13 Toward a Rhetoric of the Place: Creating Locative Experiences

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Introduction

Modern smartphones, tablets, laptop computers, and increasingly even cameras and wristwatches now come with built-in geolocation sensors. An ever-increasing range of services now ask for the latitude and longitude registered by these devices. Not only services like 4square, that are built around sharing information about places, but all kinds of social media, including Twitter, Facebook, Instagram, Flickr, and etc. Pointing to the increasing use of wearable sensors that register all kinds of movement in addition to light, sound, temperature, and even bodily functions, Gunnar Liestøl has described this as the "emergence of sensory media" (Liestøl et al., 2012).

It is only to be expected that location-aware devices should be used for artworks, entertainment, and education, and it also has been for two decades (for good overviews of early works, see Løvlie, 2011; Ciavarella & Paternò, 2004). These works are generally done within the user-centered design paradigm, in fields such as human-computer interaction (HCI) design, and user experience (UX) design (see Asaro 2007 and Hartson and Pyla 2012 for extensive overviews of these fields). Such methods yield excellent results for many services, but they stop short of helping designers of experience architecture: As I have argued more fully elsewhere, HCI and UX methods focus on interfaces to systems, systems that hold "content," but are of little help to those who wish to design content (Fagerjord, 2015).

I will argue in this chapter that rhetoric as a frame of mind can aid authors of locative experiences, and I will illustrate that with our experiences with the *Musica Romana* project, experiences that bring to mind what we call *the rhetoric of the place*.

Musica Romana (http://fagerjord/lok/roma/) is a website for mobile phones, bringing classical church music to tourists in the many churches in Rome, Italy. It uses the mobile phone's location services to list interesting churches close to the tourist. A map leads her to the nearest church. Inside, she can listen to music written for this church in the Renaissance or Baroque and hear a short talk about the composer, comparing the music with the architecture and art in the church.

In our work, we combined a UX design approach similar to that outlined by Hartson and Pyla (2012) with a rhetorical approach and some new evaluation methods. As my concern in this chapter is to share our rhetorical approach, I will order the chapter according to four of Cicero's five operations: *Inventio*, *dispositio*, *elocutio*, and *actio*:

That since all the business and art of an orator is divided into five parts, he ought first to find out what he should say; next, to dispose and arrange his matter, not only in a certain order, but with a sort of power and judgment; then to clothe and deck his thoughts with language; then to secure them in his memory; and lastly, to deliver them with dignity and grace (*De Oratore,* p. 142).

This means that this chapter does not have a traditional "methods" section, as method is the concern throughout. Instead, we begin with *inventio*, the search for the right arguments.

Inventio

How does one find out what to say in a locative experience? In *Musica Romana* we spent quite some time on this, and the work fell naturally into three distinct phases: Distinguishing the genre and topic, finding the information to be included, and matching possible arguments with the place.

Most locative projects in the research literature seem to start from a general topic: an idea of what could be interesting to communicate in a certain spot. *Musica Romana* started from my interest in music history; visiting Rome almost two decades ago, I noticed all the churches from the Medieval age, Renaissance, and Baroque and began to wonder what music was played there and whether any composers I knew about had worked in any of them. This old idea came back to me when colleagues at the University of Oslo approached me for a locative media project in 2005.

This was hardly the most original project. History is the most common use of locative media: explaining how what is on a site came to be, or showing what was once there. The many other possibilities we could have explored become apparent if we consider dimensions like time, space, or fiction, elements of what could be a "list of commonplaces" for locative experiences. While we set out to explain what was once in a certain space, others have focused on what will be, or what could be in the future. Liestøl has published both a *SitSim* showing how Oslo's massive new National Museum will look when finished (Liestøl & Morrison, 2015), and one showing how different landscapes would look if the global temperatures rise so much that the polar ice melts (Liestøl, 2014a).

Some projects add to what is at the site, such as Augmented Reality (AR) projects, and either explain what is there or show what has been

or could be there. There have also been projects, however, that close off as much as possible of the actual site and create a mediated space in the same spot. Ståle Stenslie created a virtual sculpture in Oslo that could not be seen, only felt when wearing a special bodysuit (Stenslie, 2010).

Our choice to make an explanatory or pedagogical project is also quite commonplace. Others have explored other genres such as game (Silva, 2006), poetry (Løvlie, 2011), and abstract artworks, such as music (Behrendt, 2012).

Once a topic is decided, *Inventio* for locative media is also to find the information, stories, or arguments that make your topic relevant for an audience in a certain location (Liestøl et al., 2012). Our single most important source of information was the brilliant article on Rome in *The New Grove* (Antolini, 1995). From there, we collected a long list of composers and musicians, as well as thirty-five important churches, theaters and palazzos. Not all of these are open to the public, however, and those that are open may not be very interesting today, if they even exist. Rome's first opera theatre, the *Tor di Nona*, was torn down several centuries ago, and while an opera buff might want to visit the site, there is not much to do there, as a rather nondescript apartment house now occupies the land. Working our way through the list, we chose six churches for the first prototype work and went back to the library to research information.

The third phase was to map our collection of music history to each church. We did extensive research on other mobile apps in Rome to catalogue different ways of presenting history in locative media. Scouring Apple's *App Store*, we found nine guides to Rome, which we tested in the city, together with five different guide books and three audio guides in the Colosseum, the Forum, and on a bus tour. (This work is reported in more detail in Fagerjord, 2010; Fagerjord, 2011).

We found several ways to approach the explanation of a place. One can focus on what is unique in a place or highlight what it shares with other places, up to the point where it is used as an example of a class of sites, for instance, using the Santa Maria in Trastevere as an example of the basilica form of church architecture.

More often than not, we found it worked best when audio guides used the particulars of a place and linked them to a larger topic. A story of Michelangelo's relation to the Vatican when constructing the Piazza di Campidoglio makes the whole economy of the Papal state understandable, while it is exciting to feel that this happened *right here*. As music and aesthetics was our topic, we frequently tried to point out parallels between music and architecture or paintings from the same period that the audience can see in the church.

In hindsight, however, we realize there are many more options available than those we chose initially. We would have come up with many more alternative, and quite possibly better, ideas had we worked more systematically with an *inventory* of arguments like those found in rhetoric. These catalogs do not yet exist, but a beginning could be to consider whether to use fiction or fact; whether prose, poetry, game, or abstract expression; whether to present the past, the future, or the possible future; and whether to select this place or map another place to this.

Kairos

Kairos, a rhetor's sensibility for the rhetorical situation is a central skill in rhetoric. While *Kairos* is often described as the time and place, it is rather the audience gathered in a particular place at a certain time that should be the rhetor's concern. In locative media, however, we know *where* our audience will listen, but not necessarily *when*. And who is the audience at this spot?

Authors of locative services will have to decide whether they address *all* people gathered in a spot or a select target group. Further, they must decide if they only write for those who have found the spot themselves, or if they will want to lead prospective audience members to the place.

Many, perhaps most, of locative services exist in places where people gather by their own initiative, but some take care to lead audience members to places they otherwise would not find. That was the approach we took in the Musica Romana service. We thought of our audience as tourists in Rome with an interest in classical music (but not with much formal training) and a couple of days to spend experiencing the city. While many visitors to Rome will visit the St. Peter's Cathedral in the Vatican or sit down for a coffee in the Piazza Navona, where the San Luigi Dei Francesi is just around the corner, several of the other churches are a bit out of the way.

Our prospective audience would then be arriving in a new place they knew little about, expecting to listen to music and learn a little history.

Any application is intruding on its users, asking them to alter their ways, to do something they otherwise wouldn't do. We wanted our service to intrude as little as possible by adapting to the common behavior in the church, so we visited the churches we had selected and analyzed how tourists experience them: We studied the art and architecture, the lighting, the mood, and most important: typical behavior. Spending hours inside the churches, we observed how visitors behave in these sacred areas, and we found a typical pattern: Arriving from a hectic street, often with bright sunlight, visitors suddenly alter their pace when inside these cool, dim, quiet rooms. Once inside, people tend to stop a few steps from the entrance and get an overview of the interior and sense the atmosphere. With slow move-

ments, they then either sit down on one of the benches, looking up towards the altar and the (often decorated) ceiling, or they walk down the sides, looking into the chapels. Most visits are between ten and fifteen minutes, not counting those who just peek in and leave.

From our historical research, we had lists of several composers and works for each church, but we realized that we only had time to present a few in each place. Listening to different works inside each church, we tried to find music that corresponded with the period of the architecture and main artworks and that fit the atmosphere. Our initial assumption was that the periods should match, so we selected Renaissance music in a Renaissance church, for example. (As we will see later, this assumption was not correct, however.) We also gave priority to important composers, such as Palestrina or Corelli, and tried to identify woks and movements that might have a popular appeal.

Attention to the place is also to identify difficulties users may have in the location. Weak GPS signal in certain areas is a common problem. The Inventio app for Forum Romanum suffers from the strong sunlight and few shadows in the place, so the audience is encouraged to bring an umbrella (Liestøl, 2012). In the Oslo Art Museum app, there is a traffic warning: Users are prompted on the screen to look out for approaching trams in the area (Liestøl, 2014b). The panorama app for the Eiffel Tower (2012) depends on the compass for direction, but on many devices, the compass is compromised by all the steel in the tower. For our project, the main difficulties occurred when users tried to find the churches, as we will see in the next section.

Dispositio

Dispositio, meaning ordering the parts, is the temporal dimension of a speech, but in locative media, it will also be in space. It is to direct the audience's experience in time, and it begins with getting them to the place (Broadbent and Marti 1997; Løvlie, 2009). A user interface to the navigation system guides the user from point to point, and we wanted it to be easy, logical, and as expected from earlier interfaces. Our research interest was not user-interface design but the experience in the churches, so we decided early on to rely heavily on well-known interface conventions, (Nielsen and Loranger 2006) in the beginning from Apple's Map and iTunes applications, later also from Google maps. We did have to adapt these quite a bit, however, mostly to help users to find our churches.

While the enormous St. Peter's can be seen from most of central Rome, other churches can be difficult to find in the historic center's cobblestone maze. Our survey of guide books and apps gave us insight into this:

We often followed a guide and knew we were close to a church, but still, we couldn't find it.

To create a better solution, we began with paper prototypes. We tested on ourselves, and we realized we had to cut down on features. Originally, we wanted to include several different overviews: A timeline, a composer overview, and a list of places. We found, however, that this distracted users from the main task: navigation in a busy city. By removing choices, and focusing on a smooth journey, we arrived at flow in three steps that were evaluated on the site by test users, five for the first iteration, seven for the second. Users were observed and asked to think aloud when navigating the street (Lewis 1982). The second iteration performed well in the tests:

First, the user selects a church from an overview in the form of lists and maps (Figure 1). From there, we present navigation aids for that selection only. We used a map where we show the user's location dynamically (using GPS location, Figure 2). This is not enough, however. Many churches are large, but their entrances are relatively small with adjacent buildings on all sides.

Figure 1: Overview screen with lists of sites available. Not shown: map view. Photograph by the author.

Two adjustments were necessary: First, it is important that the church's coordinates on the map be those of the entrance and not to the center of the building. Otherwise, users may be heading in the wrong direction and get

lost, even when very near. Also, when closing in on the target, users depend less on the map, and more on their own eyes. When we inserted a picture of the entrance in the application, it became easier for the users to identify the right building from a few hundred meters away (Figure 3). The resulting user interface for street navigation thus moves the audience through three concentric circles: Far away (a city map), in the neighborhood (a facade photo of the entrance), and at the place of interest (Figure 4).
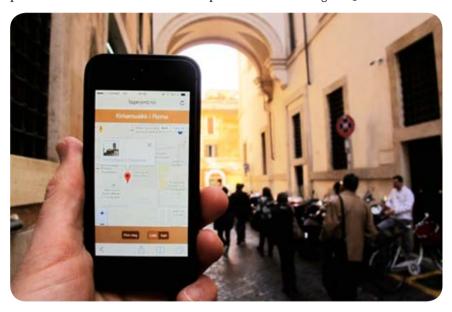
Figure 2: Dynamic location view uses real-time GPS data to locate the user in space and time. Photograph by the author.

Inside the church, we adapted the service what most people do there. We designed a "radio program" one can listen to while walking around or sitting at a bench, studying the marvelous interior. The program is presented as a list of tracks, not unlike how album tracks are visualized in music player apps such as iTunes or Spotify (figure 4). We created two or three tracks for each church. The first track introduces the theme we chose for the church, while the others give more details and, of course more music. Separating the tracks in the interface gives an indication of sequence, while it is possible to skip a track that is not interesting.

Well-functioning interactive media find a balance between a dramatic flow and allowing choices for the user. Musica Romana aims at this balance by a logical sequence for physical navigation to a church, from outside to inside, and a preferred sequence of tracks created to be pedagogical and interesting. Users may easily leave the path at any point, however, instead moving to other parts of the service.

Figure 3: Changing the initial view to an image of the building's façade facilitated users' ability to accurately navigate urban space.Photograph by the author.

Figure 4: Clear images of the interior spaces confirms for users that they have arrived at their intended destination. Photograph by the author.

Elocutio

Several early studies concluded that audio works better than writing and images for many kinds of locative media as it allows the audience to view their surroundings while listening (Oppermann and Specht, 1999; Bellotti et al., 2002; Bornträger et al., 2003; but cf. Liestøl and Morrison, 2015). This would only hold true in places that have visual interest, but that is very much the case in our project: Roman churches are so beautiful that a tiny mobile phone screen can't compete. Many people that have been involved in various stages of the project have suggested including pictures of the churches, but we have repeatedly found that our users prefer to look at the place they are in and not on the screen. The few images we have included are there to allow for browsing elsewhere, for instance, in the hotel room planning where to go the following day.

We developed a range of different techniques for our eight churches: Space as scene of an event (*locus in quo*), space as metaphor, space as metonymy, space as example, space as scene of fiction, and space-agent dramatization. These were evaluated in two rounds of user testing. In the first evaluation, with five respondents, user opinions were elicited in focus group interviews and a survey. The next iteration was evaluated using seven testers, who also were interviewed in a group. In this test, we asked each evaluator to visit two churches with contrasting kinds of programs, asking them afterwards to compare them (what we have called a "within-subject A/B test," see Fagerjord 2015). The service was also peer reviewed by another scholar with long experience in locative media.

Locus in quo

The first and most obvious technique for historical locative media is to present what happened right here and only here. In music history that can be first performances of famous works or other notable concerts, or it could be a place of importance for a noteworthy musician.

This technique, which we may call *locus in quo*, was used for three of our churches: Many of Archangelo Corelli's works, including his popular "Christmas Concerto," were first performed in San Lorenzo in Damaso, a chapel inside Cardinal Ottoboni's palace off Campo di Fiori. Handel's powerful *Dixit Dominus* had its premiere in Santa Maria in Montesanto, one of Carlo Rainaldi's twin churches at Piazza del Popolo. Finally, Italian Baroque music can be said to have begun in Chiesa Nuova, where Cavailieri's oratorios were performed around the year 1600.

By stressing that our audience is in the very spot where this happened, we are relying on what we might call an "aura effect," borrowing from Benjamin (2002). Our test-audience members confirmed in inter-

views that it had a special value to know that they were listening to music just where it was first heard centuries earlier. "It was as if the music came closer to them," they said.

Space as Metaphor

I have written repeatedly of instances where music and architecture "fit" together, creating "synesthetic parallels." These parallels are metaphorical relations. In most cases, it is on an aspect of architecture that is used as a metaphor to explain or describe one aspect of music, as architecture is visible and tangible compared to music. One example is the melodic *arch*. In Palestrina's choral music, the voices' melodic lines are quite symmetrical, so sequences going *up*, that is, to higher pitches (again, a metaphor of altitude, we have no other term for this), alternate with sequences going *down*. While most listeners will agree that the effect is one of balance, it is first when one sees the musical notation or tries to draw the music for one's inner eye that one realizes that it is similar to an arch. Palestrina's music is constructed of such melodic arches, some longer, some shorter. If we accept the metaphor of the arch, we can make the comparison to Michelangelo's architecture in St. Peter's cathedral, where the entire construction rests on semicircular arches, all mirroring the circular main cupola, and several smaller cupolas. Arches upon arches, circles within circles.

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A slightly less obvious metaphor is the view that "[t]onality is to music what linear perspective is to painting—it organizes time towards a central point of perception within the listener, the way that, in painting, space convergences of the eye/I of the viewer" (Johnson, 1999, p. 119). Tonal music is based around a central tone, the root, the first note of the major or minor scale, and the tension created by a chord formed on the fifth step of the scale (a G or G7 chord in the key of C) leading towards the root. That tonal music was developed in Italy around the same time as central perspective in painting is a parallel pointed out by many, as well as the development of atonal music in the same years as abstract painting (see, e.g., Brunswick, 1943; Schorske, 1981, p. 346). Santa Maria di Trastevere is an old church where most of the Medieval interior is kept, including the magnificent Medieval mosaics, which to a modern eye clearly is without any linear perspective. In this church we likened this art to the modal (and not tonal) Gregorian Chant of the middle ages.

Gregorian chant is far from unique in this Church, however, it was sung in all Catholic Churches right up to the twentieth century. We use the unfamiliar Medieval mosaic as a metaphor to explain how the scales used in Gregorian Chant give it its character that, to modern ears, is floating, ethereal and meditative.

To use one setting to explain what is a general principle of many places or a whole epoch in this way can be called *space as example*. Gregorian Chant in Santa Maria in Trastevere is used as an example of a musical style that was performed in all of Rome's churches, as the art in the church may be used as a pedagogical metaphor. We used examples in combinations with other techniques: Santa Cecilia in Trastevere became the example of the older Roman Chant, as one of very few manuscripts of this music is kept in this church, thus using the *locus in quo* effect.

Place as Metonymy

The other master trope of rhetoric, metonymy, was also used but with lesser effect. When we, as in San Luigi dei Francesi, present music written in a period when the church was built, there is a metonymic relation between the two. In our commentary, we explained how this was a period of rich, lavish art, pointing out how the music written for two, four, or maybe eight choirs placed at different galleries was similar in its lavishness to the rich gilded decorations in the church.[1]

Antithesis

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To use the *locus in quo* effect sometimes also led us to use music we felt did not fit the church particularly well. Handel's powerful and dramatic oratorio *Dixit Dominus* was first performed in Santa Maria de Montesanto, a small and rather unassuming church, which displays none of the drama and contrasts we find in Handel's music. The space becomes the music's antithesis, a contrast in aesthetics, and gave us an opportunity to discuss why this is so.

Another example of space as antithesis is our program for Santa Maria della Valle, a very large church on the large Via Corso. The entire first act of Puccini's opera *Tosca* takes place inside this church, so we presented three airs from the opera inside, summarizing the action in our commentary. We did not point out the, to us, obvious antitheses of the late Romantic music inside the Baroque church but assumed it would make the effect of the experience less powerful. Our testers, on the other hand, did not think this was a problem, and reported they very much enjoyed this space-as-fiction effect. "It was like walking on stage in an opera," one tester expressed.

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1. In his chapter on the Scene-Actor ratio, Burke treats this as a synechdocic relation, using an example where a harsh landscape yields harsh, strong men (Burke 1969, 8).

Personalization

The last effect was personalization, used in San Lorenzo in Damaso, in which cardinal Ottoboni utilized his support of the composer Corelli as an example of the relation between church, clergy and art in the late Baroque Papal State. Our test audience preferred the story of this colorful and extremely wealthy patron to the more general introduction to the Baroque in San Luigi dei Francesi. This is hardly a surprise; personalization is a well-known rhetorical technique, and it functioned in our project to make abstract observations of art and society come alive.

User evaluations have shown that these eight techniques (locus in quo, space as metaphor, space as example, space as metonymy, space as antithesis, space as fiction, and personalization) can work to create interesting learning experiences in a location-based system. It was not enough to write and record these texts, however. We also had to find an effective way of delivery.

Actio

The Latin term *actio* is generally translated as *delivery*. In this chapter, we will use that as a term for all that which brings the words and music to the audience. At this step in the process, we had selected music for each place and how to present it. The next step was to record the narration and to put in place the technological system to play it back.

Voice recordings were done with an inexpensive microphone (a Blue Snowball), and consumer software (Apple Garage Band). We did the recordings for the first prototypes in a hotel room and were able to do many quick iterations. As we compared different versions, it became very clear that the narrator needed to speak rather slowly and in a low voice in order to blend in with the place. The human voice is a very intimate medium of communication, and we are all sensitive to small variations in speech. Our narrator has several years of radio experience, but when he spoke in his usual "radio tone," it felt literally "out of place" in the churches. As many, including Jason Farman (2012), have argued, a place becomes a place only when experienced by people. As described earlier, a Roman church is a dim, solemn place where people move slowly and speak in low voices. To blend in with the places, our narrator needed to speak like people tend to do there. When we were satisfied with the tone of narration, we re-recorded the tracks using the same equipment in a radio studio for better acoustics and less noise.

Another continuous question of delivery was what technology to use. The first version was made as a native iPhone app. This gave us total control over interface, graphics, text, and navigation. We could also include

the sound recordings, including the music, in the app so users would download everything at once. This created a problem with music rights, however: Recording artists and their record company have the rights to distribute the recordings, and anyone wishing to distribute a recording needs a license from the record company, which in most cases have to be bought. Large digital music providers like Apple or Spotify negotiate license deals for thousands, even millions of tracks at once, but we found no way of buying a license for the dozen tracks we needed.

Apple also upgraded the iOS in this period, meaning that we would have to change large parts of our app. We chose to move our service to the Web, recreating the app in HTML and JavaScript. New telephone browsers now included geolocation services available through JavaScript, and we could stream the sound from the web server, using a music license for web podcasts.

Technically, this worked fine. Through several user tests we have confirmed that the navigation functions properly, the pages download quickly over a cellular network, and music plays back when we want it to, even within the thick marble walls. GRAMO, the Norwegian recording rights association, did not accept our application for a podcast license. We also approached a record company, which did not reply to our letters asking for permission. Without a license, we could not make our prototype publicly available on the web.

As a workaround, we chose to use Spotify's Web API, playing back the music from Spotify's streaming service. This is far less elegant, as the users need to have the Spotify app installed on their phones, and because music and narration need to be on separate tracks. Users stated in comparative tests that they preferred to have music and narration simultaneously (Fagerjord 2015), but as the iPhone only allows playback from one source at a time, we had to forgo our radio-like version with mixed narration and music. In 2014, Spotify launched an iOS SDK, making it possible to include music from Spotify in native iOS apps, and causing us to consider whether we should return to our original ambition to create a native app for the iPhone.

Our experiences with several different technologies and their different regulatory regimes show that a locative experience can be delivered relatively unchanged by many means. We could create the same user interface both as an iPhone app and a web page. Even if it looks similar, these choices are not without effect on the experience, however. A web browser comes with its own interface controls, meaning the address bar and the back button (what developers know as "browser chrome") take up space. Streaming music is also less reliable than a preinstalled track, and the costs of data

traffic can be quite expensive for visitors to Italy with data plans from other countries. On the other hand, downloading an app with all the music will take a long time (and also be expensive) over a telephone network, so users would want to do that at home or in a hotel with a Wi-Fi connection. It is less likely that a casual tourist in one of our churches could be told about the service and decide on the spot to try it out. Finally, our current Spotify workaround creates a less immersive experience, as music and narration are in separate tracks, and users have to juggle the Spotify app and the web browser simultaneously.

Conclusion

Creating a locative experience is more than offering a smooth user interface. Furthermore, to create a database system of "containers" into which one locates "content" is not enough to guarantee an exciting result. I hope to have demonstrated that ancient rhetoric outlines a sequence of steps useful for one of the most modern genres of interactive media. I also contend that rhetorical concepts are not only useful to sort and catalogue different ways of creating locative media, but also good tools for thinking and generating ideas when creating place-specific stories and explanations. Klaus M. Krippendorff has observed that to design is to combine well-known elements in new combinations (2006). Rhetorical tropes such as metaphor, metonymy, and antitheses may be used to generate ideas for new works.

In many ways, locative media are old. Plaques, statues, signs, obelisks, arches, burial mounds and pyramids have been used for millennia to communicate what is significant and special about a certain place. While electronic, sensory media open new possibilities, speech and its purposes stays remarkably stable. That may be why the oldest of disciplines can be used for the most modern of media.

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