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## Abstract

**Background and Objectives:** Emerging research regarding aging in neighborhoods emphasizes the importance of this context for well-being; however, in-depth information about the nature of person–place relationships is lacking. The interwoven and complex nature of person and place points to methods that can examine these relationships in situ and explore meanings attached to places. Participatory geospatial methods can capture situated details about place that are not verbalized during interviews or otherwise discerned, and qualitative methods can explore interpretations, both helping to generate deep understandings of the relationships between person and place. This article describes a combined qualitative-geospatial approach for studying of older adults in neighborhoods and investigates the qualitative-geospatial approach developed, including its utility and feasibility in exploring person–place transactions in neighborhoods.
**Research Design and Methods:** We developed and implemented a qualitative-geospatial approach to explore how neighborhood and person transact to shape sense of social connectedness in older adults. Methods included narrative interviews, go-along interviews, and global positioning system tracking with activity/travel diary completion followed by map-based interviews. We used a variety of data analysis methods with attention to fully utilizing diverse forms of data and integrating data during analysis. We reflected on and examined the utility and feasibility of the approach through a variety of methods.
**Results:** Findings indicate the unique understandings that each method contributes, the strengths of the overall approach, and the feasibility of implementing the approach.
**Discussion and Implications:** The developed approach has strong potential to generate knowledge about person–place transactions that can inform practice, planning, policy, and research to promote older adults' well-being.

**Keywords:** Environment, Go-along interview, Global positioning systems, Narrative analysis

Emerging research regarding aging in context reveals much about how neighborhoods relate to aging adults' health, participation, and inclusion. Quantitative studies have identified neighborhood characteristics that relate to well-being and inclusion and qualitative studies have explored

phenomena such as exclusion in neighborhoods (e.g. Phillipson, 2007). More in-depth and nuanced information about the nature of these person–place relationships is needed to support aging in neighborhoods, creating the challenge of developing innovative research approaches

that can generate such information. As such, this article describes an approach that draws on qualitative and geospatial methods aimed at understanding transactions between older adults and their neighborhoods, illustrating its development and reflecting on its potential.

It is increasingly recognized that place is not a static entity, and that person–place relationships are dynamic, complex, and imbued with meaning. For example, building from the Ecological Theory of Aging (Lawton & Nahemow, 1973) which began to consider the dynamic interactions between individuals and the environment; Wahl, Iwarsson, and Oswald (2012) emphasized belonging, identity, and place attachment within the person–place relationship. Transactional perspectives also shift away from a conceptualization of place as a container for human activity toward understanding place and person as mutually shaping and inseparable from one another (Andrews, Cutchin, McCracken, Phillips, & Wiles, 2007; Cresswell, 2004; Cutchin, 2004). Thus, neighborhoods are dynamic places imbued with meaning as well as spaces composed of physical and social elements that influence individuals and are shaped through interactions. Given that any one research method brings to light particular aspects of a phenomenon while leaving other aspects backgrounded (Huot & Rudman, 2015; Suzuki, Ahluwalia, Arora, & Mattis, 2007), addressing the person–place transactions within neighborhoods requires integrated methods. While qualitative, interpretive methods, such as narrative interviews, can be used to explore aspects of meaning, identity, and belonging (Reissman, 2007), interview-based methods have limitations. In particular, they may not capture the "nuance of daily movements, practices, and relationships" (McLees, 2013, p. 293) and other tacit and taken-for-granted elements of daily life and places that are challenging to articulate (Nunkoosing, 2005). In contrast, a grounding of persons in places, that considers specific objective elements and also captures the "feel" and tacit elements of locations (Mahmood et al., 2012), can be provided through participatory geospatial methods. Such methods, defined here as those that involve participants in the production of spatial data, can also highlight temporal elements and facilitate comparison of place-related data across participants.

Combined participatory geospatial and qualitative research methods are emerging in the aging literature (Hand, Huot, Rudman, & Wijekoon, 2017), such as approaches combining global positioning systems (GPS) tracking and map-based interviews (e.g., Heatwole Shank & Cutchin, 2016), photovoice studies (e.g., Mahmood et al., 2012), or go-along approaches (e.g., Gardner, 2011). Outside of the aging literature, combined participatory geospatial and qualitative methods have included combinations of local maps, interviews, and participant observation (Preston & Wilson, 2014), grounded theory, ethnography and mapping (Knigge & Cope, 2006), and narrative inquiry, activity diaries and sketch maps as well as incorporating qualitative analysis capabilities into geographic information systems (GIS) software (Kwan & Ding, 2008; Loebach & Gilliland, 2016). Further development and refinement of these emerging methods are needed,

especially within aging research. In particular, geospatial data are often not utilized to their full potential, frequently being used to support qualitative data collection (e.g., interviews informed by maps based on GPS tracking data) and thorough integration of qualitative and geospatial methods is often not achieved (Hand et al., 2017). Advancing combined participatory geospatial and qualitative methods holds promise to create valuable knowledge regarding neighborhoods and aging adults and requires researchers to examine and reflect on the methods throughout the research process. To this end, the objectives of this article are:

1. To describe a combined qualitative-geospatial approach for studying of older adults in neighborhoods.
2. To investigate the qualitative-geospatial approach developed, including its utility and feasibility in exploring person–place transactions in neighborhoods.

## Methods: Development and Key Characteristics of a Qualitative-Geospatial Approach

We conducted a study addressing two concurrent objectives: (a) to explore how neighborhood and person transact to shape social connectedness and inclusion in older adults and (b) to develop, implement, and explore the utility and feasibility of an approach combining participatory geospatial and qualitative methods. Using a community-based participatory research approach (Minkler & Wallerstein, 2008), we formed an advisory panel of older adult community members and other community stakeholders to contribute to decision making and collaboratively implement the research approach. See Table 1 for advisory panel member characteristics. The approach is grounded in social constructivism (Lincoln, Lynham, & Guba, 2011) and integrates narrative, GPS, mapping, and ethnographic approaches, building on previous work (Gardner, 2011; Kwan & Ding, 2008; Loebach & Gilliland, 2016; Vine, Buys & Aird, 2014). We recruited 14 residents age 65 years or more living in two neighborhoods with diverse characteristics in a mid-sized Canadian city. Individuals were eligible to participate if they lived in one of the target neighborhoods for at least 1 year, could participate in an interview in English, were not working full-time, and were able to venture into their community. All participants included in the sample were Caucasian, reported experiencing very good or excellent health, had completed high school or higher education, and typically had money left over at the end of each month. See Table 2 for details. The study received ethical approval from the University of Western Ontario's Non-medical Research Ethics Board.

### Data Collection

Thirteen participants met with a researcher three times and participated in: (a) a narrative interview, (b) a go-along

interview, and (c) GPS tracking, completing an activity/travel diary and follow-up interview. The fourteenth participant completed all but the go-along interview for health reasons and was lost to follow up. Almost all data collection sessions were completed by one researcher (R. Pack). Each session lasted 30–120 min, took place at a location of the participant's choice, and considered the participant's self-defined neighborhood. The order of data collection varied across participants to explore benefits and drawbacks of different sequences. Each participant received a $25 gift card of their choosing for each interview they participated in.

Narrative interviews were conducted based on Wengraf's (2001) open narrative elicitation process and guidelines provided by Reissman (2007). Participants responded to the initial prompt: "I would like you to tell me what it is like for you to live in your neighborhood, now, and in the past. This might include the places you go, the things you do, and the people you see. Include anything that is important to you. Begin wherever you like." Additional questions were integrated to further elicit narrative related to activities they do, places they go, people they interact with, change in the neighborhood or their activities over time, sense of belonging, and plans to continue living in the neighborhood as they age.

Within the go-along interviews (Carpiano, 2009; Gardner, 2011; Kusenbach, 2003), participants walked with the interviewer to a local destination of their choosing. Along the way the interviewer engaged the participant in an informal interview focused on the route they took, places they travelled through and visited, activities the participant engaged in, and reasons for going to these places. The interviewer also directed conversation to what they were seeing and doing and conducted participant observation, paying attention to the physical and social environment and how the participant interacted with these elements.

During the GPS-related data collection participants wore a GPS device for 4 days (two weekdays and two weekend days) to collect data in time and space (Shoval et al., 2010) and completed a diary about out-of-home activities on those specific days, including where the participant went, travel method, and social interactions. A research assistant provided instructions for using the device and contact information in case of any issues, and also contacted the participants every second day during GPS tracking to provide support if needed. Following GPS tracking the data

**Table 1.** Advisory Panel Member Characteristics

| | Resident of study neighborhood | | |
| | A | B | Older adult |
|---|---|---|---|
| University researcher—Occupational Therapy | | | |
| University researcher—Occupational Therapy | | | |
| University researcher—Geography | Yes | | |
| University researcher—Geography/Occupational Therapy | | | |
| Student research assistant—Women's Studies | Yes | | |
| Student research assistant—Geography | | | |
| City planner | Yes | | Yes |
| City planner | | | |
| Representative of nonprofit organization | | | Yes |
| Representative of nonprofit organization | Yes | | |
| Provider of older adult programming | | | |
| Community member | | Yes | Yes |
| Community member | | Yes | Yes |

**Table 2.** Participant Characteristics

| Participant | Neighborhood | Age | Gender | Marital status | Time in current neighborhood |
|---|---|---|---|---|---|
| 1 | A | 71 | Female | Separated/divorced | 4 years |
| 2 | A | 66 | Female | Married/common law | 38 years |
| 3 | B | 80 | Female | Widowed | 6 years |
| 4 | B | 84 | Male | Married/common law | 60 years |
| 5 | A | 76 | Female | Widowed | 26 years |
| 6 | A | 73 | Female | Married/common law | 43 years |
| 7 | A | 73 | Male | Married/common law | 43 years |
| 8 | A | 84 | Female | Married/common law | 20 years |
| 9 | B | 65 | Female | Married/common law | 12 years |
| 10 | B | 94 | Male | Married/common law | 17 years |
| 11 | A | 65 | Female | Married/common law | 11 years |
| 12 | B | 74 | Female | Widowed | 20 years |
| 13 | B | 76 | Female | Widowed | 25 years |
| 14 | B | 82 | Female | Separated/divorced | 35 years |

were converted into maps and printed, with each map displaying 2 days of tracking data, along with key features of the built environment (e.g., streets, parks, places of interest) for orientation. Participants then engaged in a semistructured interview that incorporated viewing the maps and activity/travel diaries with the interviewer (i.e., map-based interviews). The researcher made notations on the maps as needed, including the places the participant went, the routes taken, the travel modes, and other meaningful places in the neighborhood. The interviews focused on the participant's experiences of the neighborhood places they visited, whether they were typical places and activities, interactions with people in the places visited, and feelings of connectedness and inclusion in various places.

The interviews were audiorecorded and transcribed verbatim. Immediately following each data collection session, the interviewer recorded reflexive notes. The primary interviewer (R. Pack) and principal investigator (C. Hand) met regularly to discuss on-going data collection and analysis and shared findings with the broader research team and advisory panel, engaging in a process of collective reflexivity as a way to optimize data collection and analysis (Tracy, 2010).

### Analysis

Analysis addressed both the substantive study objective regarding person–place transactions that shape connectedness and inclusion in neighborhoods and the methodological objective regarding the utility and feasibility of the geospatial-qualitative approach. To achieve data immersion and familiarity with the entire data set (Bernard & Ryan, 2009), initial analysis involved multiple team members reading interview transcripts and diaries and viewing maps to generate themes. One theme related to how participants connect with people as well as places in their neighborhoods, in a variety of meaningful ways. Further analysis related to the substantive objective was therefore framed by the question, How and in what ways do older adults connect with and within their neighborhoods? Although sources are available on methods of analyzing each data type as separate entities, very few address analysis in relation to other data types. Thus, we adopted an analysis process that drew on sources specific to each method and worked to combine analysis methods to understand what could be gleaned from each type of data individually and in combination. Throughout analysis, we engaged in an ongoing process of interdisciplinary discussion at advisory panel and research team meetings. Data analysis followed an iterative process as follows:

Step 1: For six participants, one researcher (C. Hand) explored emerging findings by considering data for a single participant at a time. She focused on key parts of the data that helped to convey the participants' stories of their lives in their self-defined neighborhoods and the ways in which participants connect to people and places in their neighborhoods. The process involved:

- Immersion in data through close reading and rereading of interview transcripts, activity/travel diaries, observation and reflexive notes, and viewing maps.
- Creating a synopsis of the diary data describing the person's activities, places visited, travel modes, and interactions with others.
- Map visualization, a process that can facilitate exploring data in interaction with other data (MacEachren, 1994), including examining how far from home the routes ranged, any areas of frequent activity, travel modes to places visited, patterns such as clustering or dispersion (Loebach & Gilliland, 2014), or other emerging information.
- Using narrative analysis techniques (Lieblich, Tuval-Mashiach, & Zilber, 1998), to break interview text, diary, and map data into idea units, and identify emerging themes and key storylines. The ideas and emerging themes were linked to specific times, places, and activities to further contextualize the data.
- Noting relationships between participants' perceptions, activities and spatial environment and considering key quotes and emerging findings from all interview transcripts in the context of the maps and activity diary.
- Writing reflexive notes throughout this step.

Step 2: The researcher (C. Hand) reviewed the transcripts again alongside the reflexive notes for the six participants, to characterize the nature of the data and findings that were gained through each method, again taking reflexive notes.

Step 3: The researcher (C. Hand) then created a "core narrative" (Lieblich et al., 1998) for each of the six participants, focusing on how the person connects with and within their neighborhood, using approximations of the participant's own words and direct quotes. The interviewer (R. Pack) reviewed the core narratives and provided comments about their correspondence to her own emerging sense of the participants. The researcher then looked across narratives to discern patterns in how participants connect with and within their neighborhoods. After completing this process with the six participants, three from each neighborhood, an adequate understanding of the substantive study findings was achieved. As a result, the remaining steps focused on the methodological aspects of the study.

Step 4: Two team members (C. Hand and a research assistant) reviewed the data by type to generate further insights about the methods including:

- Viewing the 27 maps at once and performing visualization as in Step 1, comparing across and within neighborhoods.
- Creating synopses of the remaining activity diaries and reading all 14 as a set.
- Reviewing transcripts for the remaining eight map-based interviews, eight narrative interviews, and seven go-along interviews, taking each interview type as a data set.
- Writing reflexive notes throughout this process regarding the information that each data type was providing

regarding activities, places, people, and change over time, transactions between person and place, and connections to people and places.

Step 5: To address feasibility of the approach, the research assistants and principal investigator kept on-going notes on the process of data collection and all team members reflected on the methods.

## Results and Discussion

### Data and Understandings Gained Through Narrative Interviews

The study's narrative approach was aimed at creating in-depth stories capturing older adults' experiences of social inclusion/exclusion and connectedness/isolation in the context of their neighborhoods, their sense of identity and activities, and aspects of time such as chronology of events and life course (Chase, 2011). Participants had an opportunity to tell their stories, with varying content, levels of depth and detail, and story forms (Reissman, 2007). Some, like Participants 2 and 6, related detailed histories of themselves and their families describing the deep meaning that their neighborhood has had for them in the past and presently. Others, such as Participants 1 and 11, drew clear links between their own values and identities and their neighborhoods, with relatively little about their personal histories. For example, Participant 1 forefronted the friendliness of her neighborhood and how it has helped her to become connected in her new home and described the walkability and amenities that support her youthful and healthy identity. Participant 11 spoke of the fit between the features her neighborhood offers and her values such as sense of community, active living, and green space. Still other participants (3, 4, 12, 14), discussed their neighborhoods in a pragmatic way, relating facts about their own histories and activities and useful amenities in their neighborhoods such as parks, grocery stores, and banks. Participant 14 mentioned a recent, difficult transition to retirement, and rather than discuss the personal difficulties she faced, she turned the discussion toward her current life in her new home and neighborhood, which was full of activities and friends. Participant 3 also focused on her current home and activities, despite a 44-year history in the area, and provided little personal information about, for example, family or close friends. Finally, Participant 7 spoke of his neighborhood in a very knowledgeable, yet relatively impersonal way, detailing neighborhood changes over time, histories of various stores and owners, the social character of the neighborhood, local architecture, and traffic issues. Such narrative data provided insights into temporal, symbolic, pragmatic, and social elements of inclusion and connectedness and highlighted the varying ways participants construct the self in narrative and how these constructions are associated with the meaning assigned to and constructions of one's neighborhood.

### Data and Understandings Gained Through Go-along Interviews

The go-along interviews provided an opportunity to observe the participants in their neighborhoods and gain nonverbalized, situated information about the way they transact with various elements of their neighborhoods. Participants interacted with the social environment in a variety of ways, including greeting people and dogs (3, 7, 11, 12) and chatting with acquaintances and strangers in locations like banks and shops (5, 6, 11). Participant 8 was very sociable, chatting at length with people at adjacent tables in a coffee shop who were previously unknown to her. Conversely, Participant 14 stated that she avoids social contact while out on her walks, and other participants did not interact with passersby, despite their presence while walking (4, 9). Variations in how people engaged in social interactions were observable and methods of interacting in neighborhoods were identified, highlighting the important roles that neighborhood people play in the social networks of older residents (Gardner, 2011). In particular, the observations provided a window into subtle social interaction patterns that are typically not otherwise stated (Kusenbach, 2003).

Participants also interacted with the physical environment in a variety of ways. All participants had access to parks and natural areas and about one-third of them chose to walk in these areas (3, 4, 8, 11, 14). One participant (4) chose a challenging terrain, involving cluttered paths and steep hills, providing additional insight into the participant's abilities and interactions with his environment. The walking pace varied from fast, typically on walks that the participants usually do for exercise (3, 13, 14), to slow and leisurely (5, 6, 7). In one neighborhood, disjointed, partially blocked, or lack of sidewalks were pointed out by participants as barriers to walking (9, 13). This method therefore enabled an understanding of taken-for-granted physical elements of both spaces and persons that shaped how participants navigated their neighborhoods.

Being and doing activities in the neighborhood prompted a variety of emotional responses in the participants, providing a window to emotional and symbolic elements of person–place transactions. Some expressed enjoyment at going on a favorite walk (3) and sharing local history with the interviewer (7) or enthusiasm at seeing wildlife (8). Other participants expressed a lack of enjoyment, articulating lack of places to visit or disgust at local amenities.

The choice of route and destination for the go-along interviews, combined with comments made in the interviews, revealed meaning about how the person connects and transacts with their neighborhood. Participant 7 took the interviewer on a tour of historically meaningful neighborhood places, and seemed to connect to the neighborhood through his interest in and extensive knowledge about local geography and history. Participant 2 provided a reminiscent "family history tour" of her neighborhood, displaying the breadth of her connections to neighborhood places and discussing

especially meaningful places. Participant 4 chose a route that he had often taken to work but no longer travels, and related a relatively factual description of living and working in the area. Participant 1 had lived in the area for only a few years and provided a tour of neighborhood places, demonstrating her knowledge of the area. Two additional participants took the interviewer on a favorite walk (6, 11). Other participants chose routes and destinations that seemed to hold less personal meaning that were reflective of their typical neighborhood activities, such as walking in a park or neighborhood streets (3, 8, 13, 14) or to a local shopping area (5, 9, 12). The routes taken demonstrated how neighborhoods can form a spatial biography, via personal landmarks that hold past, present, or future meaning to the person (Kusenbach, 2003).

Finally, during the go-along interviews, elements of the neighborhood acted as interview prompts or "walking probes" (Lager, Van Hoven, & Huigen, 2013). Participants related stories of themselves in their neighborhood based on places and people they saw. They mentioned details that did not come up in the other sessions, for example, noting specific busy streets that were challenging to cross (6). Seeing certain locations prompted discussion about the people who are associated with them, illuminating the individual's network of local social connections, in particular peripheral ties (Kusenbach, 2003). Thus, go-along interviews can stimulate unplanned situations, thoughts, and remembrances that may not be mentioned in a sit-down interview (Bergeron, Paquette, & Poullaouec-Gonidec, 2014).

The concept of "being in place" with participants (Lager et al., 2013) appears to be a key component and benefit of go-along interviews. Being in context with and observing participants who can share "what is going on" (Gardner, 2011) enables researchers to gain deep and detailed understandings of life in neighborhoods (Lager et al., 2013). Researchers can gain understanding of participants' experiences of the physical and social spaces of their neighborhoods (Gardner, 2011), their unique perceptions of their environment, and what those perceptions might relate to, such as emotions, tastes, experiences, and social contexts (Kusenbach, 2003). The historical and geographical details noted by Participant 7 illustrated his unique perception of his neighborhood that could be clearly linked to his practical knowledge (Kusenbach, 2003) as a geographer. Go-along interviews further enable researchers to learn about the "spatial practices" of participants, or the ways that individuals engage with their environments (Kusenbach, 2003). Participants in the current study engaged socially, physically and emotionally with their neighborhoods and communicated the subtle layered meanings of these spatial practices (Kusenbach, 2003).

## Data and Understandings Gained Through GPS and Related Data Collection

### Activity/Travel Diaries
The activity/travel diaries provided a sense of each participant's daily lives in their communities, in contrast to the broader temporal frame often employed in the narrative interviews. While the narrative interviews highlighted the activities that participants connected to their identities and the meaning assigned to the neighborhood, the diaries illuminated the everyday, routine activities that were often not mentioned in either narratives or go-along interviews, such as shopping trips or walks in the neighborhood. Patterns could be determined within and across diaries, such as differences in travel or activities across neighborhoods, outings per day, typical travel mode, and weekend versus weekday activities. For example, across both study neighborhoods participants tended to spend time seeing family or attending religious services on weekends and did more structured activities like clubs, exercise groups, or cards during the week.

### GPS Maps and Data
The maps and numerical GPS data enabled researchers to construct further understandings about the activities in place, the neighborhood context, and the ways in which older adults interlink with neighborhood features. Viewing the maps enabled the researchers to determine the boundaries of the area each participant typically travelled within, the mode of transport (i.e., driving, walking or cycling), typical and infrequent routes, and use of local amenities. The maps allowed further integration of the GPS data with other geospatial data regarding neighborhood environments by displaying local places such as parks and shopping areas. Table 3 provides sample findings based on map and diary data, highlighting the comparisons that can be drawn across neighborhoods and Figures 1 and 2 provide sample maps.

The numerical GPS data provided quantitative information, for example, about the size of participant's activity spaces, total distance travelled, and proportion of time spent walking versus driving. The visual map data and numerical data about activity patterns provided additional, richer context that expanded findings from the map-based interview data (Knigge & Cope, 2006).

### Map-Based Interviews
The map-based interviews drew upon the maps and diaries to provide a more comprehensive sense of the participants' daily lives in their communities. Participants described their activities, places they visit, and people they interact with and their reasons for engaging in these activities. Many reasons were pragmatic, such as the convenience and prices of certain grocery stores, whereas others were more personal, such as the meaning of a certain place, or the enjoyment the person gets from a particular activity. Participant values often played a role in activity choices, for instance valuing a youthful identity and participating in mixed age groups, (1) avoiding senior centre activities (5) or shopping locally to help local businesses (7). In some cases, discussion of participant values occurred in the narrative interviews and the map-based

**Table 3.** Sample Study Findings Comparing Study Neighborhoods Based on Map and Diary Data

| Neighborhood A | Neighborhood B |
|---|---|
| Low park usage despite several parks in area. | Several participants walk in parks. |
| Participants living closer to a mall and satellite senior's centre seemed to utilize these amenities more than participants living farther away. | Most participants used neighborhood shopping area, regardless of distance from it. |
| Walking trips involve walking on major roads and smaller residential streets. | Walking trips tend to be on smaller residential streets. |
| Most walking trips were for leisure/exercise. | Walking trips were for leisure/exercise and for transport. |
| Most participants travelled within a several-kilometer radius of home, with the exception of out-of-town trips. Radius was larger than in Neighborhood B. | Most participants travelled within a several-kilometer radius of home, with the exception of out-of-town trips. Radius was smaller than in Neighborhood A. |
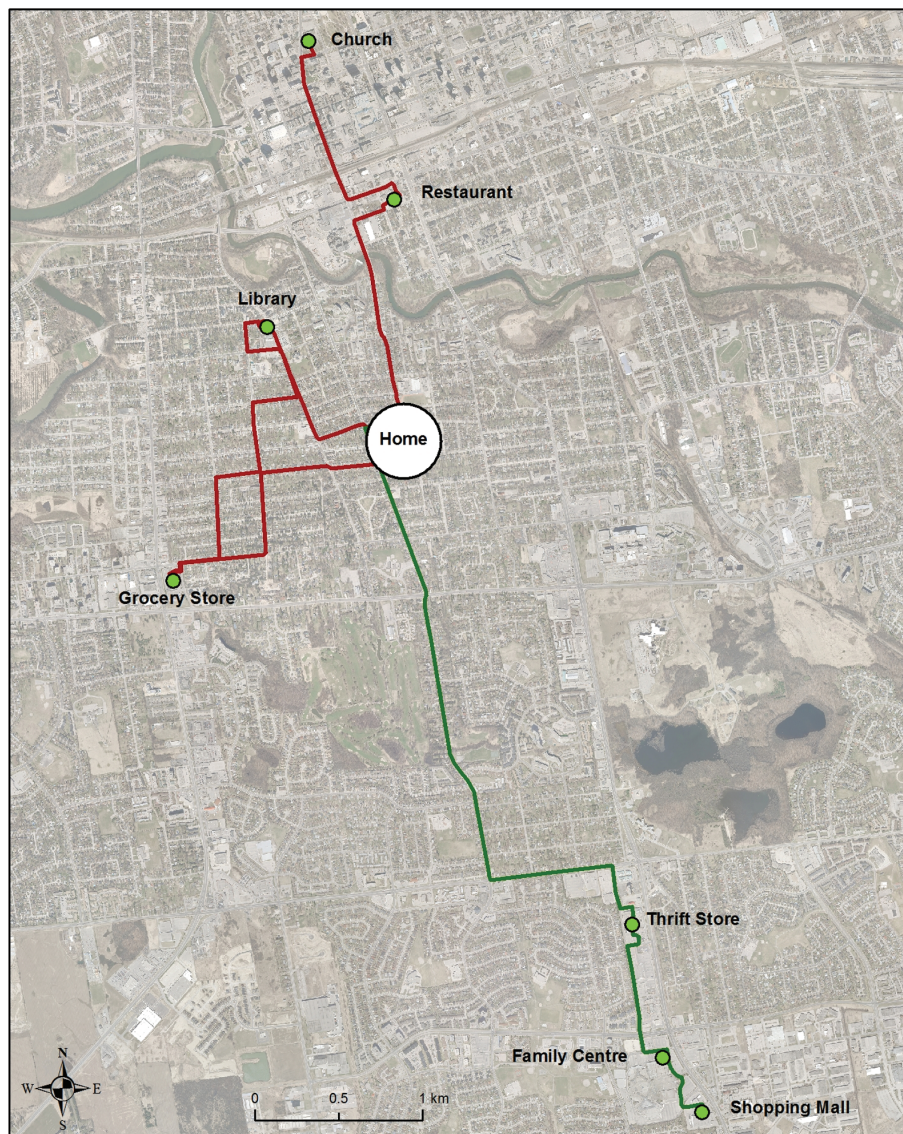


**Figure 1.** Routes travelled by Participant 1 on 2 days (Day 1 to a grocery store, library, restaurant, and church and day 2 to thrift store, family centre, and shopping mall). All travel was by car.

interviews served to elicit specific details about how values are enacted. Further, the visual representation in the maps, and the specific questions in the diaries, provided valuable interview prompts (Bell, Phoenix, Lovell, & Wheeler, 2015). The breadth of details that participants provided regarding why they do certain activities
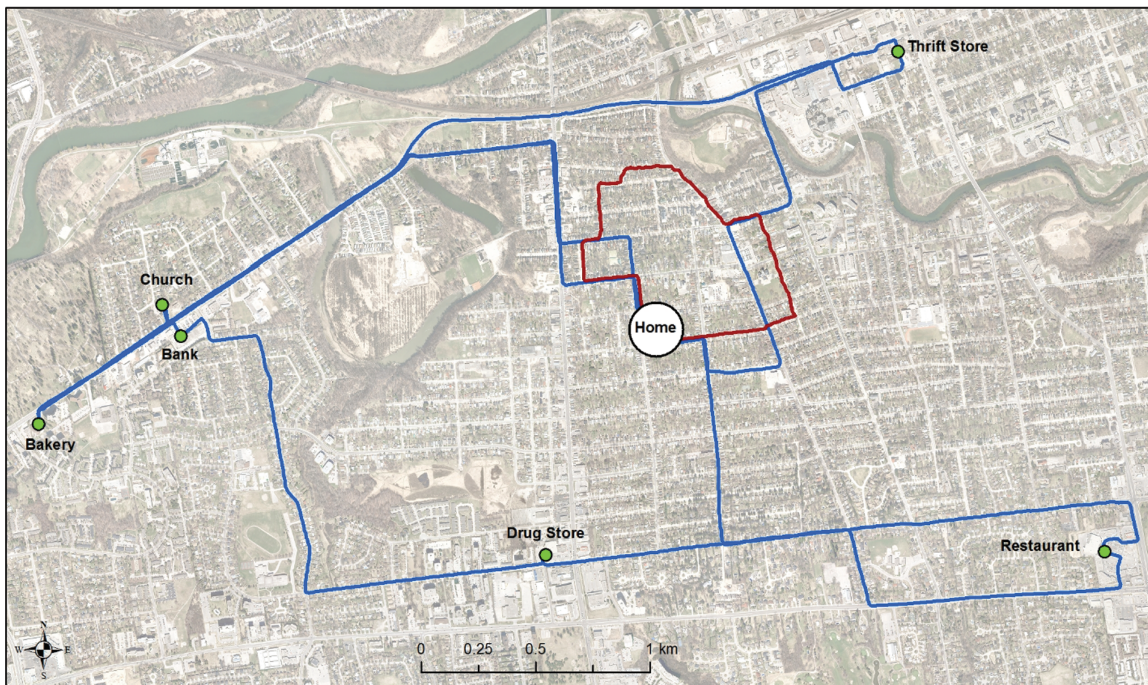
**Figure 2.** Routes travelled by Participant 2 on 2 days (Day 1 to a number of marked locations by car, and day 2 on foot in a rough circle just north of home).

illustrates the value of this method of data collection. The methods elicited information that was not gained through the more typical, narrative interviews, in particular, highlighting peripheral, yet important, social connections. Other authors have noted the value of activity tracking and map-based interviews for exploring the "taken-for-granted" aspects of aging in neighborhoods (Heatwole Shank & Cutchin, 2016) and eliciting multilayered detail about everyday experiences (Bell et al., 2015).

## Reflections on the Combined Methods

As discussed above, each method seemed to fulfill a different purpose and provided different perspectives about the participants and their transactional relationships with neighborhoods, despite some overlap of content. We chose to combine spatial and qualitative methods primarily for two reasons related to exploring spatial, social, perceptual, and other elements of person–place transactions: first, to directly place the person in the context under study, thus capturing the objective and tacit elements of place and the person's experiences of place and second, to explore meanings and interpretations. Bryman (2006) outlined 16 reasons for combining quantitative and qualitative data, several of which apply to our combination of spatial and qualitative methods. These include ensuring completeness of data and findings, explaining the findings of one method through the other, enhancing the integrity of the findings, illustrating one type of data through another, and enhancing the findings of one method using another method.

### Conceptions of Neighborhood

The combination of methods helped us to better understand participants' conceptions and boundaries of neighborhood. For example, on Participant 2's go-along interview, she took the interviewer to a home a family member had built, that was technically outside the city-defined boundaries of the neighborhood, but that the participant identifies as part of her neighborhood. Participant 8's map-based interview showed she goes to many places in the city core, outside of what is generally considered her neighborhood, but that she considers to be her community. The participants also revealed conceptions about neighborhood that they did not explicitly state. In the narrative interview, Participant 3 stated that she considered her neighborhood to be her condo complex; within the map-based interview, she stated that she is very familiar with the wider area and would never consider moving to the north-end of town, implying a wider conception of neighborhood than she previously stated. The combination of methods enabled us to go beyond triangulation and identifying points of agreement, to embrace crystallization, that is, using different methods to achieve a more complex, in-depth, and dynamic understanding (Tracy, 2010) of meanings of neighborhood and its boundaries.

### Connecting in Neighborhoods

Integrating the different types of data helped to create a rich and full understanding of how the participants connect with and within their neighborhoods. For instance, for Participant 2, who has a deep and meaningful family history in the area, her stories were overlaid on her map.

We marked such places as her grandmother's previous home and restaurant, her grandfather's previous store and her mother's previous rooming house. By placing and noting these locations on the map, we get a sense of what she means about her deep and meaningful connections. We see how far ranging her connections are, providing additional context for her connections to place demonstrated within her go-along interview. The combination of methods also provided a means to understand how participants actively negotiated connecting in neighborhoods. For example, in the map-based interview Participant 9 described some of her current social activities and connections and the value she places on helping others. In the narrative interview she articulated a tension between wanting to help others, and experiences that older, frail neighbors can become overly dependent on her. She described negotiating this tension by avoiding getting too close to older neighbors.

### Agency Within Participants

A narrative inquiry approach is often used to illuminate agency of participants, shifting their position from passive interviewees, to storytellers who craft their own narratives. Participants set the form and content of their stories, determine their beginning and end, and determine what to include and not to include (e.g., Smith & Sparkes, 2008). The other methods we used also offered participants ways to enact agency, for example, through choosing the go-along interview routes and destinations, recording specific activities in the diaries and GPS tracking, and telling stories about their own activities in the map-based interviews. The methods appeared to flatten hierarchies among researcher and participant (Van Cauwenberg et al., 2012) and encourage enthusiasm and in-depth participation in the research (Preston & Wilson, 2014), enabling coconstruction of findings regarding person–place transactions (Bell et al., 2015).

### Embodied and Enacted Transactions

Including methods that are grounded in the participants' environment enriched understanding of their transactions with the neighborhood in a variety of meaningful ways. For example, Participant 9's activity diary described walking in the neighborhood and the map-based interview revealed that lack of sidewalks was an issue. Participant 9's go-along interview on a typical walk allowed the interviewer to see the participant negotiating the lack of sidewalks and walking in the road, and discussing instances when it is unsafe and safe to do. The social environment could also be observed, revealing new data that had not been mentioned previously, specifically, that the participant encounters very few people walking in the neighborhood. In the narrative interview, Participant 3 mentioned her enjoyment of walking, and her habit of walking frequently. In her go-along interview, involving fast-paced pole-walking in a nearby park, she seemed to enact the meaning of walking for her, involving an active, healthy identity and opportunities to greet, and interact with pets and people. Participant 3 also

talked about her activity-based communities for golf and bridge and how important these were to her. The GPS data showed that these activities occur at locations several kilometers from home, suggesting another aspect to her level of commitment to the activities.

### Transactions Between Person and Place as an Ongoing Process

The combination of methods was useful in understanding participants' lives in neighborhoods as an active process that is negotiated over time (Heatwole Shank & Cutchin, 2016), at different scales. Looking across Participant 9's data illustrated the processes that she engaged in. In her narrative interview, she spoke about moving into her condo building, wanting something to do, and walking to a nearby senior's club that she continues to attend. Her map-based interview provided many details of her activities and interactions at the senior's club, including the relationships she has developed, leading to additional social activities, and club responsibilities she has taken on over time. In her go-along interview, she talked about possibilities that were not currently open to her, the lack of resources in her area, and that she is "making the best of what's there in the neighborhood." The different forms of data collection provided a window into the ongoing process of connecting with others and engaging in neighborhoods. During data collection, participants also described their lives at different temporal scales, from their small daily habits to their experiences over the course of a lifetime. Participant 6 described walking in her neighborhood as a teenager, then as a young mother and currently as an older woman, and how these repeated, long-standing experiences create a sense of connection to and belonging in her neighborhood. The local shops that she visits and her daily walking habits in her neighborhood were also described as ways she creates a deeper sense of familiarity and connectedness to place.

### Sequence of Data Collection

The order in which data collection took place varied across participants and provides some insight into what the different methods may offer. Data from each method generally built on ideas from previous methods and created a deeper understanding of the participant's experiences. For example, Participant 1, in her narrative and first interview, described why she likes her neighborhood, how she is trying to meet people in her new community and some of the activities she does and places she goes. This information provided context for the map-based interview that further described the participant's activities and travels. The final, go-along interview was a tour of the area, including several of the places the participant had mentioned in interviews, providing visual information about the participant's neighborhood experiences. In other cases, the methods did not provide scaffolded understandings but instead provided new information; for example, Participant 6's go-along and final interview included new details about the neighborhood, such as noting specific busy streets that are difficult to

cross. The repeated sessions seemed to give participants the opportunity reflect on their comments, clarify points from previous interviews, and add new information. These activities occurred regardless of the sequence of methods.

Irrespective of order, the map-based interviews tended to prompt participants to describe their current activities and places they visit, along with explanations of why they do these activities and what they like about them, in a more factual and less reflective way than other interviews. The narrative interviews tended to be more reflective and personal, regardless of the order they occurred, although in some cases (e.g., 4), the go-along was the most personal and reflective interview.

## Practicality and Feasibility of Methods

In general, the methods were implemented successfully. The participants all actively engaged in data collection and appeared comfortable with the process. The participants did not appear to have any difficulty understanding or completing the activity diaries or using the GPS devices, with the exception of occasionally forgetting to turn on the device. In some cases, the GPS device did not work properly and a research assistant provided support to resolve the issue. Within the go-along interviews, noise such as from traffic occasionally obscured the voices on the audio recordings, while at the same time providing useful, unstated information about the neighborhood context. Flexibility in scheduling was required for the go-along interviews, which were occasionally rescheduled due to weather or health issues. In terms of resources, data collection and analysis involved a large time commitment from participants and researchers alike. The data could be further explored, displayed and integrated with other geospatial data (e.g., environmental, socioeconomic) within GIS software, to facilitate more efficient handling and deeper analyses of large amounts of data. Other resources required for the interviews were minimal, including transcription and equipment costs. In contrast, the GPS-related data collection required the use of a GPS device, research assistant support to solve any technical issues, technical services to analyze the GPS data and create the maps, and printing services.

## Implications

We successfully implemented a combined qualitative-participatory geospatial approach to the study of person–place transactions among older adults in neighborhoods. Combining the methods in a novel way and purposefully reflecting on their implementation enabled us to demonstrate the value of the developed approach. The approach was grounded in the context and complexity of participants' daily lives and as such provided rich data and insight into older adults' lives in neighborhoods. Each method brought unique insights to the study. Participants construct temporal, symbolic, pragmatic, and social meanings of their neighborhoods, demonstrated in the narrative interviews. The go-along interviews provided insights into how participants transact with their neighborhoods in often subtle and non-verbalized ways, socially, physically, and emotionally. The activity/travel diaries provided a sense of each participant's daily lives in their communities and the maps and numerical GPS data provided meaningful context that complemented the interview data. The map-based interviews further generated layered meanings about participants' daily lives in their communities. Together, the methods shed light on conceptions of neighborhood and connecting in neighborhoods, provided opportunities for participants to enact agency and person–place transactions in situ, and demonstrated the temporal nature of person–place transactions.

Future research can apply the developed approach within a specific methodology, such as ethnographic research, in order to further situate findings in relation to broader cultural factors, or grounded theory, as a means to contribute to mapping out a social process. Nuanced, contextualized information about older adults' lives in neighborhoods can be used in several ways. For example, emerging study findings suggest the ways in which older adults exert influence on their neighborhoods, such as reaching out to neighbors to create a sense of community or advocating for the city to address issues like graffiti. These actions position older adults as active agents in the neighborhood and suggest that such older adults could contribute to change at the neighborhood level. At the same time, recognizing the tensions that older adults may feel in assisting and care-giving for neighbors can help to contextualize reluctance to reach out. Understanding how older adults navigate the absence of sidewalks, or use sidewalks as places for socializing, could inform city planning regarding infrastructure. Seniors' programming could incorporate the meaning that neighborhood places have for older adults, through using local, meaningful sites for events or incorporating neighborhood concepts into activities, for example. Finally, exploring the many ways in which under-resourced neighborhoods can create exclusion and isolation in older adults could suggest policy directions aimed at improving well-being. Such research, which considers the dynamic and interconnected nature of person and place, the complexity of person–place transactions, and is directly grounded in the environments of participants' lives, can generate much-needed knowledge to support aging in neighborhoods.

# References

Andrews, G. J., Cutchin, M., McCracken, K., Phillips, D. R., & Wiles, J. (2007). Geographical Gerontology: The constitution of a discipline. *Social Science & Medicine*, **65**, 151–168. doi:10.1016/j.socscimed.2007.02.047

Bell, S. L., Phoenix, C., Lovell, R., & Wheeler, B. W. (2015). Using GPS and geo-narratives: A methodological approach for understanding and situating everyday green space encounters. *Area*, **47**, 88–96. doi:10.1111/area.12152

Bergeron, J., Paquette, S., & Poullaouec-Gonidec, P. (2014). Uncovering landscape values and micro-geographies of meanings with the go-along method. *Landscape and Urban Planning*, **122**, 108–121. doi:10.1016/j.landurbplan.2013.11.009

Bernard, H. R., & Ryan, G. W. (2009). *Analyzing qualitative data: Systematic approaches*. Thousand Oaks: SAGE.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, **6**, 97–113. doi:10.1177/1468794106058877

Carpiano, R. M. (2009). Come take a walk with me: the "go-along" interview as a novel method for studying the implications of place for health and well-being. *Health & Place*, **15**, 263–272. doi:10.1016/j.healthplace.2008.05.003

Chase, S. E. (2011). Narrative inquiry: Still a field in the making. In N. Denzin & Y. Lincoln (Eds.) *The Sage handbook of qualitative research* (4th ed., pp. 421–434). Thousand Oaks: Sage.

Cresswell, T. (2004). *Place: A short introduction*. Malden, MA: Blackwell Pub.

Cutchin, M. P. (2004). Using Deweyan philosophy to rename and reframe adaptation-to-environment. *American Journal of Occupational Therapy*, **58**, 303–312. doi:10.5014/ajot.58.3.303

Gardner, P. J. (2011). Natural neighborhood networks: Important social networks in the lives of older adults aging in place. *Journal of Aging Studies*, **25**, 263–271. doi:10.1016/j.jaging.2011.03.007

Hand, C., Huot, S., Rudman, D. L., & Wijekoon, S. (2017). Qualitative-geospatial methods of exploring person-place transactions in aging Adults: A scoping review. *The Gerontologist*, 1–15, doi:10.1093/geront/gnw130

Heatwole Shank, K. S., & Cutchin, M. P. (2016). Processes of developing 'community livability' in older age. *Journal of Aging Studies*, **39**, 66–72. doi:10.1016/j.jaging.2016.11.001

Huot, S., & Rudman, D. L. (2015). Extending beyond qualitative interviewing to illuminate the tacit nature of everyday occupation: Occupational mapping and participatory occupation methods. *OTJR: Occupation, Participation and Health*, **35**, 142–150. doi:10.1177/1539449215576488

Knigge, L., & Cope, M. (2006). Grounded visualization: Integrating the analysis of qualitative and quantitative data through grounded theory and visualization. *Environment and Planning A*, **38**, 2021–37. doi:10.1068/a37327

Kusenbach M. (2003). Street phenomenology: The go-along as ethnographic research tool. *Ethnography*, **4**, 455–85. doi:10.1177/146613810343007

Kwan, M., & Ding, G. (2008). Geo-narrative : Extending geographic information systems for narrative analysis in qualitative and mixed-method. *The Professional Geographer*, **60**, 443–465. doi:10.1080/00330120802211752

Lager, D., Van Hoven, B., & Huigen, P. P. P. (2013). Dealing with change in old age: Negotiating working-class belonging in a neighbourhood in the process of urban renewal in the Netherlands. *Geoforum*, **50**, 54–61. doi:10.1016/j.geoforum.2013.07.012

Lawton, M. P., & Nahemow, L. (1973). Ecology and the aging process. In C. Eisdorfer & M. P. Lawton (Eds.), *The psychology of adult development and aging* (pp. 464–488). Washington, DC: American Psychological Association.

Lieblich, A., Tuval-Mashiach, R., & Zilber, T. (Eds.). (1998). *Narrative research: Reading, analysis, and interpretation* (**Vol. 47**). Thousand Oaks: Sage.

Lincoln, Y., Lynham, S., Guba, E. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. Denzin & Y. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 97–128). Thousand Oaks: Sage.

Loebach, J., & Gilliland, J. (2016). Neighbourhood play on the endangered list: Examining patterns in children's local activity and mobility using GPS monitoring and qualitative GIS. *Children's Geographies*, **14**, 573–589. doi:10.1080/14733285.2016.1140126

Loebach, J. E., & Gilliland, J. (2014). Free range kids? Using GPS-derived activity spaces to examine children's neighborhood activity and mobility. *Environment and Behavior*, **48**, 421–453. doi:10.1177/0013916514543177

MacEachren, A. M. (1994). Visualization in modern cartography: Setting the agenda. In A. M. MacEachren (Ed.), *Visualization in modern cartography* (pp. 1–13).

Mahmood, A., Chaudhury, H., Michael, Y. L., Campo, M., Hay, K., & Sarte, A. (2012). A photovoice documentation of the role of neighborhood physical and social environments in older adults' physical activity in two metropolitan areas in North America. *Social Science & Medicine (1982)*, **74**, 1180–1192. doi:10.1016/j.socscimed.2011.12.039

McLees, L. (2013). A postcolonial approach to urban studies: Interviews, mental maps, and photo voices on the urban farms of Dares Salaam, Tanzania. *The Professional Geographer*, **65**, 283–295. doi:10.1080/00330124.2012.679449

Minkler, M., & Wallerstein, N. (Eds.). (2008). *Community-based participatory research for health: From process to outcomes* (2nd ed.). San Francisco: Josey-Bass.

Nunkoosing, K. (2005). The problems with interviews. *Qualitative Health Research*, **15**, 698–706. doi:10.1177/1049732304273903

Phillipson, C. (2007). The 'elected' and the 'excluded': Sociological perspectives on the experience of place and community in old age. *Ageing and Society*, **27**, 321–342. doi:10.1017/S0144686X06005629

Preston, B., & Wilson, M. W. (2014). Practicing GIS as mixed method: Affordances and limitations in an urban gardening study. *Annals of the Association of American Geographers*, **104**, 510–529. doi:10.1080/00045608.2014.892325

Reissman, C. K. (2007). *Narrative methods for the human sciences*. Los Angeles: Sage.

Shoval, N., Auslander, G., Cohen-Shalom, K., Isaacson, M., Landau, R., & Heinik, J. (2010). What can we learn about the mobility of the elderly in the GPS era? *Journal of Transport Geography*, **18**, 603–612. doi:10.1016/j.jtrangeo.2010.03.012

Smith, B. & Sparkes, A. C. (2008). Narrative and its potential contribution to disability studies. *Disability & Society*, **23**, 17–28. doi:10.1080/09687590701725542

Suzuki, L. A., Ahluwalia, M. K., Arora, A. K., & Mattis, J. S. (2007). The pond you fish in determines the fish you catch: Exploring

strategies for qualitative data collection. *The Counseling Psychologist*, **35**, 295–327. doi:10.1177/0011000006290983

Tracy, S. J. (2010). Qualitative quality: Eight "big-tent" criteria for excellent qualitative research. *Qualitative Inquiry*, **16**, 837–851. doi:10.1177/1077800410383121

Van Cauwenberg, J., Van Holle, V., Simons, D., Deridder, R., Clarys, P., Goubert, L.,…Deforche, B. (2012). Environmental factors influencing older adults' walking for transportation: A study using walk-along interviews. *The International Journal of Behavioral Nutrition and Physical Activity*, **9**, 85. doi:10.1186/1479-5868-9-85

Vine, D., Buys, L., & Aird, R. (2014). Conceptions of 'community' among older adults living in high-density urban areas: An Australian case study: Conceptions of community. *Australasian Journal on Ageing*, **33**, E1–E6. doi:10.1111/ajag.12115

Wahl, H. W., Iwarsson, S., & Oswald, F. (2012). Aging well and the environment: Toward an integrative model and research agenda for the future. *The Gerontologist*, **52**, 306–316. doi:10.1093/geront/gnr154

Wengraf, T. (2001). *Qualitative research interviewing: Biographic narrative and semi-structured methods*. Thousand Oaks, CA: Sage.