of language in tourism were “noticeable by their absence” (10). The whole semiotic landscape, constructed of multiple layers, stages the site, subsequently framing and mediating tourists’ movements and interpretations of the site.

My work builds on previous research on the sociolinguistics of tourism by bringing together understandings of both digital and physical semiotic layers. Acknowledging the role of digitized representations alongside physical is increasingly important in tourism research as AR technology becomes more advanced and prevalent. Although researchers in human geography have described how the annotating function of AR constructs overlays of place with new and multiple meanings (Graham & Zook, 2013; Graham 2009), there has yet to be much attention to this area in LL research. Space as it is experienced today is a blend of mediums, layered with social uses, cultural meanings, and historic narratives, and it is important to investigate these multiple layers in the semiotic construction of space.

My work also demonstrates the significance of engaging with the narratives of park spaces as sites of tourism and linguistic landscaping. In doing so, I draw on both the work of linguists (Sandilands, 2014), as well as Indigenous rhetorics scholars investigating park space representation and governance in the US context (Colchester, 2004; Hernandez, 2022; Stevens, 2014). The spaces I examined were all socially significant as part of efforts in the US to make safe and accessible outdoor spaces, even within urban areas; all sites were free to enter, and all were marketed towards a variety of visitors. Their representation of the people and purposes of the space, however, was homogenized and exclusive, even within the digital representations. Digital representations have potential for social commentary, but this was rarely a reality; it

was much more common for digital representations to replicate and reify existing narratives and inequities. Even if physical representations of a space are altered, digital representations investigated in this project did not reflect changes. It is important to be aware of multiple layers of representation so that attempted changes to representation can be made across multiple layers, therefore impacting more visitors' experiences of spaces.

Within the sociolinguistics of tourism and linguistic landscaping research, my work also extends conceptions of outdoor recreational spaces by examining multiple layers of representation. Both of these areas of research have acknowledged biases towards urban spaces. However, more research in these areas is significant because the commodification of certain spaces as "natural" and "rural" has historically been a means of violence towards minoritized populations when tourist industries seek to make spaces available for a market of (white) wilderness seekers (Finney, 2014; Hernandez, 2022; O'Brien, 2015; Stevens, 2014). The commodification of spaces on the basis of their "wilderness" has historically been a political practice, accomplished through (re)mapping and (re)naming of space; it continues today as a more covert practice of redefining the value and purpose of spaces, through both physical and digital representations (Graham, 2009; Rose, 1994). As Graham (2009) puts it, "representations of place always both constitute and legitimate power relations" (425). In the context of outdoor tourism, for instance, spaces can be redefined as a "wilderness," and represented as natural to particular histories and heritages, thus delegitimizing other claims to and conceptions of the space (Hernandez, 2022; Kimmerer, 2013; Sandilands 2010).

Linguistic commodification and mapping are part of this process of erasure in park spaces, and deserve more attention in LL research. Research has demonstrated the prominence

of dominant ideologies with regards to language, imagery, and symbolism within the constructed linguistic landscape (Blommaert & Maly, 2014). Researchers of these constructed LLs need to be careful not to reify these hegemonic narratives by documenting only what *is* there, without acknowledging who and what is erased or obscured. In my context, US park spaces, this means not reifying eurocentric histories of US heritage and natural sites by acknowledging the histories of Indigenous peoples, as well as drawing from current Indigenous scholarship that tells the stories that are not presented within the physical or digital linguistic landscapes. Recognizing those histories, ideologies, and people who are erased through the LL represents a significant expansion of this area of research.

In doing so, my research aligns with the social turn of LL research, particularly Blommaert and Maly's (2014) recommendations for ethnographic linguistic landscape analysis (ELLA). An ELLA approach is a methodological extension of LL research, which investigates the social construction of place through the emplacement of particular social groups and ideologies within physical representations of space. Blommaert and Maly (2014) propose that researchers account for more than simply the physical representations, but also the particular histories, ideologies, and contexts the constructed landscape relies on and reifies. I do so by examining the history of US park spaces, including what and whose ideologies and histories are erased from the constructed LL, along with what ideologies and histories are reified. I also draw into this approach the sociolinguistic conceptions of language ideology and enregisterment to investigate how associations between certain ideologies and places are socially constructed through semiotic representations in the LL, which uses language and symbols to legitimate place use and ownership. In aligning with the ELLA approach, I view the signs and symbols that

make up a linguistic landscape as indicative of social, cultural, and historic narratives of the area, and in particular, of those in power within the area. These signs and symbols both construct and reify narratives of place through promoting, and sometimes enforcing, certain language ideologies, histories, and cultural iconography.

1.4 Terminology

This dissertation also contributes several key concepts to linguistic landscaping research, which I outline here. Although most of these terms are defined elsewhere in context, I bring together the central terms, the most ideologically loaded terms, and those debated by scholars in various fields, in this section so readers can refer back to the definitions throughout. I make clear why I chose particular terms and the meaning I intend by using it in the context of this research.

Linguistic Landscaping: I use the terms *landscaping* or *linguistic landscaping* rather than *landscape* or *linguistic landscape* to acknowledge and call attention to the agents and agentive process behind what we see in a landscape. I do refer to *linguistic landscape* or LL when describing the early form of the research area in sociolinguistics, however.

Emplaced/Emplacement: Semiotic signs are *emplaced* when they are purposefully placed to index something within a space, whether digitally or physically. This might include, for example, graffiti, government signs, and advertising messages, but does not include an accidentally dropped flyer. Digital representations can also be emplaced, if they are purposefully connected to particular sites.

Semiotic layering: I use the term *layers* or *semiotic layering* to describe the relationship between different representations of place. The use of *layers*, *layering*, and *overlays* is common across disciplinary research on language and place that describes the multiple levels of semiotics that construct space (see, for example, Hernandez (2022) on ecocolonialism, Christen et al. (2017) on digital representation of Indigenous knowledge, or Gendelman & Aiello (2010) and Thurlow & Jaworski (2014) on tourist facades). Although not always using the term *layers*, LL research and landscape studies more broadly have already engaged with the idea of the constructed landscape as a space layered with multiple and potentially conflicting representations. These are not always termed layers in the research, but I will use this term throughout to point out the simultaneity and the relationships between different conceptions of spaces. It is important to note, too, that this term is flawed; layers might imply that these are fixed, discrete elements of representation, but this is not the case. The layers of landscape are part of an ongoing, dynamic relationship. The boundaries between layers are blurry, and they interact by reinforcing, amplifying, or contradicting the meaning constructed for those who view them. In this project, I explore the relationality between the physical and digital, as well as between representation of different heritages and knowledge systems.

Space-time flattening: The methodological lens of this project is *space-time flattening*, the idea that dynamic physical sites become flattened and sanitized through digital media representation (see Westenhoff & Soblo, 2022). This is a methodological extension of Massey's time-space compression, the idea from human geography that through technological advancements (such as in transportation), space and time shrink, or become compressed, as geographic points around the world become more connected and appear closer together than

in the past. Outside the context of augmented reality, which we discussed in our article, the *flattening* of landscapes can be seen in the signs and symbols of physical representation, as the histories and heritages of spaces are narrowed to portray only specific cultural groups in specific times, while erasing of all others.

Indigenous, Native American: I use the terms Indigenous in this dissertation to describe Indigenous people more generally, and Native American to describe the Indigenous people of North America specifically. When referring to specific Tribal nations, I use specific Tribal names. I use the UN definition of indigeneity as: “self-identification; historical continuity with ancestors who inhabited their territory prior to conquest, colonialism, or the establishment of the present boundaries of the states; distinctive identity and culture, which may include their own cultural, social, political, and economic institutions; social, political, and economic marginalization by wider society; and acceptance as Indigenous peoples by other peoples in the global Indigenous peoples movement” (Stevens, 2014, p. 16).

Immigrant, Settler: Media, including the park signs studied for this project, tend to use the word “settler” to refer to European arrivals pre-1900s. This term can often naturalize their occupation of North America, and additionally sets European immigrants apart from immigrants of other nations. The term “settler” in research is generally used more critically, but often constructs a binary between Indigenous and European (or others in other contexts), a binary which does not necessarily hold up, for instance for mixed race individuals (Faulkhead, 2017). I want to avoid constructing binaries, so I use the word “immigrant” rather than “settler” as a generic term to refer to newly arrived Europeans in North America. However, I do use the terms settler and settler-colonialism to refer to the ongoing process and structure of

colonialism which privileges European-American immigrants and descendants (Kauanui, 2016), as well as to refer to particular individuals who contribute to this system in specific ways.

Histories, Heritages: To describe the human past of the sites in this project, I use the plural “histories” or “heritages,” or refer to a specific history or heritage, rather than using the more common singular nonspecific of the words. This is because histories and heritages are always multiple, with many layered at once onto different spaces.

1.5 You are here

The concepts and topics of this dissertation are complex and multiple, so to orient the reader each chapter will end with a section similar to this one, which indicates the concepts covered so far, those still to come, and the larger connections and themes between chapters.

Chapter 1 has covered my own positionality with relation to the dissertation research, how the project is situated within linguistic landscapes research, and its significance within the field of sociolinguistics. Additionally, I drew connections between sociolinguistics research on location as a factor in linguistic variation, representations of people and places, digital mapping, and the sociolinguistics of tourism. This chapter’s primary focus is how linguistic landscaping research can account for the dynamic, multiple constructions of space through both digital and physical layers of semiotic representation, as well as how these representations impact the construction of spaces through particular lenses.

In Chapter 2, I situate my research as part of the interdisciplinary theory behind the use of photo-based methods in landscape research. I argue that linguistic landscaping (LL) research as a whole is strengthened by engaging with the historic interdisciplinarity of landscape studies.

I also describe in greater detail the methodological lens of analysis, *space-time flattening*, which calls attention to the ongoing and agentive process of linguistic landscaping and the static digital representations of space that obscure this process. One of the mechanisms of this digital “stilling” of representation is corporate mediation, which I introduce alongside an overview of the platform for digital data collection, *Niantic’s Pokémon GO*. Next, I situate each of the six data sites within a local and historic context. Finally, I introduce the methods of data collection and analysis, and close with an explanation of how these methods inform the structures of Chapters 3 and 4.

In Chapter 3, I answer the first research question by examining the relationships between representations in AR and physical space at the data sites. The chapter provides an overview of how digital representations can amplify, erase, or construct new social meanings and intended uses of spaces. The chapter is organized according to three data categories introduced in Chapter 2, which together form what I call the first level of visitor interaction with the sites; in other words, the things that structure a visitor’s first impression of and/or encounter with a space. These data categories begin to characterize a site for visitors, likely before they engage with any detailed information or text.

In Chapter 4, I answer the second research question by examining the language of educational and commemorative signs at the six data sites, with a particular focus on designated heritage sites. The chapter provides an overview of the ways digital and physical semiotics construct narratives of belonging and exclusion in outdoor recreational spaces and designated heritage sites. The chapter is organized according to four narrative categories, which within these spaces construct a version of the parks that centers European-American

histories at the expense of all others. These narrative categories do so by aligning the parks with particular ideologies, organizations, and historic figures, as well as naturalizing the eurocentric histories presented for visitors.

In Chapter 5, the final chapter, I address the significance of these results for linguistic landscaping research and AR representation, and propose a model for AR tourism design in park spaces going forward. There are many models of a more ethical and accurate design for AR representation from small-scale AR developers focusing on educational and historic content. These models can be used by large AR developers, and by their users, to (re)construct their means of site representation, sourcing, and monitoring. The widespread use of AR for recreation and tourism means that it will take more than transformation of physical representations, in park spaces or any other, to alter hegemonic representations of space for a tourist audience.

Chapter 2

In the previous chapter I argued that linguistic landscaping research needs to account for the multiple constructions of space through both digital and physical layers of semiotic representation. This project does so in the context of outdoor tourism in the United States, including recreational mobile gaming and heritage tourism. Several lines of interdisciplinary research on landscape inform this work, particularly linguistic landscapes as an area of sociolinguistics. As described in Chapter 1, research on LL around the year 2010 began a significant shift towards qualitative, ethnographic methodologies, exemplified for instance by the edited collections of Shohamy et al. (2010), Mark et al. (2011), and Shohamy and Gorter (2009). What unifies this body of work is a shared emphasis on the agentive nature of linguistic landscapes: both the actors behind the languaged landscape, as well as the impact of that language on visitors. In other words, the language of landscape is not static or value-free, but rather “participate(s) in the melding of the wider social and cultural reality” (Shohamy et al., 2010, xiii). In this chapter, I situate my research as part of the interdisciplinary theory behind the use of photography in landscape research. I then describe the local and historical context of each research site, the methods of data collection, and methods of data analysis. Before this, however, I describe the methodological lens of space-time flattening.

My work uses the lens of space-time flattening (Westenhoff & Soblo, 2022) to call attention to the ongoing process of linguistic landscaping and conflicting static representations of space. We define space-time flattening in terms of AR landscapes, arguing that these landscapes “do not (re)present the complex narrative that exists in the physical space [but] rather...present a flattened and sanitized narrative of place” (article in press). Space-time

flattening is one mechanism through which landscaping becomes landscape; how, through narrow representations, it goes from being something agentively constructed to being perceived as agentless. In the context of this project, space-time flattening can be seen even without looking at AR layers of representation, as physical representations of space also narrow the histories of spaces to specific cultural groups in a specific time by obscuring other cultures and histories. This can be seen, for instance, in the narrowing of sites of heritage tourism sites to focus on European-Americans at the expense of all others. My research investigates this process in two ways. First, I apply the concept of space-time flattening to the layered landscapes constructed by mobile digital technology and describe how digitized representations flatten physical representations, specifically in outdoor recreation spaces. Second, I describe the erasure of histories and heritages at outdoor heritage site representations in US parks, particularly those outside the eurocentric focus of digital and physical representations (see Ch1 p. 19 for a discussion of erasure). These two contexts will be described in detail in the results chapters; in this chapter, I describe the methods and methodology of my research.

2.1 Photo-based methods

Photography is used in landscape research in two overarching ways: 1) through analyzing existing photographs as a kind of collective archive, and 2) a researcher taking photographs in order to conduct a close visual analysis of a particular thing or place at a particular point in time. I do both, the first through collecting screenshots of images uploaded to the popular AR platform *Niantic's* mobile games by users, and second by walking the same landscapes these

screenshots derive from to conduct my own photographic analysis of the spaces. These methods are derived from particular methodologies, stemming primarily from visual analysis research in linguistic landscaping, tourism studies, and human geography, which I outline in this section.

Photography has been both a common method of data collection and subject of data analysis in a great deal of research focused on landscape across multiple disciplines. Taking a photo-based approach in LL research benefits from engaging with this interdisciplinary history. Landscape researchers have used photography to document signs and other semiotics within their data sites, compiling archives of data that can be analyzed later. Increasingly, researchers have also used participatory photography methods, in which research participants and local partners are provided with equipment to document their firsthand experiences of spaces, which the researcher(s) can then analyze (Alam et al. 2018). Finally, photography has been a significant source of data in the form of existing archives. For instance, landscape researchers in geography and environmental sciences have used archived photos for comparative studies to see the alterations to landscapes and resources over time (Meyers & Young, 2017).

Photography has been significant to other areas of research as well, of course, but landscape-focused studies are of most relevance here, particularly those situated in the semiotics of tourism. In this section, I focus on how photo-based methods contribute to a view of landscape itself as an archive; the analytic lens and positionality of the researcher; how researchers have constructed ongoing archives of landscape semiotics via repeat photography and ground truthing; and finally how landscapes have been constructed and researched via tourist representations.

2.1.1 Photography as medium

In linguistic landscaping research, photo-based methods have been described simplistically even by some researchers who use them. For instance, Gorter (2012) proposed that the use of photography as a primary method of data collection makes LL research a particularly simple and accessible type of research to conduct: “Taking photos of the LL requires hardly any effort and poses no particular difficulties” (in Hélot et al., p. 9). This perspective overlooks that photography, like other qualitative methods of data collection, is both an act of data collection and of analysis—just as an interviewer can skew the responses of their participants through their positionality, conversation style, and the context of the interview, among other factors (Bailey & Cukor-Avila, 1999; Rickford & MacNair-Knox, 1994; Seidman, 2013), so too can a photographer alter their results. The positionality of the photographer/researcher means that certain features will be more salient to them than others; particular angles or times of day might obscure certain details of a site; and what photos they choose to ultimately present as part of their data, just like interviews excerpts, can dramatically alter the analysis, discussion, and conclusions drawn. Nash (2016), in part of his proposal for LL research to strengthen its interdisciplinary ties, responds to Gorter, stating that, “taking such a perspective undermines the seriousness and insight required of an LL scholar or any sociolinguist or landscape student who uses photographic means to interact with and collect data in languaged landscapes” (p. 383). Photography is neither simplistic nor neutral, and treating it as such can be detrimental to the validity of data collection and analysis in a photo-based project. Through engaging with a broader history of photo-based methodologies, not only in research specifically calling itself

“linguistic landscapes,” but also with the longer history of sociolinguistics, of landscape research in geography, as well as visual analysis techniques from geosemiotics, is one way for an LL researcher to consider more seriously the analytic positionality of using photo-based methods.

Photography in tourism is an active, participatory construction of meaning within a space, which can be communicated to and replicated by global audiences, overriding local conceptions of place. This view of photography as constructing meaning is critical to understanding the use of photography in research. Research with photo-based methods can contribute to the construction of archives of temporary landscape features, alterations, or social communications. Viewing research as an opportunity for actively constructing or calling attention to underrepresented social/cultural meanings of landscape has been central to photo-based work on urban art (Christensen & Thor, 2017; Moreau & Alderman, 2011; Pennycook, 2009). This work uses photography to document and analyze how visual semiotics construct particular local meanings in urban communities.

Researchers on the sociolinguistics of tourism have analyzed tourist memorabilia such as postcards, flyers, brochures, and even T-shirts (Johnstone, 2009; Pritchard & Morgan, 2005; Thurlow & Jaworski, 2014). Most relevant to my context are analyses of postcards, as this genre, consisting of an image intended to show a distinctive feature of a location alongside a brief textual description, can simplify and subvert local meanings in favor of meanings targeted to a global audience with recreational purposes for visiting a space. Pritchard and Morgan (2005) have called this phenomenon “postcarding,” by which complex places are reduced to particular interpretations governed by particular groups of people:

Postcards, as a rich cultural reservoir of popular perceptions, play a similar role to tourism promotional material, travelogues and travel writing...in creating discourses of places and peoples. Postcards imagine complicated, evocative places and several tourism scholars have examined the postcard within the discourse of the masculine, colonial gaze, which objectifies, stereotypes and romanticises notions of the exotic Other. (p. 54)

Photography is crucial to the postcarding of spaces, both in its use in traditional media such as postcards, as well as in the increasingly digitized ways of distributing tourist images via social media and other platforms. Pritchard and Morgan (2005) point out that it was the development of photography, and of postcards in particular in 1869, that led to the broad diffusion of prototypical images of popular tourist destinations that rewrote those destinations in terms of what a visitor could, and indeed should, experience and expect (55). One function of these global tourist images, described by Thurlow and Jaworski (2014), is to construct for visitors an idealized image of an area that they feel required to replicate on their own visit to an area (such as themselves, friends, or loved ones “holding up” the Leaning Tower). Today, these images can be spread all the more rapidly due to social media, as well as other digital platforms such as, in my context, mobile AR gaming, which distributes certain photos taken by certain visitors and uses these to represent complex places to a broad audience of recreational gamers.

My research on space-time flattening via tourist representations, both digital and physical, is influenced by the concept of postcarding. Through tourist representations, spaces become flattened as places of consumption, typically by an outsider audience. The genre of postcards, and social function of postcarding, is mimicked by the representations of sites as

they appear in Niantic's AR platform. Users of the AR platforms are able to send each other virtual "gifts," which they acquire by interacting with gaming features at different real-world locations, that include the image of the site as it appears in the AR platform (Image 2.1). As of January 2022, Niantic even revealed a new feature called the "postcard book," which allows users to save the images, like the image from Image 2.1, from in-game gifts in a virtual format. The digital platform mimics both the physical genre features of a postcard, as well as the sociocultural function of postcards as a genre of tourism. The digitized gifts are representations of particular features of a site, which are foregrounded at the expense of other features, and which function to represent those sites as spaces for recreation to an outsider audience, rather than foregrounding local meanings and contexts.

In my context, local place meanings contrast with the digitized representations of AR gaming; the visuals and descriptors used to represent locations in the AR gaming platform are, much like postcards, oriented towards a non-local audience that has a transient or recreational purpose for visiting a site that can obscure local purposes (Hjorth, 2013; Mejia, 2012). Additionally, these digital representations can reify and reinforce existing inequities in the representations of spaces as significant in terms of culture or heritage. Indeed, Niantic lists cultural or historical significance as a factor for players to consider when nominating sites for inclusion; their criteria have not changed since their first game, *Ingress*, began taking crowd-sourced nominations for sites (see Stark, 2015). A consistent issue with their supposedly crowd-sourced sites (see section 2.2.3), however, has been their majority white, male playerbase, which means that a majority of site nominations are represented through a white, male lens. Although mobile casual games like Niantic's games have attracted a broader demographic of

players than have been traditionally thought of as “gamers,” these games and the sites memorialized within them still raise issues of representation, safety, and accessibility for minoritized players of large and varied groups (Blasiola et al., 2016; Tekinbas, 2017). Nominated sites are not problematized and typically use simplified and neutral language in descriptors; one example of this are the differential representations of European immigrant and Native American memorials at the midwest sites in this project, described in chapters 3 and 4. The only site designated to a named Native American is not included digitally, while four sites nearby representing named European immigrants are included digitally (more on this in section 2.1.2).

2.1.2 Photography as method

Landscapes can be digitized in multiple ways, and these digital layers can alter or obscure a site as it would be physically experienced. This is why part of my research method relies on physically walking the data sites, rather than relying on digital research and data collection; this method was informed by two methods from human geography research, ground truthing and repeat photography. Ground truthing, also known as *field validation*, is intended to determine if results acquired digitally are accurate when compared to physical counterparts, particularly in terms of location. In the traditional sense, ground truthing is used by remote sensing work to verify small pieces of data that are a sample of a much larger area being studied (see for instance Abraão et al. 2008 or Lake et al. 2010). It also adds key contextual information gleaned by human researchers to the understanding of a data site. Lake et al. 2010, for instance, emphasize the additional insight and detail that can be gained through having researchers literally on the ground at a data site, as opposed to relying solely on remote data collection

techniques. In that context, ground truthing (or field validation) contrasts data collection literally “on the ground” with remote sensing via satellite GPS data. It is a direct method of data collection, which values the researchers’ assessments of data sites. In my context, ground truthing means walking the landscape to verify the accuracy of online and digitized representations of physical sites—in terms of appearance, location, and also to gain a better sense of the larger context, which is often absent from digitized representations.

Ground truthing techniques were particularly important in my context not only to verify the sites being digitized by the AR platform, but also to compare the physical sites with how those same sites were described online by park tourism websites. At Kankakee State Park, for instance, the online information primarily focused on the space being part of the French-Canadian Heritage Corridor (FCHC), and recorded many memorials to early French settlers as part of the corridor. A single site listed online memorialized a Native American, Chief Shawanasee, as part of the corridor. This was the only site that focused on a named Native American across all six data collection sites. However, upon my visit to Kankakee, I discovered that the memorial was physically separated from the main part of the park by a main road, and furthermore that a visitor would have to embark on a hike through somewhat poorly marked trails to locate it (Image 2.2; see also Figure 4). I did embark on this hike—twice—but was unable to locate the memorial. This is not to say that the memorial does not exist, but it is at least not nearly as accessible as the other memorials listed as part of the FCHC at Kankakee, such as the many memorials focusing on European heritage, all of which were clearly visible along the main greenway through the park, the Kankakee Riverfront Trailway. In this case, reliance on digitized materials—what the park as part of the FCHC claimed was present on site—would have obscured

crucial details with regards to context and disparities between the different locations of onsite memorials.

In addition to ground truthing, which was significant for data collection and analysis in terms of comparing the digitized and physical representations of sites, repeat photography was used to inform data collection and analysis. Repeat photography is a photo-based method by which a researcher first collects previous photos taken at a particular site, then recreates these photos in their own context by matching as exactly as possible the composition of the earlier photo in order to document change over time in a landscape. In this sense, repeat photography has already been significant for uncovering the changing landscapes of US park spaces as tourism has become increasingly common and motorized (Meyers & Young, 2017). In my context, repeat photography was significant as I attempted to replicate as exactly as possible the images used in the digitized AR representation when taking my own photos of the sites. This allows a direct comparison between the features of the site shown in the digitized version, and changes that may have taken place to the physical space since then. Since the digitized images in the AR platform typically rely on a single photo, there can be obvious distinctions in time of year; almost all of the digitized photos at Kankakee and many of those at Indiana Dunes, for instance, show the sites covered by snow, whereas I was collecting data in the summer and the sites were more likely to be overgrown with ivy. At Seven Islands, repeat photography was particularly significant as the park had undergone many changes to the layout of the space and location of various trails and signage, so digitized and physical representations often differed widely. In short, ground truthing was significant for viewing the physical context of sites left out of digitized representations, while repeat photography was significant for comparing the

changes to a physical site between the time of the digitized representation photo and my own data collection.

Whether a researcher relies on their own or on archived photos, closely analyzing their photo-based data is the next step in a photo-based method. When analyzing the visual data of photo-based methods, LL research has incorporated visual analysis techniques from geosemiotics. For instance, Jaworski and Pritchard (2005) point out that specific images symbolically brand products in particular ways: “the background of major cities...is used to imply a cosmopolitan product, the background of the countryside a natural product, the background of mountains a pure product...and so on” (p. 23). Symbolic branding in tourist media is especially important when considering the positionalities of human subjects in visual representations. Scollon and Scollon (2003), for instance, differentiate between the gaze of human subjects in visuals ranging from “the offer” to “the demand.” An offer is given to viewers to see a human subject as object when the image shows a person looking down, away, or even facing away; the opposite is true when a human subject looks out of the image by facing forward and/or with an outward-directed gaze, in effect “demanding” a viewer’s attention (described more in 2.3).

These differential representations are significant in my context due to the different heritages intended to be visually represented by human subjects in educational and historic signage. Differences in the depiction of ethnicity correlated with differences in the physical positioning of human subjects in images. At the historical signs in Indiana Dunes, for instance, while overtly European subjects were often facing towards the viewer, looking out of the image, overtly Native American subjects were facing away, moving away, or looking further into

the image. This was true even when the two groups were depicted as interacting with each other in the same sign (this will be examined more in Chapter 4). Visual analysis of these representations, alongside textual analysis that is more common in sociolinguistics, reveals how semiotic landscapes are constructed by particular sociocultural power structures that trivialize some heritages while centralizing others.

In this section I have shown the importance, moving forward, for LL researchers to engage seriously and critically with photo-based methods and methodologies. My approach to LL research is an interdisciplinary one, which brings into focus the hidden positionalities behind visual representations of space, and is part of an ongoing shift in research on landscape and language that considers more closely the agents behind ongoing place construction. The sociolinguistics of tourism, for instance, views otherwise mundane acts of media and consumption as part of an ongoing construction of the social values and cultural views of particular groups of people at particular times. This focus on text and language as constructing sociocultural groups is a contribution of sociolinguistics to landscape research as a whole. In my context, the text and images of park signage serve to localize particular populations through narratives of historic lives or heritage in a region. The heritage narrative of park signs centralizes European immigrants of the 1800s as the true “locals” of a region by deploying specific descriptions of time as pre- and post- settlement, and by contrast generalizing time and human populations of Native Americans as “pre-settlement” (see section 2.3 and Chapter 4). The AR platform reifies this inequity, by distributing a simplified version of this narrative to a global audience. Locality in this context communicates belonging to or ownership of land; localness is semiotically constructed and leads European-Americans to appear as the historic

owners, via their heritage, of spaces of significance to Native Americans. The next chapters, Chapter 3 and Chapter 4, provide details on this semiotic construction via digital and physical signage.

2.2 Data collection

Data for this project derives from six sites in the United States' southern Appalachian and midwest regions. The six sites are connected through a shared emphasis on outdoor recreation, heritage tourism, and natural preservation. At each site, I conducted a survey of the linguistic landscaping in digital and physical layers through taking photographs and screenshots of emplaced semiotics. For a particular semiotic representation to be included it had to meet the criteria of being a non-mobile, person-made, deliberate communicative act. In being non-mobile, a point could be temporary, such as community flyers attached to kiosks or temporary closure signs. In contrast, I did not include signs such as disposable brochures, trail maps, and other paper objects meant to be carried around an area by visitors. Although these have been significant to LL research on tourism in the past, they did not fit the criteria for this project because my focus was on the deliberate landscaping of emplaced semiotics—although a brochure or trail map might be placed anywhere a person drops it, it would not be deliberately *emplaced* because the placement would not be purposeful or intended to last. Also included in data collection were non-linguistic symbols and structures, as these semiotics communicate social meaning just as much as language.

The types of signs and structures included in data collection are split into five categories, organized based on the functions of the individual sites included and the meanings

communicated to visitors as the items fulfill these functions. Each category is significant because the types of semiotics within it indicate different social and historical meanings for the space, as well as differing in how those meanings are communicated. These categories are also important in the relationship between digital and physical representation, because whether and how accurately a particular category of site moves from physical into digital representation indicates the social significance communicated by particular aspects of a space for the digital user base. In Table 1 (below), I report each of these categories, the descriptive questions that the category can be used to answer about the social meaning being communicated in the space, and finally some examples of what kinds of features were included in each category. Overall these categories are consistent with other linguistic landscaping research that has focused on emplaced semiotics, and are also similar to the definition of “points of interest” that users of the AR platform that I used in data collection are encouraged to map (this will be detailed in section 2.2.3, below). These five categories also divide the two results chapters, with designations, pathways, and aesthetic structures included in Chapter 3, and the more text-heavy educational and commemorative signs included in Chapter 4.

Data was collected primarily during the summer and fall of 2021, as the COVID-19 pandemic was ongoing; for this reason all data collection took place outdoors, without close contact with people. Although there were indoor spaces at most of the sites (such as visitor centers), semiotics emplaced indoors were not included in data collection.

2.2.1 Sites of data collection

The spaces included in this project are connected by a shared focus on outdoor recreation, heritage tourism, and ecological preservation. Three of the sites are located in the United States' midwest region, and three in the southeastern Appalachian region. They are all free to enter (with one partial exception in Beaver Lake). The sites in the midwest tended to be broader in their historical focus, whereas the southeastern sites were more locally focused.

The six sites chosen for this project differ in several key ways, including management structures, institutional settings, size, and geographic region. One park is part of the National Park system (Indiana Dunes), two are part of different state park systems (Seven Islands and Kankakee), and three are under individual land management, including as a natural preserve (Gar Creek), a city park (Lake Louise), and dual management by a birding association and homeowner association (Beaver Lake). This variation in management structure led to a comparison between different styles of mediation for the linguistic landscaping of the sites. The variation in region was also valuable in conducting a cross-regional analysis and comparison of representations.

The variation in the designation, size, and funding also led the sites to be promoted in different ways. The sites in the midwest—Indiana Dunes, Gar Creek, and Kankakee—were larger and offered a wider range of activities, including camping at Indiana Dunes and Kankakee, than the sites in the southeast. Indiana Dunes, as a national park, was by far the largest of the sites of data collection, and contained the most options in terms of outdoor recreation, including guided tours of the park's different ecosystems, camping, hiking and trail running, and beaches with associated activities like boating and diving. By contrast, the entirety of Lake Louise park,

Table 1: Data Collection Categories

Category	Description	Examples
Designations	What is the space? What is it called and how can it be used?	Entrance signs, rule and regulation signs, etc.
Pathways	How is the space meant to be navigated or experienced? Where can and can't visitors go?	Trails, trail markers, directional signs, etc.
Aesthetic Structures	How do non-linguistic structures construct meaningful representations of the space?	Statues, murals, art installations, etc.
Commemorative	What historic and heritages are significant in the space?	Graveyards, donor memorials, historic monuments, etc.
Educational	What kinds of things are significant in the space? What can a visitor learn about within the space?	Educational signs and kiosks

consisting of a loop trail surrounding a small human-made lake, could be seen from a small hill parking lot at the corner of the park.

As these six sites are so varied, the methodology and framework described in this chapter is meant to be valuable to researchers in many conceivable settings. In this section, I provide details on the geography, historical and social context, and accessibility of all sites, beginning with the three sites in the southeast.

2.2.1.1 Southeast Sites

All three sites in the southeast are located near the Appalachian mountain range; two are in western North Carolina (Beaver Lake Bird Sanctuary and Lake Louise Park) and one is in east Tennessee (Seven Islands State Birding Park). The western North Carolina area is a popular destination for outdoor tourism due to its proximity to the Great Smoky Mountains National Park, the Appalachian Trail, and many state parks in the Appalachian mountain range. This context means that people who come to stay in Asheville or Weaverville as tourists are often interested in outdoor recreation, which increases the traffic at both Beaver Lake and Lake Louise. The context in east Tennessee is similar, and Seven Islands emphasizes its proximity to the Great Smoky Mountains by park signage at overlooks, which show visitors the different peaks within that mountain range that they might see on clear days.

The two North Carolina parks are both small city parks, in Asheville and Weaverville respectively. Asheville, NC is one of the many rapidly growing cities of the US southeast, where housing prices have been rising in response to wealthy retirees and urbanites moving to the

area.⁵ It also has a well-developed tourism industry, including outdoor tourism as well as urban art walks and the Biltmore House, the largest home in the US

Weaverville is a suburb of Asheville, which has its own smaller downtown that attracts urban tourists with art fairs and a network of city parks, of which Lake Louise is one. Lake Louise (Figure 1⁶) consists of 15.5 acres next to downtown Weaverville, NC, including two short loop trails around a lake. The upper loop is primarily paved, with some sections that are smoothed dirt and gravel. On one side there is a lower portion of the loop, which is a dirt path that descends to the banks of the lake and a small playground next to the lake. The lower loop is only a half circle; to complete the circle, a visitor would have to return to the upper loop. The park encourages walking and fishing, and in addition to the playground contains exercise equipment, grills, and picnic shelters. The park hosts many community events, such as those related to holidays like Easter or Halloween.

Beaver Lake is just outside downtown Asheville in a wealthy suburb, where it is maintained by a homeowner's association (HOA). Beaver Lake (Figure 2) consists of a main trail circling a manmade lake and a boardwalk through a small wetland within the circumference of this main trail. The bird sanctuary, shown on the left side of Figure 2, is built on an 8-acre marsh that was purchased by a local charter of the Audubon society (the Elisha Mitchell Audubon Society). The land is also partly owned by the Lake View Park Commission, a commission of an adjacent neighborhood across a street from the park (shown at the bottom of Figure 2). The

⁵ Buncombe County (where Asheville and Weaverville are located) housing prices rose by over 10% between 2020 and 2021, and homes sold more quickly on average, according to Redfin real estate brokerage

⁶ All images and figures referenced in this dissertation are in the "Dissertation Image Gallery," a folder attachment to this dissertation. The image gallery is also online in [this](#) shareable folder.

park around Beaver Lake is marketed for walkers and runners; it is free for pedestrians, but dog walkers have to pay a monthly fee to walk dogs there. The bird sanctuary is a more exclusive space, which bans runners and pets. Only walking pedestrians are allowed on the bird sanctuary boardwalk. The bird sanctuary was purchased in 1991 in response to city plans to build a mall on the marsh, where local members of the Audubon society had already been birdwatching. The land easement of Beaver Lake specifies that the land can only be used for natural preservation. The park documents the process of the bird sanctuary's purchase and ownership with signs, and also contains many educational signs about bird migrations, nesting, preservation, and other topics related to birds. Community programs focused on bird watching for children and adults regularly take place there. It is part of the North Carolina birding trail, a collection of parks in the state that emphasize birding tourism.

This designation and the park signs connect Beaver Lake to the larger history of recreational ornithology—bird watching, or *birding* for the more active modern term—in the US, which gained popularity in the 1970s and 80s.⁷ Historically, ornithology has been both egalitarian, welcoming citizen scientists, as well as heavily eurocentric (Brunner, 2017). Early ornithology was predicated on a high degree of mobility, meaning it was a science of the wealthy, and was also predicated on the "discovery" of "exotic" species (Chansigaud, 2009).⁸ Although both Beaver Lake and Seven Islands are positioned within this larger history, neither

⁷ That is to say, gained popularity as a recreational activity, using photography, as opposed to an elite hobby of white men traveling (or paying others to travel) to shoot and collect birds' skins for private collections. Although the new recreational/non-lethal form of birding was taken up by many women, it was still men who dominated professional ornithology, publications, and early leadership positions in professional organizations.

⁸ "Early ornithology" here referring to the aforementioned rich white men shooting as many birds as possible and naming them, and relying on the unacknowledged labor of female family members and native guides.

engage with the problematic nature of ornithology, instead employing western scientific objective descriptions of the activities of preservationists and ornithologists in the area, obscuring the positionality of birding.

On the other side of the Appalachians, Seven Islands (Figure 3) also focuses on birding as both a recreational and scientific activity. The park is located in East Tennessee, 19 miles from downtown Knoxville, and occupies 416 acres along the French Broad River. The park encourages outdoor recreation such as hiking, biking, boating, and birding, as well as hosting research and educational groups, primarily focused on birds or land management practices. The park is a former working farm owned by the Kelly family in the 1900s, whose history on the land is documented by park signs. In 2002, the land was acquired as a wildlife refuge by the Knox County parks and recreation department as well as non-profit interest groups. As a wildlife refuge, the land was maintained as a farm-like habitat, consisting of large open fields surrounded by forest and bordered on one side by the French Broad River. Several large structures related to the Kelly Farm, including a house and two barns, have also been maintained on the property.

In 2013, Seven Islands became a state park, and construction began soon after to increase the accessibility of the space. Previously, Seven Islands had no accessible trails other than the main service road, Kelly Lane, which ran through the park past the three Kelly family structures (see the Kelly Lane Greenway marked in Figure 3). Since becoming a state park, part of the main parking area, as well as the main trail leading into the park, have both been paved, and a new trail consisting of a concrete pedestrian bridge and small loop around an island have been added (the Bobwhite and Island Loop Trails in Figure 3). The park has also added more

informational signs, pamphlets, and programs, mostly related to birds, in the first of the two barns which is next to the parking area, turning this space into a visitor center.

The three sites in the southeastern Appalachians—Beaver Lake, Lake Louise, and Seven Islands—are generally smaller than those in the midwest both in physical space and in the scope of activities and heritages they promote. At Lake Louise in NC, the heritage and community of the town of Weaverville is a focus in addition to outdoor recreation. Though the park is small, it contains multiple memorials and dedications to different members of the community. Beaver Lake is the most exclusive site investigated, being a city park run by an HOA that requires certain populations—dog walkers—to pay to use the park. The exclusive nature of Beaver Lake is also emphasized in the bird sanctuary area; the exclusionary language used, although positioning the bans on use as solely ecological in purpose, brings to mind the exclusionary and eurocentric history of ornithology itself. Though Seven Islands is also marketed as a space for birdwatchers, it is far less overtly exclusionary. The community heritage emphasized at all these sites are tied to specific families, park donors, and community leaders, as opposed to focusing on broader or longer histories. The smaller scope of these spaces means that eurocentric histories are entirely the focus, omitting the presence of other histories important to the area, notably those of Black Americans and Native Americans. The two birding focused parks, in particular, include images of people engaged in preservation activities on many park signs; although ethnicity cannot be determined from skin color, the individuals featured are fairly homogeneous in being pale-skinned. This, along with the western scientific objectivity of much of the sign language, aligns with a Eurocentric and chauvinistic history of ornithology (more on this in Chapter 4)

2.2.1.2 Midwest sites

The three midwest sites emphasize earlier histories than do the southeastern sites. Kankakee and Gar Creek, for instance, are both part of the Kankakee Riverfront Trailway system, which is part of the French-Canadian heritage corridor (FCHC), a historic tourism site spanning the United States and Canada. The FCHC, as the name implies, is intended to highlight the French heritage of the region; this goal is problematic in excluding the heritages of Native Americans in particular. Along the riverfront trailway through both Gar Creek and Kankakee, there are multiple memorials to named European immigrants of the early 1800s, while Native Americans are mentioned only in the broadest of terms. A similar marketing of European heritage takes place at Indiana Dunes, though of the Swedish immigrant community. A commonality between all of these sites is the emphasis on European settler heritage, highlighting the connections between the park space and larger historic communities of European immigrants to the midwestern region. This emphasis makes the corresponding lack of memorialization of Native American histories all the more apparent in the midwest sites; although each of the three midwest sites include some description of Native histories, the inclusion is extremely sparse when compared to the European histories described (more on this in chapters 3 and 4).

Kankakee county, where both Kankakee River State Park⁹ and Gar Creek are located (see Figure 4), takes its name from an Indigenous Miami-Illinois language word roughly translated as “open country.” The land on which these parks is situated was historically the home of many

⁹ I use the park’s full name in this chapter when necessary to distinguish it from the county, river, and greenway system of the same name; elsewhere, I shorten it to “Kankakee.”

groups, including the Peoria, Kaskaskia, Piankashaw, Wea, Miami, Mascoutin, Odawa, Sauk, Mesquaki, Kickapoo, Potawatomi, Ojibwe, and Chickasaw Nations, and the name Kankakee—of the county, river, greenway, and park—reflects this history. Both Kankakee River State Park and Gar Creek, however, are now part of the FCHC, which emphasizes a different history of the space: one of French-Canadian immigration. The emphasis on the French identity of the county can be seen in other place names, such as historic Bourbonnais Village, which, situated within the county, contains many museums, monuments, and other informational features related to French heritage.

The recreational activities promoted at Kankakee River State Park include camping, horseback riding, fishing and boating, as well as walking, running, biking, and hiking. There is also seasonal hunting and a shooting range adjacent to the park. The park occupies over 10 miles along the banks of the Kankakee River and 4000 acres, including a main greenway that runs the length of the riverfront, in the process passing by park management buildings, campgrounds, and heritage sites designated as part of the FCHC (see the Kankakee River Trailway marked in Figure 4). Gar Creek is smaller, at 85 acres, and consists of a few short woodland trails and a main greenway that is part of the Riverfront Trailways system (see the lower left side of Figure 4). Like at Kankakee, heritage sites are concentrated along this main greenway, and emphasize European histories. Visitors to Gar Creek are encouraged to walk, run, or bike the trails, or to ski in winter.

As part of the FCHC, the Kankakee Riverfront Trailway greenway contains many memorials to various aspects of European immigrant communities, including within the park boundaries of Kankakee River State Park and Gar Creek. These memorials tend to focus on

people and places from the 1800s, while dealing only briefly and vaguely with history before 1800. This is consistent with the focus of the FCHC overall, which focuses on French-speaking immigrants to North America spanning the US and Canada; the corridor has already been significant to LL research in the Canadian context (Heller et al., 2014), but has yet to be examined in the US context. Kankakee county became a part of the FCHC in 2015 and is its southern terminus.

In the Kankakee river region, sites designated as part of the FCHC are overwhelmingly related to European immigrants, despite the relatively short role of Europeans in the history of the area. These sites include memorials to specific individuals, as well as mills, town markers, and historic buildings. The town of Rockville, for instance, was a small town in the 1800s where French-speaking immigrants settled, and the land it occupied is now marked by a memorial within Kankakee River State Park. By contrast, mention of Native Americans can be seen more often in the names of campgrounds (such as the Potawatomi Campground). The only memorial to a named Native American is supposedly within the boundaries of Kankakee State Park, the memorial to Chief Shawanasee, but this site is separate from the main area of the park and not very accessible (see the “Chief Shaw Trail,” as it is named on site, marked in Figure 4). Within Gar Creek, the situation is similar, with memorials to named Europeans and European settlements contrasting with the erasure of Native American histories. Digital information from the FCHC tourist site on the Kankakee river region, for instance, terms the French Canadians the “first significant ethnic group” to enter the area (Paul), and names heritage sites specific to European immigrants, such as the “first white settler [of Bourbonnais]” and “father of Kankakee,” who settled in the area in 1832 (Allen, 2000). The FCHC, including the Kankakee

river region where these two parks are located, intends to celebrate French-Canadian heritage and settlement in the area, and it does so at the expense of Native Americans.

These two Illinois parks also emphasize the preservation of historic prairie and riverine ecosystems within the state. For instance, educational signs contain quoted passages from European immigrants who first encountered the prairie ecosystems, positioning the land as a wilderness in the 1800s which is now being preserved. The Illinois state park tourism site calls Kankakee River State Park an “unspoiled setting,” which visitors are able to enjoy recreationally thanks to preservation efforts. Both parks are connected to large efforts within Kankakee county and surrounding counties to “green” the city by creating a network of greenways that connect different area parks. Maps of the trailway system are included in the parking area of Gar Creek.

In neighboring Indiana, the final data collection site, Indiana Dunes National Park, occupies over 15,000 acres on the southern shore of Lake Michigan (see Figure 5). Designated a national park in 2019, Indiana Dunes is, as of data collection, the newest addition to the United States national park system. Despite its newness, marketing positions the park as part of the larger history of the national parks by chronicling efforts to save the dunes that began concurrently with the creation of the national park service (NPS). The NPS was founded in 1916, and park brochures state that the then-director of the NPS attempted to include the area as a national park that year. It took another ten years, however, for the area to become partially protected, when in 1926 a small portion of the modern-day national park was designated a state park. The state park still exists within the boundaries of the national park on the east side,

but is a separate space where visitors must pay to enter (not shown in Figure 5, which shows the west side of the park).

Efforts to protect Indiana Dunes in many ways parallel developments in the NPS. The primary group seeking to protect the park were a wilderness club in the area, similar to other national parks; unusually, however, the “Save the Dunes Council” was made up primarily of women. This may have been a factor in the space not being designated a national park earlier, as most other spaces designated as national parks early on were championed by men.¹⁰ Signs in the park chronicle the attempts by Illinois steel and power companies to discredit the women as “harmless birdwatchers.” The space did not become fully protected until 1966, with a proposal from two men—then president John F. Kennedy and an Illinois Congressman—to create Indiana Dunes National Lakeshore, which encompassed 8,330 acres. Tourist texts in park brochures, maps, and signs, do not comment on this gender dynamic. Protection only expanded to the current size of over 15,000 acres in 2019 when it was redesignated a national park.

The park today is also similar to other national parks in its emphasis on eurocentric histories. Although including more information about Native American histories than any of the other smaller parks included in data collection, these histories at Indiana Dunes are always contextualized by European settlement in the early 1800s. In this case, it is Swedish immigrants, rather than French-Canadians, whose history is primarily documented via signs and structures. Park signs at a memorial farm even detail the “ceding” of the land by Native Americans to the government in the early 1800s, a process brokered by one of the Swedish immigrants who is

¹⁰ For instance, one of the best known early preservations John Muir was instrumental in the creation of the earliest national parks in the North American west, and in the local context of Knoxville, naturalist H. P. Ijams contributed to the early boundary setting of the Great Smoky Mountains National Park.

memorialized there (more details in Chapter 4). Although Indiana Dunes emphasizes heritage tourism as a recreational activity, the heritage chronicled there is a distinctly European one. There are no named Native Americans in any of the park signs at heritage sites.

In addition to heritage tourism, Indiana Dunes markets itself towards a wide variety of outdoor recreationists. The park is made up of a network of beaches on the southern shore of Lake Michigan, all with their own parking areas and all encouraging picnickers, walkers, boaters, and hikers. There are also trails through the sand dunes that border the beaches where trail running and hiking are encouraged, and nature programs are led by rangers. For the purposes of this project, I focused on two areas on the east side of the park where the human and ecological heritage of the area are the focal points. These areas, shown in Figure 5, are the Bailly Homestead and Chellberg Farm heritage sites, where Swedish immigrant heritage is the focus, and the Cowles Bog Trail area, where ecological diversity and preservation are the focus. The area is named “Cowles” after botanist Henry Cowles, who in 1899 wrote about the plant ecology of the area and helped preserve the dunes; the Cowles Bog Trail leads visitors past a wetland where there is particularly high biodiversity and signs that explain efforts to preserve and maintain the area.

2.2.2 On-site data collection

To collect data at these six sites, I first researched each site online, looking at maps of the area and reading the parks’ online information about where points of interest were located. At the physically larger sites of the midwest, online research prior to visiting was particularly important in order to focus data collection on specific heritage and educational sites within the

parks. At each of the three southeastern sites, it was possible to walk the entire park within a day. After online research, I visited each site at least twice to conduct ground truthing. At the first visit, I walked the spaces I had mapped through online research where advertised points of interest were located, taking photos and screenshots of signs and structures within the five data collection categories. This process of ground truthing enabled me to note features that physically differed from online descriptions. I also documented semiotics not mentioned online; this was particularly important for the southeastern sites, which had little information available online compared to the midwestern sites.

After the first visit, I looked through the images I collected and compared these with the points mentioned online. The comparison revealed that information from tourist sites did not accurately portray the variable difficulty of accessing different tourist sites. At Seven Islands, for instance, tourist websites did not mention the steep elevation gain or trail reroutes a visitor would need to bypass in order to get to overlook points. When I returned to sites for a second visit, I focused my data collection on sites that were more difficult to locate or access, taking photographs and screenshots of anything I missed on the first walk through. Second visits generally took place only a few days after the first visit, so points within the site were not altered in between visits. There was only one case where a site mentioned online could not be located after two attempts—this was at Kankakee, the memorial to Chief Shawanese.

The process of on-site data collection differed at Seven Islands, because this park was local to me and was the focus of an earlier pilot study for the dissertation project. The data from Seven Islands was collected over four years, during 2018, 2020, and 2021, documenting the same signs and structures as they were represented both digitally and physically. This

longer process meant that I was able to capture changes over time to these various semiotics, both in digital and physical representations. Each of these data collection trips, spaced over four years, followed the same process of data collection as did each trip for the other five locations: I conducted online research, and visited the site at least twice to ensure accuracy and thoroughness of on-site data collection.

To mitigate the skewed perspective photographs can have on data representation, I took multiple photos of sites where it was impossible to represent all sides of a site with a single photo. I also photographed the context surrounding a site; this was particularly important for screenshots of digital representations, which often omitted much of the surrounding context by focusing only on a small area or aspect of represented sites.

I also collected text related to each site, which was analyzed alongside visual data. I transcribed all textual data from photographs of sites in the designation, educational, and commemorative categories. Pathways and aesthetic structures contained no or extremely minimal text, so were not included in transcriptions. This data was used for close analysis of representation of heritages via textual and imagistic representations at the in-person sites. Much of the details, including both text and images, represented physically were absent from the digital layer, so in-person data collection focused on documenting the detailed semiotics representing different people, heritages, and site uses. Combined with context, the text and images enabled me to construct a nuanced representation of each data site for analysis, comparing these representations between physical and digital mediums.

2.2.3 Digital data collection

Data collection included screenshots of digitally emplaced representations of the same sites noted in the collection of physically emplaced representations, through the AR company Niantic's real world AR platform. Although Niantic is primarily an AR technology company, they are most known for the AR gaming applications (apps) that make up their real world platform, including Ingress (released 2012, and re-launched in 2018 as Ingress Prime), Pokémon GO (released 2016), and Harry Potter: Wizards Unite (released 2019), and it is through these apps that I collected screenshots of digital sites. Niantic's games share the same mapping software, in which specific features in physical space are digitally marked by particular gaming features. In this project, I use Pokémon GO for visuals, as it is by far the most widely used of Niantic's games. It's popularity has already led it to be used as a data collection platform in research extending understandings of the mediation of spatial experience through AR gaming technology (Davies & Innocent, 2017; Giddings, 2017; Sicart, 2017). Prior to delving into a description of data analysis, it is necessary to understand how the AR games encourage users to interact with space, as well as how points come to be represented across the AR platform, so I provide an overview here.

Pokémon GO launched in July 2016, and within its first month broke revenue records for an AR mobile game, breaking \$100 million in just twenty days ("Pokémon GO Revenue"). Although usage quickly dropped, from 250 million players worldwide that summer down to only 50 million in December 2016, its playerbase has steadily grown since then, as tracked through annual downloads. As of 2020, the year of data collection for this project, the revenue from Pokémon GO broke \$1 billion for the first time. The United States is by far the company's

largest playerbase, generating 38% of that revenue with 19% of total downloads. For comparison with Niantic's other games, in the year 2021 as of November, Pokémon GO earned \$26 million in revenue and was downloaded 1 million times; Harry Potter: Wizards Unite earned 100k and was downloaded 30k times; and Ingress Prime earned 100k with 8k downloads (Sensor Tower estimates).

Playing any of Niantic's games requires players to interact with marked features on the in-game map (Image 2.3). In Pokémon GO!, these features are represented by discs superimposed on a map of the user's physical location within the app which, when clicked on, provides users with an image and sometimes descriptive text related to the location (see Image 2.1 for a visual). Shortly before data collection began in Spring 2021, a mechanism for players to add additional images and review sites was introduced (Image 2.4). Additional images can be accessed in a separate screen from the main image; however, most points at the locations for data collection still only included one image as a representation. In order to play any of these games, players must tap on and interact with the sites, for instance by spinning the discs, in order to gain in-game resources.

During digital data collection, ground truthing—being physically present at the site—was significant because documenting differences between the physical sites and their digitized representations indicated the mediational choices made by both Niantic as a company as well as individual users of the AR platforms. For instance, if a physical site was not represented within the AR platform, it could still be included in data collection, as an absence of representation can be just as significant as particular textual or imagistic descriptions of a site. Additionally, some sites were represented in the AR platform that no longer existed in physical

space; these sites were also included, as the AR sites then serve as emplaced representations of previous sites. The kinds of sites included and omitted from the AR platform indicates the influence of social/cultural preferences and ideologies of individuals, as both users of the platform and visitors to the sites surveyed.

Niantic crowdsources nominations for in-game sites from its playerbase through their web platform, Wayfarer (Image 2.5). While users can nominate sites anywhere, the Wayfarer review process is geolocated, enabling users to rate features only within a specific area that they choose at the time they sign up. The geolocated reviews are intended to align with Niantic's stated "core values," which include community and exploration, by encouraging users to engage with representations in their local area rather than more globally. In reality, users may be asked to rate features within a radius of hundreds of miles. For instance, my own Wayfarer account is tied to the Knoxville area zip code, because this was my location when I first created an account, but in reality I am regularly asked to review sites in neighboring states such as Kentucky or North Carolina. Meanwhile users along national borders have reported in online forums being asked to review sites in other countries, in languages they are not familiar with. Site nominations include images and brief descriptions of potential sites (see Image 2.6 for a visual).

When users review so-called "wayspots" in the Wayfarer program, they are asked to rate a submission using a likert-style scale of 1-5 in six categories. These categories, drawn from the page "Wayspot eligibility," include the following:

- *Title and description*: Reviewers are told to rate highly submissions with “official” or “creative” titles (depending on whether an official title exists for the physical site), and with “correct spelling/capitalization/grammar”
- *Historical or cultural significance*: Reviewers are given no context on what this means, but rather told to “use your best judgment”
- *Visual uniqueness*: Reviewers are told to rank highly submissions that are “easy to locate and visually distinct,” and rank low submissions that are “bland”
- *Accessibility*: Reviewers are asked to consider the accessibility and safety to walking pedestrians; for instance, they should rank low submissions that require pedestrians to enter busy intersections
- *Location accuracy and Duplicates*: Reviewers are shown the geolocated point submitted for the site under review, and asked to consider its accuracy based on their own local knowledge of the area

An issue with these criteria are that they are all highly subjective, and provide no incentive for users to submit underrepresented local sites or to situate sites in socially or culturally appropriate ways. One example of a “creative” title that made it through this screening process, for instance, is a site at Gar Creek called “Carved Indian in tree stump.”¹¹ That this name was used to name the site in Pokémon GO indicates that it is a name which apparently neither the company nor users deemed inappropriate (more on this in Chapter 3).

¹¹ All sites referenced in this dissertation use their names exactly as they appear in the physical space or in the AR platform, including terminology, capitalisation, spellings, etc.

Niantic uses these criteria to screen not only submissions, but also potential reviewers. They do so in two primary ways. Upon first signing up, users of Wayfarer (called “Wayfinders” by the company) have to complete a training based on these criteria and then take a quiz that asks them to apply the criteria by rating sample submissions. Users only have two chances to pass the quiz; if they fail the first time, they have to wait thirty days before retaking the quiz, and if they fail a second time, they cannot become “wayfinders” for the company. The second way Niantic screens reviewers is through a performance rating. The performance rating of an individual user is calculated based on an individual’s ratings of submissions in comparison to all other users’ ratings of those same submissions (“How to review”). Users who have a high performance rating are those who are earning many “agreements,” that is, their ratings of submissions (whether to accept or reject a submission) match other reviewers’ ratings. A high performance rating earns users an upgrade to their profile, which in turn speeds up the review process for their own nominations.

In addition to these criteria, the representation of sites is constrained by space. In areas with a high density of sites, new submissions will be rejected no matter their ratings based on the criteria. Existing sites of gameplay are not updated frequently, which leads to former physical sites being represented digitally, even when they no longer exist or have been dramatically altered (Westenhoff & Soblo 2022). Although there are some differences in what sites are represented within each game, most sites represented are the same across the platform, and the text and image descriptions are identical.

The limitations of the AR platform detailed here have interpretable effects on the representation of landscapes, which are mediated by a small number of vetted users as well as

the corporation. Although overtly crowdsourced, Niantic controls the sites being represented through their criteria, limiting site submissions to players who have made certain in-game achievements, and limiting the amount of sites that can appear in-game. The end result is a system of mutual social mediation, through which the company screens users' alignment with their criteria, then enables them to screen each other, and finally promotes those users who are most in line with their company's "core values," according to a performance rating.

2.3 Data Analysis

As aforementioned at the beginning of this chapter, in using photo-based methods, I take the stance that photography is neither neutral nor simplistic, but rather is itself an act of analysis (Nash, 2016). Factors of positionality, technology, and context all mean that certain details of a photographed site are salient while others are omitted. The researcher needs to make decisions about how photographic data is represented, just as interviewers choose particular quotes and include these in ways to ethically represent research participants. For instance, a poorer quality photo might lead a particular piece of data or dataset to seem less important than other pieces or datasets.

Analysis of physical and digital semiotic representations is qualitative in nature and will draw from Blommaert and Maly's (2014) recommendations for ethnographic linguistic landscape analysis (ELLA). An ELLA approach attempts to index social relations, norms, and practices, legitimate belonging and use, and membership in a space. It differs from early linguistic landscapes research, such as Landry and Bourhis (1994), which used quantitative analysis to codify the amount and importance of a particular linguistic code as it appeared in a

multilingual area. Using an ELLA approach means questioning the production and origin of representations of space, the deliberate emplacement of representation, and the effects intended by emplaced semiotic representations. This approach is described in greater detail in the literature review (see p. 45-46).

The ELLA approach is appropriate in my case because my interest is not in quantifying the presence or absence of languages or cultural iconography, but rather in the ideologies embedded in the semiotic representations of emplaced sites, as well as those apparent in the inclusion/exclusion of representations of different sociocultural and linguistic groups. My approach aligns with ELLA and is intended to account for the social and agentive nature of emplaced semiotics, the cultural history of spaces, and the linguistic and extra-linguistic resources that are part of the ongoing construction of spaces. To do so, I analyzed the relationships between layers of representation, as well as the text, images, and context of those representations. All data analysis was guided by the research questions; I looked for instances of alteration between layers of representation, and how spaces were semiotically constructed in terms of use, access, and heritage, via the text, image, and context of sites. This section is organized by these four categories: relationships, text, image, and context. The coding of the first two types of data, relationships and text, form the major analytic structures of chapters 3 and 4, respectively. Coding from the imagistic and contextual data are significant in both chapters, but secondary in this dataset to the relationship and text categories.

2.3.1 Relationships

At all sites, more features existed physically than were represented digitally; this fact, as well as the relatively static representations of the digital platform, mean that all the sites are examples of space-time flattening, as the representations of each of the six parks overall were narrowed and homogenized. The analytic categories for relationships, therefore, describe how extensively a site overall is being flattened, by examining the representations of individual points in the five data collection categories.

The relationships between digital and physical layers were analyzed according to the first research question, i.e., how these relationships led the social meaning and intended use of sites to be altered in any way. There are three descriptive categories for site representation: omission, alteration, and inclusion. These categories focus on both whether a particular feature at a site was included digitally, as well as the accuracy of that inclusion. These three categories can be visualized as a continuum, with omission and inclusion at opposite ends. *Omission* means that a site is not included at all in the digital layer. *Alteration* indicates that a site is included at least partially, but its appearance or location is altered. *Inclusion* means a site is included accurately, with an image and textual description that match the physical site, and is also located accurately to the physical location. Within the category of alteration, sites might be simplified or complicated; for instance, textual descriptions are typically very brief in the AR platform, even for sites containing a large amount of text, and this is an example of *simplification*. At a few sites, however, the altered textual description of a site *complicated* the social meaning and use of the space through wordplay. In other cases of alteration, text and

images represented older versions of a feature; other features were represented accurately in the image and text, but were not located correctly.

The three categories of representation are connected to three categories for the social meaning communicated via digital representation (or lack thereof). This second set of categories focuses on how social meaning can be amplified, erased, or new meaning constructed, through the digital layer. Social meaning can be *erased* when a feature is not included digitally, i.e. omitted; it can be *amplified* when a feature is accurately and holistically included; when a feature is altered digitally, a new social meaning can be *constructed*. As described above, that new social meaning might be a simplification or a complication to existing meaning. However, similar to the descriptive categories, these categories should be visualized as a continuum, in connection with each other, rather than as discrete points. For instance, amplification and erasure can work in tandem to reinforce particular social meanings within a space. This was the case for the uneven representation of Native American and European immigrant histories, of which only the latter were included digitally. This is an instance where the *erasure* of Native American histories, together with the *amplification* of European immigrant histories, work together to reinforce a conception of the spaces as for white visitors.

2.3.2 Text

A close textual analysis of signs, particularly those focused on educational or commemorative purposes within the context of the data collection sites, contributed to answering the second research question. The text of park signage is a primary way that outdoor spaces are semiotically constructed as belonging to certain groups of people, while excluding others

(Sandilands, 2010). For the textual analysis, I looked primarily at text-heavy park signage, including those in the educational and commemorative categories. I used an inductive process of textual analysis, whereby data is coded based on similar themes that emerge from the data itself, rather than deductively according to apriori categories. Four categories emerged from inductive coding: wilderness, settlement, preservation, and visitor address. Together these categories are meaningful to how the sites were intended to be used, accessed, navigated, and whose histories were shown to be significant, and constructed a narrative of the sites that naturalized the eurocentrism apparent in park signage. These categories, and the key words used to demarcate them, are described in Table 2. Among the four narrative categories, two common distinctions stood out: references to people and to time. The way people and time were mentioned within references to the construction (in the case of settlement, often literal construction) of the landscape served to focus the narrative on particular points of time and groups of people, while excluding others via homogenization and vague language.

References to people include use of the second person (“you,” “we,” “our”), specific actors and agents (“Joseph Bailly”; “the Kelly family”), and nonspecific groups of people (“the Potawatomi Indians”). These categories of time correlated with steps in the narrative categories: second person appears in visitor address, specific actors in the preservation and settlement categories, and nonspecific in the wilderness category. Two of these categories can be seen, for instance, in the following quote from the sign “Highways of the Past” at Indiana Dunes: “Change is the best word to describe the Bailly Homestead since 1822. In the 1820’s when the Potawatomi Indians brought their beaver pelts by canoe to trade with Joseph Bailly, the main house was yet to be built.” In this example, which was coded as part of the settlement

Table 2: Narrative categories

Category	Description	Key words and/or phrases
Wilderness	nonspecific descriptions of land without reference to any specific humans, including habitation or modification of land; generally nonspecific with regards to time	“wild,” “wilderness,” “natural”
Settlement	descriptions of construction, consumption, and settlement, which modifies the land; generally includes specific dates and human agents	“settle,” “civilization,” “construct,” “sale”
Preservation	descriptions of direct human intervention to benefit some aspect of the landscape, plants, and/or animals; generally includes specific dates and human agents	“restore,” “protect,” “preserve,” “stewardship,” and synonyms
Visitor address	use of second person, directives about what visitors should do; describes time as current/present	“You,” “we,” “our,” “As you [verb],” “Most visitors [do X]”

narrative, there are two types of specific people—the “Bailly” homestead, presumably belonging to the Bailly family, and Joseph Bailly, a European immigrant to Indiana. There is also a nonspecific group of people—the Potawatomi Indians—here referred to by two names, “Potawatomi,” an in-group name, and “Indians,” a name prescribed to them by Europeans immigrants, such as the Baillys. The signs at Indiana Dunes switch between different names for the Native American occupants of Indiana, but do not mention specific individuals in the way they do for European immigrants. These distinctions in the way people are referenced is one mechanism by which eurocentrism is naturalized by park signage.

References to time typically center on either the settlement narrative in the 1800s (as shown in the above quote), or on the preservation narrative of the mid- to late-1900s. The timeline includes four types of time: modern day (“today,” “currently”), specific years, referential time (“pre-European contact”), and nonspecific time (“in the summer,” “between 13,000 and 16,000 years ago”). Specific time is demonstrated by the above quote; the other three types can be demonstrated by a sign from Indiana Dunes (Image 2.7) containing both text and images.

In Image 2.7 the text and image reinforce each other. There is a referential time (“Pre-European contact”) modern time (“present day”), and nonspecific time (“throughout time”). The timeline overall on park signs tends to construct the narrative that its timeline is all-encompassing, although it does centralize certain times—the 1800s and 1900s. In this case, the center of the timeline is “European contact,” since this is the locus from which “pre-” springs. The narrative constructed by the timeline encompasses present day, technically a time that refers to whatever the current year is when a visitor views it. Visitors are often incorporated

into the narrative in this way, becoming textually complicit with the landscape as it is constructed, both via the timeline and through the use of second person. The combination of references to time and people, centralizing certain times and named actors while obscuring others through vague or referential language, is a key way the text narratively constructs the six park spaces examined.

2.3.3 Images

In addition to text, park signs also contain images, and these were significant in communicating meaning in combination with text. Visual analysis took into account in particular the people represented by signs, how they were portrayed, and how these portrayals interacted with the text alongside the images. For instance, Native Americans in park signs at Indiana Dunes were almost always represented alongside European immigrants, and the text of signs placed their histories within a European settlement context (this will be detailed in Chapter 4). The images and text in this context, then, reinforce the social meaning communicated that the spaces are historically the settlements of Europeans, rather than the homes of Native Americans. For this analysis, I draw on Scollon and Scollon's (2003) geosemiotic analysis of human subject portrayals, particularly the concept of *gaze*. They discuss gaze as part of the interaction order, where, for instance, when a stranger maintains eye contact, there is an "obligation to enter into some sort of engagement. In other words, the *demand* [via eye contact] is the first move in opening up interaction space in the social world" (p. 96). In their visual analysis of advertisements, the gaze includes both how the viewer is positioned in relation to human

subjects—for instance, whether they are positioned as above or below a particular subject by the angle of the image—as well as the subjects’ gaze within the image.

Scollon and Scollon’s (2003) basic distinction between types of gaze are the *offer* and the *demand*. In the offer, the viewer may be positioned over the subject, with the subject looking down, away, or physically turned away from the viewer. This portrayal invites the viewer to look at the visual subject as object. In the demand, the viewer may be positioned beneath the subject, with the subject looking forwards, out, or physically facing the viewer. This portrayal demands attention be drawn to the visual subject’s face and eyes. In the demand, the subject may also be portrayed as closer to the viewer, in the foreground of the image, while in the offer the subject may be further away. It is through a combination of these factors—for instance, a visual subject looking down, in the background, positioned lower than a viewer—that we can call a particular portrayal an “offer” or “demand.” If factors conflict—for instance, a visual subject facing out, but in the background—then other salient details may come into play in deciding where the portrayal lies on the continuum of offer to demand. A researcher might examine the portrayal of this person in relation to other persons and elements of the image, how active or passive they are, and how clear their facial features are.

These two types of gaze, the offer and the demand, rely on social norms which would disallow a person from staring directly at a stranger who is close by and facing them, but allow a person to stare directly at a stranger who is far away and facing away, or what Goffman (1983) calls *civil inattention*. Although staring can be interpreted as “rude” in either case, rudeness is only constructed if one is caught staring. The depiction of human subjects facing outwards, demanding attention, ascribes greater agency and humanity to them, while the

opposite is true of human subjects facing away. Additional factors, such as facial features being portrayed clearly, humanize visual subjects, whereas blurred or abstract facial features can dehumanize.

2.3.4 Context

Finally, data analysis of all sites took into account the larger context within which signs and structures appeared, and how that context was communicated or not communicated. This included visuals and text that connected the parks to larger communities (such as the city of Weaverville at Lake Louise), institutions (like the National Park Service), and ideologies (such as nationalistic or capitalistic messages embedded in text and symbols in the US context).

Although sometimes context was referenced by the actual text of signs, at other times it was invoked by iconic images. In the park context, these images were typically animal species such as the bison, grizzly bear, or great blue heron. These images all connected the parks to both the national and state park services as mascots. Meanwhile references to holidays, such as Thanksgiving, can connect to a US nationalist ideology. Other larger contexts that were not typically referenced directly by park signage included accessibility of natural spaces, safety for different demographics, and exclusivity of park spaces. All of these contexts are significant, to both larger conversations in the US during the time of data collection and amidst ongoing calls from players and researchers of Niantic's AR games to increase accessibility of gameplay as well as acknowledge that the spaces of mobile gameplay are not always safe or egalitarian for Black, LatinX, queer, and female players, to name a few.

2.4 You are here

In this chapter, I have introduced the methodology and methods of this project, an overview of photo-based methods, the six data sites, the social mediation of AR sites, and my process of data collection and analysis. The next two chapters discuss the results of the project. Since each of the results chapters are divided based on categories introduced in the data collection and data analysis sections of this chapter, I provide a preview of their organization here, with a more detailed explanation of the organization at the beginning of each chapter, respectively.

Chapter 3 reports on the first research question, examining the relationships between representations in AR and physical space. Data from the designation, pathways, and aesthetic structures categories are included in Chapter 3. The chapter is organized according to these three data collection categories because the types of social meaning and use that the spaces convey differs widely based on the type of site. However, viewing these signs and structures together can tell us something overall about the data sites. Each of these three data collection categories are things encountered almost immediately when a visitor enters a space—naming signs, the physical layout of the space, and large aesthetic structures. These three categories begin to characterize a site for visitors, likely before they engage with any detailed text. Within each of the three major sections of Chapter 3, analysis is based on the categories of relationship between physical and digital representations, including amplification, erasure, and construction of new meaning.

Chapter 4 reports on the second research question, examining data from the educational and commemorative categories. These two categories primarily include text-heavy park signage, which require a deeper level of engagement from visitors than do the categories

in Chapter 3. These signs also generally appear geographically further into a space than do the categories in Chapter 3, requiring additional physical effort from visitors to engage with them. Chapter 4 is organized according to the analytic categories of narrative developed from the textual analysis: wilderness, settlement, preservation, and visitor involvement. The chapter is organized in this way to answer the second research question, by critically examining how the space is constructed linguistically, and how other elements—visuals, context, and the multilayered representation of physical and AR space—also contribute to this construction. Within each of these four narrative categories, data from both the educational and commemorative categories are included.

Chapter 3

This chapter focuses on digital and physical representations of space from all six sites, investigating the relationship between these layers of representation. A layered view of linguistic landscaping is a significant expansion of research in this area. With digital representations of space becoming more prevalent as digital technology becomes increasingly small, portable, and variable in function, the ways that spaces are represented and regulated are correspondingly becoming more digitized. Although digital technology has at times been seen as more egalitarian or transgressive in representations (see section 1.2.6), the research presented here demonstrates that this is not always the case. Instead, as will be shown in this chapter, digital representations in the context of recreational gaming can construct representations that are more static and simplistic than those present physically, spatially and temporally flattening spaces as they are at particular moments in time, for particular functions and audiences.

This chapter addresses the first research question: What are the relationships between representations in digital and physical space, and what are the consequences for the social meaning and intended use of spaces? To answer this research question, the data is split into three major subsections (3.1, 3.2, and 3.3), including designations, pathways, and aesthetic structures (see Ch. 2, pg. 9-10 for details on these categories). These categories are dealt with separately because the semiotics of each differ in the kind of meaning they construct within the space. Together, however, the three categories of data addressed here form the first level of visitor interaction with a space. In other words, these are things someone would encounter immediately upon entering a space, or might even see if they arrive at a space but are unable to

enter it due to accessibility, safety, or some other reason. These three categories together, therefore, perform a gatekeeping function by naming spaces through designations, regulating access through pathways, and connecting spaces to larger contexts through aesthetic structures, ultimately communicating whose histories and visitations are welcomed, and whose are excluded.

Sections 3.1, 3.2, and 3.3 analyze the relationship between digital and physical representations, and how this relationship can amplify, erase, or create new social meanings or intended uses of the spaces. Within each section, sites are categorized according to the digital layer because the focus of this project is on the ways the digital layer departs from the physical. When there are points from different categories present in the digital and physical space, the point is categorized according to the digital representation; the same is true when multiple physical points appear close together, where fewer digital points appear. In this case, the omission of physical points is noted. The data from Seven Islands, as I was able to visit this site multiple times over four years, is a particularly compelling example of space-time flattening, and for this reason represents a larger portion of this chapter when analyzing the “time” element of space-time flattening.

The discussion section (3.4) will provide some key takeaways from across the three major subsections by addressing the overall effect of these first level representations on visitor access, use, and social meaning. Each of the six data sites restricts visitor access in particular ways, and the digital layer of representation can create both an alternative and limited view of the spaces. The restriction of access in turn restricts the kinds of social meanings, particularly in the form of heritage representations, that are constructed or viewed as significant within the

space. I return to the representation of heritage in Chapter 4, with a more detailed discussion of the data categories—educational and commemorative—a visitor would encounter as they enter further into a space.

3.1 Designations

The designation category refers to signs that detail the overall function of a site, including naming signs, such as entrance signs that name the park and state its designation (as a national park, state park, natural preserve, etc.), as well as signs that give overall rules of use of each site—that is, rules and regulations that apply to the whole space. In the AR landscape, designations such as entrance signs that named each site were almost always included; entrance trail maps were sometimes included; and rules of use signs were almost always omitted. Through the partial or total omission of designations, all the sites included in this project were altered by the AR landscape, especially by being simplified through a lack of AR representations.

This section describes these alterations in representation between digital and physical sites, as well as how the digital representations enact new social meanings. The first key alteration is the simplification of change over time; the digital layer did not reflect recent changes to sites, including changes in the site designation, such as at Seven Islands. Additionally, the local meaning of sites was omitted through the complete omission of community signs and flyers in the digital layer. A second common alteration was the simplification of sites, even when they were included in the digital layer, that emphasized the recreational use of spaces over other uses. Finally, there was one case where the digital layer

was used to construct a new meaning in the site through textual play at Lake Louise; this case is described at the end of the section.

The digital representation can only capture a particular moment in time, without reflecting the changes over time to a site. In the digital layer, signs detailing the rules of use for a site were almost always omitted. Some of these signs were relatively permanent, made of wood or metal, but others were flyers pinned to existing permanent signs, such as temporary area closure markers or community event flyers. At Lake Louise, for instance, many community event signs gave details on local events that were not included digitally (Image 3.1.1¹²). Other parks, such as Seven Islands and Beaver Lake, also had many flyers listing community events layered over designation signs or at information kiosks at the park entrances (Image 3.1.2). Even when a site is represented, as is the case at the Seven Islands kiosk (which was added as a digital site in Fall 2021), the site is altered and simplified because the digital layer cannot reflect changes to informational flyers and community events. The digital layer cannot reflect the temporary uses of an area, represented physically by these community signs and flyers, because its criteria for submissions include permanency, in addition to the updates being too slow to account for temporary use. This leads to the erasure of local meanings and representations of park spaces, in favor of a more homogenized, globalized representation. The lack of representation of rule signs and community signs, particularly those designating temporary community events or regulations, is an example of the flattening effect of AR, where dynamic sites are represented as static or permanent at a particular moment in time.

¹² All images and figures referenced in this dissertation are in the “Dissertation Image Gallery,” a folder attachment to this dissertation. The image gallery is also online in [this](#) shareable folder.

In addition to the erasure of local meanings, the digital layer also heavily altered or omitted designation signs that had been added to the site relatively recently. At the two North Carolina sites, Beaver Lake and Lake Louise, although the designation signs naming each site were included, more recent signs or sign alterations were left out. At Beaver Lake, a sign designating the space as part of the North Carolina birding trail was a recent addition, added in the year 2020 (Image 3.1.3). This sign connected the park to a network of parks across the state that markets itself towards bird watchers, but had not been added to the digital layer. Recent changes to signs were also not included at Lake Louise, which altered the representation between layers. For instance, two large wooden kiosks listing the park name and general rules were included digitally, but the images had not been updated to reflect the new kiosks (Image 3.1.4). The digital images still showed the older signs, and although at the entrance sign there were other images that had been uploaded by visitors, none of these showed the new sign, instead focusing on the lake and fountain behind it. These two sites, as well as those described later in this section, indicate that the digital layer can be slow to reflect changes to a physical site, and does not represent spaces holistically in terms of their function.

Another example of the potentially static nature of digital representations was the changing designations at Seven Islands. Here, the digital layer omitted the ongoing changes since the redesignation of Seven Islands to a state park by not updating representations of signs (Image 3.1.5). For instance, the digital representation still shows the “Wildlife Refuge” sign, altering the designation of the site when physically the state park sign has been present since 2018. Even with the new feature enabling users to upload additional images to revise existing sites, the AR representation has remained unchanged. In other words, the designation of the

space outside of its digital function—as a site for gameplay in Niantic’s platforms—is not acknowledged or considered significant by users of the game, and/or by reviewers on Wayfarer who may have downvoted representation updates. Physically, the change from a wildlife refuge to a state park is significant in terms of the accessibility of the space. Becoming a state park brought increased funding, and as a result the physical site has undergone many changes to walking trails, such as opening new areas of the park, closing some old trails, and paving existing areas to increase accessibility (these changes will be detailed in section 3.2). Despite these changes, the AR map has remained largely static, representing a sort of ghost map of the previous trails and signage, including the entrance sign.

Even when physical sites are represented accurately, there are still alterations to the amount of information the digital layer includes. The digital representations of rule signs, such as those at Beaver Lake and Gar Creek, for instance, note only the recreational use of the spaces, without adding more detailed information. The digital representation of a map at Beaver Lake, for instance, says only “beautiful beaver lake running, fishing, boating” (Image 3.1.6) The physical map shows the park layout, explains trail distances, and is surrounded by other rule signs that are omitted digitally, including at the time of data collection a warning *not* to use the lake (for instance by fishing or boating) due to toxic algae (Image 3.1.7; see also Image 3.2.3). Similarly at Gar Creek, although site designations are included digitally, there are key alterations to information present on the physical signs. Upon entering the preserve, there are three signs a visitor might encounter close to the parking lot: the “Gar Creek Preserve” sign that names the site and marks the roadside parking lot, a trail map that connects the preserve to other trail systems in the county, and a rule sign designating the use of the area (Image

3.1.8). Only the first two are represented digitally, and both are heavily simplified. In the AR landscape, although the “Riverfront Trailway” sign is repeated, it gives a much more basic description of the area as a whole rather than the specifics found on physical signage: “A nice river walk map on the Kankakee River” (Image 3.1.9). This digital representation alters the site by omitting the majority of details of the sign, including only the designation and a brief mention of the recreational use of a site. Left out of the digital representation is the regulatory text detailing rules of the area; this was also the case in other sites of data collection. Like the alteration of designations at Seven Islands, the limited representation of designation signs at Gar Creek indicates that the digital layer gamifies the space by including only tiny portions of the information on the physical sign, representing the space primarily as one of gameplay. The sign translated into AR represents the space as purely recreational, avoiding the additional use of the space as a heritage site.

Although most cases of alteration simplified meaning, one example constructed meaning in the site by adding complexity textually. At Lake Louise Park the only rule sign included in the digital layer is a large kiosk with a bulleted list of rules, which in the digital layer is called “Lake LOUISE PARK rules” (Image 3.1.10). The narrative of the space is altered through the use of all-caps indicating a less professional tone than the original sign, as well as a play on the word “rules” (McCulloch, 2019).¹³ Alteration of sites that added complexity was not common across sites looked at for this project, but happened twice at Lake Louise; the other

¹³ Although block capitals have in the past been considered a written version of shouting, McCulloch (2019) shows how online block capitals are more often used for a style she calls *emphatic minimalist*, which emphasizes particular words or phrases with a minimalistic deadpan humor to alter the social meaning of the communication (see p. 145).

example is included in the next section, “Pathways.” The fact that two sites were altered in similar ways at Lake Louise, but rarely altered in similar ways at the other five sites surveyed, indicates the potential of individual uploaders to construct meaning, as well as omit or simplify meaning, depending on their individual biases/positionality.

In park spaces, changes in land management can bring about sudden transformations that lead to greater disparities between digital and physical representations of place, and in representing designations the digital layer was unable to reflect the changes to sites over time, nor the detail of physical representation. This was especially clear at Seven Islands, where not even the name of the site had been updated by the end of data collection in 2021, eight years after it became a state park. The space-time flattening of Seven Islands via digital representations will be further explored in section 3.2, which examines the pathways represented via physical and digital layers. Similar to designations, pathways are a category that polices the potential and intended uses of the site; in the case of designations, this is done textually, whereas in pathways this is done via the physical routes that lay out where visitors can and cannot go. While alterations to representations between digital and physical layers of designation signs can alter social meanings and intended uses, alterations in the category of pathways can lead visitors literally “off trail” into areas no longer intended to be accessed at all.

3.2 Pathways

As a whole, pathways regulate access to a site: where visitors are allowed to go, how they should get there, and what kinds of abilities are needed to access the space in the first place. This means that a visitor’s first interaction with a site, including their decision to enter the

space, is governed partly by pathways. There are two parts of this category: physical pathways and directional markers. Together, these features regulate how visitors navigate or experience sites, and indicate the boundaries of a space. Although physical pathways are not marked as sites of interaction in the digital layer, they are represented on the map, where a visitor's avatar is shown to be walking around the digital space as they themselves are in the physical space (see Image 2.3). The pathways through parks varied widely in whether a particular path was included or excluded across different sites. Generally, however, the more constructed a pathway was, the more likely its inclusion, with paved roads almost always appearing, paved greenways usually appearing, and dirt or gravel paths often omitted. In the case of directional markers, accessible trailhead markers were often included; trail markers further along dirt or gravel trails were not typically included; and signs referencing temporary trail reroutes or closures, often due to hazardous events or natural preservation efforts, were universally omitted. The lack of sites deeper into parks indicate that many players may not engage beyond this first level of interaction, navigating the site by accessing areas located along paved pathways that are accessible by motorized vehicle. These signs represent an added layer of regulation, in addition to the pathways themselves that make different areas within a site more or less accessible. Since these two aspects of pathways work in tandem to regulate where visitors go and how they move through the space, they are addressed together in this section.

This section addresses three primary ways the digital layer alters or omits the pathways represented in the six sites. First, the digital map obscures accessibility within the sites by representing all pathways as the same, as well as erasing the calls for increased accessibility both in park spaces and in the digital platform itself. Second, it omits the function of the park

spaces as natural areas, valuable for outdoor recreation and sightseeing, by emphasizing heavily constructed sites and omitted “seasonal” sites. This raises issues with the platform in park spaces as a whole, where natural preservation and recreation are often goals, but conflict with the motives of the digital representation of sites for gameplay. Finally, the lack of change within the platform creates a mismatch in the digital and physical representations of the space, which impacts the safety of visitors and alters how the space is navigated, as the digital persists in representing closed-off or unsafe areas as static sites of gameplay. As a whole, the representation of pathways in the AR platform is consistent with space-time flattening: the park spaces are simplified by being represented as more homogenous, more static, and with fewer potential ways for visitors to engage with the space, than is the physical reality.

There is a bias in the AR platform towards representing space for humans, omitting relatively natural spaces while including sites that are heavily human-altered and constructed. In the rural park space of Seven Islands, this conflicts with the intended recreational use of appreciating non-human structures and life. This is apparent by the clustering of digital sites around vehicle-accessible pathways, the static representations of digital sites where physically the area is now closed to visitors, as well as by the disparities in pathways represented on the map. Trails that are paved, which at Seven Islands include only Kelly Lane (a road through the park that serves as both a trail and service road) and the pedestrian bridge, are included as green pathways in the AR map. The pedestrian bridge is one of the newest trails in the park, which was constructed as a pathway to a heron rookery on an island in the French Broad River. Other trails composed of dirt or gravel are not apparent in the AR map; these include trails that have been present for a much longer time than the pedestrian bridge, such as the Seclusion

Bend trail and Upland Loop trail, as well as newer trails like the loop trail around the island connected to the park via the pedestrian bridge. At Seven Islands the digital bias towards representing heavily constructed sites, such as the pedestrian bridge, over older sites leads to a simplification of the space and devaluation of areas which are not heavily human-altered or intended for human use. Sites that are promoted in the physical space such as gardens or scenic overlooks are not included in the AR map due to the corporate regulation of representation by Niantic, which emphasizes human-made structures and specifically bans sites that are “seasonal.” This specification is in conflict with physical representations of state and national parks that often encourage visitors to stop to view overlooks, gardens, or other natural sites of interest, and is an example of how the digital layer can be problematic when applied to outdoor recreation spaces. The digital representation of Seven Islands does not serve the site, because the omission and simplification of sites erases and therefore devalues this function of the space.

The omission of nature-based recreational functions is a consistent issue with AR representations of park spaces. The game is much more geared towards urban spaces, and has not made accommodations for the different functions or types of sites in park spaces. Relative to the state parks, Kankakee and Seven Islands, Indiana Dunes National Park has more physical space with fewer sites included in AR. An inner part of the park memorializing two settler families, detailed in Chapter 4, contains the highest density of sites in the park. In other parts of the park, the AR sites included tend to be trailhead markers and maps clustered at parking lots. Most of the tourist attraction areas in Indiana Dunes, outside of the heritage sites, would be counted as seasonal and so are omitted. Like at Seven Islands, this leads to the erasure of a key

function of the park. The AR map does not represent the natural or seasonal attractions of outdoor spaces, instead homogenizing these as blank green expanses on the map, which sometimes do not even reflect the park boundaries. For instance, the physical spaces on the outskirts of the national park border on private property. In the physical site, this border is marked by several signs and barbed wire fencing, but in the AR map, there is no apparent distinction between the two areas: both are represented by the darker green that is used to represent park spaces instead of the lighter green that marks all other spaces (Image 3.2.1). The AR map also makes no distinction between open and closed areas of the park, which are marked in the physical space; this is the same as the lack of distinction between open and closed areas of Seven Islands State Park.

At several of the sites, temporary closures or trail reroutes were in conflict with the AR representation of sites for gameplay, which create a narrative of recreational use in the space. The AR sites sometimes encourage visitors to go off-trail, to a location where a trail might previously have been, to interact with gameplay elements. Seven Islands, Indiana Dunes and Kankakee all had temporary alterations to their pathways during the time of data collection that were not included digitally. These included temporary signs marking trail closures, reroutes, and ongoing preservation activities by park staff. Some of these signs redirected visitors around trail reroutes, such as in Image 3.2.2 of a reroute of the Upland Loop Trail at Seven Islands, but others warned visitors of danger, such as in Image 3.2.3 of a sign warning of toxic algae at Beaver Lake. There are also often signs designating the preferred use of trails, for instance prohibiting bikes, pets, or specifying a particular direction that visitors are supposed to go on a loop trail. These types of signs, all intended to regulate the navigation of spaces,

typically in the interest of natural preservation, are universally omitted in the digital layer. At Seven Islands, many trail reroute signs are apparent since the space's conversion from a wildlife refuge to a state park, intended to allow certain sections of the park to recover after erosion or having vegetation repeatedly walked over by visitors. This omission enacts erasure of the dynamic nature of sites which experience degradation like erosion or natural events like flooding; additionally, it erases the efforts of park management to correct degradation, or keep visitors safe.

The potential disparity between physical and digital representations of pathways, even when they are represented, is most clear at Seven Islands. Near the entrance of the park, transformations to the physical space since its designation as a state park are immediately apparent. At the entrance of the park, the site has transformed due to the reconstruction of the main trail into the park and the entrance area (Image 3.2.4). This construction temporarily blocked the trail, but by the summer of 2021, the construction was complete, and a new paved pathway replaced the old dirt trail (Image 3.2.5). Additionally, a new trailhead kiosk with maps, informational flyers, and a public restroom all went up at the entrance to the newly paved trail (see Image 3.1.2). The digital layer, however, shows only a digital site, marking the former location of an educational sign, "Grassland habitat" (Image 3.2.6), which has been removed as of 2021. Throughout the construction of the entrance trail, this sign has remained the sole representation of the site in the digital map. Despite the ability of players to upload new images of the site, the three images available in the AR map of the site in 2021 are all of the same sign (Image 3.2.7). This area is one of several where multiple images are included in the digital layer, but all images show the same physically inaccurate point as occupying the area, rather than

updating the site representation. At the “Grassland habitat” sign, the context around it—such as construction, other signs, the new park map, flyers listing park regulations and programs, and advertisements for the landscapers who created the garden that now surrounds the site, as well as the large and newly paved main trail into the park—is not represented digitally. This creates a flattened representation of the site, privileging a particular point in time over others. At Seven Islands, this and other sites also demonstrate a lack of adaptability in the AR platform, which leads areas to be represented as static even when changes occur.

At Seven Islands, this representational flattening can endanger users by not responding to physical pathway alterations. At Seven Islands, trails have been removed, new trails introduced, and some trails rerouted or rebuilt, but none of these changes have been represented by the digital layer. This is another example, like designations at Seven Islands, where changes to digital representations are not necessary for gameplay, and changes do not occur. In this case though, the intended use is not only simplified but is in conflict with physical intended use. Pathways in Seven Islands that have been closed or rerouted to allow natural restoration, for instance, are still represented as areas of gameplay digitally. These changes are reflected in physical signage, but not in the digital representations. For instance, the Upland Loop trail is only represented digitally by a site at the trail entrance; as of 2021, however, only the former entrance to the trail is represented, while the current entrance is omitted (see Image 3.2.2). This former trail entrance as of 2021 is an overgrown hillside, and to reach the other site along the Upland Loop trail—the Mt LeConte overlook—a visitor in 2021 would have to take a circuitous route bypassing several trail reroutes.

When digital sites are included in the AR map further inside the park, an overall layout of trails can be seen from the location of these sites even without the green pathways (see for instance Image 3.2.8). Where there was previously a trail circling Schumpert Pond, for instance, there are three AR sites, but there is no longer a physical trail because the area is no longer intended to be accessed by visitors (Image 3.2.9). This leads to a conflicting narrative of use: in the physical site, the area around Schumpert Pond is closed, intended as a space for plants and non-human animals that occupy the park. However, the digital layer implies that the area around Schumpert Pond is open for mobile gameplay, just like any of the other areas that include sites for gameplay around the park. Lack of updates in a space such as Seven Islands shows the specific issues of digitized representations for these areas, as opposed to urban areas: in the case of Schumpert Pond, as well as the reroute of the Upland Loop trail, the physical space is intended to be for non-humans, but the digitized site continues to represent the areas as for human gameplay. Visitors to these spaces can cause damage to preservation and restoration efforts, but they are being encouraged to enter them by the digital platform's representations of the space as static and intended for human use.

Even with the updated images to AR sites as of 2021, most sites at Seven Islands remain static as they were represented in 2018. For instance, the Seclusion Bend Trail is the longest natural trail in the park, and follows the banks of the French Broad River. The use of the trail has changed, however, by natural events such as flooding, and a redesignation as a walking trail only. These changes are reflected by the different signs pictured digitally and physically; the digital sign indicates that the trail was once accessible to motorized vehicles (Image 3.2.10). There has also been a new sign made, which has undergone several revisions made evident by

the overlay of signs on top of the actual trail name marker (Image 3.2.11). The modern sign calls attention to the natural changes as well as limitations in the park; the overlaid sign in the upper right alerts visitors to flooding ahead, which limits mobility. Throughout these events—flooding, trail closures—the digital site has remained static, representing the site as a space for gameplay.

Even when pathways are not wholly omitted, they are still homogenized by the AR platform as two-dimensional green lines outlined in yellow (see Image 2.3). This creates challenges for accessibility in the AR game, particularly in park spaces. There is no visual distinction on the AR map between paved, gravel, dirt, or other trail mediums, nor between geographic altitude. At Kankakee, for instance, a viewer of the AR map would not be able to determine whether a distant pathway was made of gravel or dirt, how steep it was, or how well-maintained—in other words, they would be unable to tell how accessible a path was to people with different physical abilities. The main part of Kankakee that is mapped in the digital layer is the area around and along a greenway that runs along the Kankakee River. The greenway passes picnic pavilions, historic markers, and park buildings, all included in the digital layer as sites of gameplay. There are also several bridges that appear as sites in the AR map. For a visitor to the physical greenway, the differences in pathways is apparent—some of the pathways are paved greenway, some are roads, and some are thin dirt or gravel trails that veer off from the greenway and down to the river (Image 3.2.12). None of these physical differences in pathways are reflected in the AR map. Instead, the digital layer represents all pathways as the same, which in reality does not reflect the variation in accessibility of different areas of the park. The same is true for all represented pathways on the AR map. This shows the

particularities that AR representations need to consider in a park context—just as park maps indicate altitude gain, so too could AR, in order to increase user safety based on access to information. This is problematic because people of different abilities do use Niantic’s platform and accessibility of gameplay has been a concern raised by the playerbase since the beginning of the game. Even when unpaved pathways are included, they are homogenized, which does not address mobility limitations. This avoids engaging with issues of accessibility. Despite individual efforts, gameplay is not altered in any systemic way for individuals with physical disabilities.

Although clearly not often the case, AR representation can be an opportunity for users to alter sites by constructing new meanings that problematize the physical pathways of a space. Accessible and safe gameplay for different demographics has been a consistent issue with Niantic’s AR platform (Tekinbas, 2017), both in research as well as social media, but little change has occurred in the gameplay in response to this advocacy. At one site researched for this project, Lake Louise, at least one visitor has used gameplay elements to call attention to inaccessibility of park spaces and of the park as a site for gameplay. At this park, there is one wheelchair ramp to a low trail circling the lake; the dirt or gravel paths and staircases are otherwise generally inaccessible for people of different abilities (see pp. 68-69 for a detailed description of the layout of Lake Louise). The ramp is marked with a digital point of gameplay, the descriptor text of which reads: “A flagrant display of respect for the handicapped” (Image 3.2.13) The sarcasm in the language is apparent in the use of the word “flagrant.” The visitor who submitted the description used the digital layer to superimpose their analysis of the location—that it is insufficient to address accessibility within the park—on the physical location.

At Lake Louise, the ramp site shows how the digital layer can be used for social commentary. However, at six sites of data collection, this was the only instance of the digital layer being used in this way; it was much more typical for the layer to repeat and simplify the messages of physical signs, rather than problematizing or altering those messages. It should also be noted that despite the problematization of the accessibility of Lake Louise in this instance, there has not been a response: there are still no other accessible paths apart from the ramp, and gameplay has not become significantly more accessible. The consistent lack of change or engagement in response to those calling for more accessible gameplay demonstrates the lack of value placed on community feedback by Niantic, and has pessimistic implications for the social responsiveness of the digital representations spread by the AR platform more generally.

The alterations in pathway representations, like the designation category, raise issues of safety, accessibility, and conflict in intended use between digital and physical representations. In park spaces, some of these conflicts include the function of sites as areas of preservation, places for nonhumans, and park management responses to environmental degradation, none of which are acknowledged digitally. Preservation of certain environments and species is a primary motive within many park spaces, including those used in this project; however, the gamification of space via Niantic's platform does not engage with this, instead simplifying spaces as sites of gameplay. Additionally, there is a digital emphasis on representing human-made and human-altered landscapes, such as paved pathways, over other types of pathways, which communicates that spaces not made by and for human use are less valuable. In a park context, the emphasis on human-made/used does not fit as neatly as it does in urban contexts. Finally, issues of safety and accessibility are exacerbated by the mismatch between digital and

physical pathway representations, not only because the digital includes no information about closed pathways, but also due to basic representational choices in the AR platform, which homogenizes all pathways regardless of how these pathways are made or their altitude.

3.3 Aesthetic Structures

Sites that are often featured by the AR platform are large aesthetic structures, such as large urban statues and murals. All of the points included in this category were large, highly visible, three-dimensional structures, some of which depicted objects or animals that could be considered iconic of the area. Although these structures all seem to fit Niantic's criteria for submissions, some were omitted or only partially included. Their omission or inclusion is significant because these structures communicate meaning, often without text, by associating spaces with particular social/cultural ideas, movements, and groups.

This section addresses, first, the function of the digital layer to emphasize certain contexts of spaces through the repetition of representation of aesthetic structures. Due to their size and high degree of visibility, as well as the position of most of the structures near park entrances, these aesthetic structures and their function in associating the sites with particular contexts can impact the perceived safety of a space for visitors, as well as communicating who is welcome inside a space. However, there was significant variation in the types of aesthetic structures included digitally, particularly in representations of features that served both a functional and aesthetic purpose, leading to a simplified emphasis of certain features, uses, and associations of sites over others. Finally, in two cases the digital layer constructed new meaning through either textual play, as at Lake Louise, and secondly through its naming function, where

in the absence of contextual information on-site, the digital layer can directly construct meanings not present physically. This second case, which occurred at Gar Creek, is addressed at the end of the section.

Iconic wildlife was often featured by aesthetic structures within the park spaces, communicating the individual park's connection to a broader network of parks and the goal of preserving endemic species. At Indiana Dunes, for instance, an art installation wrapped around the visitor center, including several two-story high murals, a large bison sculpture, and an ornate bench featuring a raccoon (Image 3.3.1). Of all the art installation features, only the raccoon bench was included, while the bison and murals were omitted. Of these omitted features, the bison is perhaps the most surprising, as it is a mascot of the national park service (NPS) and serves to connect the park to the larger history of the US national park system (Image 3.3.2). The art installation as a whole was put in place to commemorate the NPS's two hundredth birthday, and the bison is called the "bison-tenial" bison to reflect this. The omission of the bison-tenial bison, therefore, digitally divorces the park and the art installation from this larger context in its position as part of the NPS.

The sole digital representative of the art installation is the "What can you recycle?" bench, which features a raccoon (see Image 3.3.1). Digitally, the site has been altered with the name "You can recycle what?" and includes the raccoon side of the bench as the primary image, although visitors can see the opposite side (which features recyclables such as computers and tires) if they click to view additional images. Physically the value of the bench is to reiterate the preservation narrative of the park; it is eye-catching as part of the art installation, but in reality serves a practical and educational function in showing visitors some

things they can recycle. Digitally, however, the uploader of this site uses a play on words by moving the word “What” to the end of the title and showing the raccoon, implying that raccoons can be recycled. This is similar to the wordplay of the submitter(s) at Lake Louise, who use the word “flagrant” to call attention to the lack of accessibility, or the use of all-caps to imply that Lake Louise is awesome, rather than that the sign is showing the rules of Lake Louise. Together these signs indicate the potential of AR to alter the meaning of sites through textual play, ultimately constructing new or additional meanings. However, these instances of meaning construction were rare, and with the raccoon bench as the only example at Indiana Dunes indicates the problematic nature of a lack of communication and transparency of site approval via corporate mediation. Other sites constructing new meanings within the space may have been submitted, but rejected; other components of the art installation may also have been submitted. The potential of individual site submitters is mediated by the system of corporate mediation and mutual social mediation through Wayfarer, and without greater transparency about site submissions from the company, it is impossible to know whether sites that construct new meaning within a space are actually only rarely submitted, or simply rarely accepted.

Another park system mascot, Smokey the Bear, which is only sometimes included digitally, appears at Kankakee. Smokey appears twice by the park visitor center, once holding a sign pointing towards the visitor center (Image 3.3.3), and again as a “selfie station” (Image 3.3.4). Here, a human-sized cutout of Smokey invites visitors to take a selfie, and text on the sign instructs viewers on how to take selfies. In addition to providing an interactive element for visitors, the sign is intended to promote the park through social media posts resulting from selfies. This structure, therefore, intends to channel the digitized narrative of the park in a

particular way, by having visitors upload their images with Smokey on social media platforms with Smokey's slogan, "Only you can prevent wildfires!" highly visible in their image. The slogan at this point is outdated, but is still sociohistorically representative of the US park system.¹⁴ Physically, then, the Selfie Smokey invites visitors to take part and contribute to connecting the park to the historic context of the NPS. Of the two Smokey signs, though similar in size and appearance, only the visitor center sign Smokey appears in the digital layer; the selfie Smokey is omitted. An indication of why can be seen in the difference in appearance between the visitor center Smokey physically and digitally—the first appears more similar in style to the selfie Smokey, while the second is an older style of Smokey. The new visitor center Smokey, as well as the selfie Smokey, are more dynamic than the older style visitor center Smokey in their position; they wear jeans and a khaki hat rather than green pants and hat, and their coloration is more vibrant. The selfie Smokey, obviously, is likely newer than the visitor center Smokey, and predictably (based on the lack of digital updates apparent at Seven Islands) neither it nor the new version of the visitor center Smokey are included as digital sites.

In addition to the idiosyncratic representation of structures featuring iconic wildlife, the digital layer was also idiosyncratic in representing the function of spaces, particularly when structures served both an aesthetic and a functional purpose. These cases are significant because the digital layer simplifies these sites through emphasizing certain features, uses, or associations of sites over others. In other cases of wildlife representation, the digital content being uploaded emphasizes the aesthetic over the functional value of structures. This is true for

¹⁴ The NPS's wildfire prevention campaign was a publicity program focusing on wildfire prevention, launched in 1944 after a bear cub was rescued from a tree after a fire. This cub led to Smokey the Bear, the most recognizable mascot of the NPS.

several sites at Seven Islands and Beaver Lake. At Seven Islands, one of these is a large carved mural featuring swallows, located on the supports for the pedestrian bridge that was completed in 2020; the bridge, although it is included as a represented pathway, is not included in the digitized swallow mural site (Image 3.3.5). The bridge and swallow mural are both potential points that could be represented digitally according to the game's criteria; however, the constraints of the platform mean that both would probably not be included because they would appear too close together on the digital map. In this instance, the uploads of users and mediation by the company ascribe value to the purely aesthetic function of the swallow mural, over the function of the bridge. A similar alteration occurs at Beaver Lake, where visitors entering the boardwalk trail must pass by an iron arch over an ornate bike rack that features a heron (Image 3.3.6). Only the heron is shown in the digital image, altering the site by not presenting its function as a bike rack. The heron at Beaver Lake is performing a similar contextualizing function as do Smokey and the bison-tennial bison, but in the context of North American birding; the mascot for the Audubon society, for instance, is a large crane-like bird similar in appearance to the heron at Beaver Lake. These two sites present a contrast to the omission of all but the racoon bench from the Indiana Dunes art installation; there, aesthetic features such as the murals and bison are omitted, whereas the functional bench is included, albeit in an altered way. The influence of individual users at the two birding focused parks, therefore, emphasizes the value of the aesthetic, whereas at Indiana Dunes the functional is emphasized while the aesthetic is omitted.

Another area at Seven Islands where aesthetics are featured over function is at one of two large barns. The point featured digitally is called "Seven Islands Barn art," and prominently

features the artistic representation of quilt squares on the front of the barn (Image 3.3.7). With the additional image available for visitors to view as of 2020, the whole barn is shown. However, it is clear that this image was taken some years ago, prior to the reconstruction of the front area of Seven Islands to be more accessible. As of 2021, the barn was being converted into an informational visitor center, featuring a walk-through gallery of signs describing different bird species of the area, an information kiosk, and free park maps and brochures (Image 3.3.8). Although visitor centers are often featured digitally at other sites—such as Indiana Dunes and Kankakee—the barn is not called a visitor center, because the digital representation focuses on the “barn art” and the images used to represent the site have not been updated. The beautification efforts around the new visitor center, as well as the practical function of the barn as a visitor center, go unacknowledged and unvalued digitally. At the visitor center barn there is both a loss of spatial context, through this lack of updates, as well as a loss of historical and cultural context in the textual description (or rather lack thereof) of the quilt squares as connected to the southern Appalachian region. These contexts—spatial, temporal, cultural—are not necessary for the use of the space as a site of gameplay and so there is no incentive for visitors to include them.

In addition to the alteration of sites by valuing aesthetic over functional features, the digital also alters structures by adding titles or small amounts of descriptor text to structures which physically have no textual description. For instance, a modern art sculpture that occupies a field between Beaver Lake’s walking trail and the bird sanctuary is called “Concrete Triangulation” by the digital representation (Image 3.3.9), but the structure is not named physically. Similarly, at Lake Louise a large non-functional waterwheel contains no contextual

information on site, but the digitized representation adds a title and short descriptor (Image 3.3.10). Although the titles and descriptors in this case do not significantly complicate or construct meaning in the sites (the waterwheel descriptor merely states, “Waterwheel next to lake Louise, weaverville nc,” for instance), it does show the power of the AR platform to construct meaning within sites via naming in the absence of on-site contextual information. Aesthetic structures as a category often lacked much contextual information when compared to other sites, such as educational or commemorative (discussed in Chapter 4). A lack of on-site contextual information, coupled with the naming capabilities of the AR landscape, becomes particularly problematic for representations of people.

One such case is at Gar Creek, where a forest path leads visitors from a roadside parking area through the woods down to the Kankakee River greenway. Along the forest path there are two points marked digitally, one named “carved squirrel,” and the other “Carved Indian in tree stump” (Image 3.3.11). In contrast to other representations of humans, this is a case where in the absence of physical information, the digital layer actively constructs a discriminatory representation (Image 3.3.12). Both carvings are similarly carved out of tree stumps still rooted to the ground, and both are larger than life; the second stands approximately eight feet in height, while the former is approximately three. There is no information available at either site, or anywhere else visited at Gar Creek, and so the sole source of information or location are the digital representations, both of which, in addition to their names, include an image of the carving and the descriptor text “alongside the Gar Creek Trail.” At the “Carved Indian” site, a visitor would see a tall, broken off tree trunk, into which is carved a life-sized human face and torso (Image 3.3.13). There is no indication that the carving is intended to be Native American

aside from the name of the digital site. This site shows the importance of questioning the digital landscape and information offered—it is impossible to know how the carving got this name, whether the original carver intended the carving to be Native American, or what other factors influenced the contributor who created the site to name it thus. What we do know is that the userbase, and the company as mediator, approved this site for inclusion in the AR landscape. Juxtaposed next to the digital representations of educational signs detailing the eurocentric histories and preservation of Gar Creek, the contrast between representations is stark. It also demonstrates a serious issue with the mediation of sites for inclusion as it happens currently; in this case, it is the digital layer that directly imposes the identity of “Indian” to the carved figure, in the absence of any contextual information on-site.

The representation of aesthetic structures at these six sites demonstrates the role of individual submissions and corporate mediation through the digital platform in constructing landscapes. Meaning can be constructed in simplification and omission, as the digital layer emphasizes particular features, uses, and associations of sites, at the expense of others. Additionally, the digital constructed new meaning through its naming function, where the digital layer could add additional textual descriptions of a site when none existed physically. The construction of meaning occurred in both designations and pathways, notably at Lake Louise, but in the case of Gar Creek, the meaning constructed results in a racially biased representation. This case shows that the idea that digital representations universally or often serve to problematize or complicate spaces is not true (see section 1.2.6). Aesthetic structures that associate sites with racist institutions, or which themselves serve to other particular people groups, construct the spaces as for a specific group of insiders—in the US context, typically

white cis-male able-bodied people. The digital layer can exacerbate these representations, particularly because in the US context the digital playerbase is dominated by this same group of people. The inclusion, alteration, or omission of aesthetic structures at the six sites makes clear the influence of individual biases in which sites are represented, how they are represented, and ultimately, what kinds of sites are valued by the community of Niantic's playerbase. The company's lack of updates to the sites, noted in both the designations and pathways category, means that individual biases can persist digitally in an environment that is neither culturally sensitive nor socially responsive. In many cases at these six sites, the digital served to simplify or homogenize sites, and in the case of Native American histories, to exclude and dehumanize. These concepts will be further discussed in Chapter 4.

3.4 Discussion

Together, the three data categories discussed in this chapter perform gatekeeping functions that construct who and what park spaces are for, as well as whose heritage and history are considered significant within the space. Designations do so by stating how a space can be used (used in a sanctioned way, at least), while the pathways through a space can physically prevent individuals with different abilities from entering a space. Together, the designation and aesthetic structure categories also begin to construct a particular history for the space. Many of the sites, for instance, used large visible structures of mascots of organizations like the NPS or Audubon society to connect to larger histories within the US context. This iconography also connects the spaces to the NPS's (and ornithology's) habit of preserving eurocentric histories, at the expense of others, and of characterizing current park spaces as "wildernesses" in need of

preservation (Brunner, 2017; Colchester, 2004; Stevens, 2014). As is typical in the US context, this means preserving a space in the state in which it was “discovered” by European immigrants, never mind that North American spaces had been human-modified and constructed for millenia prior to European immigration. In this section, I discuss how these first level visitor interactions with designations, pathways, and aesthetic structures characterize the sites, inviting and excluding different populations based on language, layout, and imagery. I also summarize key points discussed throughout the chapter that answer the first research question.

Physically, the three southeastern Appalachian sites are fairly similar in their focus on local histories and communities. As soon as a visitor enters Seven Islands, for instance, they see the visitor center barn, with its representation of Appalachian quilt squares. The three sites also emphasize their educational and recreational value; at Lake Louise, picnic tables and benches are scattered around the lake, and its position within a neighborhood means that many of the people walking there are able to walk straight from their homes without driving (and correspondingly, the parking lots here are very small). The two birding-focused sites emphasize education and recreation through their focus on birding, something that appears in the name of each site, as well as in site imagery that uses the great blue heron. The heron imagery is similar to the logo of the National Audubon Society, an extremely prominent organization in the history of recreational ornithology.

In these three sites, the digital layer largely amplifies, albeit in a simplified manner, the physical representations. Many of the physical sites are included digitally, even if, in the case of Seven Islands, there are inaccuracies that alter the digital sites from their physical counterparts.

At sites with such a local focus, and an emphasis on recreation and education, the amplification and simplification of digital sites further obscures the issues with sites: in physical accessibility (in all cases), safety for minoritized visitors (in the case of the two city parks in North Carolina), and the social/historical contexts outside the generally eurocentric physical presentation of history (in all cases). Although in a few cases at Lake Louise the digital representation constructed alternative meanings in the space linguistically, this was not the norm, and furthermore, did not lead to any kind of change to the accessibility of either the physical space or to gameplay. In addition to the amplification and simplification of these contexts, the digital layer erases the local meaning of these spaces by not representing the many local uses and meanings of the space apparent on temporary flyers and signs. This is a significant issue for digital representation, which often markets spaces to global audiences while obscuring their local meaning.

In physical representation, the three midwest sites emphasize their connections to eurocentric history dating to the early 1800s. At Kankakee, for instance, the main greenway through the park leads visitors past many memorials to European immigrants of the 1800s (discussed in detail in Ch. 4), while mentioning Native American histories only in the names applied to certain areas within the park, such as the Potawatomi campground (or the name Kankakee itself). Both Kankakee and Gar Creek are also part of the French Canadian Heritage Corridor (see pp. 74-76 for a detailed description of these sites and the FCHC), and emphasize these French-Canadian histories over others in leading visitors to points of interest that describe these histories, via both the physical pathways as well as directional markers. The parks also connect to larger histories and contexts of US organizations like the park service,

particularly through the use of large mascots in prominent locations in the parks, such as by the visitor centers of Indiana Dunes and Kankakee. The overall effect of physical representations in these spaces are more nationally focused, grounded in the context of US history that emphasizes European immigration to North America and the preservation activities of organizations like the NPS that have historically been dominated by white men.

The digital representations of these parks are generally consistent with space-time flattening. That is, the spaces become simplified for the use of recreational gameplay, with site representations either omitted or heavily altered to emphasize recreation over the historic heritage or natural preservation focuses of the physical sites. Additionally, the representations of eurocentric histories at the expense of others is amplified in the digital layer, which does not include even the slim representation of Native American histories found in the physical spaces, never mind acknowledgement of the consistent issues present in AR representations with accessibility for differently abled people and safety for minoritized groups.

Despite this trend, there were some sites that indicated the potential of AR representations to tell a different kind of narrative than that of physical sites, for better or for worse. Construction of altered or additional meaning occurred in examples at Indiana Dunes, Lake Louise, and Gar Creek. At Indiana Dunes and Lake Louise, content uploaders used textual play to alter the meaning of sites in a comedic way--for instance by suggesting that raccoons could be recycled or using a play on the word "rules" to suggest that Lake Louise park is awesome. In a second instance at Lake Louise, sarcasm was used to call attention to the inaccessibility of the park space as a whole, despite token attempts to increase accessibility. By contrast, at Gar Creek, the title and description ascribe the identity "Indian" to a carved figure,

altering the meaning of the site in a way that is consistent with the generally vague treatment of Native American histories in the rest of the space. As these four examples show, the AR platform, even though it is a gaming platform, has the potential to alter perceptions of spaces and interpretations of sites through its features. However, the overall pattern in the relationships between digital and physical representations was that physical sites were simplified through alteration, or omitted entirely. This is particularly true for sites that are not part of the main vehicle-accessible parts of the parks, such as the memorial to Chief Shawanasee at Kankakee. This leads to a feedback loop, in which sites within the physical park spaces with a high degree of visibility and visitor traffic are reified by the digital layer, while sites relegated to less visible and trafficked areas are omitted. The digital layer therefore tends to reify hegemonic narratives and the erasure of minoritized peoples within the park spaces, and at present there is not sufficient incentive for Niantic to train their content uploaders to do otherwise.

Overall, the result of these first level interactions in digital and physical representations for visitors is the construction of spaces for a specific audience, one of European ancestry and who are generally able-bodied. It does so by leaving unacknowledged other histories or contexts, differing levels of accessibility for areas of recreation and gameplay, uses of the space by nonhumans, and through associating the spaces with organizations and ideologies with eurocentric histories. The variation in accuracy and detail of representations across the six sites indicates that individual users, with their particular values and biases, can have a fairly high degree of impact on the digital representation of sites; it only takes one user to upload a site, and a few community members on Wayfarer to approve it. However, once these

representations are uploaded and added to the digital landscape, they are largely static and resistant to change. This is particularly clear from the lack of updates at Seven Islands, but has implications beyond this park—even if game users are concerned by the sites included at Gar Creek, for instance, the lack of change in the platform indicates that the current representation would be difficult to change.

The overall simplification of the representation of spaces in the digital layer—simplification in terms of spatial, temporal, and cultural contexts—is consistent with space-time flattening. The function of space-time flattening in these park spaces was to represent sites as purely recreational spaces for gameplay, rather than engaging with the dynamic nature of the sites, as well as the problematic issues of accessibility and historical/cultural representation. Space-time flattening is also apparent in the omission of local meanings of sites, particularly those in the southern Appalachians. The omission of local signs is similar to what other researchers have noted with regards to urban tourist areas (Jaworski and Pritchard, 2005; Johnstone, 2009), and indicates that the homogenization of spaces for a global audience also occurs at small, locally-focused outdoor spaces. Although there were some hints as to the potential of AR to construct new meaning in a space, for instance by addressing issues of accessibility as at Lake Louise, as a whole, it was much more common for representations to simplify, omit, and constrain the representations of a space.

3.5 You Are Here

In this chapter, I answered the first research question in the context of first level visitor interactions with three of the data categories. This chapter provided an overview of the

relationships between representation in digital and physical space, and the consequences of these relationships for the social meaning and intended use of data sites. In the next chapter, I discuss in greater detail the language of educational and commemorative signs at the six data sites, with a particular focus on designated heritage sites, in order to answer the second research question.

At this juncture, a reader might raise the valid critique that cultural inclusiveness, representational accuracy, and responsiveness to social contexts are not the point of the AR platform which is, after all, marketed as a casual mobile game. As I have shown in this chapter, and will continue to show in Chapter 4, AR representations construct spaces in meaningful ways that depart from physical representation, modifying spaces for new uses and particular audiences. The widespread use of Niantic's AR platform games, and Pokémon GO in particular (see section 2.2.3), represents an opportunity, and indeed an imperative, for constructing new narratives within landscapes that have historically excluded large and varied groups of people. This opportunity for AR to do something different is captured by research that indicates that the audience of the new wave of casual mobile games is far broader and more varied demographically than of any other type of game (Eklund, 2016), but also by smaller AR developments that seek to shift the power of representation to local communities by emplacing their histories and narratives within the digitized landscape (Elwood & Mitchell, 2015; Hunt & Stevenson, 2016; McMahon et al., 2019). I return to these concepts, discussing the representational imperatives of AR spaces and what a socially responsive AR platform might look like, in Chapter 5.

Chapter 4

This chapter reports on the findings related to the second research question: In what ways do the digitally and physically emplaced semiotics of heritage tourism construct narratives of belonging and exclusion in outdoor recreation spaces? The data from educational and commemorative signs, which tend to be more text-heavy and located deeper within the park spaces compared to the signs and semiotics described in Chapter 3, are used to answer the research question. The chapter is organized into four subsections according to the analytic categories of narrative developed from the textual analysis of these signs: wilderness, settlement, preservation, and visitor engagement. In these four subsections, I critically examine how the spaces are constructed linguistically, and how other elements—visuals, positioning of visitors, and historic contexts—also contribute to this construction. There is some overlap within these four categories, as they are not represented discretely and in chronological order in the park spaces, but rather are four intertwined themes of how the parks continuously describe the spaces, their value, and who uses them. In the discussion section (section 4.5), I revisit the influence of AR representations in constructing the spaces, discussing how the AR layer alters, erases, or amplifies the narrative categories constructed by the park signs.

The digital representation of educational and commemorative signs was generally simplified across all six sites. While the digital platform often encourages visitors to interact with the spaces in the first level interactions, detailed in Chapter 3, in a simplified manner, it does not represent the more textually complex representations of educational or commemorative signs. Instead of representing the text and images, the digital representations

include only tiny portions of these sites; see, for instance, Image 4.1¹⁵ of the “Native Grass Management” sign at Seven Islands, where the title and descriptor is the same; the physical sign is described later and shown in Image 4.3.5. This pattern was repeated at other sites. A further issue with these representations is that, in some cases like Beaver Lake, only a tiny portion of educational and commemorative signs were included digitally (see the points in Image 4.2, which represent six signs digitally in comparison to the twenty-five educational and commemorative signs present physically).

The relationships between AR and physical representations are not a focus for these two categories because the relationships are relatively homogenous: alteration via simplification, and omission. This is in part due to the medium and technology of Niantic’s platform, which requires shorter text descriptions than park signs have, generally. The messages of physical signs are therefore simplified, and what nuance does exist erased, by the AR representations; the overall message of physical representations is therefore unproblematically reinforced via AR. Additionally, the lack of representation indicates the purposes of the game: visitors interact with a space at the surface level, but educational and commemorative purposes of sites are not valued in the same way as they are physically.

In this chapter, therefore, the digital representations are not as significant because they are so heavily simplified, despite representing spaces that construct complex linguistic and imagistic narratives. Chapter 4 turns away from the digital to discuss more deeply the physical narratives constructed by signs, which fewer visitors may interact with than those mentioned in

¹⁵ All images and figures referenced in this dissertation are in the “Dissertation Image Gallery,” a folder attachment to this dissertation. The image gallery is also online in [this](#) shareable folder.

Chapter 3, but which are still significant. In the discussion section of this chapter, I return to relationships because the erasure and amplification of different signs communicates social meaning to users of the AR platform, via space-time flattening. This relationship is further examined in Chapter 5, which returns to the question of digital representations and how this augmented layer might add to or complicate representations of these signs, even working within the constraints of the platform.

During the bulk of this chapter, in four subsections, the focus is on how physical educational and commemorative signs, which make up the most text-heavy layer of representation within the parks, construct a colonial narrative of the park landscapes as, by turns, wilderness, settlements, preservation sites, and spaces for visitor engagement. These four categories of textual analysis are detailed in Chapter 2 (see Table 2 on p. 90). To reiterate, these categories together construct an overall narrative of the park spaces that naturalizes the eurocentric histories presented, the division between uninhabited “wilderness” and modern “civilization,” and serves to limit how the spaces are used, accessed, navigated, and owned.

Key to understanding how spaces are constructed via this narrative are the references to people and time. Supposed “wilderness” is described in time-ambiguous terms, without reference to people and without definite dates, whereas settlement and preservation are described in time-bounded terms, referencing specific (European) people and their activities during specific points in time. This process of narrative construction is similar to what has been documented by Indigenous rhetorics scholarship in other park spaces (Stevens, 2014; Thornton, 2014), not only in the US context, but around the world (see section 1.4.4). The effect of the time-ambiguous “wilderness” narrative overall is to erase the presence and rights of Indigenous

inhabitants, while justifying the settlement and preservation activities of Europeans through referring to particular time-bound activities, such as challenges being overcome and positive influences in the landscape.

4.1 The Parks as “Wilderness”

All six of the sites include explanations of vague historic times in which the landscape was a “wilderness” or “natural.” Although these spaces were culturally-constructed for many centuries prior to European immigration, the wilderness narrative uses several strategies to obscure this past, including removing human agents by using past tense, references to a time-ambiguous, long ago past, and referencing settlement as a specific time-bound occurrence around which the history of the space revolves. The goal of these narratives is to construct the wilderness as valuable, monetarily in terms of resources and/or aesthetically in terms of tourism, and the parks’ preservation efforts in keeping the wilderness in this state as likewise valuable.

Park signs explain natural processes in a timeless way, in order to position these processes as the most normal or correct state of the environment. These natural processes are described as benefitting certain plant and animal species in the environment, but signs make no reference to human occupants of the space, implying that the most natural state of a space is one without human occupants. Preservation, or direct human intervention to maintain these natural states of the space (addressed in section 4.3), is only necessary due to later human occupancy during settlement (addressed in section 4.2). The binary between wilderness and civilization in park space is a well-documented strategy of erasure in Indigenous land and

rhetoric research (Stevens, 2014; see section 1.4.4). For instance, an Indiana Dunes sign called “Restoring the Wetlands” references a nonspecific time as part of an origin story of the space: “Cowles Bog and the Great Marsh were created several thousands [sic] years ago when Lake Michigan’s water level dropped significantly, leaving these wetlands behind” (Image 4.1.1). This text is located on a sign that overlooks the referenced marsh, and is accompanied by images of the land, of humans engaged in preservation activity, and a great blue heron, a species often used in the construction of wilderness and preservation narratives at the data sites.

The great blue heron is a common species used in constructing a space as a wilderness or as in need of preservation. The great blue heron is large, noticeable, and fairly common; it is one that visitors will likely have seen before, or will see while at one of the spaces. It is also a fairly harmless species, and one considered aesthetically pleasing, as opposed to other amphibious or reptilian species that tend to live in wetlands like several of the data sites. Wetlands historically have been a particularly difficult type of environment to preserve through legal means, due to their perceived low aesthetic and economic value.¹⁶ Relying on the great blue heron, and other species of birds, Seven Islands and Beaver Lake make similar claims as Indiana Dunes as to the environmental and aesthetic value of wetlands. Beaver Lake in “An Accidental Wetlands,” for instance, explains both these environments’ significance to birds, as well as the natural reason for wetlands sometimes not being visually appealing: “[wetlands] provide nesting and feeding habitat for a variety of birds and water-loving plants and creatures. The oily sheen sometimes seen on the water is natural and is caused by the breakdown of

¹⁶ The perceived undesirability of wetlands had devastating consequences for plants, animals, and people who lived in and relied on them (Kimmerer, 2013); it also led to wetlands being some of the last habitats to be formally preserved in the US park system, which early on focused primarily on the mountains and deserts of the west.

organic matter” (Image 4.1.2). Seven Islands uses a similar strategy: “Birds typically seen in this habitat include the Yellow Warbler, Spotted Sandpiper, and Swamp Sparrow. A riparian habitat is the interface between land and a river or stream.” Both these birding focused parks accompany the sign text with images of birds, and the signs themselves position visitors to look over the referenced wetland and potentially see these species themselves (Image 4.1.3).

Although Indiana Dunes does not have a special focus on birds, as do these two parks, all three of the parks use imagery of birds, as well as text directly referencing them, as a rhetorical strategy to promote the value of a historically undervalued type of environment. They also explain the environment of a wetland, including its formation or particular features, without reference to human occupancy, in order to construct the wetland spaces as pure and valuable wildernesses. Although this goes unmentioned, these park signs all rely on a common understanding of wetlands as inherently undesirable, as well as a capitalistic means of explaining the use-value, either in terms of economic resources or aesthetically. This is a deeply US-centric justification, which is backed up by imagery; Seven Islands, for instance, uses a bald eagle as one of the pictured species, connecting the wetland to a symbol of patriotism. These understandings of value in connection with wetlands are not universal (Kimmerer, 2013). However, the park signs treat these understandings as universal by not mentioning different understandings of wetlands and human relationships with them.

In addition to animals, specific plant species are also used to situate the park spaces in long histories, naturalizing what exists or what is preserved on the space as the most correct form of the habitat, as opposed to alterations to the habitat by foreign species. Beaver Lake, for instance, emphasizes the nativity of the American chestnut tree to the US: “The magnificent

American chestnut tree (*Castanea dentata*) once dominated 200 million acres of the eastern United States” (Image 4.1.4) The sign goes on to explain the value of these tree in providing resources to the US economy, as well as the threat of nonnative species. For this sign to be effective, Beaver Lake relies on the iconic status of the American chestnut tree to preservation efforts focused on preventing the spread of nonnative species (such as the chestnut blight fungus). Elsewhere, native plant species are described in positive ways that connect to human activities, such as sugar maples having buds “like ice cream cones” at Indiana Dunes, or “colorful” and “adaptable” prairie flower species at Kankakee. These descriptions position the plant species as not only valuable aesthetically through their uniqueness, but also as contributing economic resources to the US. The sign text is accompanied by images of the native species referenced, and often by images of preservation efforts such as prescribed burns as well (Image 4.1.5). Descriptions like these also begin to suggest the imminent threat of nonnative species, foreshadowing the narrative that becomes much more prominent in signs describing preservation efforts.

Spaces being portrayed as “natural” wildernesses, useful to plant and animal species, is not quite enough to merit their value and preservation. Signs at the data sites also rely on descriptions of commercial value. Beaver Lake, for instance, in communicating the value of wetlands, describes these as “some of the most biologically productive ecosystems in the world,” using the idea of *productivity* in a capitalist society for value. At another sign, titled “The Value of Wetlands,” wetlands are described as “a natural resource whose importance have only recently been realized.” This text is accompanied by an illustration of a great blue heron, an image that is very common in the wilderness and preservation narratives of Beaver Lake, which

even uses an anthropomorphic cartoon heron on directional markers to direct runners and bikers away from the bird sanctuary boardwalk (Image 4.1.6). Of course, the value of spaces as economic resources includes their use in tourism. At Indiana Dunes, one informational sign is repeated, alongside a park map, at several parking areas around the space. The sign characterizes the site thus: “The 15,000 acres of dunes, oak savannas, bogs, marshes, and forests offer an opportunity to explore the rich diversity of nature throughout the seasons.” However, the “opportunity to explore” is somewhat limited by characterizations of the site as historically a space of European-Americans via the text, as well as the fairly homogenous depiction of human “explorers” on the sign. While there are some individuals of darker skin tones, the majority have pale skin tones, and all of them are depicted as able-bodied and of a similar thin body type.

Although there are people pictured on some of the park signs, they are not referenced directly in text that describes the space as a wilderness. Instead, signs like the one at Kankakee in Image 4.1.5 present the land, along with plant and animals species, as the agents, rather than people. In this sign, there is a person pictured conducting a prescribed burn, but they are not referenced by the text. The sign text also fails to mention the long history of environmental stewardship by the Potawatomi of the area (Whyte, 2015; Citizen Potawatomi Nation, 2022), instead positioning the land as a “wilderness” that was (and continues to be) open to settlement by Europeans. Signs even avoid mention of very recent human intervention in habitats, as in a sign describing the preserved farmland habitat of Seven Islands: “This culturally created habitat consists of land reverting to grasslands or being reclaimed by forest species in a

process called succession” (Image 4.1.7) Although the habitat is “culturally created,” it is the land itself that does the “reverting,” and no specific human agents are mentioned.

Part of the value of the space being preserved, then, is the apparent “naturalness” of the processes occurring, with naturalness being defined in part by a lack of human agency and intervention. At Seven Islands, the human intervention occurred in the early 1900s, with the Kelly family farming the land before the state bought and designated the space a wildlife preserve (see section 2.2.1.1 for more details). Referencing earlier history, meanwhile, the sign in Image 4.1.5 uses a quote from an early settler of the region to characterize the space as a wilderness: “I was in the midst of a prairie!...What a new and wondrous world of beauty! What a magnificent sight!...How shall I convey to you the idea of a prairie?” The quote characterizes the space as “new,” presuming an audience (“you”) of Europeans as yet unfamiliar with a prairie ecosystem. The space is not, in this quote, characterized by its far longer history of human intervention by Native American occupants, but rather is a “new” space for European immigrants to explore and appreciate.

Several key strategies mentioned so far contribute to the construction of Gar Creek as a wilderness. These strategies include removing human agents, setting the space in a deeply historic time period, and referencing settlement as a nexus around which the history of the space (and its phases of “wilderness” and “settled”) revolves. A sign near the parking lot of Gar Creek gives this characterization of the space:

Since the retreat of the last glaciers between 13,000 and 16,000 years ago, Illinois has been primarily comprised of prairie ecosystem. Illinois, prior to European settlement,

consisted of approximately 22 million acres of prairie and 14 million acres of forest. The grass dominated prairies were described by early settlers as “a waving sea of grass.”

This characterization is accompanied by images and short descriptions of native plant species, as well as a current map of the land the sign refers to (Image 4.1.8). The text removes Native Americans entirely by referring to a time only “prior to European settlement,” as well as relying on a settler description of the space as “a waving sea of grass.” The reliance on the settler description is similar to the quote from the sign at Kankakee (Image 4.1.4) mentioned above; both erase the presence of Native Americans, making the land appear unfamiliar and new to human occupants. The history referenced by the Gar Creek sign naturalizes the prairie ecosystem intended to be preserved, as well as conjuring an image for visitors of the kind of “natural” ecosystem encountered by early settlers.

The overt message of descriptions of the spaces as wildernesses is to construct the spaces as pure, natural, and valuable environments that are worth preserving and protecting. Covertly, though, the parks construct a division between “wilderness” and “civilization,” which devalues and erases the history and ongoing presence of Native Americans. The signs do so by referring to the spaces in a state of wilderness at a vague, unspecified time, which contrasts with the specific years mentioned when the space transitions to being “settled” by European immigrants. The binary constructed between wild and civilized spaces, and erasure of Native Americans in favor of a presentation of a “pure” wild space untouched by humans, is a rhetorical move well-documented by Indigenous scholars (Stevens, 2014). The move in this case constructs a positive narrative for visitors through descriptions of the space pre-settlement as humanless, which avoids the violence and contention of settlement. In the modern day park

spaces, the wild/civilized binary also constructs an exclusionary narrative, in which Native Americans, and other non-Europeans, are not valued.

4.2 The Parks during “Settlement”

After being “wildernesses,” spaces transition to being “settled” through European immigration, when heavy human intervention in a landscape begins to be described and the previously wild spaces become civilized. In conformity with the wilderness narrative, descriptions of settlement of the space are kept to a post-1800s timeline; in descriptions of time prior to this (usually unspecified times), there is minimal mention of people, and no description of human intervention with the landscape. The fact that Native Americans lived here is erased through vague language and an emphasis on the transiency of their communities—in addition, of course, to a general lack of mention. Settlement narratives are much more prominent at the midwest sites, which focus heavily on European immigration as the source of value in the spaces being called heritage sites. However, this binary between wilderness and settlement is also apparent at Seven Islands.

Settlement serves as one “nexus” around which references to people and time are oriented. At Indiana Dunes for instance, there is the time before the Baillys, a cluster of years in which important events happened for this family, and the time after. This is the case in the sample passage introduced in Chapter 2: “Change is the best word to describe the Bailly Homestead since 1822. In the 1820’s when the Potawatomi Indians brought their beaver pelts by canoe to trade with Joseph Bailly, the main house was yet to be built.” In this passage, time is all relative to the construction of the main house of the Bailly family, either prior to (“yet to

be built”) or after construction (“since then”). The people also center around this house; it is an essential part of the “Bailly Homestead,” and the Potawatomi are described in relation to the Baillys and the house as they bring trade goods there. The house is physically present in the space as a monument, providing visitors a clear visual of this nexus of time and people.

The sign’s message is further reinforced by the images accompanying the text, as well as how a visitor must be positioned to view the sign (Image 4.2.1). The sign, “Highways of the Past,” depicts an interaction between Native Americans¹⁷ and European immigrants (presumably the Baillys). The Native occupants of the image, although foregrounded, are depicted in manual labor, bent over, facing away from viewers. Meanwhile the European occupants, although further away from viewers, are depicted upright, moving toward the viewer. The sign positions viewers so they are viewing the house from the angle the Native Americans depicted would have been; the house is directly behind the sign, the same position as it is in the sign image. When the male European (presumably Joseph Bailly) depicted raises his hand in greeting, his greeting is directed towards a viewer as much as it is towards the Native Americans in the foreground of the image. The sign’s title, “Highways of the Past,” positions the scene and people viewed as part of a vanished history, one which is commemorated only in the structure of the Bailly homestead; the Native occupants have vanished without a trace and with minimal mention.

Particularly at the three midwestern parks, signs refer to “settlement” as a time-bound event, occurring during specific years in the early 1800s. “Wild” spaces, as previously noted, are

¹⁷ According to the sign these are the Potawatomi; however, their depiction is extremely vague and gives no real indication of their tribal affiliation. The problematic nature of their depiction is described more later in this section.

by contrast time-ambiguous, referred to as or implied to be a time before settlement. The settlement of the space is demonstrated through structures which are now preserved and/or commemorated within the parks. These structures then form part of the value of the spaces as heritage sites, communicating the importance of key people, structures, and communities (all European ones in these cases). At another sign in Indiana Dunes, “The Bailly Homestead,” describes this transition period directly: “Although Indiana became a state in 1816, northwestern Indiana was essentially a wilderness when Joseph Bailly arrived in 1822 from Michigan with his wife Marie and their children to build their homestead.” This sign positions the space within the larger context of the United States by beginning with reference to Indiana becoming a state. The image accompanying the text, meanwhile, depicts men engaged in construction of a log structure—presumably part of the homestead mentioned by the text—with trees in the background (Image 4.2.2). This is a land literally in transition from “wild” to “settled,” as the trees in the background give way to the bare trunks being used in construction in the foreground. Although a woman is mentioned by the sign—Marie—there are no women depicted in this sign.

Settlement is depicted as labor intensive, and the pre-settlement period of “wilderness” is described as dangerous; women do not generally feature prominently in the narratives of Europeans overcoming and taming wild spaces. Later on in “The Bailly Homestead” sign, the danger of the space is made explicit: “The 500,000 acre Kankakee Marsh, located to the southeast of here, was a major impediment to travel and discouraged settlement of the Calumet Region. The Baillys were among the first settlers to the area.” In overcoming the “impediment” of the marsh, the Baillys are depicted as surmounting obstacles they faced in the

transition from wilderness to settlement, a narrative which ignores the fact that people had lived in and traveled through the region for millenia prior to their arrival. The danger the Baillys faced in order to settle the area becomes part of the justification for their use of the land.

The depiction of the “wild” marsh as a dangerous obstacle, and the narrative of European settlers overcoming said obstacle, will be a familiar one to Indigenous rhetoricians. For instance, Grimwood et al. (2019) point out how Canadian parks describe particular *myths of settlement*: “The most exemplary is the one that begins with European explorers ‘discovering’ pristine lands—that is, *terra nullius*—and working hard to overcome exceptional struggles and establish a coherent and progressive society” (p. 234-235). At Indiana Dunes, this obstacle is the marsh; the sign leaves unacknowledged, of course, that the marsh had already been occupied by Indigenous people. In addition to the marsh as an impediment, the marsh here is a land that is implied as being inherently dirty or undesirable—this is why its importance must be justified through descriptions of the space as a resource. This notion will be familiar to conservation scientists; Kimmerer (2013) points how how wetlands were both seen as productive land, but also as undesirable, “precipitat[ing] a 90 percent loss of the wetlands—as well as the Native people who depended upon them...Decried as “wastelands,” marsh draining for agriculture was carried out on a huge scale” (p. 231). Although the signs rely on these ideas—the first of the marsh as an impediment, the second of the marsh as inherently undesirable—these are not universal, and the fact that alternatives are not presented makes them seem to be universal. The Potawatomi, who lived in this area at the time described by the signs, had a positive relationship with the marsh and likely did not view it as undesirable. Although in the present-day the marsh is acknowledged as a valuable (economically-speaking) space, the narrative of it

being undesirable and an impediment to overcome is still a necessary step to legitimizing settlement.

Of all the signs at Indiana Dunes, only two depict Native Americans: one is the aforementioned “Highways of the Past” sign, which describes the Potawatomi as a trading community without reference to a distinct home within the space. The second is “The Calumet Region, 1822-1835” (Image 4.2.3). The first half of this sign’s text is devoted to the Bailly family, particularly Joseph Bailly’s choice of where to build his homestead. The second half describes the lives of the Potawatomi, but does so in extremely general ways that emphasizes their transience and leaves out major historical events and ties that intertwined the lives of the Potawatomi, the French-Canadians, the British, and the new US citizens, as well as other Native American communities in the Great Lakes region. The text of the sign describes their primary activities as hunting and gathering (with “some farming”), their separation into “family groups,” and their movement between different camps. The terms “family groups” and “camp,” next to eurocentric histories on this and other signs, implies that these groups were small, but historically these groups were either larger or not substantially different in size from European communities, which of course are described as “settlements” or “homesteads.” The images on these signs reinforce this message of transience and smallness of Native communities, as well as their separation from European communities, through depictions of their housing, clothing, and lack of technology, which maximizes the difference between European and Native communities.

Though the Potawatomi are the only group mentioned by signs at Indiana Dunes, their history in the region is fairly short compared to other Native American peoples. The Great Lakes

region has been the home of many different Native American tribes, including at the time described by the park signage the Potawatomi and sister tribes, the Ottawa and the Ojibwe.¹⁸ Left out of the signs, and more deliberately obscured through imagery, is the longer history of contact between Native and European cultures, particularly in this case between the French and Potawatomi. There was a shared material culture between Native and French people in their trading relationship, and of interrelationships in marriage, during the 16-1700s (CPN Cultural Heritage Center). The depictions in the sign, by contrast, emphasize stereotypical material goods in clothing, which maximizes the difference between the Native and European communities. This maximal difference does not reflect reality, as by this time the Potawatomi were using European goods, including clothing, that the Baillys would have been familiar with. They were a *métis* culture, of mixed Potawatomi and French ancestry (CPN Cultural Heritage Center, 2019). Although their history is left out of the signs, it is still significant to the space, so a partial history that demonstrates key inaccuracies of the signs' portrayal of the Potawatomi is provided here.

The Potawatomi as a people group had largely settled in Indiana around the early 1800s after the revolutionary war and repeated attacks by the US army as the new nation attempted to expand into the midwest region. *Settled* is a key word: in the period depicted by the sign in Image 4.2.3, they were generally living in settled village communities, often with French-Canadians as part of the community, and had been living, interacting, and trading with the

¹⁸ Information in this section has been sourced from the [Citizen Potawatomi Nation Cultural Heritage Center](#), which documents their lifeways, culture, and history. They and other tribes who impacted and called the Great Lakes region home continue on as people on their own lands today. Readers should see the [Bois Forte Heritage Center](#), [Six Nations Iroquois Cultural Center](#), [Algonquins of Canada](#), [Ziibiwing Center](#), as a few additional online resources detailing the history of the region.

European immigrants of the region for over a century. They had access to European goods, many of them spoke and/or wrote English and French in addition to their own languages, and they primarily grew or farmed their food, rather than hunting and gathering. By contrast, their depiction of garb and communities on these signs (Image 4.2.1 and Image 4.2.3) is historicized and homogenized, similar to what Grimwood et al. (2019) and Thornton (2014) describe in their research contexts. This historicization and homogenization serves to maximize perceived difference between European and Indigenous. For instance European immigrants also practiced hunting and gathering, but their activities are not described in the same way.

The signs at Indiana Dunes leave out even some of the most recent history of Native Americans in the area, that of the Potawatomi's role in various wars and as trading partners with earlier French settlers, and even obscure through imagery the fact that this longer history exists. At the only specific time in the lives of the Potawatomi described by the signs, the early 1800s, the American Revolutionary War had just occurred, in which the Potawatomi and nearby tribes in the Great Lakes region fought on the side of the British. In wars that followed, the Potawatomi resisted US expansion into the midwest, but ultimately were forced out of their lands.

Prior to and during these colonial wars, there was also conflict within Native American tribes and communities, for instance between those who sided with the French and with the British, as well as the accommodationists (Native Americans who felt the tribes should adopt more European culture) and nativists (those who felt Native Americans should keep their culture distinct) (CPN Cultural Heritage Center, 2019). The Potawatomi prior to the revolutionary war had generally been on the side of the French in the disputes between the

French and British for control of the North American colonies, as had most of the tribes of the Great Lakes region. However, the French ultimately withdrew to Canada, and native tribes like the Potawatomi left below the border were victimized by the largely British-descendant new US citizens. The Bailly immigration, and Potawatomi ceding of the land, is a part of this larger history which is left entirely out of descriptions of the history of the space.

At the point described in the sign in Image 4.2.3, in which Bailly negotiates with Potawatomi elders to “cede” the land to the US, the Potawatomi were living in settled communities that would have looked very similar to European settlements. They likely did so because they were told they could keep their land if they adopted this lifestyle, and the resulting villages were probably a tense mix of new/old conceptions of space, ownership, and wealth (CPN Cultural Heritage Center, 2019). This is left out of the signs at Indiana Dunes because it does not fit the wilderness/settlement divide, which positions Native peoples as part of the “wilderness” of the past. The signs also fail to mention the Indian Removal Act of 1832, which came immediately before the Bailly/Potawatomi “negotiation” in 1833. These events and complexities are ignored in order to maintain the simplistic narrative that the space was “essentially a wilderness,” with minimal to no human history or intervention, prior to the 1800s.

In a narrative of settlement, that values permanent construction as a marker of civilization, the distinction between Native Americans and Europeans is critical to justifying settlement. Depicting Native Americans as separate and transient implies that the land is available or open for settlers. Signs at Indiana Dunes, Kankakee, and Seven Islands emphasize construction, both of physical buildings and of horticultural habitats, as demarcating the

transition of land from wild to settled. Indiana Dunes chronicles not only the Bailly settlement, but also that of the Swedish community and particularly the Chellberg farm, where several structures have been preserved as part of a heritage site. One of these is a former Lutheran church, which the accompanying sign calls “the heart of their [the Swedish community’s] social world” (Image 4.2.4) Another is the Rockville post office, which is commemorated at Kankakee. Sites of physical labor, such as the Kelly farm at Seven Islands and Altorf Mill site at Kankakee, are also commemorated and described as part of the settlement narrative (Image 4.2.5). Together, these structures and the accompanying signs build a particular view of what it means for a land to be “settled,” i.e., not available for someone else to settle it: markers of settlement include religious structures (the church), government structures (the post office) that tie it to a larger nation, and working structures that alter the landscape for human use (the mill and farm). These markers preserve a legacy through their commemoration within the parks, and the signs communicate this through describing the ongoing history of families like the Baillys in Indiana or the Kellys in Tennessee.

Another marker of settlement is the changing value of the space. As opposed to the aesthetic value of a wilderness, the value of a settled space comes from the consumption of its natural resources, which enable progress in a consumer-capitalist society. The capitalist value of the French Broad River, for example, is detailed by the sign “Steamboat Times on the French Broad River” at Seven Islands: “In the late 1800s, roughly 50 country stores served the needs of residents along or near the French Broad River from Knoxville upstream to Dandridge” (Image 4.2.6). The French Broad River, more than being part of the aesthetic natural space of Seven Islands, is also an avenue for goods and services of communities in Tennessee. The valuable

resources of natural spaces are also described at Beaver Lake, in the form of chestnut sales, and at Indiana Dunes, in the form of maple syrup tapping. The latter, described by the sign “Maple Syrup’s Future,” states: “Maple sugar and syrup, once a winter survival food and valuable trade item, has become a year-round luxury available around the world.” In building the settlement narrative as an early part of progress in a capitalist society, this sign fully erases Native American presence, and emphasizes the progress of a society with access to “year-round luxury” goods.

Within the settlement narrative, although there are descriptions of natural resource use, there is not yet direct mention of any threat to these resources. At Indiana Dunes, one sign describing prairie preservation mentions that, “since the 1830’s, much of the tallgrass prairie has been plowed under, planted with crops, or buried under construction.” Although there is a description of loss here—of the tallgrass prairie specifically—there is no mention of any negative impact of this loss, and there are no specific agents. The prairie is “plowed,” “planted,” and “buried,” but in contrast to other signs, no human actors are performing these actions. The settlement narrative, tied as it is to US identity through its descriptions of capitalism, expansion, consumerism, and religion, remains generally positive; the negative impacts to environment are ignored in favor of a generally upbeat view of the construction and legacy of European settlements.

The overt goal of descriptions of settlement in the spaces is to document the human history and heritage of the spaces. However, these descriptions erase the presence of Native Americans by setting up a sharp distinction between European and Native American civilizations, and portraying the former as less civilized through describing their communities as

transient, separate from the economy in which Europeans were engaged, maximally different in appearance, and ultimately as secondary to European immigrants and communities. Instead of dealing with the longer and more complex history of the spaces, the signs portray the settlement of the park spaces by European immigrants as a simplistic narrative of choosing a site, constructing buildings, and modifying the land for farming, which is entirely nonviolent. The effort put in by these portrayed settlers serves to justify their occupation of the space, as well as the preservation of their structures by modern park organizations. Covertly, this portrayal of an extremely simplified and eurocentric history of the parks construct spaces where Native Americans, as well as others, are devalued and excluded. By emphasizing the value of the park spaces as heritage sites, and portraying only a eurocentric version of history, the parks imply that this is the only heritage of significance.

4.3 The Parks being “Preserved”

While the wilderness and settlement stages of the parks’ narrative relies on a binary between wild and civilized spaces for much of their significance and meaning, the preservation stage introduces a second key binary: native and nonnative species. These terms are used interchangeably by the park signs with other more charged terms, such as *invasive* or *alien*, and always refer to non-human animals and plants.¹⁹ There is no mention of the relative indigeneity of Native American and European immigrant groups, for instance. This binary functions to contrast species “worth” preserving with those not worth preserving, and relies on metaphors

¹⁹ The terms I use to describe plant and animal species in this section are based on the terms of the park signs and are not meant to convey any individual stance on the classification of “native,” “introduced,” “invasive,” or other ecological classifications.

of threat to justify preservation efforts (as in the *conservation as war* metaphor, introduced in section 1.2.5). When species are described as native or invasive, these descriptions rely on a eurocentric view of the species present in a space at the time of settlement. Specific preservation efforts of the mid- to late-1900s serve as a second centerpoint in the timeline, in addition to the specific years listed in settlement, and the ongoing nature of preservation efforts begun in the 1900s is conveyed through how signs address visitors directly. Since the preservation narrative conveys activities that have both been done in the past, and are currently ongoing, it is significant who is being featured in photos as “doing preservation.” Often, there is a similarity between depictions of preservationists (in photographs) and the depictions of settlers (in drawings); both groups are generally homogenous in being pale-skinned, able-bodied, and primarily male. These two depictions lead to an implicit “you” for the visitor audience of these signs, which will be detailed more in section 4.4. As a whole, preservation activities described in the parks relate to four areas: the preservation of “historic” buildings, of particular plant and non-human animal species (usually birds), and finally of “natural” landscapes generally. I will describe each of these four areas of preservation in this section.

Of the parks where buildings were preserved and described as part of the heritage of the area, these buildings were universally of European origin. In Indiana Dunes, for instance, the settlements of the Bailly and Chellberg families, both European immigrant families of the 1800s, are preserved and designated as heritage sites within the park. At Kankakee, memorials to buildings such as the Altorff Mill and Rockville Post Office occupy space next to the main greenway through the park, claiming to use original stone from the old buildings. Finally at

Seven Islands, the barns and home of the Kelly family are preserved. At all three parks, the preservation of these buildings is justified as presenting the history significant to the space, without reference to the other histories and heritages that go unpreserved. These buildings also serve to commemorate European intervention in the land, while intervention in the land by other groups, with longer histories, is obscured through the civilization/wilderness binary. Although these historic buildings are described in terms of preservation, most of the preservation-focused signs at these and the other parks describe preservation in terms of the “natural” spaces and “native” species mentioned in the wilderness narrative of section 4.1.

In order to justify the preservation of certain valuable species—such as those introduced in section 4.1—the park signs contrast these with nonnative species, using metaphors of invasion and violence to emphasize the threat to native plant and animal species. A sign at Beaver Lake titled “Preserve our natural heritage” (Image 4.3.1) provides an overview of the key metaphors used to describe nonnative species:

Non-native invasive pest plants are taking over our native landscape. These alien invaders are killing native plants, affecting wildlife, and reducing natural diversity. For example, Kudzu has consumed 7 million acres in the South and replaced thousands of native species! The impact of these pest plants is second only to outright habitat destruction....Of course, most introduced plants pose no threat, but some invasive species grow out of control. These pest plants rampage across the landscapes unchecked by biological controls left behind in their original homeland.

There are a variety of terms used to describe introduced plant species—pests, aliens, invaders—and their movement is described in violent terms. These plants *destroy*, they

rampage, they are *out of control*. The consistency in the metaphors used indicates that these are not just metaphors, but metaphorical concepts (Lakoff & Johnson, 2003; see section 1.2.5 of Chapter 1). Nonnative species in the western conservation context are understood as violent invaders. However, just like other metaphorical concepts, this is a culturally-bound metaphor that is not universal. Like the wilderness narrative, this passage uses the passive tense to remove human agents, while attributing agency to the plants themselves. The plants are “introduced,” but visitors are not meant to focus on who introduced them; instead, the metaphors of threat urge visitors to engage in preservation by combatting the “alien invaders.” This sign uses an example that audiences of the southeast in particular will be familiar with, kudzu, to bring the fight to a visitor’s backyard. Other particular species are singled out as “problem plants” on the sign, and visitors are told how they can help native plants through gardening practices.

Individual preservation efforts are often highlighted on park signs, which indicates to visitors that individuals can make a difference by helping preserve native species, and prevent the spread of invasive species, through practices such as those outlined in the sign in Image 4.3.1. At Indiana Dunes, for instance, a sign at the visitor center warns that, “Seeds of invasive plants hitchhike on your shoes’ lugs and laces, allowing invasive plants to spread quickly and crowd-out native plants. It takes time and costs money to remove the invaders. Stopping the unintentional spread of seeds is the best way to protect the native landscape.” As above, the nonnative plants are anthropomorphized; they are not merely stuck to your shoes, they are hitchhiking, a negative activity in the US context because it implies getting something (a ride) for free. Other signs at Indiana Dunes utilize the “alien” metaphor to describe nonnative plants.

Preventing the spread of these plants, for example through use of a boot brush as is advocated for in the above sign, is valuable both for the protection of native species but also the economy—after all, it “takes time and costs money” to remove nonnative species once they have *hitchhiked* to new territories. Individual intervention also takes place in the form of teamwork, through volunteer programs and projects; efforts like these are described at Indiana Dunes, Seven Islands, Beaver Lake, and Kankakee.

Descriptions of preservation overall promote the idea that desirable species are in need of direct human intervention with and maintenance of landscapes in order to thrive. Although sometimes these are plant species, such as those just described, the most common group of species described at the parks surveyed for this project are birds. The native species in this narrative are in need of saving—by humans, from nonnative species—and this justifies human intervention in the landscape. At Beaver Lake, one such struggle chronicled is between scientists, bluebirds, and house sparrows (Image 4.3.2). In the sign “Home Sweet Home,” a cartoon bluebird says, “Who’s that in my home!?” as a house sparrow looks out from a tree cavity; text next to the house sparrow claims, “A House Sparrow has invaded a Bluebird’s home and thrown him out!” The main text of the sign reads,

In the early 1900s, scientists began to notice that aggressive populations of House Sparrows and Starlings (introduced to America from England) were out-competing our native birds for nesting sites in tree cavities. This was causing declines in populations of species such as Bluebirds. Beginning in the 1960s, more people started putting up nest boxes for Bluebirds and other native birds so they would have places to nest. Now Bluebird populations are growing again.

The bluebird in particular is anthropomorphized in this sign to provide a species in need of saving and direct intervention, while the house sparrows (and starlings) are described with metaphors of invasion and aggression. The house sparrow has “thrown out” the bluebird from “his” home. In the main sign text, humans—including scientists and “more people”—are a positive force, who notice the conflict and help the bluebirds by putting up nest boxes, modifying habitats so the population can recover. In reality, this conflict is not only between bluebirds and house sparrows, but between a variety of bird species, native and nonnative, that compete for territories, as well as between birds and humans due to habitat destruction. However, the sign uses this particular story, while mentioning “other native birds” in the sign and images below the text, to garner sympathy for a particular species that is easily noticed and fairly well-known, a bluebird. The bluebird acts as an icon for preservation in this instance, as does the great blue heron for wilderness. Passive voice is used strategically to maintain the idea that human intervention is positive in this conflict—in a parentheses, the sign states that house sparrows and starlings were “introduced,” but does not ascribe a human agent to the introduction.²⁰ Furthermore, the sign uses “our” to describe native birds, a fairly common strategy of the signs to convey both ownership over the native species that human preservationists are supposedly responsible for, as well as positioning these species as part of the US community (described more in section 4.4). The story of the bluebird, house sparrows, and humans, is ultimately a positive one, with a happy ending—bluebird populations are

²⁰ House sparrows were brought to their new home in North America in the 1850s to control another nonnative species, a caterpillar. This is a common reason for nonnative species spread, of which the cane toad in Australia might be the most widely known.

“growing again”—and the sign does not complicate the happy ending by entering into a deeper description of who introduced starlings and house sparrows in the first place.

In the preservation narrative specific species and groups of desirable or threatened species provide a rationale for preservation of a space, including small modifications such as bird boxes, designation as nature preserves, or even the reconstruction of whole environments. Signs at Kankakee, for instance, describe the “discovery” of the Kankakee mallow, an isolated and endangered species, as essential to justifying the designation of one part of the park as a nature preserve (Image 4.3.3). The sign text plays out very similarly to the bluebird text above, although in this instance at least the Kankakee mallow has no speech bubbles—after being discovered, the mallow is threatened by “invasive plant species like bush honey suckle,” and is subsequently allowed to “flourish once again” due to human intervention. Visitors are told that the plant is “unique,” and are taught how to recognize it by two diagrams on the sign. After all, a species being native is not enough to warrant preservation; it must also be unique and noticeable, like the bluebird, in order to be desirable.

Regardless of whether the species or habitats needed to help these populations are “native” or “natural,” the parks still rely on the native/nonnative binary, and threatening metaphors of violence and invasion, to justify the modification and maintenance of particular habitats. At Seven Islands, for instance, the sign “Farmland Habitat” describes how the area has been artificially constructed in order to create more “ideal” habitat for birds: “The typical agricultural landscape of the Seven Islands area was good, but far from ideal bird habitat. To rectify this, a project was undertaken to bring native grasses back into prominence and to remove exotic species” (Image 4.3.4). In this sign, although the park still describes the land in

the native/nonnative dichotomy, there is no attempt to naturalize the desired habitat as “wilderness” or “natural” to the space somehow. Instead, it is “ideal” for birds, which is the main goal, aesthetically and economically, of the preserved space at Seven Islands. The “exotic” species are removed not because they are nonnative, but rather because they are not ideal for birds.

The “Native Grass Management” sign positions viewers to look out at the grassland being managed, potentially even seeing some of the birds who use the space, and describes some of the native grass species in greater detail (Image 4.3.4). Similar positioning of visitors is used by signs describing the reconstruction of habitats at the Cowles Bog area of Indiana Dunes, which describes efforts to restore native plant diversity. While the goal of the preservation activities chronicled in the sign “Restoring the wetlands” (see Image 4.1.1) is to promote plant diversity, the only specific species mentioned is the great blue heron: “As plant diversity returns to Cowles Bog, an increase in the number of bird species, like the Great Blue Heron, will occur.” The preservation narrative is constructed through assigning particular roles to highly visible or desirable species, such as the great blue heron or bluebird, and describing the benefits of preservation to these species. Theoretically, a visitor can look up from the “Restoring the wetlands” sign and see a great blue heron or the “Home sweet home” sign and see a bluebird, the tangible ambassadors of preservation efforts.

The parks also justify preservation efforts through portraying species as economically valuable in some way. For economic value, species are sometimes described as economic resources, while at other times their value derives from their aesthetic quality or ability to provide a tourist “spectacle” (see Image 4.3.6) Native tree species mentioned earlier, such as

the sugar maple and American chestnut, are described in terms of direct economic value as resources. The sugar maple is described in this way in the sign “Maple Syrup’s Future” (see Image 2.7) as providing a commodity, maple syrup, that “future generations will continue to enjoy...as long as Sugar maple groves are protected.” In addition to direct economic resource value, certain species also provide value by giving a “spectacle” for locals and tourists. This is the value assigned to swifts at Beaver Lake: “A large swirl of swifts coming to roost at sunset is an urban spectacle not to be missed. It is important...to provide nesting sites like this tower” (Image 4.3.5). The value of protecting swifts and sugar maples is that these species are not only valuable currently, but also for future generations. The implication of this sign is that the spectacle of swifts will be missed by future generations if not for preservation efforts like the construction of the tower; the sugar maple sign addresses this more directly by referencing future generations. Whether economic or aesthetic, the value of these species is in part future-focused, and for that reason requires constant vigilance, intervention, and maintenance on the part of humans.

Intervention in the preserved spaces comes in the form of landscaping, habitat reconstruction, structures such as bird boxes, bird banding and other scientific surveys, preventing the spread of nonnative species, as well as, of course, the continual monitoring and maintenance of all of the above. These preservation activities are all not only accessible to visitors, but are crucial to the success of preservation efforts. The signs at these parks frequently reference preservation efforts that are tied to particular local organizations, including land grant universities, birding societies, and park organizations like the NPS, which compounds this erasure due to these organizations’ alignment with western scientific

ideologies and knowledge systems. All of the spaces also commemorate particular “stewards” of the environment based on their monetary donations to the space, such as at Beaver Lake where the HOA of the adjacent neighborhood is the primary donor: “The Lakeview Park Association continues to own and maintain the lake. The shoreline within Beaver Lake Bird Sanctuary is managed by Elisha Mitchell Audubon under a permanent conservation easement donated by the association.” Although it would appear, when park signs use the second person to refer to “you,” they are calling for anyone to assist with preservation, the context constructed through images, references to organizations, and descriptions of individual or group donations, conflicts with this idea. The semiotics of the park signs—including text, images, and context—are united in the presentation of the spaces as eurocentric: historically, presently, and presumably in the future as well. All these elements contribute to constructing the implicit “you” who is referenced by signs as the parks promote visitor engagement.

The issue with the conservation model is not that it is being represented in general, but rather that it is represented without any context or alternatives, even at the linguistic level of the implicit binaries and metaphorical concepts used to describe conservation activities. The conservation model is one rooted in colonization and paternalism; the word conservation itself was first used by President Roosevelt, who used government policies to create protected sites to combat western expansion and urbanization (Hernandez, 2022). Along with this “protection” of spaces came the displacement of Indigenous peoples, “if their lands were deemed as national parks-worthy” (Hernandez, 2022, p. 77). There is a general lack of reconciliation with the racist origins and actions of conservation science, which is reflected in how the park signs treat it as the only model of stewardship. A lack of critical consideration also leads to these

origins being recycled, as still it is typically white, cisgender men governing conservation policies, often without consulting Indigenous people. All of these issues go unacknowledged by the park signs; a further issue for land stewardship more generally is that there is a loss of knowledge when the conservation model is the only one presented. This model stems from one tradition of knowledge, but there are many others with which organizations could engage to develop more effective means of land stewardship. Hernandez (2022) suggests a model of *kincentric ecology*, viewing flora and fauna as relatives in need to ethical treatment, including nonnative species. This is a model shared by many Indigenous communities of North America and elsewhere, which focuses not on the resource value of a space, but rather on the inherent value and rights of all living things (including the land itself). Within this model, relationships are the focus, rather than ownership.

Instead of engaging with multiple perspectives, of course, the signs in these park spaces present only a western conservation model, one that separates humans from land and other species. Images of preservation activities, as well as descriptions of individuals and organizations engaged in preservation, reinforce this, portraying preservation as a primarily (and uniquely) European American activity. Since the signs have distinguished between the spaces as wild, unaltered by humans, and only later as civilized, and altered by humans, the stewardship and knowledge of Native Americans intervening in the landscape can easily be ignored in the preservation narrative. Like the settlement narrative, the preservation narrative communicates an extremely simplistic and generally positive version of historic activities and ongoing efforts. The parks also do not address other models of conservation, such as kincentric ecology. Instead, the signs describe only a model that has been called a “fortress” model of

conservation, using the conceptual metaphor of war to describe preservation efforts and nonnative species spread. In this model, both human residents and nonnative non-human animal and plant species are described as invaders or as dangerous, and human conservation scientists are described as saviors of vulnerable native species.

The overt goal of these descriptions of the preservation of the spaces is to communicate their economic, aesthetic, and recreational value. However, through descriptions of preservation efforts in terms of human intervention as necessary to save certain charismatic species, the spaces set up a eurocentric model of conservation that further extends the wilderness/civilization divide that has been reiterated by descriptions of the spaces as wild and settled (described earlier), as well as descriptions of nonnative species as violent invaders.

4.4 Visitor engagement with the parks

The six parks use second person language, directives, and descriptions of “present” time to have visitors participate in the construction of the idealized past (wilderness and settlement) of a space, as well as feel involved in its present and future (preservation). Visitors are told to picture an idealized past, to consider the economic value of the preserved environments to their communities, to use the spaces to learn and explore, and to help in ongoing preservation efforts. They are further told that they, as individuals, can make a difference to the spaces, or plant and animal species that live there, through direct intervention, awareness raising, and monetary donations to organizations and scientific efforts. The values communicated through these strategies construct a particular type of visitor, one that is of European descent, able-

bodied, is financially secure, and is aligned with individualistic and capitalist values, while constructing an exclusionary space for visitors of other demographics and ideologies.

Visitors are encouraged to picture the past in an idealized way at several of the parks, which locates them as part of the ongoing history of the space as well as erasing the more problematic aspects of the past. At Indiana Dunes, for instance, visitors are instructed by the “Highways of the Past” sign (pictured in Image 4.2.1) to:

As you walk these grounds, imagine the scenes, the people and changes that have occurred here. Picture Joseph Bailly greeting the Indians as they delivered their beaver pelts to trade. Hear the sound of the Indian and Bailly children playing while their parents bartered for trade goods.

The vision of the past conjured for visitors, as they walk through the preserved buildings that form the Bailly homestead site, is a positive and simplistic one. However, the language of this sign shows the problematic nature of this comparison—for one, the Native American populations are referred to as “Indians,” and for another, they are left entirely generalized, whereas the sign specifically names Joseph Bailly and the Bailly children. It is clear who the visitor is intended to imagine, picture, and hear: Joseph Bailly does the greeting, while the “Indians” simply deliver trade goods.

Visitors are also encouraged to engage with the parks spatially, as the signs point out the different surrounding environments. At Indiana Dunes, for instance, visitors are told, “Trees in the winter may look alike, but look more closely. You are in a mixed deciduous forest.” Other parks make similar moves. With this strategy, the uniqueness of the space is pointed out—it is

not made up of generic trees, but rather “mixed deciduous” trees. This ascribes a naming role to visitors in the space: they know where they are because they are able to name species within the environment. This aligns with western science that focuses on naming and identification, which is similar to how birds are described by signs. In a more far-reaching version of this naming practice, at the Seven Islands’ Mt. LeConte overlook, visitors are instructed to look at and picture the best vacation to several peaks in the nearby Great Smoky Mountains National Park: “Pause and take a moment to enjoy the view. On a clear day you can see Mount LeConte to the southeast. ...A trip to the [LeConte] lodge is not complete without watching a sunrise from the Myrtle Point peak and the sunset from Clifftop.” The image accompanying the text includes a diagram of named peaks in the Great Smoky Mountains, which a visitor could see on clear days (Image 4.4.1). Although theoretically addressed to anyone, this particular description assumes a visitor who is financially secure; a trip to LeConte lodge is expensive, and requires a reservation far in advance.

The monetary value of spaces and species, and how these benefit visitors specifically, is emphasized by park signs through connecting these to resources and to “our” (the US) way of life. The American chestnut tree, in addition to being a focal point at Beaver Lake for preservation and prevention of nonnative species spread, is also described as a resource: “Many uses of wood from these trees supported the US economy and our way of life.” The US as part of the broader context of the parks becomes particularly distinct in visitor address, unifying the park spaces as part of the US, and visitors as part of the US population, which communicates that visitors and the parks share a common ideology and set of values as part of this community. In this quote, this ideology is specifically a capitalist one: the American

chestnut tree is valuable due to its use as a resource supporting the economy, which in turn fuels “our way of life.”

The use of the pronouns “we” and “our” is a form of deictic positioning that is common across the park spaces, which positions visitors as part of a particular in-group with shared values. Deictic words include pronouns and definite articles such as “this” or “that,” which assume a particular shared context between speakers. For instance, meeting “this afternoon” has a specific meaning if the two speakers both reside in the Eastern Standard Time Zone, but if only one speaker is there, while the other is in Thailand, “this afternoon” has an ambiguous meaning that must be specified—“my afternoon, not yours.” Grieser (2022) describes the use of deictic pronouns by residents of Anacostia to distinguish in-groups and out-groups in a gentrifying neighborhood: “Pronouns...signal linkages or disunions between groups of people. When someone uses “we” or “us” they are indicating who they view as people who, like themselves, can and cannot be referred to as being a part of the same group” (p. 53). In this context, deictic pronouns are used actively by residents of Anacostia to distinguish between themselves and the developers and new residents contributing to gentrification. In the parks context, similar deictic pronouns are used by signs to distinguish visitors as an in-group. However, because these signs are textual, there is an assumption made about visitors that could make some feel they are part of the in-group referred to, while alienating others; the in-group of “us” in these signs are those who share capitalist values, are relatively affluent, and generally are able-bodied and feel safe when exploring the park landscapes.

Another instance of deictic positioning is at work at Indiana Dunes, where the park promotes the wetlands and lake as a “national treasure”: “Lake Michigan is one of our great

natural resources and a major recreational area. As you wade in the water, walk the beaches, and explore the dunes, enjoy this national treasure.” Like the American chestnut tree, Lake Michigan is “our,” and the subject “our” is again modified to be US specific, in this instance through the use of the word “national.” Its value as a “resource” stems from its use as a recreational area, one that visitors are invited to explore and enjoy; more than being mere visitors to the space, the “our” implies that these visitors in fact own the lake, just as they own a particular way of life in the above quote from Beaver Lake. At Indiana Dunes, this same text is repeated at a number of large kiosks throughout the park at different parking lots (Image 4.4.2). It is significant that these two examples are very different spaces; one is a small city park, owned partially by a neighborhood, while the other is a national park covering thousands of acres. The national park, Indiana Dunes, in a sense is “our” to the broader US—tax dollars do pay for the space—but at Beaver Lake, the “our” is technically much more specific and connected to a neighborhood HOA. However, both spaces use similar language to connect to a US nationalist ideology.

The use of “our” to imply human ownership over and responsibility for spaces and animals continues as the parks encourage visitors to help preservation efforts directly, rather than simply seeing the value of spaces. Ownership then becomes one part of the value of these spaces and animals. At Beaver Lake, for instance, a sign instructs visitors in constructing a “bird-friendly garden” by planting native species: “Native plants provide the food our birds need when they need it most....Native plants in your yard mean your baby birds will have enough to eat....As a bonus, you may reduce the amount of grass in your yard, meaning less mowing and reduced emission of greenhouse gasses!” The implication here is that through assisting birds—

which is necessary for their continued existence, at least as far as the preservationist narrative goes—they become owned by the person helping them. Birds in *your* yard, which *you* have planted native plants in, are *yours*. As a secondary value to planting native species, the sign states that visitors will mow less, an argument based on the capitalist idea of time-as-resource. This, in turn, can reduce greenhouse gas emissions; while technically true, the amount of emissions reduced by not mowing one's lawn are extremely minimal.

Part of the goal of the spaces, then, becomes educating visitors in a very specific type of environmentalism, which is rooted in settler-colonialism. This furthers both the settler and preservationist narratives by emphasizing capitalist values such as private property and ownership of particular species, using the war metaphor of conservation as a battle between native and nonnative species, and promoting individualistic rather than communal practices of environmentalism. Another sign at Beaver Lake, for instance, instructs visitors on a first step to helping native species: "Educate Yourself: Become familiar with invasive plants and remove them from your yard. Seek help if you can't get rid of them. For detailed information, talk to the staff here." This is the "Preserve our natural heritage" sign in Image 4.3.1, which uses metaphors of alien invasions and violent rampages to describe nonnative plants. There are several problems with this type of rhetoric, including the aforementioned issues with climate change communications that emphasize individual efforts, but also including that these are based on very specific ideologies of space and animals that are not universal. The ideologies of resource value, tourist spectacles, and ownership through assistance, stem from a eurocentric, individualistic view of these spaces, which are implied to be universal by the language of signs that removes human agents (in describing "wilderness," or the negative impacts of nonnative

species and climate change that preservation seeks to reverse). In this context, the message of the rhetoric around native and nonnative species, resource value, and preservation efforts, can be summed up: if species and spaces are helpful to the US economy, they are valuable and worth preservation efforts.

The two birding parks also emphasize a particular type of knowledge about bird species that is based on identification and naming. This rhetoric will be unsurprising to anyone familiar with ornithology, which in its early form as a western European science was predicated on identification and naming, typically by white male Europeans, without acknowledging the labor of Indigenous guides and female family members (see p. 70). This rhetoric is emphasized through references to specific features of species (referred to as “fieldmarks” in birding manuals) and through addressing visitors directly to instruct them on where to look for different species. At Beaver Lake, the connection between knowledge and identification is addressed directly by the sign “Who lives in these woods?” (Image 4.4.3), which encourages visitors to use field guides and offers a birding checklist: “Look at the size, shape, and main colors on the bird....With the help of a field guide, you can discover what birds you are seeing. A bird checklist for the sanctuary is available at the kiosk by the parking lot, or online at emasnc.org. Have Fun!” Beaver Lake aligns with the long history of recreational ornithology in the US and other countries, where long checklists of specific species of birds are used to demonstrate knowledge. Although Seven Islands does not address the use of field guides or checklists directly, it does emphasize observation. At Seven Islands, for instance, the “Riparian Habitat” sign (see Image 4.1.3) instructs visitors that, “In this habitat you may see Eastern Kingbirds, Northern Parulas, and Yellow Warblers as well as wading birds such as the Great Blue

Heron....This place...is a great place to observe wildlife.” The emphasis is on observation, with viewers who are able to name the species they observe able to claim that they “know” this species. Although they use slightly different strategies, both of these birding focused parks communicate a similar message that birds are there for human observers, and that the identification of specific species is valuable, while other species (such as starlings or house sparrows) are not valuable.

Many different signs focused on birds at these two parks use anthropomorphic birds to emphasize observation and to construct a friendly, accessible image of birds, which is similar to the concept of the “offer” and the “demand” introduced by Scollon and Scollon (2003). At Beaver Lake, cartoon birds on signs speak directly to visitors, encouraging visitors to locate and learn about them. One sign, titled “Do you know any bird language?” tells visitors that “Birds communicate with each other just as people do, by talking,” and includes phrases that different common species supposedly “say,” such as an eastern towhee saying “Drink you tea!” (Image 4.4.4). The sign further anthropomorphizes birds by including cartoon representations; the human observer has a cartoon bluebird on his head, while a cartoon hummingbird is positioned in the top right of the sign. The hummingbird “hums,” the sign claims, “Because they don’t know the words!” These signs have birds directly encourage humans to observe them, through images as well as text, and the placement of the signs positions human visitors to be able to look up from reading the sign and potentially see the species described. A cardinal in the sign “Take a peak at some beaks,” for instance, says to visitors, “Look at my sturdy bill! I can easily crush hard seeds and get out the nice meaty part inside” (Image 4.4.5). Like the other sign, this sign uses not only anthropomorphic dialogue but also cartoon birds to make them appear more

friendly and humanoid. The anthropomorphization of birds, description of fieldmarks, and cartoon humans and birds, all contribute to the naturalization of a particular type of knowledge of and interaction with animals. The overall message of these signs aligns with recreational ornithology: if you can identify and name a species, you “know” it, and through this familiarity, you can claim ownership of it.

The overt message of direct communication with visitors on park signage is to construct the parks as friendly, safe, and educational spaces for visitors. Covertly, though, the parks construct a particular type of visitor, through not only direct communication with visitors but also through how signs describe the spaces as wilderness, as areas of historic settlements, in preservation efforts, and crucially what and who is left out of this narrative. The constructed visitor is able-bodied, of European descent, is financially secure with disposable income, and is a US citizen aligned with the individualistic and capitalist values of the nation. The particular type of knowledge valued and communicated to this visitor is a specifically eurocentric one, reliant not only on capitalism in understanding the economic and aesthetic value of spaces (plants, habitats, and animals as “resources”), but also on the idea of knowledge as identification and naming. These values and types of knowledge are naturalized because they are communicated indirectly, without a presentation of alternatives. Likewise, the constructed visitor is naturalized through the erasure of complex histories and the homogenous images of visitors presented. While the spaces may be successful in communicating their safety and friendliness to this particular type of visitor, they in fact construct a highly exclusionary space that erases the presence of different individuals.

4.5 Discussion

This chapter has described the narrative construction of six US park spaces through educational and commemorative park signs, which provide visitors an onsite guide to the value of a space, who belongs there, and what histories are considered significant. This narrative takes place through four intertwined themes of the park signs: the parks are wilderness, they are places of (European) settlement, they are preservation sites, and visitors have an active role in the construction of these functions of the sites. Key binaries, such as that between wild and civilized, and native and nonnative, show up throughout these four themes, and serve to maximize the difference between those who belong in the space and whose history is valued (European Americans), and who is excluded with their history erased or minimized (Native Americans). Although this dissertation is concerned primarily with this relationship between the histories of European and Native Americans, the parks also entirely erase the histories of other populations.

As the history and presence of Native Americans is largely unacknowledged at the data sites, I as a researcher run the risk of reinstating this erasure by including only what is available at the data sites; this is true of LL research more generally, which tends to focus on what is available in place within a site. This is an issue for the field to consider more broadly: by reporting what physically exists, or is physically written or depicted in an area, researchers can become complicit in the erasure of minoritized groups. Moving forwards, LL research should be working not only to avoid, but to challenge this. I have done so in this chapter by including a partial history of the area, left unacknowledged by physical signs, which is highly significant to the space. By including at least a brief description of the history, impact, and importance of

culturally erased peoples, such as the Potawatomi in this instance, researchers of linguistic landscaping can present a more complex and accurate understanding of their data sites.

At the three midwestern parks—Indiana Dunes, Kankakee, and Gar Creek—the differentiation between Native and European American histories is furthered in particular through a distinction in descriptions of time and people. While European immigrants of the 1800s and conservationists of the 1900s are referenced with specific names and specific years, Native Americans are left entirely generalized in time, name, and appearance. Their impact on the landscapes of the parks, their knowledge of conservation, and their ongoing connection to the spaces are left entirely unacknowledged. Instead, only a western conservation model of stewardship is described, which emphasizes the binary between native and nonnative species, and human and non-human environments. Both these distinctions are necessary for European settlement to be naturalized and justified by the signs; since humans do not count as part of the “natural” environment, where there is a distinction between native and nonnative species, there is no need for the parks to engage with the relative indigeneity of Native American and European immigrant groups. This is an example of human exceptionalism, which aligns with the western conservation model but not Indigenous stewardship models (Kimmerer, 2013; Hernandez, 2022).

At the southeastern parks—Beaver Lake, Lake Louise, and Seven Islands—there is no direct mention of Native Americans’ impact on and relationship with the spaces, and therefore no direct comparison between Native American and European American ways of life, as there are in the midwestern parks. However, in their focus on preservation of particular species, and alignment with particular strategies of conservation, the parks naturalize a European

conservation model by making it appear that this is the only model of conservation available. Since Native Americans' lives are not addressed at all in these three parks, there is no need for a distinction to be made between a community-based model of stewardship, in which local populations of a space are the stewards, and the "fortress" model of conservation, which seeks to remove all human occupants and puts conservation in the hands of government organizations. There is also no need at the southeastern parks to justify European settlement through the strategies used at the midwestern parks, because there is no acknowledgement of the longer history of these spaces. Whether minimized and simplified, as at the midwestern parks, or entirely erased, as at the southeastern parks, the reliance on eurocentric conceptions of wilderness, settlement, preservation, and visitor engagement contribute to a construction of the park spaces that is highly exclusionary.

Through the simplification and erasure of educational and commemorative signs, the AR platform as a whole serves to amplify and extend these representations to a larger audience, essentially augmenting the problematic nature of the eurocentric narrative constructed by physical signs. The next paragraphs revisit several key areas of the parks described earlier in the chapter to look more closely at the AR representations.

One example detailed in section 4.2 are the Bailly and Chellberg homestead heritage sites in Indiana Dunes. These spaces are designated heritage sites, with a relatively large concentration of educational signs relative to the rest of the park. As has been detailed earlier in this chapter, this is an extremely narrow representation of the scope of human histories within the site. Although educational signs around the homestead buildings claim to describe a history of the area spanning the early 1800s (pre settlement in 1822) to the present, the

depiction of Native American histories is overly simplistic and serves to erase the diversity and significance of their impact on the landscape. The educational signs included digitally, however, do not represent even this attempt. For instance, Image 4.5.1 is one of only two digital representations at the Chellberg heritage site and represents the syrup shack, a structure that details some of the history of maple syrup production as well as how it is harvested currently. It is at this space that the sign in Image 2.7 is located; it is one of the four informational signs alongside the syrup shack, shown in Image 4.5.2. This sign, all the other signs, as well as the surrounding context of the site are all excluded from the digital representation, which uses a single closeup photo to represent the space, with little informative text. None of the complexity or problematic nature of this site or the individual signs is acknowledged.

Another example is at Kankakee, where commemorative sites designated as part of the French-Canadian Heritage Corridor focus primarily on the heritage of French settlers, for instance commemorating the historic town of Rockville, the Altorf Mill, as well as specific early European immigrants. These memorials are repeated in the AR sites of the area, which include the Rockville, Altorf Mill, and Bert Stephens memorials, the latter of which is shown in Image 4.5.3. These memorial sites are accurate in location and the images used to portray them in the AR map. This heritage is therefore represented as significant to the area both via the physical and digital layers of representation. Commemoration is absent, however, for the heritage of Native Americans such as the Potawatomi. Native Americans are referenced only in the names of sites of use, such as the Potawatomi Campground, and no individuals are named in memorials, with one exception. The only individual named in a memorial is Chief Shawanese, but this memorial is not only physically separated by a road from the main part of the park and

difficult to locate, but also is not included in the digital layer. One irony is that a common function of AR is to help users navigate spaces and locate sites of interest; if the memorial were included digitally, it likely would be easier to find. Overall, at Kankakee the AR sites serve to amplify the memorialization of European settlement of the area, at the expense of unnamed Potawatomi individuals, as well as omitting the only supposed attempt at including a memorial to a named individual, Chief Shawanasee.

Similarly, at Gar Creek memorial sites reference specific European-American individuals' contributions to the industrialization of the area—for instance, the “Tribute to Ira L. Collins” and “State Fish Hatchery Stone Arch” both provide descriptions of individual roles in the development of Kankakee county (Image 4.5.4). The AR representations, such as that shown in Image 4.5.4, match these descriptions as well as images of the sites, although the textual descriptions are shorter in AR than on the physical signs. In contrast to the detailed biographical information and list of contributions of named European Americans, there is no representation of named Native Americans at Gar Creek, either at physical sites or via the AR landscape. Instead, there is the single supposed representation, “Carved Indian in tree stump,” the problematic nature of which is described in detail in Chapter 3. This is an example where the digital layer constructs additional meaning, beyond what is present in the physical layer, where there is no title, descriptions, attribution, or other information. The carving of a person could be read entirely differently in the physical site, but in the digital layer it is named and categorized. Although this direct categorization in the absence of physical information did not occur at other sites in this project, the carving at Gar Creek indicates the flawed nature of the site submission system, which does not adequately screen for racist or inappropriate submissions, does not

provide guidelines in ethical representation for submitters, and ultimately does not incentivize accurate, holistic, and ethical submissions.

In these examples, the question of whose heritage is being valued by the AR map—which encourages users to upload sites of “historic or cultural significance” (see section 2.2.3)—is particularly poignant, because the digital layer amplifies the physical layer in valuing only a specific eurocentric history of the area. For a visitor interacting with both digital and physical signage, memorialization that appears in the physical layer is erased in the digital, or vague or racist representations (of Native Americans) are contrasted with specific descriptions of the contributions of named (European) individuals.

These sites of digital representation are sponsored and mediated by an AR corporation—Niantic—that sources digital sites from its userbase and limits these site submissions in various ways. These ways include by requiring players to achieve certain in-game accomplishments, which necessitate a high degree of engagement with their platform, having users go through a training module that serves to align them with the company’s stated values, and finally by having users mediate each other. Essentially, the digital layer adds an additional step in the official sanctioning of representation—in addition to a sign, memorial, or art installation needing to be sanctioned within the physical space, it must also go through approval to be represented in the AR platform, and thus shown to a broader audience. In the data sites, this led to the simplification and erasure of the few sites that acknowledge Native American histories, and the amplification of eurocentric histories. Although there is potential for transgressive representations through textual play, such as at the wheelchair ramp or rules

sign at Lake Louise, or the raccoon bench at Indiana Dunes, this potential did not translate in these cases to more ethical and holistic representations of the site histories.

4.6: You are here

In this chapter, I answered the second research question in the context of the educational and commemorative park signs. This chapter provided an overview of the ways digital and physical semiotics construct narratives of belonging and exclusion in heritage tourism spaces. In the next chapter, I address what this means for linguistic landscaping research, and propose a model for AR tourism design going forward.

In Chapter 5, I will argue that there is a space for AR to perform social justice work, although this particular platform is not currently doing so. For this shift to occur, there needs to be incentive for the corporation, Niantic, to change their means of collecting site submissions and to incentivize users to submit and regulate sites from a perspective of ethics. The ideal for AR representations of the future is to go beyond what is physically present, subverting problematic physical representations to imagine spaces more holistically and ethically. There are many models of this from small scale AR developers of educational and historic heritage content. These models can be used by large AR developers, and by their userbase, to (re)construct their means of site representation, sourcing, and monitoring. The widespread use of AR for recreation and tourism means that it will take more than transformation of physical representations, in park spaces or any other, to alter hegemonic representations of space for a tourist audience. Research and activism also needs to engage with AR tourist platforms in considering how to construct more ethical and accurate representations of space.

Chapter 5

Colonialism introduced many layers that need to be dismantled, so in order to truly reach decolonization, all these layers must be dismantled. This means that like onions there are multiple layers embedded in ourselves and our systems that need to be peeled off. (Hernandez, 2022, p. 236)

When I conceptualized this project, I considered the contributions it would make to understandings of multilayered, digitized landscapes, to sociolinguistic research on tourism and sites of heritage, and to the interdisciplinarity of landscape studies. I anticipated that AR could provide an alternative, and potentially transgressive, avenue for representation in US park tourism spaces where eurocentric histories, heritages, and knowledge systems are typically foregrounded by physical representation. What I never considered was the profound impact this research would have on me and my understanding of my family history and positionality.

During the course of this project, speaking with family members, I discovered that one group in my ancestry were given a homestead by the US government in Wisconsin in the mid-1800s. I realized the signs in Indiana describing the Bailly homestead and their “negotiation” with Potawatomi elders could just as easily have been describing these Swiss homesteaders of my own family, and that knowingly or not, they were participants in the violence of the Indian Removal Act and the displacement of thousands of Indigenous people. I, too, was a participant, in that I had benefited tremendously from this original “gift” of land. The violence and erasure I had documented in research was no longer abstract, but a matter of reconciling with my own history and of deeply reconsidering my own role and responsibility in decolonization.

Questioning, building awareness of, and considering critically the constructed landscapes around us are not only the work of the people who are directly minoritized, whose identities are directly threatened by these constructions, but can and must be the work also of those who have benefitted from these spaces. Although the experience of the constructed landscape is a universal one, the spaces experienced by individuals differ drastically. There is a particularly sharp division in the spaces investigated for this project between the amplification of European histories and erasure of Indigenous histories. I chose to use ethnographic linguistic landscape analysis (ELLA) as an analytic method in order to call attention to the erased contexts, histories, and social meanings of sites, in addition to what was explicitly represented (see Chapter 1). This analysis was enriched by analyzing different layers of representation and their relationships, and revealed several key conclusions, including the flattening of representations via the digital layer, the reification of hegemonic narratives between layers, and the role of corporate mediation in portraying a particular sanitized and gamified version of the spaces.

In this final chapter, I summarize the key results from chapters 3 and 4, including the relationships between digital and physical layers of representation and the narratives constructed by these representations that constrict the possible uses, purposes, and values within the spaces investigated. Following this, I bring these results together to develop a framework for linguistic landscaping research moving forward. In addition to providing recommendations for future research, I also provide recommendations for AR developers, users, and participants, and discuss how the tools of linguistic landscaping work are applicable to a broad audience.

5.1 Summary of results

Overall, there were three kinds of relationships between digital and physical representations within the six sites: 1) the digital layer amplified certain physical representations, 2) the digital layer erased and devalued other physical representations, and 3) the digital layer constructed new meanings within the site. In the amplification of physical sites, the digital layer reified existing inequities in physical representation, particularly with regards to the uneven representation of heritage and systems of knowledge. The digital layer, like the physical, represented eurocentric versions of these at the expense of all others. Even with occasional transgressive representations in which the digital constructed new meaning, overall, the digital layer was not unique or transgressive in representing who these six park spaces were for through the marketing of heritage and outdoor recreation tourism.

The digital layer often amplified the inequities of physical signage through representing certain signs and structures in a highly simplified and uncritical way (see Chapter 3). These inequities included issues of accessibility, safety for minoritized visitors, and the uneven representation of Indigenous and European heritage within the spaces. At Kankakee, for instance, the digital layer amplified the representation of French-Canadian heritage, which was memorialized by signs and monuments along the main greenway through the park, by including nearly all of these in the digital layer. Although the digital representations did not include the detail of physical sites, they did show the sign or memorial in the visual representation and included the names of individual immigrants and buildings from the early 1800s (see Chapter 3). This contrasted with the memorial to Chief Shawanasee, the only named Native American

mentioned at any of the sites, which was separated from the main greenway by a road and was also omitted from the digital layer.

The digital layer mimicked physical inequities in the erasure of particular sites through a lack of mention of any heritage or knowledge system that is not eurocentric, which corresponded with the lack of mention on physical signs. The omission of the memorial to Chief Shawanasee, and inclusion of the French-Canadian memorials, shows a cyclical relationship between the physical and digital representations: sites within the physical park space that are positioned in highly visible and trafficked areas are reified by the digital layer, while sites relegated to less visible and trafficked areas are omitted. The digital layer therefore reified hegemonic narratives and the erasure of minoritized peoples within the park spaces.

In addition, the digital layer omitted key purposes of the sites, including the local meanings communicated through temporary flyers and community event signs, as well as scenic areas promoted by the park that were not heavily altered by humans, such as scenic overlooks, rivers, or gardens. The omission of local meanings leads to a flattening of the purpose of the space, which is gamified by being digitally marketed to a global audience of recreators at the expense of other uses (see Chapter 3). Local meanings were especially significant to the three smaller parks in the southeast, all of which included large kiosks where community events and programs were advertised by flyers. This, as well as the omission of scenic areas, is a function of corporate mediation: the platform bans the inclusion of sites that are considered seasonal or temporary, including natural areas where a particular “attraction” may be visible only part of the year. In these cases, the omission is a direct result of this

mediation by the corporation, and shows how the platform currently is not sufficient for representing the nuance of physical sites, particularly in outdoor park spaces.

Although not common, there were a few examples in the data sites that showed the potential for the AR platform to construct new meaning through representations of sites (see Chapter 3). Construction of an altered meaning occurred at Indiana Dunes, Lake Louise, and Gar Creek. At Lake Louise, for instance, sarcasm was used to call attention to the general inaccessibility of the park space in the description of a ramp that was the only feature of the park meant to increase accessibility. Also at Lake Louise, as well as at Indiana Dunes, content uploaders used the digital descriptions to alter the meaning of sites in a comedic way, for instance using wordplay to suggest that raccoons could be recycled. At Gar Creek, however, the title and description of a site in the absence of any physical information dramatically narrowed the meaning of the site by ascribing the identity “Indian” to a carved human figure. Although this is a new meaning for the site, it is consistent with the historicized and simplified treatment of Indigenous histories within the rest of the space. Taken together, these four examples show the potential of the AR platform to alter the representation and meaning of sites through its features.

In these cases, we can conclude that although the digital layer can sometimes represent spaces in transgressive ways, it more often amplifies the hegemonic narratives portrayed through physical representations. This is due in part to the additional level of mediation in the digital landscape—in addition to being physically represented at some point, a sign must be accepted as a digital site before being represented in the platform. This mediation led the digital sites to be heavily simplified and the spaces they represented gamified in the context of

the platform. Their inclusion in the platform was not critical or problematized, which led to the amplification of the inequities constructed physically. Although the digital layer has the opportunity to provide additional information or commentary on the inequities spread by physical signs, in these cases it generally did not. This is particularly problematic because some of the criteria used by the platform for site submissions include sites of “historical or cultural significance” (see Chapter 2). However, it is clear from the sites included that the content uploaders and content reviewers, trained by the company, had only one kind of cultural significance in mind, and the narrative resulting from their submissions focus only on eurocentric settler heritage, aesthetics, and knowledge systems.

There were four crucial themes of the narrative constructed by physical signs: these included ways of conceptualizing the spaces as areas of wilderness, sites of settlement, areas of preservation, and sites for visitor engagement (see Chapter 4). As the overall narrative was constructed primarily through text-heavy educational and commemorative signs, it was not as commonly represented in the digital platform as were the designation signs, pathways, and aesthetic structures introduced in Chapter 3. However, some of these signs were still included, and those included focused exclusively on eurocentric versions of knowledge and heritage.

Within the six park spaces, there was an equation between Indigeneity and wild/uncivilized spaces, which implicitly communicated a lack of rights for Indigenous communities within the space and justified settlement (see Chapter 4). Indigenous conceptions of ownership and space were not acknowledged or accounted for. There were several key strategies used to naturalize a conception of the sites as *wildernesses*, rather than Indigenous homelands: the signs removed human agents by using passive voice and past tense, referred to

a time-ambiguous past, and contrasted this with the time-bound occurrence of settlement. The wilderness narrative functions to construct the spaces as valuable in terms of a capitalist society: the spaces and species within them are monetarily valuable as resources and/or aesthetic aspects of tourism. This alignment with capitalism might seem incongruous with the additional construction of the spaces as “pure” wild spaces, untouched by human civilization, but is in fact a rhetorical move that relies on a western conception of the aesthetic of purity or untouched wilderness as being a valuable “escape” from the city, at least for those who can afford it and who are welcomed within the space. The binary constructed between wild/civilized spaces leads to the parks being exclusionary spaces, part of the “fortress model” of western conservation (Stevens, 2014; see Chapter 4).

Settlement narratives were featured prominently in signs at the three midwest sites, but also occurred at Seven Islands; the settlement narrative focused on a particular instance of European settlement as a source of value within the space, justifying it as a heritage site (see Chapter 4). Settlement is described as a generally peaceful process of negotiation between settlers and Indigenous populations, but also as a dangerous one in which the settlers must overcome obstacles, which helps justify their occupation of the land. These obstacles come from the environment and rely on a particular conception of environmental aesthetics (for instance, a marsh is construed as an inherently challenging environment in which to live, whereas a prairie is not). Settlers of a marsh (like the Baillys) have “conquered” or “overcome” it as an obstacle, and therefore have a right to settle there. The physical signs that they have overcome an environment are the preserved and memorialized structures within the spaces. These physical structures, such as the Bailly house at Indiana Dunes, become a physical nexus

around which people and events are described as taking place, as well as being a focal point for modern visitors. This leads to a clear expression of value in a certain kind of built environment, one which is heavily modified by humans; this value is amplified by the digital layer, which emphasizes similar human-constructed environments as sites of gameplay. The physical structures are also used by the signs to create a sharp distinction between European and Native American communities, and to portray the former as not true inhabitants of the space because of a lack of permanent physical structures. The signs overall naturalize the occupation of European settlers through portraying their way of life—overcoming obstacles and the creation of permanent structures and alterations to the land—as justifying their ownership of the space, and contrasting this with a maximally different picture of Native American communities. Additionally, this is only accomplished through portraying Native American lives as historicized, simplistic, and time-ambiguous, rather than acknowledging their current existence and rights.

The preservation narratives of signs focus on a second key binary—between native and nonnative species—as well as a continual struggle between human conservationists, environmental degradation, and vulnerable native plant and animal species (see Chapter 4). Like in the wilderness narrative, humans are not mentioned as perpetrators or agents of environmental degradation, and the blame is instead ascribed to nonnative plant and animal species. The model of land stewardship described is exclusively a western conservation science model, which portrays human habitation and the movement of non-human animal and plant species as a danger to native environments, including plant and animal species. Certain types of environments, animals, and plants play key roles in this narrative, as either villains (for nonnative species) or damsels (for native species) for the hero (conservationists) to save. This

was the case at Beaver Lake where anthropomorphic starlings ousted eastern bluebirds from their homes, with the problem solved by a particular kind of nest box being used for bluebirds; the story told on this sign makes no mention of the human introduction of starlings to North America. This model, with conservation portrayed as a war between human saviors and nonnative animal species, is the only one mentioned by signs, naturalizing it and implying that it is the only model available. The eurocentric values and knowledge communicated through these signs set up an implicit “you” for the visitors being addressed by park signs.

The parks engage visitors with these narratives through several strategies, including use of second person language and deictic positioning, directives to picture an idealized and simplistic past, as well as descriptions of individual efforts towards preservation (see Chapter 4). The goal of visitor engagement is to have visitors feel involved in the past of a space, through their connection to its human heritage, as well as its present and future. However, this construction relies on deictic positioning of visitors in which the implied “you” or “we” of park signs shares particular values and ideologies, including individualism, capitalism, and acceptance of western versions of the heritage of the space and conservation science. The language of signs also assumes visitors who are financially secure, encouraging monetary donations as a way of performing preservation. Taken together, these strategies of positioning construct an exclusionary space for visitors who do not share these values, ideologies, or means, by leaving them unacknowledged.

There are a few key takeaways on the relationship between AR and physical representations and how this constructs the landscape and narratives of heritage. First, AR was not typically transgressive in these six sites. Instead, with a few exceptions, it tended to reify

the hegemonic narratives of physical representation through amplifying eurocentric signs, participating in the erasure of Indigenous persons, and at times constructing new racist representations. Rather than providing a different perspective on sites, the digital layer tended to flatten representations—narrowing them to particular images captured at particular points in time, with only snippets of text, which did not complicate or contextualize the sites. This simplification and reification of hegemonic narratives was the impact of corporate mediation; from these representations, we can learn how the company, content submitters, and content reviewers mediate the landscape, and what they consider significant. In the next section, I discuss each of these in detail.

5.2 Contributions

Understandings of space and representation are enhanced by taking a linguistic landscaping perspective, which focuses on the ideologies behind what is apparent in the built environment. My approach contributes to LL research by building on ELLA, by questioning the agents, social forces, and historical contexts behind the representations apparent in constructed spaces, and investigating not only what is apparent but also what is erased from the landscape. My work further contributes to LL research by the dual focus on both physical and digital layers. The layering of landscapes is particularly significant for researchers to address with increasingly digitized tourist environments, which are constructed and regulated in ways that differ from the physical landscape. In this section, I outline these key contributions to research and make recommendations for ethical AR tourism and landscaping moving forward.

Within the AR mediated landscapes of this research, certain kinds of environments and histories were made more significant than others: heavily human-modified structures and spaces, highly trafficked areas, and sites with high visibility. This was the case for designations signs, pathways, and aesthetic structures, all of which tended to be represented more often than educational or commemorative signs, which were less visible and harder to access. The exceptions were those educational and commemorative signs that were located along paved, clear pathways, such as the educational signs at Seven Islands (many of which are located along the paved road through the park, Kelly Lane) or the memorials of the French-Canadian Heritage Corridor at Kankakee (which were located along the main paved greenway through the park). In contrast, educational signs and memorials further away from these main areas were not represented digitally, including the memorial to Chief Shawanasee at Kankakee.

The emphasis on highly visible and accessible sites in the digital leads to a feedback loop, where sites that already were foregrounded in physical representations—by being close to roads, accessible, large, visible, etc.—are amplified by digital representation, with the reverse true for physical sites that are less visible and accessible. In addition, the AR platform did not represent areas with less direct human intervention, such as scenic overlooks, gardens, or riverbanks, which were advertised as attractions by the parks. These omissions are a direct result of corporate mediation, as the company bans the inclusion of sites that are “seasonal,” including attractions that change over the course of a year—an example given in their online training, for instance, is that submitters should include a sign describing a scenic overlook, but not the overlook itself (see Chapter 2).

Generally, corporate mediation both enhanced the inequities between European and Indigenous representation, as well as flattened the landscape to be more simplistic by omitting alterations to and local purposes of spaces. This is significant because increasing numbers of individuals are experiencing spaces as mediated through digitized landscapes, while the agents and processes behind the creation of these landscapes are obscured. In Niantic's case, the digitized landscapes are constructed in a cycle of three sources, which I describe next (see also Chapter 2):

1. The company: The company mediates representations through their selection criteria for content submitters, including requiring certain in-game achievements that require a high degree of engagement with their applications, as well as their stated submission criteria that potential content submitters are quizzed on. They further regulate sites via in-game mechanisms for site review. As of the summer of 2022, Niantic introduced a form for players to report issues at represented sites, but these issues are focused solely on typographic and geographic inaccuracies: players can point out misspellings or incorrect locations, for instance, but there is no mechanism for players to report discriminatory representations. In this way, Niantic regulates both the type of sites submitted, as well as what criteria players can use to review the sites.
2. Content reviewers: There are two groups of content reviewers. First, those who have met the company's criteria through their site submission platform (see Chapter 2) are able to vote on submissions, directly choosing what is included and not included, based on their view of how well a particular site matches the company's criteria. Second, all players are able to access the site review feature while they are near a particular site;

they are then able to report inaccuracies or issues via text boxes next to prompts, including misspellings or location inaccuracies. Technically, a player could write whatever they chose in the text boxes, but it requires action from the company to make any suggested changes.

3. Content submitters: As players visit different places, they choose what to submit as potential sites. Players are only able to submit sites when they are physically present in a space, because they must add the geographic location and several images of a potential site for a submission. They also choose what to write for the title and textual description of a site. Their choices focus the potential pool of submissions for review in particular ways, based on their individual perspectives and positionalities. Further narrowing this pool, content submitters who are also reviewers in the platform Wayfarer are able to boost the speed of review for their own submissions by earning a high performance rating. The performance rating is based on their ratio of agreement to disagreement with all other reviewers in Wayfarer; those who earn many agreements, essentially by being in line with the company's criteria for site review, have their own submissions boosted on the site so that they will be reviewed more quickly and thus potentially enter the AR landscape more quickly.

This is the process that led to the digitized landscapes in the six data sites. The players who contributed to content submissions and reviews, as well as the company as mediator, constructed a digital layer that reifies eurocentric histories and ideologies, through amplifying eurocentric signs, erasing Indigenous representations, and at times constructing racist representations.

Although I address corporate mediation primarily through the investigation of Niantic's AR platforms, the concept of corporate mediation is a useful one for linguistic landscaping research more broadly in thinking about the agents behind the landscape. A focus on the agents of landscaping entails addressing what is *not* represented in a landscape, as well as what is, and questioning the purposes and consequences of this representation for the social meaning and potential uses of a space. This approach aligns with and expands on Blommaert and Maly's (2014) proposal for ELLA (see Chapter 1). Addressing the broader history and context of spaces also enables researchers of LLs to not reinforce the erasure already written into landscapes, and to instead envision landscapes more holistically and accurately in their potential functions and meanings. In the US context, as well as more broadly, this means in particular engaging with Indigenous scholarship (see Chapter 4). Researchers, as well as the landscapers they critique, need to be addressing western ideologies and histories as one possible version of meaning within a space, and engaging with other ideologies and histories as other, equally valid meanings, which should be represented in ethical ways.

In drawing from an Indigenous rhetorics perspective in a US parks tourism context, my work complicates several biases inherent in much LL research, much of which is still focused on the physical texts of highly multilingual and multicultural urban centers (see Chapter 1). This work makes the assumption that multilingualism and multiculturalism is located primarily within an urban context, and is significant only when it is seen and apparent through physical signage. However, this approach disguises the long history of landscape curation and erasure, whereby the physical landscape reflects only a socioculturally biased and always incomplete version of a space. By engaging with the multidisciplinary of landscapes research, which has

demonstrated the long role of landscape curation in creating unjust representations of spaces (Mels, 2016), LL researchers could do more to unearth the meanings of spaces that are hidden or obscured by physical and digital landscapes. In this project, I do so by engaging with Indigenous rhetorics scholarship, which demonstrated the multiplicity of my data sites, even when physically the sites had been curated so as to narrowly represent only eurocentric histories. In this way, my research contributes to a growing movement in LL research that seeks to acknowledge the history and social meaning of spaces, beyond what is physically present (Blommaert & Maly, 2014; see Chapter 1).

Although in the case of recreational AR the medium of representation is relatively new, the problematic and simplistic nature of representations of Indigenous people is nothing new. In fact very similar cases to those presented here have been documented at park spaces around the world (Baldwin et al., 2010; Stevens, 2014), including in other US park spaces (Colchester, 2004), as well as in AR and media representations (Faulkhead, 2017; McMahon et al., 2019). Within park spaces, the representations of landscapes often relies on what has been called a *colonial conservation model* (Colchester, 2004), which ostensibly preserves “natural” lands with native plant and animal species for recreation, at the expense of human residents of the area. Those residents in the North American context have most often been Native Americans, who are forced out of lands in response to the “conservation” of the lands; this violence is well documented at early US national parks such as Yosemite and Yellow Stone (see Colchester, 2004), as well as in Canadian national parks (Baldwin et al., 2010).

Despite this past, there are hopeful moves in a better direction in park representation in North America. This includes an increase in partnerships and community-engaged conservation

practices, including tribally managed parks and comanagement (Thornton, 2014; Zotigh, 2020), renaming landmarks with their Indigenous names (McKie, 2022), as well as the removal of offensive or racist names (Warthin, 2022). While these are positive steps, based on this research, there is more to do in terms of representation. The park signs surveyed for this project relied implicitly on western models of history and conservation, which could be substituted for, or at least contextualized by, descriptions of Indigenous models such as kincentric ecologies, as well as a more thorough and precise description of Indigenous history. Kincentric ecologies are significant in park spaces as a form of conservation, because understanding the role of nonnative (humans, non-human animals, and plants) species as that of *welcome* or *unwelcome* guests (Hernandez, 2022) is a way to break down the settler-colonial conservation model that monetizes and individualizes approaches to environmental engagement and stewardship. Although the western conservation movement has done a significant amount of positive environmental work, the rhetorical effect of conservation policies that separate humans from environment, and native from nonnative, have had significant negative impacts for Indigenous rights and sovereignty, which persist today in park representations. By *sovereignty*, I refer to the rights of self-representation and identification (King, 2017). At the national park level, there are at least hopeful precedents, policies, and practices, that can spread and be built upon in the future. If changes in management structures, as well as more ethical and precise representations of models of stewardship and history, can occur at the highest level of park management, national parks, there will be models for smaller parks, including state and city parks such as those surveyed in this project.

Although there have been significant steps forward in representation and research within physical park spaces, today, ethical representations must address both physical and digital representations for true change occur. This is because sites today are constructed in a blend between digital and physical layers of representation. In the popular, recreational AR space, there is both a lack of precedent for ethical representations, as well as a lack of critical consideration given to the platforms constructing representations. Although there are areas of research on both the ethics of popular AR media (Carrera et al., 2018; Tekinbas, 2017; Westenhoff & Soblo, 2022; see Chapter 1) as well as research on the use of AR for Indigenous communities (Gottlieb, 2018; Marques et al., 2019; Sieck & Zaman, 2017; see Chapter 1), these areas of research are not often in conversation with each other. For instance, Sieck and Zaman (2017), while documenting important efforts to preserve Indigenous oral narratives through emplaced AR archives, note that, a “best-practice example for a mobile AR application is Pokémon GO, which attracts millions of users” (p. 2), without describing further what “best-practice” means in this context. As shown by this dissertation, Niantic’s Pokémon GO is indeed a widely used application that represents a broad range of items within its digital archive, but it is questionable whether it is an example of “best practices” for doing so.

On the surface, there is good reason for Pokémon GO to be cited uncritically; it appears to be an egalitarian AR platform, giving control of site representation to a broad userbase. It appears to hold great opportunity as an overlay of the physical landscape, with the potential to represent spaces in new and transgressive ways. It sometimes does so, as shown in a few examples of in this project and by Westenhoff (2022) at Arlington National Cemetery in Virginia. Upon critical consideration, however, Pokémon GO also often perpetuates the

inequities and harms constructed by physical landscaping (see Chapters 3 and 4). Due to the mechanisms of corporate mediation, it is also clear that there are neither equal opportunities for constructing the digital landscape across the userbase, nor are those opportunities as free or egalitarian as they seem on the surface. Instead, Niantic trains its userbase in specific ways, which do not acknowledge ethical or culturally appropriate representation, and empowers users who are most inline with their criteria with greater control over representations than those who are not (see Chapter 2).

Moving forward, recommendations for a more ethical AR design can be drawn from the work of small scale AR developers and researchers that focus on education and participatory archiving. In Chapter 1, I identify two key areas of research that can inform a model for more ethical design practices include: 1) research that focuses on using and/or building AR applications in classroom teaching settings to address particular aspects of a curriculum, usually relating to untold histories of minoritized peoples (what Gottlieb, 2018, calls the “null curriculum”), and 2) research focusing on the ethics of AR platforms for Indigenous communities, which uses community-led methods to develop AR applications as a way of expanding and re-replacing Indigenous representation in Indigenous landscapes (for more on each of these areas, see Chapter 1). I draw on these bodies of work as models for how popular tourist AR representations can ethically engage with Indigenous and other minoritized communities, and communicate these engagement strategies to their userbase.

Although there is no universal approach, there are best practices derived from various Indigenous communities using AR as an emplaced cultural archive. For instance, Sieck and Zaman (2017) point out that AR can more easily preserve oral narratives of landscape than can

physically emplaced archives, an important means of distributing knowledge for future generations. Marques et al. (2019) emphasize the ability of AR to locate experiences within a particular site, “privileging phenomena that are unique to that place,” as a way of interpretation and reconstructing spaces (p. 195). Finally, digitized content such as AR can categorize knowledge for display to different audiences, including resources accessible only to a tribal community, or to certain members within that community, and differentiating the records accessible to a larger audience (Christen, 2011; McMahon et al., 2019). Whatever the particular affordances of AR being utilized by a community, the most important principle for researchers and/or developers of AR platforms is to include an ongoing process of co-creation and co-management of data and representations (McMahon et al., 2019). Including communities is crucial to preventing AR from becoming a further layer of colonization, which represents cultural content without the consent or input of communities being represented.

For a popular, recreational AR platform like Niantic’s, several recommendations can be made. The most crucial missed opportunity for this platform is for the company to use its role as mediator to amplify the voices and representations of marginalized communities through its site submission process. This can occur both through engaging local community members in the vetting process of site submissions within their local spaces, as well as providing more training for site submitters and reviewers in ethical cultural and social representations. As an added layer of review, there should be a more robust way for community members to call attention to unethical representations in their area, as well as a dedicated team to review these complaints specifically. Although a recent update, mentioned above, did add a feature for visitors to a site to review its accuracy, this is more focused on the accuracy of the geographic location and

correction of typographic errors, and it is not adequate for the purposes of reviewing the ethics of representation. The growing popularity of AR applications like those of Niantic's platform means that this digital layer of representation is spread to an increasingly broad audience, giving it a meaningful impact on the way spaces are represented to and experienced by visitors. With the popularity of their platform, Niantic has a chance to be a leader in designing site-specific AR representations in a way that is not only ethical, but that is anti-racist, anti-ableist, and anti-sexist.

5.3 Suggestions for future research

As I collected data during the year 2021, my work was limited by the COVID-19 pandemic; my data collection intentionally did not involve any human participants and data collection took place exclusively outside. Future work should examine the linguistic landscaping of interpretive centers, visitor centers, and other indoor spaces within designated park and heritage sites. Future work should also include talking to visitors or observations, giving more information on the social effects of linguistic landscaping. One way of doing so could be a participatory photography model of data collection and analysis. Increasingly, the social sciences have handed the camera over to other participants and partners and asked them to take photos of research sites, putting these photos through a dynamic analysis in a ground up form of research (see Chapter 2). Applying a participatory photography model to this kind of work could open up new perspectives and lenses through which to view the constructed landscape, adding complexity to the data gathered.

My research design was meant to provide a framework for research that could be conducted at any number of park spaces, with any number of AR or other digital applications. I investigated six sites that differed in their location, management structure, and institutional oversight, and from this we can say that the research design is applicable in different contexts and can represent a point of departure for other researchers interested in the semiotic layering of landscapes. Future work could be conducted at any number of outdoor recreation spaces across the United States and internationally, using different AR platforms. The current study focuses on the digitization of spaces through popular mobile gaming applications, but future work could also focus on other digitized formats, including the ways parks themselves move information to online and mobile formats. Additionally, throughout this study I have emphasized the commonalities of representation in these places, but there is something to be gained by thinking about their differences. For instance, one site is a national park, whereas another is controlled by an HOA. A future study could focus more on who has ownership over the space, and what the effects are of different forms of management for representation.

5.4 You are here

Augmented reality is becoming an increasing part of our everyday lives, whether we use gaming applications like Niantic's or not. Consider how online reviews drive visitation and purchasing, how new "room view" features enable buyers to place AR items in their homes to consider the fit of a new piece of furniture, or how the content of mapping applications guide the routes we take and the places we go. Companies, agencies, communities, and individuals all have choices

to make in how they construct and engage with these new media, and these choices have significant impact in how we experience and participate in constructing spaces.

For readers who are users of any popular AR platforms, such as Niantic's, I encourage you to speak up via in-game site review features, through site submissions, and through online site reviews to point out inconsistencies and inequities in representation in your local spaces. For users who are unable to access these features, engagement via social media is an additional option. I also encourage users to not engage with any content related to sites that are not ethical or appropriate representations. For everyone, including those who are not engaged in these platforms, it is my hope that this dissertation can help provide you with new lenses through which to critically consider and question your local landscapes, both digital and physical.

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Vita

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