Spatial Experiences: Using Google Earth To Locate Meanings Pertinent to Sense of Place

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Abstract

Using aerial images that enable research participants, during an interview, to discuss and locate points of spatial significance in their community represents an innovative approach to place-based research. This method allows for participants to discuss spaces relative to their associated meanings and enables researchers and community planners to understand the makings of place in a particular community. This article discusses how researchers and planners can use Google Earth to organize and spatially reference qualitative data to allocate community members' subjective meanings of particular spaces and landscapes. The article includes examples from the Dominican Republic to outline the suggested approach.

Introduction

"…to experience a geographical place, it seems, is the want to communicate about it" (Ryden, 1993: 19). Maps provide users and researchers copious information by detailing places relative to one another; however, perceptions of human experiences often remain unnoticed in maps. Researchers use mental maps to better visualize people's experiences and to understand how people view their world to seek meanings not necessarily visible (Relph, 1997; Ryden, 1993; Wise, 2014). Google Earth represents a contemporary and innovative approach to seeking meanings and insight into everyday spaces and places and to locating and reinforcing understandings of sense of place and sense of community. The approach outlined in this article can be useful for community planners to get a sense of how people engage with and interact in particular spaces and places to better inform future decisionmaking. Using aerial images during the interview process provides research participants the ability to spatially identify and discuss points of spatial significance in a particular community. Cognitive mapping exercises, in which researchers use Google Earth to reference data gathered from identified points on the map and subsequent interviews, therefore enable interviewees

to characterize pertinent discourse regarding experiences, perceptions, and imaginations, which can all be referenced spatially. Using Google Earth as a tool to organize and spatially reference qualitative data will enable researchers to allocate subjective meanings of particular landscapes with which members of a community interact frequently. Moreover, enabling researchers to understand the makings of place in a particular community further integrates sociological and geographical understandings.

The conceptual and practical method of data collection presented in the following section was piloted in the Dominican Republic as part of a wider ethnographic study. Interviews were held with members of the community using Google Earth images to encourage interviewees to discuss significant spaces and places in the community while the researcher referenced these points. Subsequent data collected during field conversations and participant observations can also be stored along with interview data in placemarks to efficiently organize and spatially reference a wider collection and range of data.

Theoretical Framework

Geographers and planners attempt to understand people's perceptions and experiences in and of the spaces, places, and landscapes with which they socially interact. Lynch's (1960) work on social psychology concerning structure, identity, and meaning has provided foundational conceptual insight on place and social perceptions. Furthermore, this insight concerns how individuals evaluate spaces, places, and landscapes. Mental maps and imaging practices intentionally rely on individuals' psychological perceptions of social spaces. Lynch (1960: 6) noted "…there may be little in the real object that is ordered or remarkable, and yet its mental picture has gained identity and organization through long familiarity." Lynch's (1960) typologies for interpretation involve paths, edges (for example, perimeters or boundaries), nodes (points), landmarks, and element interrelations. Similarly, Sack (1997), writing from a geographical standpoint, conceptually complements Lynch's approach, suggesting that to understand places researchers should address social relations—adding supplemental meaning to paths, edges, and nodes. Sack (1997: 155) suggested "…awareness is the capacity to see things not only from our own partial and personal perspective but also from other points of view." Documenting points on Google Earth maps also enables researchers to consolidate multiple points of view spatially—which is the main point this article will suggest and show.

In reiterating mental mapping approaches, this technique has been a core approach of behavioral geographers, who pioneered humanist thought (Madaleno, 2010). Researchers who have conducted mental mapping exercises have attempted to explore lived experiences to uncover people's cognitive perceptions, understandings, and images of particular places (Downs and Stea, 2005; Fenster, 2009; Gould and White, 1986; Madaleno, 2010; Smiley, 2013; Wise, 2014). Moreover, mental mapping endeavors have offered researchers insight into cognitive perceptions of, for example, globalization (for example, Madaleno, 2010), relative locations (for example, Gould and White, 1986), local landscapes (for example, Wise, 2014), migration (Kusek and Wise, 2014), and why people travel particular routes (for example, Wood, 1978). Building on concepts offered from mental maps, using Google Earth images provides the researcher and the interviewee the opportunity to identify and spatially reference points during discussions. Participants identify actual sites on

aerial images instead of drafting from memory, as they would in more traditional mental mapping techniques. Seeing and identifying particular spaces and places evoke memories, and the narratives that participants communicate supply meaning of lived experiences, offering insight into sense of place. The objective of this article is to challenge researchers to look beyond what is inherently visible. This approach provides the potential for researchers and planners to further gain from new knowledge offered by local residents. Such data may offer new or alternative perspectives on contested spaces or landscapes and can offer insight into existing social divisions to better inform future planning or community development.

Google Earth in Research

The epistemological and methodological rationale of this approach reflects on organizing and spatially referencing experiences of fieldwork and interview data. According to Sui (2004), approaches using nascent technologies encourage researchers to seek supplemental meanings of spaces, places, and landscapes. Google Earth enables researchers to conduct spatial analyses of landscapes, with the ability to zoom in on specific site locations and identify cultural and physical features based on the elements of recognition—such as shape, size, pattern, tone, texture, shadows, site, association, resolution—brought in from remote sensing (see Lillesand, Kiefer, and Chipman, 2008). Applying a spatial technology such as Google Earth to studies on sense of place represents a unique and innovative approach not only to advance the collection of data, but also to efficiently organize and spatially reference data gathered through interviews, conversations, and participant observations.

Beyond using this technology in physical and geological sciences, geographers and urban/regional planners use remote sensing technologies in research to interpret cultural landscapes. Hong (2003), for example, incorporated aerial imaging with ethnographic research, arguing that remote sensing technologies are advancing cultural landscape interpretations. The use of Google Earth supports inductive social and cultural research relating to the area of qualitative Geographic Information System (GIS) and remote sensing (Bender et al., 2005; Cope and Elwood, 2009). Google Earth has even been referred to as "desktop archaeology" (Kennedy, 2009). It has become a tool to assist social science researchers, but mainly through spatial observations and interpretations (for example, Brunn and Wilson, 2013; Kennedy and Bishop, 2011; Lisle, 2006). Street View, where available, enables the researcher to navigate farther along paths and into certain areas identified by interviewees (Brunn and Wilson, 2013). In terms of storing and referencing data, features embedded in Google Earth enable researchers to view historical images; measure distances; and create placemarks, lines, and polygons to store data, similar to storing data in GIS attribute tables.

Although this approach is inherently ethnographic, ethnographies aim to understand people's everyday lives and sense of place (Watson and Till, 2010). Ethnography is a snapshot of a community's everyday cultural practices, in which researchers take on some proximate role to immerse themselves with a group's natural setting. With ethnographic studies, which are observational and participatory, social and cultural researchers spend an appropriate period of time living alongside a local group of people to engage in and reflect on daily activities. Participant observations help researchers and planners understand community identity in terms of how people interact with their environment, surroundings, sociopolitical situations, and cultural landscapes (Basso, 1996;

Watson and Till 2010). Although ethnographic methods are rigorous, they challenge researchers to critically evaluate and write about social phenomena in addition to understanding everyday meanings and situations in a local community. Although ethnography was pioneered in anthropologic inquiry, "…geographers have brought our discipline's theorizations of space, place, scale, landscape, and environment to develop further understandings of spatial processes and concepts in ethnography" (Watson and Till, 2010: 122). In this regard, Google Earth is a tool to help ethnographers locate these spatial data, because the use of this readily available technology can bring snapshots of fieldwork locations into a new perspective.

Applying Google Earth technology to research presents an alternative dynamic in human (cultural and social) geography methodology, assisting with visual ethnographies of space and place. Google Earth captures clear images of the landscape—particularly over time—and enables cultural and social geographers to discuss and identify meanings with local members of the community by assessing meanings imprinted in the landscape or sites of social activity—each pertinent to sense of place. It enables people to recognize spaces and places of significance and engage with landscapes and sites in the community in a different way. It may also provide researchers the opportunity to see how spaces and places connect and link, because people will speak from experience, and researchers and community planners then will be challenged to connect and relate the narratives presented. This approach provides participants another way to link their cognitive memory with spaces and places of familiarity; participants can trace memories and experiences in certain spaces on the images for input into placemarks (or lines and polygons) in Google Earth back in the computer lab. Cope and Elwood (2009: 1) noted that such geographically based technologies can be used to store "non-cartographic forms of spatial knowledge, such as emotion," as a way of pinpointing and consolidating data—the images presented in the following section illustrate this approach. Each point marked in Google Earth will have a particular association, and the data referenced offer researchers and planners much insight into how people interact in their local settings. Therefore, in line with the main points put forth in this article, Google Earth becomes a database for storing and referencing experiences. Ground-truthing is often necessary to capture experiences that cannot be interpreted only from images. Collecting photographs is another way of referencing spatial images in places where Street View is unavailable, such as in the case of rural areas of the Dominican Republic (the use of GPS-enabled cameras or video recorders is easily spatially referenced in Google Earth or GIS). Analyzing the landscape involves critically reporting on features; spatial designations; and how, where, and why people gather in certain locations. This approach offers much insight and meaning for social scientists, geographers, and planners. In this regard, the landscape becomes the stage on which broader narratives need to be explored (Basso, 1996; Manzo and Devine-Wright, 2014), and interpretations add insight to meanings of community involvement and sense of place.

Using Google Earth To Spatially Reference Sense of Place

This section provides an example of how Google Earth can be used during the interview process to complement narrative ethnographic research and cognitive mapping exercises. Having Google Earth images during interviews enables the researcher to map and locate points discussed when

asking participants to identify significant spaces and places in the community. Approaches will differ based on location and access, but researchers can either have printed images, which may limit discussions to the printed frame, or conduct interviews with Google Earth open to enable the interviewee to navigate and to help document and reference data. In the context presented previously, the objective of this approach is to consolidate and spatially reference meanings associated with social spaces and places, because such insight offers perspective into what is not always inherently visible. Interviews make experiences visible, because data gathered during the interview process are often not available otherwise. In general, interviews fill voids, and Google Earth becomes a tool to spatially reference interview data.

Visual reference points that spark cognitive memories during interviews help participants elaborate on past experiences and social activities—based on space and place. Participants may refer to positive experiences in particular spaces, where interactions and community building have occurred. Sometimes people relate to a particular incident or physical feature in the landscape. These memories can also be unsettling to participants, because they may identify an area that is off limits because of a crime or an area of the city or town that is associated with some negative connotation. Nevertheless, experiences are spatially referenced to exact site locations. This insight enables researchers to see (new) meanings significant to community and identity formation—or sense of place.

The pilot-study example was conducted in a rural community in the Dominican Republic. As noted, this method was tested as part of a wider ethnographic study in which the researcher spent one semester residing in Villa Ascension de Caraballo (hereafter, Villa Ascension) as a volunteer assisting with community development. Residing in a community and observing everyday life and activities enable researchers to elaborate and reflect on participants' responses to add value to the meaning being communicated and to add supplemental depth. To gather a representative sample, participants were selected based on a range of age, gender, employment, and role in the community. Each participant involved was presented with a laminated Google Earth image of Villa Ascension and markers; they were asked to locate important community spaces on the map. After the participants identified spaces and places on the laminated image, the interviewer used the marked map to guide the semistructured interview about the meanings of identified spaces and places in relation to their actual significance to the participants and the community. Exhibits 1 and 2 are digitized examples of locations identified or circled on the Google Earth transparencies. Participants had the freedom to discuss experiences and relate to social activities in these spaces, offering insight into the making of places.

This approach represents a visual qualitative mapping method that engages participants with their local geography and adds meanings to the places where they reside. Researchers and planners can critically evaluate meanings that emerge to better understand everyday perceptions and uses of space. It is important to note specific visible features recognized by each participant and to complement insight from local community members with data collected from observations, queries, and conversations during research. Bringing together a wide range of data helps a researcher fill the void of what is not visible. Certain elements in an image may take on alternative meanings that should not be assumed, so for clarity the researcher must facilitate a discussion with each participant regarding why certain spaces or places were identified.

Exhibit 1

Example 1 of Community Spaces Identified As Important in Villa Ascension de Caraballo, Dominican Republic

Exhibit 2

Example 2 of Community Spaces Identified As Important in Villa Ascension de Caraballo, Dominican Republic

As mentioned previously, placemarks, a Google Earth feature, enables the researcher to store data on specific spaces and places from interviews or observations in placemark textboxes. The researcher can also add images and links, as necessary; can edit data entered into each placemark by selecting "properties"; and can save data as .kmz files that can be edited at a later time. For the pilot study conducted in Villa Ascension, interviewees were asked to identify the five points in

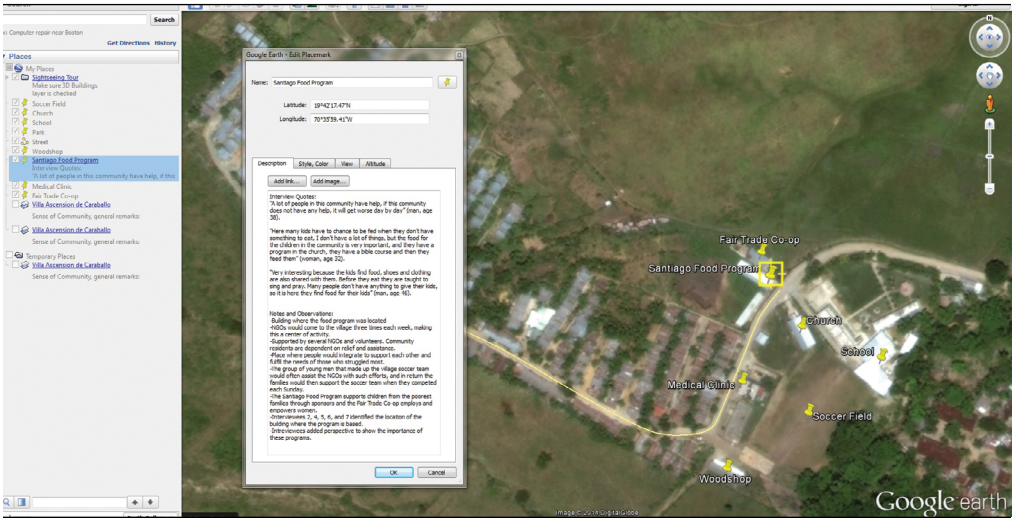
the community they deemed most significant to sense of place and sense of community. Exhibit 3 identifies all the points discussed by those who participated in this study. Exhibit 4 shows one of the points and the corresponding spatially referenced interview data. Each placemark has embedded latitude and longitude coordinates, which can then be easily spatially referenced in GIS. Using

Exhibit 3

Google Earth Placemarks Identifying All Locations Identified As Important by Study Participants in Villa Ascension de Caraballo, Dominican Republic

Exhibit 4

Example of Spatially Referenced Data From Participant Interviews in Villa Ascension de Caraballo, Dominican Republic



digitizing commands, the researcher can then identify the points discussed by participants (see exhibit 3) and add supplemental data from the interview to an attribute table (exhibit 4). Entering qualitative data into Google Earth or GIS is an efficient way to organize and spatially reference interviews or photographs collected to inform the analysis and assess similarities or differences in understanding spaces and place.

Concluding Remarks

The data entered into Google Earth placemarks are useful for academic researchers to engage with the meanings embedded in significant spaces and places identified by members of a local community. Such data are also useful for planners who are seeking insight into the effect of new community buildings, parks, or spaces based on location. Google Earth is a tool for storing and spatially referencing qualitative data collected in the field as a means for understanding particular spaces and places. The wider purpose of this method and approach is to produce and store new local knowledge from community participants to consult, or inform, when planning new projects. This article not only is relevant to understanding people's perceptions of place and community in urban areas but also offers insight into how to strategically plan for and promote community development by enabling participants to spatially reference their experiences. Using easily and readily accessible technologies such as Google Earth encourages researchers to fully develop practical understandings of spatial interactions and to georeference meanings in actual locations. Moreover, Google Earth promotes the underlying spatial emphasis of this work to gather, identify, and locate data to make sense of place more visible and spatially informed, which makes it relevant to social science researchers and community planners.

Author

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