

Communication Asset Mapping: An Ecological Field Application Toward Building Healthy Communities

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Guided by an integrated theoretical approach combining communication infrastructure theory with methods of assets-oriented community field mapping, this study reports the findings of an engaged scholarship project we term *communication asset mapping* (CAM). Ecological in orientation and participatory in practice, CAM represents a tool for analyzing urban spaces' potential as mediums for building healthy communities. This article offers two case studies from different low-income neighborhoods in Los Angeles, the first a researcher-directed CAM application and the second undertaken in collaboration with community health promotion workers. Both offer insights for

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researchers and practitioners interested in the intersecting roles of communication and place in creating positive community change.

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Researchers have become increasingly concerned with developing socially relevant scholarship that actively promotes the building of healthy communities (Minkler, 2000; Stoecker, 2005). This development parallels a broader call for “engaged scholarship” within the academy as university personnel push for a greater allocation of research effort and institutional resources to addressing society’s most urgent social, civic, economic, and moral problems (Boyer, 1996; Burawoy, 2005). Following in these traditions, this article introduces *communication asset mapping* (CAM) as an example of engaged research that aims to tackle place-based disparities in community health. Guided by an integrated theoretical approach that combines communication infrastructure theory (CIT) (Ball-Rokeach, Kim, & Matei, 2001; Kim & Ball-Rokeach, 2006) with methods of assets-oriented community field mapping (McKnight & Kretzmann, 1993; Sharpe, Greaney, Lee, & Royce, 2000), CAM is a collaborative field research strategy that brings academics, residents, and community organizations together to highlight positive spaces of discursive interaction and community building in local neighborhoods through street-level mapping. These spaces, which we call communication assets, can be used as tools by researchers and practitioners to promote sustainable community health.

Following the lead of the Healthy Communities movement, our approach is grounded in a broad definition of community health as the state of collective well-being of people who share a common place or experience (Norris & Pittman, 2000). A wide body of research has established that local geography has an important role in shaping well-being. Neighborhoods can play both positive and negative roles within this context, alternately serving to mitigate or exacerbate health disparities faced by various groups (Minkler, 2000). Whereas traditional approaches to community health promotion have focused on remedying local deficits and preventing disorder, this study aligns with theoretical and methodological shifts that call for increased focus on leveraging existing assets to address social disparities. As Sharpe et al. (2000) asserted in their call for assets-oriented community assessment, such an orientation “allows community members to identify, support, and mobilize existing community resources to create a shared vision of change, and encourages greater creativity when community members do address problems and obstacles” (p. 205).

In practice, the integration of communication theory into the field of assets-oriented community assessment means the CAM approach is explicitly concerned with mapping local spaces and analyzing their ability to serve as sites for multiple modes of local storytelling. Building on the communication infrastructure framework, we argue that attention to geographically situated communication dynamics—including interpersonal discursive interaction among residents, communication between and among community-based organizations, and the storytelling role of local and ethnic media—strengthens local communication assets’ potential to promote healthy communities and expands urban communication theories. In addition, an understanding of communication assets can help inform the effective distribution of community-based research to community stakeholders.

We begin with a review of literature on ecological and assets-based approaches to building healthy communities, highlighting the relative absence of communication theory in this body of work. We then present the CIT-based framework that has guided the development of the CAM methodology. Next, we describe a field application process for identifying positive spaces in the communication environments of two low-income Los Angeles neighborhoods, explaining how practitioners and researchers can leverage communication assets to advance community change efforts. The two CAM applications, deployed in different community health contexts, demonstrate the method in action and provide insights into CAM's strengths and limitations as a community-based participatory method. We conclude this work with a discussion of CAM's implications for theory and practice, focusing on communication processes in the context of building healthy communities.

Literature Review

Ecological and Asset-Based Approaches to Building Healthy Communities

Many advocates in the contemporary field of health promotion have shifted from a narrow emphasis on individual behavior change toward ecological strategies that include environmental analysis and community-based interventions (Minkler, 2000; Stokols, 1992). A foundational report for the Healthy Communities movement—written by Hancock and Duhl (1986) for the World Health Organization—outlined a set of eleven parameters that contribute to a city's health. Their criteria cut across the physical environment, social environment, and personal characteristics of community residents. In another formative work on the "social ecology of health promotion," Stokols (1992) provided a theoretical framework for understanding how community health is influenced by these same multilevel interactions. Highlighting "transactions between individual or collective behavior and the health resources and constraints that exist in specific environmental settings" (p. 6), Stokols's framework emphasized dynamic relationships between people and place. From this perspective, the local environment contributes significantly to the health outcomes of individuals and groups, and individuals and groups concurrently shape the local environment's health-promoting capacity. Together, these interactions influence behavior and outcomes related to community health.

This type of approach, which we call "ecological" in orientation, helped to form the basis of our CAM methodology. Sallis, Owen, and Fisher (2008) defined ecological models of health behavior as those that "emphasize the environmental and policy contexts of behavior, while incorporating social and psychological influences" (p. 465). In taking this perspective, our work also aligns with contemporary coalitions of practitioners and researchers that have turned their attention to the building of healthy communities, a movement that is, according to McGinnis and Robinson (2013),

built on the notion that fundamental health progress derives not from serial responses to individual threats as they arise to the level of public consciousness but from the communitywide social, environmental, and cultural conditions that matter for health promotion, health protection, and the health services needs of every individual. (p. 10)

This reorientation has been influenced by research demonstrating that negative health outcomes are not simply the product of genetics or poor individual decision-making. Instead, it shows that health disparities—connected to outcomes as disparate as diet-related disease and crime, among others—emerge across racial/ethnic lines and, quite strikingly, within shared geographies.

In the city of Los Angeles, for example, health outcomes in lower-income African American and Latino neighborhoods differ starkly from those in more affluent neighborhoods with largely white populations (Park, Watson, & Galloway-Gilliam, 2008; Pastor Jr., Morello-Frosch, & Sadd, 2005). To address these community-based health disparities and build healthier communities, several prominent scholars and practitioners have insisted that environmental analysis, often connected to community-based and participatory research strategies, offers a valuable path forward (Pastor et al., 2005).

Guided by these ecological perspectives, CAM was developed with the goal of identifying localities' existing communicative strengths and using them as potential building blocks for healthy communities. Our approach took inspiration from the field of community development and its methods of community mapping. Of course, urban planners have always been concerned with the built environment, as their work focuses primarily on cataloging physical infrastructure such as buildings, roads, sewage lines, and urban design (Thomas, Hendrix, & Congalton, 2003). These methods, and the maps produced through their efforts, have been useful for the practices of planners but too often have failed to resonate with and be put to use by community members themselves (Dennis, 2006).

In recent decades, influenced by social work, community organizing, and community development principles, "community asset mapping" has emerged to address these issues within the planning field. Notably, McKnight and Kretzmann (1993) outlined an approach they called "asset-based community development." Unlike deficit models, which argue that remedies to community problems need to be provided by external agents, this strategy instead focused on building community through place-based assets in the neighborhoods in question. Asset mapping, accomplished by cataloging the available assets and skills of individuals, households, citizens' associations, and formal institutions, was conceptualized as a way to document and catalyze the capacity for positive community development (McKnight & Kretzmann, 1993). Since these initial formulations, methods of community asset mapping have evolved toward increased participation of residents and community organizations in the design, implementation, and analysis of community asset maps. This perspective has become ingrained into the broader Healthy Communities movement, the key characteristic of a healthy community being its ability to identify and build on local strengths to enhance its physical and civic infrastructure (Norris & Pittman, 2000).

We see these diverse scholarly efforts to characterize the dynamic points of influence on health behavior as worthwhile initiatives that have influenced our own perspectives. Attention to broader aspects of health, and particularly the importance of place in the development of health outcomes and disparities, is a necessary foundation for this work's approach. We also believe that strong participation by community members benefits the deployment of ecologically oriented health frameworks, providing an opportunity to validate scholarly observations with the lived experience of residents. Moreover, we contend that more explicit integration of theory from the field of communication—particularly theory that investigates the

communicative dimensions of urban places—would help to advance research and practice in the Healthy Communities movement.

It must be noted that previous healthy communities research has considered the role of communication. Indeed, Hancock and Duhal (1986) included “access to a wide variety of experiences and resources with the possibility of multiple contacts, interaction and communication” (p. 33) among their parameters for the building of healthy communities. In addition, features such as social support, community organizations, and media have consistently appeared in ecological models of health behavior (Sallis et al., 2008). In considering communication resources, however, such work has often overlooked their roles as local storytellers and potential sites of community building. As Matsaganis (2007) noted, the field of neighborhood effects (Sampson, Morenoff, & Gannon-Rowley, 2002) has focused on a community’s institutional resources—including public spaces, medical facilities, schools, and grocery stores—as key variables. Yet, few neighborhood effects studies have actually moved beyond analyzing the density of such institutional resources, as such quantitative metrics are what researchers have generally sought to correlate with neighborhood health outcomes (Sampson & Raudenbush, 1999). Matsaganis (2007) argued that institutional resources require greater attention regarding their ability to serve as sites of neighborhood communication or lack thereof, and as hubs of problem-solving or problem-causing interactions. Following this critique, our work below does not aim to measure the density of local community resources in a neighborhood, but instead uses participatory mapping to identify spaces with potential for promoting health and solving problems.

Our review of the literature on community asset mapping found a noticeable lack of communication theory in these discussions. Mapping the existence of items such as churches, schools, parks, libraries and cultural groups can be a valuable starting point for promoting community health in historically marginalized neighborhoods. However, absent further theorizing of how these and other elements connect discursively to residents’ lives, such efforts are of limited utility. Fundamentally, we suggest that research on building healthy communities could be bolstered by more grounded investigations of community-level communicative dimensions.

Expanding Upon Communication Infrastructure Theory

The importance of community assets in the ecological promotion of healthy communities can be further established by closer examination of their interaction with community-level communication dynamics. This theory-driven research approach builds on the foundations of CIT. The theory is primarily concerned with exploring local communities’ communication infrastructure, which consists of two components. First, the storytelling network (STN) is composed of residents, community organizations, and local or ethnic media that participate in communicative actions about the community. These storytellers are not isolated but rather involved in a dynamic conversation, together forming the communicative structure of community. Second, the STN is situated within the communication action context (CAC), which comprises any elements of the built and social environments that enable or constrain the STN. Again, the relationship between these elements is not static but dynamic, so the CAC can influence the STN, while the STN can encourage changes to the broader CAC (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006).

Much of the work guided by CIT has shown that a strong STN can encourage neighborhood belonging, civic participation, and collective efficacy (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006). Other work has examined the importance of the CAC for advancing similar aims. Hayden and Ball-Rokeach (2007) described how community technology centers can be places where economically disadvantaged Los Angeles residents practice knowledge production. In formulating a strategy to communicate health information to “hard-to-reach” populations, Wilkin, Stringer, O’Quin, Montgomery, and Hunt (2011) leveraged two elements of the CAC: “comfort zones” and “communication hot spots.” In this context, comfort zones refer to businesses and community institutions with which residents have an ongoing affective connection, derived through interactions that develop a sense of familiarity over time. “Communication hot spots” are places where community members tend to engage each other in everyday conversation. In a study aimed at reducing reproductive health disparities in a small urban community, Matsaganis and Golden (2015) argued that the interplay between the STN and the CAC eventually produces what they termed the “field of health action” (p. 6), described as the place-specific context that residents may access for health-care services and information.

Ultimately, CIT demonstrates the critical role of local places in the storytelling practices of neighborhood residents. Given communication’s centrality to the construction of the social life of cities, this perspective asserts, urban spaces are best understood by examining people’s communication practices (Matei & Ball-Rokeach, 2005). CAM builds upon this basis by constructing a method for assessing specific elements of the urban environment. Guided by CIT, the field application situates networks of communication connections in environmental contexts so as to build a dynamic understanding of community, all with an eye to its implications for building healthy communities. CAM’s focus on the discursive elements of place—constructed through collaborations between researchers, residents, and practitioners—constitutes a theoretical and methodological contribution to ecological models of health behavior, neighborhood effects research, and asset-oriented mapping procedures. As a field application, the approach advances CIT through a grounded investigation of the local environment’s capacity to contribute to a healthier community.

Communication Asset Mapping Application Development

Goals

The core goal of CAM is to map urban communities’ communication assets, defined as positive spaces of discursive interaction and community-building that exist in local neighborhoods. As in other asset-oriented approaches, use of “positive” indicates that a space has the capacity to communicatively contribute to improved community development. Our inclusion of discursive interaction incorporates communicative dimensions—including communication hot spots and comfort zones—into descriptions of local residents’ connections to neighborhood spaces, thus extending previous studies’ definition of community spaces as solely physical resources. Whereas previous CIT-informed investigations into the communication environment relied on survey data and focus groups to identify communication assets, CAM uses fieldwork and street-level mapping to offer a more textured understanding of these spaces. In addition, the participatory nature of the mapping brings university researchers and community participants together, advancing insights into the viability of university-community partnerships.

The next sections describe two applications of the CAM process, focusing on the methodological development and refinement of the participatory mapping procedure. Both geographic sites of the CAM application—South Los Angeles (known as South LA) and Boyle Heights—have been named by public health officials, major philanthropies, researchers, and residents themselves as areas whose mainly low-income African American and Latino residents' health outcomes are poor, compared to those residents of more affluent neighborhoods (Ratner & Robinson, 2013). This reality makes these areas especially suited to the launch of a participatory community methodology like CAM. Instead of focusing on the deficits of these two neighborhoods, our CAM initiatives explicitly directed attention to spaces of positive discursive interaction, identified through field-based observation of local streets and neighborhoods. Though methodologically similar, our two applications used different participant strategies to integrate CAM into a field-based agenda for engaged scholarship. The perspectives of academic researchers drove the first application, whereas the second was grounded in the perspectives of local "Promotoras de Salud" (Promotoras), translated from Spanish as "community health promoters." These applications of CAM highlight the flexibility of the method, its evolving field-based nature, and its ability to integrate multiple perspectives regarding communication assets and their role in building healthy communities.

The researcher-driven CAM application, based in the neighborhood of South LA, was informed by local residents' prior responses to a telephone survey administered by the Metamorphosis project at the University of Southern California. Aspects of this survey investigated the area's communication infrastructure, including communication hot spots and comfort zones identified by respondents. The project was part of a grant the research team received from The California Endowment to support a building-healthy-communities initiative in South LA. To provide a more textured field-based account of the survey responses and further identify what spaces might serve as communication assets, a team of 10 graduate students from Metamorphosis designed and deployed a pilot CAM strategy.

The second application of CAM, based in the Boyle Heights community, emerged from a more participatory design that involved local Promotoras from the outset. Building on a multilevel study funded by the National Cancer Institute to identify strategies for preventing cervical cancer among Latinas in different Los Angeles neighborhoods, CAM was used to catalog communication assets that Promotora participants saw as contributing to healthy communities initiatives in Boyle Heights. We partnered with the East Los Angeles Community Corporation, a local community organization, to recruit 23 Promotoras with experience conducting grassroots health promotion in the area. Given the health focus of this effort, we collaboratively decided to use the term "health communication asset mapping" in our training workshops, field mapping, and printed maps that were later disseminated in the community.

We explored the following research questions through the two applications:

RQ1: How can the identification of communication assets contribute to building healthy communities?

RQ2a: What are the strengths and weaknesses of a researcher-driven field application of CAM?

RQ2b: What are the strengths and weaknesses of a Promotora-driven, participatory field application of CAM?

Methods and Process

Across both applications, the procedures consisted of field instrument development, participant training, field mapping, debriefing sessions, and map development, described below.

First we determined the geography that the participants would map in both areas. The South LA area (10 square miles) was based on the boundaries proposed as part of the grant-funded project within the region, while the Boyle Heights area (6.5 square miles) accorded with the neighborhood boundaries determined by the City of Los Angeles. We divided these geographies into manageable subareas (27 for South LA and nine for Boyle Heights) that teams of two to three mappers could walk and map within a two-hour time frame.

We then designed printed field instruments for recording the locations and observations of the communication assets mapped by the participants. The field instruments included predetermined categories of communication assets (public space, business, community organization, school, public service, medical/health, church, and culture/arts resource). These were informed by previous research on places identified along communicative dimensions from communication-hot-spot and comfort-zone questions addressed in phone surveys conducted in the South LA community. The field instrument contained sections for recording the asset's address, subarea, field observations, mappers' names, and the date and time of the mapping. Space to record emergent categories was also included, and participants were instructed to record observations that did not fit into the predetermined categories if they believed a given site warranted documentation as a communication asset. The instruments also included instructions on photographing the assets in the field with cameras we provided to the participants.

Prior to the mapping, we convened a training workshop for all participants where we discussed the Healthy Communities movement and goals of the CAM application with them, and described examples of communication assets based on previous research. Participants were trained in the field mapping instruments and protocol and then sent out to collect data in the subareas assigned to each team. Once the areas were mapped, we entered the CAM data collected on the paper instruments into a digital spreadsheet and uploaded the photos as part of a database.

After each of the two mapping exercises took place, we moderated a discussion with the participants to pinpoint which observed communication assets they believed were most important for the purposes of building healthy communities. Given the high number of total communication assets identified in the field applications, we asked participants to highlight a selection of exemplary items from each of the mapped subareas to serve as illustrative communication assets during these debriefing sessions. Following these sessions, we created maps of the selected communication assets for both areas. These debriefing sessions further informed the discussion prompted by our guiding research questions below.

The selection debriefing process led to the design of final communication asset maps of each geography that were eventually shared with community-based practitioners who work on building-healthy-communities efforts in the two areas.

The following section describes the basic findings of the two applications, outlining the number and categories of key communication assets identified by the mappers and demonstrating how these assets were visualized through maps. From there, the discussion section speaks to emergent themes of CAM's utility for research and practice that work to build healthy communities.

Findings

The two applications aimed to examine how communication asset mapping could contribute to building healthy communities (RQ1). Because we were informed by a CIT framework that establishes the importance of communication hot spots (i.e., places where residents gather) and comfort zones (i.e., community institutions that residents feel affectively connected to) in the environment, the map of communication assets highlighted spaces that could potentially be accessed for building healthy communities. Consistent with the strengths-based framework of the Healthy Communities movement, this orientation enabled researchers and Promotoras alike to identify existent spaces in both neighborhoods that could serve as assets.

To justify the selection of specific spaces as communication assets, mapping participants named two main communicative criteria: (a) the observed presence of local discursive interaction between residents and (b) community service activity. These reasons were consistent with the CIT-guided communication asset mapping training offered before the field applications. Below we briefly describe the key communication assets identified in each application and display the maps that were produced for the areas.

Researcher-Driven Application in South LA

The team of university researchers identified 54 communication assets in the South LA study location (14 churches, 14 businesses, 11 community organizations, six medical/health clinics, five schools, three public spaces, and one cultural/arts resource). Based on their knowledge of CIT communication hot spots and comfort zones, the researchers highlighted the assets that best illustrated the communicative capacity for community-building. CIT-guided observation was exemplified by one team member's identification of Los Amigos Shopping Mall as a local business that served as a communication asset. The researcher noted that the mall operated as a "gathering place where people can buy goods from a variety of small vendors and buy different types of food for sale." Having observed discursive interaction and community members gathering there, the researcher categorized this South LA space as one of CIT's communication hot spots.

In South LA, religious associations dominated the landscape. This was unsurprising, as both our prior understanding of this neighborhood's composition and our earlier survey data indicated religious associations were important to residents (Ball-Rokeach, Moran, Hether, & Frank, 2010). Still, the scope and variety of religious associations in the area was an interesting finding. In some mapping subareas, almost all of the identified communication assets were churches—many of them small "storefront" churches with regular congregations of fewer than 100, we found. However, the area also held a few quite sizable churches situated in large complexes and serving thousands. Also worth noting was that several

church establishments both big and small catered to residents in multiple languages—English and Spanish—reflecting South LA’s demographic shift from a historically African American to a rising Latino population (Ong, Firestone, Pfeiffer, Poon, & Tran, 2008). For larger churches, this usually meant offering separate English- and Spanish-language services at different times in the same location. By contrast, for some smaller “storefront” churches this meant different religious associations were sharing the same building. For instance, one researcher observed that a Spanish-language Evangelical Christian church and an English-language African American Baptist church offered services at different times in the same building. This site’s multiethnic adaptation led the researcher to designate it an example of a comfort zone that could promote positive connections within the area’s multilingual population.

The assets were mapped onto a digital online map (Figure 1) on the Metamorphosis team’s translational website *MetaConnects.org*, developed to share research with community-based practitioners. The online interface allowed users to click on a dot representing a communication asset, whereupon a pop-up window described the asset and its location, provided a picture, and explained why it had been selected. A digital, interactive form was chosen for the map so it could be shared with Metamorphosis’s network of South LA organizations and practitioners via an online listserv and other community events.

The map included geo-coded points that, when scrolled over, revealed a pop-up box with the name, image, and a short description of the asset. The Web interface also included video tutorials explaining how communication assets can benefit community-building work and how to use the digital interactive map.

Participatory Application in Boyle Heights

Regarding the second application, the research team found the Promotoras to be an ideal group with which to collaboratively explore health communication assets in Boyle Heights. This approach was consistent with previous CIT research pointing to community organizers’ key role as storytelling agents of community change (Broad et al., 2013). What the communication asset mapping application added was a frame showing how working knowledge of local spaces could be leveraged to reach out to a community for health promotion. Promotoras identified 41 communication assets in Boyle Heights (11 community organizations, seven public spaces, seven schools, seven medical/health clinics, three churches, three public services, two businesses, and one cultural/arts resource). As in the researcher case study, assets were identified following a post-mapping discussion to narrow down the key assets participants believed should appear on the map. Because their relationship to the neighborhood was informed by their previous experience with health promotion activities in Boyle Heights, they were able to present textured accounts of spaces they had used to conduct health promotion in the area. Although their criteria relied heavily on prior experience of utilizing these sites for health promotion, the Promotoras’ reasons for selecting these assets were similar to those offered in the researcher-led application in that their primary focus was the communicative interactions observed at the sites.

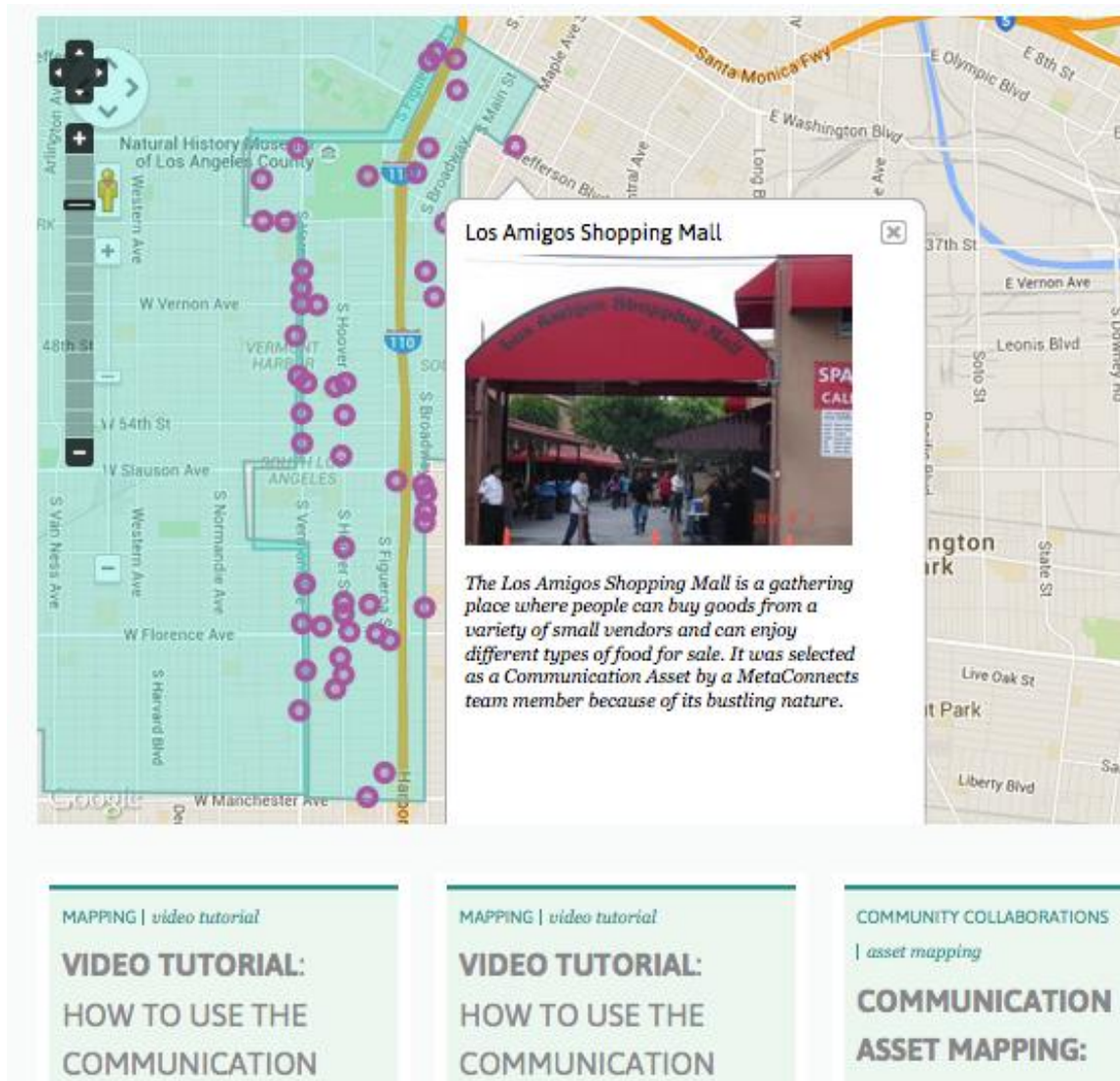


Figure 1. Screenshot of the interactive digital communication asset map for South LA mapped by the researchers developed for Metamorphosis's translational website platform MetaConnects.org.

Many Promotoras were raising families or working with families in their health outreach efforts, and they emphasized the importance of family-oriented assets in the community. For example, all three of

the public services mapped by Promotoras were public libraries described as both conversational gathering places (i.e., communication hot spots) and community resources (i.e., comfort zones) for many families living in the neighborhood. The same held for the seven schools they documented as assets. They learned from prior experience within the community that health promotion success depended on connecting with mothers, who often were their children's primary caretakers and interfaced with their schools.

In collaboration with the Promotoras and assisted by a graphic designer, our team produced neighborhood maps highlighting the health communication assets in Boyle Heights (Figure 2). The maps' design allowed for dissemination through multiple communication channels. The printability of the maps was emphasized because the Promotoras, who regularly engaged in interpersonal interaction in the field, wanted the option to distribute the maps in person. The names and locations of the communication assets appeared on the front of the map, and its back featured further description of how those assets could be leveraged for health promotion. The back also listed information on healthy community campaigns in the area. Promotoras understood that these independent sites could effectively build healthy communities only if practitioners activated them as spaces where discursive interaction about health takes place. This ethos informed the decision to highlight active local health campaigns on the back of the map, presenting pathways by which community members could get informed about and involved in local campaigns.

Besides geographically representing the health communication assets, the map explained its purpose and suggested ways for practitioners to use it. It included icons and selected pictures of assets that visually represented the neighborhood. The back of the map provided additional description of the assets and information on local health campaigns that the Promotoras suggested should be shared with community members.

In both applications, the communication asset mapping process was aligned with health promotion approaches that value the significance of local places within particular urban environments. Participants in the two applications identified categorically similar assets, such as schools, community organizations, medical/health clinics, businesses, public spaces, restaurants, and churches. Through the mapping process, participants communicated how the assets were characteristic of the local surroundings, consistent with CIT's proposition that communities are situated in a particular communication action context. For example, the ethnic makeup of the different neighborhoods shaped participants' understanding of the communication assets they mapped in each neighborhood. Researchers noticed that many community organizations in South LA reflected the community's African American historical presence, but they also saw signs of an emerging landscape of Latino organizations due to shifting demographics. Organizations in Boyle Heights were overwhelmingly Latino-serving. This suggests that healthy communities need to build future efforts around ethnically appropriate outreach.



Figure 2. The front of the Boyle Heights communication asset map, mapped by the Promotoras.

Discussion

The findings above speak to the first research question, which asked how the identification of communication assets can contribute to building healthy communities (RQ1). Community-based approaches that are contextual can inform health interventions by capturing everyday intricacies across cultures and geographies. Public health agencies and foundations working to promote health in lower-income neighborhoods (or any other neighborhood, for that matter) can benefit from a more nuanced understanding of community spaces. For example, in the current work, communication asset mapping by different stakeholders led to the identification of diverse spaces that can potentially be leveraged to build healthy communities in lower-income areas. This asset-oriented field approach shows how the local communicative capacity to promote health in neighborhoods can be mapped and shared via different media.

As an extension of CIT-informed research into community health promotion, CAM offers an approach to studying the urban CAC from the perspective of multiple storytelling actors. Past inquiry by the research team has strengthened our understanding of how communication dynamics influence health and civic vitality in metropolitan Los Angeles. Much of this work has focused on the indispensable role of the storytelling network, composed of residents, organizations, and local media. The CAM methodology delves deeper into the CAC in which the storytelling network is embedded. Surveys and focus groups can identify general components of the communication environment, but CAM's field-based methodology encourages researchers to get to know the neighborhood under study and qualitatively assess specific communication assets. In taking an ecological approach to community-based communication research, it is important to consider how field-based methods like CAM might be integrated into the process as a way to convey how place is constructed, maintained, and negotiated. Indeed, the storytelling network is no isolated phenomenon, but rather is engaged in a contextual relationship with its communication environment. Inclusion of this method in the research team's multilevel methodological framework enhances the understanding of local community, improves theory development, and encourages researchers to reflexively take into account the complex everyday realities of the neighborhoods where their work is situated. CAM also has clear implications for organizing and policy practice, as it is able to activate broader community conversations that highlight local knowledge and build connections between multiple stakeholders in the community-building process.

As for the strengths and weaknesses of researcher-driven (RQ2a) and participatory (RQ2b) CAM applications, the two cases enhance our understanding of how participatory mapping practices and university-community partnerships might contribute to the Healthy Communities movement. The remainder of this section outlines the strengths and weaknesses that surfaced in these applications, and then discusses the limitations of and future directions for CAM.

Researcher-Driven Application in South LA.

The university researchers' application of CAM confirms that an asset-oriented approach can improve academics' understanding of the positive components of lower-income neighborhoods. By mapping communication assets in these neighborhoods, the researcher participants learned about local

spaces' capacities for creating change that can build healthy communities. As is often true of academic research teams, many of the researchers were not from the community under study, but they were aware of the negative image historically imparted in mainstream media accounts of the area (Matei & Ball-Rokeach, 2005; Sides, 2003). Observations of local community organizing and other signs of positive community development, combined with post-mapping debriefing discussions, expanded participant mappers' previous perceptions of the neighborhood. Building-healthy-communities efforts must consider storytelling approaches that present a more comprehensive account of a stigmatized lower-income neighborhood by discussing its positive aspects as well.

The deliberate choice of an online interactive map as the form of communication for the South LA application was another strength of this application. In this case, the mapping was used as a means to contribute content to the academic team's translational website, designed for community-based researchers and practitioners. We decided on the online interactive map after holding focus groups with local community practitioners, who mentioned that an online resource devoted to translational aspects of our research could inform their community-building activities (Broad et al., 2013). An advantage of the interactive map created as part of this translational research effort is that it could later be updated with layers of data obtained in future iterations of CAM by youth, policy makers, and community practitioners in South LA.

A weakness of the South LA application was the external researchers' potential to be seen as intrusive elements within the neighborhood. Even research team members with more experience in the local community had a feeling of being an "outsider" in the neighborhood as they walked the area holding a clipboard and taking photos. Researchers recognized this as part of the process of conducting observational CAM research but did indicate that at times they were uncomfortable with this positionality. Also, in several instances community members, store owners, and others approached them on the street, asking them what they were doing. A few of these interactions bordered on hostility, though in other instances community members (including several store owners) were concerned that the researchers were police or city officials. Even in these cases, once the researchers explained what they were doing, community members were generally happy to support a project highlighting positive aspects of their neighborhood.

Participatory Application in Boyle Heights

A strength of the participatory CAM application was the opportunity to link on-the-ground community practitioners with concepts from communication theory. For the Promotoras, the mapping process validated many of their own practices in the health promotion work already conducted in lower-income neighborhoods like Boyle Heights. In debriefing discussions, Promotoras found CAM valuable because it represented the neighborhood through an assets-based framing. Even though the application did not immediately remedy the problems affecting the neighborhood, Promotoras were excited to explore the ways a visual roadmap of communication assets could enhance the grassroots health promotion work they were already doing. The CAM terminology and methodology offered language and a framework that strengthened their capacity to leverage local resources and connect their efforts with those of local practitioners and policy makers.

Attention to health communication resources relevant to engaging lower-income communities was particularly important in the work with the Promotoras, whose case illustrated the suitability of print as the primary communication medium for the health communication asset maps. This aligns with previous CIT-informed studies that emphasized how community practitioners used print in combination with newer media sources to activate storytelling networks (Broad et al., 2013; Stokes, Villanueva, Bar, & Ball-Rokeach, 2015). None of the Promotoras had relationships with mainstream media or even mentioned public service ads as effective means of reaching the lower-income Latino families that are the main audience for their health promotion work. The primary communication assets Promotoras mapped were the places where they engage in their own work, which they nominated as ideal places for reaching out to other Spanish speakers in their community. Therefore, it made sense to produce printed maps that Promotoras and other community practitioners could utilize in the field. Workshop participants indicated that printed maps could be a fruitful way to start conversations about healthy communities while providing an accessible resource directory. Health campaigns have traditionally relied on public service advertising through legacy media, but emerging health communication research is showing the value of local spaces in efforts to connect with hard-to-reach populations (Campbell & Scott, 2012; Lechuga, Garcia, Owczarzak, Barker, & Benson, 2015; Wilkin et al., 2011). Our application of CAM demonstrates a method that is sensitive to local spaces' role in outreach efforts but also recognizes that different media channels may be more or less appropriate depending on the target audience and the goals being pursued.

One challenge faced in the Promotora-led CAM application concerned the interpersonal dynamics of the group itself. Many of the participants had worked in Boyle Heights as Promotoras, but those who also lived in the area and worked directly for a community organization in the neighborhood tended to regard their own views on potential health communication assets as the most "authentic." Participants who considered themselves the most authentic often tried to dominate the post-mapping discussion. Additionally, some participants expressed different civic views about health communication assets in the neighborhood, advocating, for instance, listing local government field offices rather than health clinics as spaces where health campaigns might receive more attention from local decision makers. Such subjective views became points of discursive engagements during the workshop as participants were pushed to present arguments explaining why they felt a certain place merited consideration and inclusion as a health communication asset on the map. This observation points directly back to how the CAM process can open discursive spaces that prompt participants to become effective community researchers and advocates activating the communication environment to serve the goal of healthy communities.

Limitations and Future Directions

The application of CAM by two different participant groups in two different neighborhoods presents an ecological case for more textured field understandings that can bolster healthy communities strategies. Still, the project had its limitations. To begin, CAM is not meant to replace deficit mapping in lower-income communities but should instead be seen as a capacity-building tool for community interventions where an asset-based approach makes sense. CAM is appropriate for entities operating from a community-organizing platform that aims to build leadership from within the community to solve local problems. The CAM method can also complement the deficit-mapping approaches required of entities concerned with addressing social disorder. Deficit approaches to mapping lower-income communities will

remain important, given real public safety concerns. Deficit mapping benefits the strategies used by the police, building code enforcement agencies, and other organizations that consider public policy issues.

Further, though we see the CAM process as systematic, we do not claim it is objective. Instead, it calls for the addition of multiple community voices to either validate researchers' assertions or contrast them to others. This is the direction taken by the Promotoras case and future work, in which, as a next step, we have enlisted community-based organizers from the area to collaboratively identify what they see as communication assets in their community. These organizers' voices will, in time, be augmented by voices of everyday community residents, youth, policy makers, and others as we endeavor to get a textured sense of the multiplicity of viewpoints that arise when spaces are viewed through different lenses.

The most promising application of CAM as a participatory and community-based research method is its solicitation of different perspectives on communication assets from multiple stakeholders. Training various observers (especially mappers who socially identify themselves across spectrums of age, race, class, gender, and sexuality) in CAM allows diverse stakeholders to bring their unique perspectives to the strategic activation of everyday spaces of communication so as to build healthier communities. Future CAM efforts will attach particular importance to viewpoints of the youth in the study areas, as the surveys and focus groups conducted thus far in South LA and Boyle Heights have not involved anyone under 18. Both populations comprise many families with youth who live and interact in the neighborhoods. One of the emergent findings of the mapping conducted in the South LA study area was the identification of tattoo parlors, bicycle shops, and youth bicycle groups there. These categories were not identified or mentioned in our previous survey research on communication hot spots and comfort zones, likely in part because of the absence of youth perspectives. In the field and through CAM, however, team members came across shops catering to these types of youth interests. These might be communication assets worth identifying when policy makers consider healthy communities interventions meant to create positive change with the collaboration of young adults.

Future applications of CAM should also consider conducting mapping procedures at different times of day and on different days of the week, to help researchers build a more comprehensive understanding of an area and allow practitioners to make more strategic use of potential communication assets for health promotion. In this study, we focused on mapping during daytime hours—largely because of safety considerations for the participants—so this analysis does not account for communication assets that might be activated in the evening hours. Observation of certain public spaces at night—a park, for instance—might demonstrate that a daytime communication asset is unsafe in the evening, home to gang or other criminal activity, and therefore not a capacity building-block after dark. Indeed, informal conversations with local parks employees revealed that gangs claim certain park territory in the evening, making these areas unsafe for residents at night. The reverse—that spaces that are not communication assets in the daytime become so during the evening hours—might also be true.

Further, ethnographic research focused on the identified communication assets would offer thick description illuminating the type and quality of the discourse at the root of efforts to build healthier communities. For example, our research identified numerous churches in South LA as communication

assets. Ethnographic work analyzing the content of conversation within these spaces would offer insight into how and why certain churches prove particularly valuable for the community development process. In this vein, another researcher affiliated with Metamorphosis (Son, 2015) is currently using participant observation to explore the role of churches as pathways for immigrant civic engagement.

Researchers will also need to consider encouraging and tracking community leaders' access to communication asset maps for building healthy communities work. Scholars of asset-based community development have argued that the asset-mapping projects with the greatest potential to impact on-the-ground change outcomes are those with consistent participation from the community (Green & Haines, 2015). Hence, studies and longer-term engagement with communities participating in such projects are needed. This accords with the need for future impact studies on "engaged scholarship" (Nyden & Percy, 2010). Researchers should also be mindful of the need to update these maps over time to reflect demographic, economic, and other neighborhood changes. These efforts are part of a broader strategy to draw from collaborative engaged research and mapping projects to improve the state of the Healthy Communities movement that our work focuses on.

Ultimately, the CAM application advances the research team's methodological goals with its orientation to community-based participatory research. The results in this article are described primarily through the lens of academic research, but plans from the start have been to eventually put CAM in the hands of community members from the study areas. CAM does not aspire to provide a definitive or objective view of the communication environment—rather, it was designed as an iterative mapping method that is most effectively carried out through collaborations between academics, residents, community organizations, and policy makers. Such an undertaking explores different layers of perspectives on the communication assets within the study area's communication environment. Research efforts that bring together multiple stakeholders are valuable exercises for social change initiatives striving to positively influence the building of healthy communities. Guided by CIT's attention to the power of local storytelling networks, the CAM process helps participants better understand what communication assets exist in a neighborhood, and encourages interested parties to strategize about how these assets might mobilize community action to build healthier communities.

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