

## MAPPING FEELING: AN APPROACH TO THE STUDY OF EMOTIONAL RESPONSE TO THE BUILT ENVIRONMENT AND LANDSCAPE

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*Feeling maps survey and map people's emotional responses to their environment as they walk through the streets of a particular urban area. This study describes the first application of feeling maps in long-term, ethnographic field research. It was conducted in Mitzpe Ramon, a small town in Israel's Negev Desert Highlands. Over the course of one year, an ethnographer individually accompanied 55 participants with diverse social characteristics on a set of seven walking routes. These routes included neighborhood spaces, open public spaces, and at least one view of the surrounding natural desert landscape. The locations where between two and seven participants spontaneously reported experiencing strong feelings (positive, negative, or mixed) based on a numerical rating scale and open-ended narration were identified as "affective clusters." Results suggest that people's shared feelings about specific places are influenced by the particular physical properties and characteristics of a given place. Making a contribution to cognitive mapping and environmental preference techniques, feeling maps enable researchers to share a participant's position and views of the landscape as he or she articulates emotions and memories related to those views. Replicable in any setting, this technique could be used to create and maintain spaces that are attractive, inviting, and emotionally pleasing to a variety of users.*

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## INTRODUCTION

Feeling maps, a technique for urban research developed by Yodan Rofè (2004) for use in neighborhood planning and urban design, seek to survey and map people's emotional responses to their environment as they walk through the streets of a particular urban area. This study describes the first application of feeling maps in any long-term, ethnographic field research. It was conducted in Mitzpe Ramon, a small town (population 4,700) in Israel's Negev Desert Highlands.

### *Background*

The Negev Desert Highlands are comprised of a series of small settlements in Israel's hot-arid southern district. The southernmost, smallest, and most isolated of these urban settlements is Mitzpe Ramon, situated near the northern rim of an erosion crater. In 1956, Mitzpe Ramon was established as one of 28 "development towns" (*ayarot pituach*, also referred to as "new towns"). These geographically peripheral urban settlements were designed by planners working for the young state of Israel to absorb swelling immigrant populations, ease development pressures on the country's crowded center, create strategic outposts to secure landholdings, and actively populate the outposts with Jewish inhabitants.

Information made available to the authors by the local town council in 2009 provides rough estimates of the relative size of identifiable subgroups in contemporary Mitzpe Ramon: roughly 30% of households are associated with the armed forces (There is a large officer training base close to town, as well as other bases in the area.); 20-30% of households are constituted by immigrants from the former Soviet Union; 13% of households consist of religious families; 7% of households consist of "newcomers" who arrived in the 1990s (e.g., tour operators, artists, alternative therapists); 3% of households (30 households) consist of "veterans" who came to Mitzpe Ramon in the 1960s; and 2% of households (25 households) consist of members of the Black Hebrew community.<sup>1</sup> Although most informal estimates project the majority of the population is *Mizrahi*,<sup>2</sup> this is not an ethnic category that the town council tracks in any formal way. The local population can be characterized as culturally and socioeconomically diverse and presenting a broad range of needs and interests.

Like many Israeli development towns, Mitzpe Ramon experiences problems caused by its isolation, economic depression, low incomes, unemployment, and underemployment. As a geographically, socially, and politically peripheral municipality that offers residents a limited number of formal social and economic options, it has suffered from image problems and difficulties in retaining its population. Furthermore, despite its unique geographic features and desert setting, it is notorious for its unappealing architectural form. In particular, as in other Israeli development towns, there are many prefabricated buildings constructed from monochrome concrete slabs and other inexpensive materials, quickly erected *en masse*, and placed in spatial isolation. These tracts, reminiscent of Soviet-style low-rise housing, are examples of spatial zones resulting from state planning, financing, and control, followed by state disinterest, as well as municipal neglect and a lack of funding. Thus, even though the town evolved somewhat organically, it did so illogically, at least according to residents. For example, there is no clear single center of town, neighborhoods and services are not concentrated, and walking is an important part of daily life if one does not own a car.

The study to map feelings in Mitzpe Ramon was a component of a long-term ethnographic inquiry into the role of space, place, and landscape in the daily life of residents in a peripheral desert town (Weinreb, n.d.). The first author of this paper, Weinreb, is an ethnographer who resided in Mitzpe Ramon from 2007-2009, during which time she used the town's medical and municipal services; sent her children to local schools and child care; participated in town events, celebrations, and meetings; and maintained a written and photographic record of everyday life. Through unstructured and semi-structured interviews, observations in public space, and moving about exclusively

as a pedestrian during the period of study, she closely familiarized herself with fellow residents' actual use of space as well as their expressed concerns, interests, and emotions as they related to the local environment. In addition to this qualitative work, which provided rich contextual data about the locale and the social life of its residents, she chose to use feeling maps to more systematically elicit individuals' feelings about different types of places and understand where feelings about place were shared and why. This paper serves as a case study but also provides a model for how feeling maps may be applied as a technique in a variety of settings.

### ***Feeling Maps, Environmental Perception, and Phenomenology***

The feeling map technique builds on a tradition of studies in cognitive mapping, evaluative mapping, environmental preference (EP), and environmental affect, adding an approach in which people experience, evaluate, and describe their environment in situ and reflect on their response directly in narrative.

The tradition of cognitive mapping in urban planning and design dates back to Lynch (1960), who introduced "image mapping" to capture and compare the environmental perceptions of residents from various streets by allowing them to sketch on and annotate street maps (see also Appleyard, *et al.*, 1964; Milgram and Jodelet, 1976; Orleans, 1973). Researchers using cognitive mapping argue that all cognition in the environment is also, at some level, evaluative (Carmona, *et al.*, 2003; Golledge, 1999; Nasar, 1992, 1998). This insight then tied cognitive mapping to EP studies, which have a long tradition in environmental psychology, while also trying to isolate aesthetic preference as a variable apart from other emotional and cognitive responses to environments, natural or urban (Bechtel and Churchman, 2002; Carp and Carp, 1982; Seamon, 1987; Seamon and Mugerauer, 2000; Stokols and Altman, 1991).

Two key findings emerge from both the cognitive mapping work and the evaluative work: (1) there is substantial inter-subjective agreement about individuals' shared EPs<sup>3</sup> and which features of an environment individuals find salient and (2) "complex order"<sup>4</sup> is important for cognition (Appleyard, *et al.*, 1964; Lynch, 1960; Milgram and Jodelet, 1976; Orleans, 1973) and preference (Lewis, 2010; Nasar, 1984, 1994; Stamps, 1999; Yang and Brown, 1992).

Another stream of environmental psychology literature addresses environmental affect more specifically, highlighting the complexity of the affective response itself, particularly the difficulty in separating the inter-subjective affective response to a physical place from its personal meaning and social significance. Generally, however, there is a consensus that affect works on two dimensions: arousal (a response to sensory stimulation, both positive and negative) and well-being (a feeling of contentment and satisfaction). There is also substantial evidence of the positive effect of nature and plants on a person's sense of well-being (see Wilson [1975, 1978] generally; for landscape aesthetics and habitat theory, see Appleton [1975], Humphrey [1972, 1980], Johnson-Laird [1998], Kaplan [1987], and Kellert and Wilson [1995]), as well as on high stress levels in urban environments (Cohen, *et al.*, 1986; Glass and Singer, 1972; Ulrich, *et al.*, 1991).

Arrayed against this body of work on EP is scholarship in phenomenology, framed in terms of both substance and methods. The goal of phenomenological geographical research is "a rigorous description of human life as it is lived and reflected upon in all of its first-person concreteness, urgency, and ambiguity" (Pollio, *et al.*, 1997:5). The central claim of phenomenologists is that EP research does not represent the complexity of multi-sensorial and bodily aspects of being in place. For example, in many EP studies, respondents evaluate still photographs or paintings of natural landscapes (*e.g.*, Balling and Falk, 1982; Calvin, *et al.*, 1972; Shafer and Brush, 1977; Shuttleworth, 1980), video clips (Heft and Nasar, 2000), or simulated interior environments (Dazkir and Read, 2011). Furthermore, phenomenologists claim that breaking down the human experience of place into its cognitive, evaluative, and affective aspects is futile since any experience of space includes all three, and they are inextricably linked.

While using the techniques described above is common in EP research, the current study differs from them in that it relies on direct experience of places *in situ*. Walking through space grounds the research in everyday encounters with a particular environment. The subject becomes more attentive to processes and events that might normally go unnoticed and unquestioned. The experience of place comes closer to the way people experience space on a day-to-day basis. In particular, participants are active participants in the landscape, and their response to any given place is shaped by their peripheral views (*i.e.*, views outside the center of the gaze), their memory of previous views, and intangibles like “meanings or atmosphere not visibly expressed on the landscape” (Zube, *et al.*, 1982:19) but nonetheless sensed. In contrast to EP research, feeling maps also require participants to report on their sense of well-being as a complex phenomenological response instead of asking them to define it or separate its various aspects. Finally, ethnographic context bolsters phenomenological research through the ethnographer’s immersion in a mutually shared environment and familiarity with participants’ lives and personal histories.

In addition to extending EP and phenomenological geography with an ethnographic approach, this article’s positions on intersubjectivity, affect, and well-being are influenced by Alexander’s (2005) theory of wholeness. The structures he describes have complex order. Alexander builds his theory through the analysis of similarity in the physical structure — not the social meaning — of artifacts and physical spaces, using examples from many non-industrialized and non-Western world cultures, as well as modern Western life and art. The feeling map technique was developed, in part, as an empirical tool to explore, though not formally test, the validity of Alexander’s claims.

## METHODS

### *Study Setting*

Within the context of the long-term ethnographic study of Mitzpe Ramon, and building on Rofé’s (2004) work,<sup>5</sup> feeling maps were used in this study to more systematically elicit individuals’ feelings about different types of places. The town provided a somewhat unusual, but in many ways ideal, setting for the study because its small population and relatively empty streets and public spaces enabled participants to more easily focus on their immediate physical surroundings.

In consultation with local residents, Weinreb designed seven approximately 20- to 30-minute<sup>6</sup> walking routes throughout town that reflected both reported and observed common pathways used by pedestrians. Each of the seven routes was also designed to weave through sections of at least two neighborhoods and part of the town’s periphery. Together, the routes covered each area of town and included segments from all neighborhoods, as defined by commonly held views of neighborhood boundaries; public spaces (*i.e.*, public parks, gardens, building complexes, and open spaces); and at least one view of the surrounding natural desert landscape. Finally, all of the routes were walked in at least two different seasons of the year and at different times during daylight hours (morning, afternoon, and early evening) to control for the effects of seasonality and variations in temperature and the quality and intensity of light. Each of these factors can affect aesthetic perception and emotional experience in the physical environment.

### *Participants*

Over the course of one year (May 2008-May 2009), Weinreb individually accompanied 55 participants with diverse social characteristics on the walks (seven discrete routes, each walked by seven to nine participants).<sup>7</sup> While the sample of participants for any given route was not representative of Mitzpe Ramon’s population in any formal, statistical way, the samples were designed to maximize variability in participants’ characteristics across a number of dimensions.<sup>8</sup> Thus, the group of participants for each route included (1) men and women; (2) a diverse age range; (3) owners and



renters, including recipients of state-subsidized public housing; (4) veterans, newcomers, and usually one visitor/tourist from out of town; (5) religious and secular individuals; (6) college-educated individuals and individuals who had not completed high school; (7) employed and unemployed individuals; (8) residents both engaged in and disengaged from local political processes; (9) people whose homes or places of business were located directly on the route and people who did not reside or work near the route; (10) participants who Weinreb, as an ethnographer, knew well and with whom she had routine social contact and those with whom she did not; and (11) *Ashkenazim*, *Mizrahim*, Black Hebrews, and new immigrants from the former Soviet Union.

### ***Procedure: Walking the Routes***

Weinreb provided the following instructions to each participant before embarking on any given walking route: to (1) remain aware of how he or she was feeling for the duration of the route; (2) relate any given moment that he or she actually felt something and describe that feeling, whether positive, negative, or neutral; (3) point out when and where his or her feelings changed; and (4) be prepared, at that moment, to rate the change in their sense of well-being using a simple four-point scale: 1 = feeling very good, 2 = feeling good, 3 = feeling bad, and 4 = feeling very bad. Participants were told they were welcome to state the reason associated with their rating, but because feelings are subjective and complex, reasonably, there might be times when they could not be easily explained. Likewise, participants were told that while a neutral *value* was intentionally omitted from the numerical scale (in order to encourage them to decide between a positive and a negative change in feeling), a neutral *feeling* was valid and could be narrated — it just would not be marked on the map.

It is important to emphasize here that when using this technique, participants were not asked for their emotional responses to the landscape at set points along the routes. On the contrary, they were free to state where their feelings changed without any intervention. Therefore, they were never asked, “How do you feel now?” Rather, they spontaneously reported when their feelings changed, if at all, at which time they provided or were asked to provide the numerical rating (1–4) for that feeling. In other words, any rating point described here is the product of a two-step process in which participants spontaneously stated where their feelings changed and then provided a rating. This technique makes the resulting clusters, whether related to positive or negative feelings, particularly compelling because it maximizes the content validity of the overall measure relative to a technique that would have required us to request a rating at pre-selected points.

Finally, throughout each walk, Weinreb documented both (1) the narration (which included comments on any thought or emotion triggered by the route, whether personal, historical, political, or simply informational)<sup>9</sup> to be used for content analysis and (2) the precise location of the ratings themselves to produce aggregated maps. Metadata on or about individual walks, such as descriptive information about the weather and conditions at the time of day of the walk and any other factors that might influence the perception or ambience of or atmosphere in the town that day, were also documented.

## **RESULTS AND DISCUSSION**

The experimental application of feeling maps in this study produced three types of results for analysis: (1) a map showing where emotions aggregate or “cluster” in space (referred to as “affective clusters” in this article); (2) a content analysis of narratives on the walks, with particular attention paid to moments when participants spontaneously described or commented on areas that made them feel particularly good or bad; and (3) an analysis of the physical properties of places with positive, negative, and mixed-emotion affective clusters. We describe and analyze each of these results below.



FIGURE 1. Aggregated map with examples of affective clusters and walking routes (map created for authors by [www.blackstrawman.com](http://www.blackstrawman.com)).

### *Aggregated Map*

Weinreb produced an aggregated feeling map of the town by transferring the numerical ratings (1-4) from individual, partial mappings to a master map, shown in Figure 1. In creating this aggregated map, colors were used to indicate feelings: white = feeling very good, light gray = feeling good, dark gray = feeling bad, and black = feeling very bad. Once the aggregated map was created, it was possible to visually discern areas of strong feelings. We call these areas affective clusters, defined as the tendency shared by two or more participants in a particular place on a given route to move from neutral feelings to stronger feelings. The greater the number of people reporting a strong positive or negative feeling in the same location, the more pronounced the affective cluster. Affective clusters, as emotion “hot spots,” exhibit aggregations of positive ratings, negative ratings, or

TABLE 1. Reasons for positive and negative feelings about a place, as narrated during the walks, by frequency.

Sources of Feelings	Number of Responses
<i>Positive feelings</i>	
Vegetation, foliage, grass, plants, gardens	38
Big views, natural vistas, unobstructed desert landscapes	24
Positive personal associations	23
Signs of care, ownership, or investment	19
Children playing, signs of children	12
<i>Negative feelings</i>	
Signs of neglect, lack of care, or abandonment	30
Ugly, unpleasant, or ordinary architecture	29
Presence of trash, including receptacle	28
Deserted, unused, or lonely spaces	21
Dirty or unkempt spaces	15
Ruined opportunities, unrealized potential of a space	12

in some cases, a mixture of strong positive and negative ratings in the same place. Indeed, there were instances in which all seven participants on a given route reported the same change in feeling at the same site, signaling a complete consensus in feeling about the area.<sup>10</sup> One positive affective cluster was located at a shady pathway entrance to a memorial garden, while a negative affective cluster was located in front of an abandoned building. These and other more complicated examples concerning mixed affective clusters will be explained in more detail below.

### *Content Analysis of Narratives*

Table 1 summarizes the reasons given for positive and negative feelings about a place, as narrated to Weinreb during the walks. The reasons given for positive feelings are listed first. Consistent with most EP studies, they show that, in general, participants provided positive narrations and reported the highest ratings in areas with vegetation, foliage, grass, plants, and gardens ("This is quite well kept. This touch of green and flowers gives humanity to this area."). Big views, natural vistas, and unobstructed desert landscapes were the second most frequently mentioned reason for positive feelings ("Nature takes away negative thinking. You think, 'Everything's going to be fine. I'm beautiful.'"). Positive personal associations were the third most frequently mentioned reason for positive feelings. These referred to remembered experiences with friends or family or attachment to the town or nation ("I have happy memories. The first time I came to Mitzpe, we spent time in this park. I have family memories here."). Signs of care for, ownership of, or investment in a property, public or private, were the next most frequent reasons ("The benches are in good shape, there's a place for doing a barbecue, a well-tended garden, no trash, tables for sitting outside and eating, trees planted, fresh paint."). Finally, children playing or signs of children also triggered some positive narrations ("I'm feeling better, seeing the kindergarten, a sign of life and hope.").

Reasons for negative feelings about a place are shown in the bottom section of Table 1. The most frequently given reason for a negative feeling was signs of neglect, lack of care, or abandonment (typically a long-unfinished building, paving, or landscaping project) ("This paved foot path is partial, half-finished. Turn around! [She turns to empty space behind her.] What do you see? Where are we?"). The second most frequently given reason was ugly, unpleasant, or ordinary architecture ("This is like a prison. How could you be inspired here? ... a horrible building! An awful, closed-in jail."). The third reason for negative feelings was the presence of trash, either on the street or in an ill-placed or prominently placed receptacle ("Leaving trash out makes pretty things ugly. A diaper, now, really?"). The fourth reason was a feeling of emptiness in public spaces or buildings that are unpopulated, deserted, lonely, underused, or unused ("Here near the swimming pool, it depends. In the spring and summer, there is the sound of children and life, but not now ... now it is sad."). The fifth reason was areas that were described as generally dirty or

unkempt — though not specifically citing trash as the problem (“Look at the parking lot and the laundry hanging out of the window. It’s ugly. It’s nothing; not homey, not calling you, not welcoming. You can see that there are people there, but ...”). Finally, the perception that a given space represented ruined opportunities or unrealized potential also triggered some negative feelings (“See this unused area by the tennis court? It is what might have been but is not.”). It is notable that each of these reasons for negative feelings can, in some way, with the exception of ugly architecture, be traced back to an underlying factor of neglect.

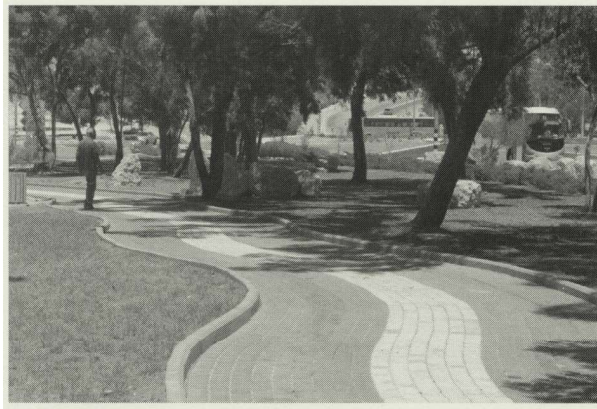


FIGURE 2. Paved footpath in a memorial garden (location “A” on the map in Figure 1), which elicited “very good” feelings overall.

In summary, based on the narratives and descriptions given during the walks and associated with these affective clusters, participants reported feeling better in areas that are verdant and cared for; offer views of the open, natural landscape; and show signs of children’s play. Moreover, they reported feeling worse in areas that are sullied by “ugly” buildings and trash or otherwise dirty, unkempt, or uncared for, as well as areas that provoked a lonely feeling because they appeared to be chronically or cyclically abandoned. Both the positive and negative descriptions narrated by the participants contained signs of tangible (a state of physical change in a park or garden) and intangible (a state of mind like a sense of well-being or satisfaction) feelings about the landscape.

Personal associations were a primary example of intangible and subjective feelings, related much more to memory than to anything immediately visual. Positive personal associations stemmed from memories about a range of personal experiences with friends and family and attachment to this locality or the nation. Negative personal associations were articulated as disappointment regarding the ruined or unrealized potential of a space, often tied to a sentiment that municipal leaders had failed to follow through on promises to complete development, livability, or beautification projects.

Performing a content analysis on the words people use to describe why they feel good or bad provides a basis for further analysis. It is not sufficient, however, to illuminate many of the patterns that explain what evokes positive feelings, alone or in combination with negative feelings, or robust enough to understand affective clusters as units of analysis in and of themselves. When analyzed together, affective clusters appear to have features or characteristics in common that extend beyond the content analysis. The next section discusses some images and descriptions of locations with high levels of agreement.

### *Analysis of Affective Clusters*

In this section, we will discuss the four affective clusters that had the highest level of agreement and two in which feelings were divergent. First, we will look at areas in which there was a consensus or near consensus within the affective cluster: two examples of areas in which participants reported feeling “very good” (*i.e.*, rated the area a one) (see Figures 2-3) and two examples of areas where they felt “bad” or “very bad” (*i.e.*, rated the area a three or four) (see Figures 4-5). Then, the section concludes with two examples of areas in which participants reported a range of ratings, narratives, and emotions (*i.e.*, a pattern of mixed feelings in an affective cluster), illustrating how this technique is still useful for learning about an area where a variety of feelings are reported and a pattern of agreement is not evident (see Figures 6-7).





FIGURE 3. Entering the popular Ramon Crater lookout point (location “B” on the map in Figure 1), which consistently elicited “very good” feelings.

#### *Positive affective clusters*

Figure 2 shows the paved entry to a modest memorial garden near the entrance of town (location “A” on the map in Figure 1). Six of the seven participants rated this location a one and reported feeling “very good” there; one participant rated it a two and reported feeling “good.” The ratings were provided anywhere from immediately upon entry to the park to within approximately 10 m (33 ft.) of the footpath. The garden features a curving, multicolored, brick footpath shaded by Aleppo pines and flanked by decorative boulders and a small, open, patchy grass area. Participants liked the green space, particularly the grass, where one could see young children playing or people picnicking.

ing. They also enjoyed the relief provided by the shade during the summer months, the sense that there was “a bit of civilization” in the desert, and that it had “a European feeling.” Two participants also had personal associations with the area: one had practiced tai chi there in the past, and another, taking in the surroundings within view, was reminded of road trips and places like this on the way home. Another participant mentioned immediately recognizing the bright white stone so often used for soldiers’ memorials, a feature she claimed she can immediately identify and that makes her sad, though she still rated the area a one.<sup>11</sup>

In the second positive affective cluster, positive ratings also began on a footpath or walkway, this time leading to a natural vista in town marked on tourist maps as a “lookout point” into the Ramon Crater (Figure 3) (location “B” on the map in Figure 1). All seven participants who walked this route reported feeling “very good” (a rating of one) at this location.

Unlike many other tourist destinations, its location across from ordinary apartment blocks, community synagogues, and schools makes it accessible to a variety of residents and visitors. On this route, from the street, pedestrians can see a horizon and an edge or “drop off,” which is the rim of the crater, along which a promenade has been built. It is known as the “bird balcony” because one can see birds flying beneath your feet rather than above your head, and it offers what many consider to be the most panoramic view of the crater from within the town.

Of all of the walks in or near town, this spot was the most dramatic in that participants slowed their pace, paused, and lingered for the greatest periods of time here. Though not everyone liked the design or materials of the balcony, particularly the white metal and sharp, “unnatural,” modern form of the shelter, they also physically interacted with the built environment most in this site, leaning with their elbows or placing their hands on the balcony’s edge while taking in the vista and describing what they felt. Standing on the balcony and taking in the view at times changed a person’s perspective of the town: “It’s a postcard ... when I look at rocks and dirt [around town, on the desert floor] it is a small view, this is great.” “Impressive.” “All the colors, quiet, the animals [ibexes and birds]. I sometimes come here to take breaks.” Another participant described it as the “best, best, best, best, you can see the crater, and this is a safe, good surface to stand on.”

Analysis of the positive affective clusters revealed that, despite their diversity in location, in most cases, they seem to have a remarkably similar feature: the natural world hanging in some type of visual and experiential balance with the built environment. Notably, the most highly rated areas

never housed only a building or some other built form alone without a natural landscape feature, nor were they simply a wide, natural desert or crater vista that suddenly came into view without the help of a built structure. Rather, scenes in which the natural world was present in some form but exhibited a structured wholeness in balance with the built environment elicited the highest ratings. So, for example, a footpath winding *among* trees or foliage, stairs *built into* green space, a path *flanked* by natural scenery, and a structure that *framed* an expansive landscape elicited positive responses. In contrast, a cement footpath snaking through a series of buildings (a common feature in town) did not elicit dramatic positive feelings by itself. Foliage, flowers blooming, or a green lawn alone also did not receive high ratings unless their presence was balanced by some built form. (See Alexander [2005], Appleton [1975], Bourassa [1992:9], Casey [1993:225], and Nassauer [1995:231] for related conclusions concerning EP.)

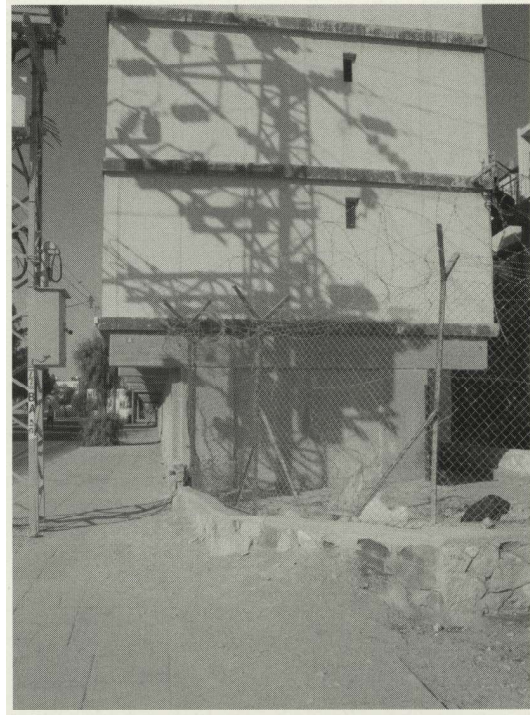


FIGURE 4. Abandoned apartment building (location “C” on the map in Figure 1), which elicited “bad” and “very bad” feelings.

#### *Negative affective clusters*

Figure 4 shows an abandoned, four-story, beige concrete building with small windows (location “C” on the map in Figure 1). Three of seven participants reported feeling “very bad” here (a rating of four), and another three reported feeling “bad” (rating this location a three). One participant reported feeling “very good” (a rating of one), but this was only after the building had been demolished. The small yard of the building is protected by chicken-wire fence topped with large coils of barbed wire, both of which routinely catch plastic bags and other bits of trash that blow in their direction. The building is surrounded by a concrete sidewalk and unused open space and has no trees, flowers, or shrubs. The abandoned building is located in one of the areas locally considered a town center and known as the “second center” since the town does not contain a single, clear commercial, social, or geographic center. This area also contains some of the oldest multistory buildings in town, most of which are quite run down, though none as much as this building. Six of the seven participants rated the area a three or four, exclaiming “look at the barbed wire!” and offering the following descriptions: “dilapidated,” “abandoned,” part of a “sorry set of buildings” and “the sad side of the street,” “architecturally terrible,” “a useless building,” and finally, miraculously “escaping demolition.” Participants were bothered that its current ownership or use was unknown. They were concerned about approaching it, and the negative feelings, while primarily brought on by its appearance, were also shaped by concerns about municipal responsibility.

Surprisingly, the second negative space analyzed here is the area surrounding what is considered the town’s main commercial center, which is housed in a mall-like promenade by the main entrance to the town (Figure 5) (location “D” on the map in Figure 1). Five of the seven participants reported feeling “very bad” at this location (a rating of four), and two reported feeling “bad” (a rating of three). This is one of the areas that all residents must use regularly because the supermarket, post office, and municipal administration offices are located here, along with a variety of small, unadorned but frequented shops and eateries. For participants, bad feelings and the narration concerning them started upon approaching the commercial center from behind and continued for the



FIGURE 5. View of the town's primary commercial center from a commonly used approach (location "D" on the map in Figure 1), which consistently elicited "bad" and "very bad" feelings.

entire length of the building. Multiple reasons were given for disliking the area, but the lack of a clear physical center or energetic focal point was a theme that resonated throughout the narratives. The most common way to get to the center by foot is via a long, meandering, unfinished footpath that makes wide switchbacks down a hill (most people ignore the long path and cut down the hill) and leads to a center that is considered dull, shabby, depressing, and of "utterly uninspiring architecture." This commonly used path approaches the building from behind, but residents claim there is no clear front to the center; all of the facades look like the back. In fact, there was a widely circulating rumor

among residents that the ill-educated contractor misread the plans for the center and had it built facing the wrong direction, with a poorly placed parking lot and an unrecognizable entrance.

"What's here?" commented one participant on the shortcut to the center: "dirt, irrigation hoses sticking out of the ground, lack of trees, what little grass is there appears gray instead of green." There are more details that disturb and add to the overall distaste for the center: "messy kiosks"; "an empty, non-functioning fountain"; "graffiti on the wall leading to the supermarket"; "splattered drink and cigarette butts on the ground, the smell of urine, not enough bushes"; "shabby." A weekly Friday farmer's market near the mall was described as "illogically located, congested, unnecessarily crowding the entrances to the other shops." As one participant summarized, despite the people who congregate and use the center regularly, "it's not alive, it's not established, it's not developing, and it feels temporary, there are people sitting around in a disorderly way with scattered tables on the grass, there's trash in front of the bank." On the one hand, in this small desert town, a light flow of pedestrian traffic heightens the sense of vibrancy. On the other hand, when areas like this become packed with people, they no longer receive positive ratings and, in fact, often receive negative ones. This place is not a place to linger and enjoy; rather, it is one in which to get essential business done and then leave. Even if residents and visitors use the area regularly (and it is rarely felt to be abandoned), the other factors prevented it from feeling lively or making people want to linger. The lack of planning (as evidenced by the abandoned building, unfinished footpath, and unclear central focus in a variety of areas) also led to a distaste and bad feelings for the area.

#### *Mixed-emotion affective clusters*

Participants provided abundant narratives and ratings but no clear agreement concerning one of the most active and consistently populated pedestrian thoroughfares in town, shown in Figure 6 (location "E" on the map in Figure 1). Four of the eight participants reported feeling "good" (a rating of two), three reported feeling "bad" (a rating of three), and one reported feeling "very bad" (a rating of four) at this location. Regardless of how participants felt about the long, well-used interior walkway between the buildings, they agreed that it is lively. The buildings in this row used to be primarily dormitories for an art boarding school. Today, they are used almost entirely by single and married students at the *yeshiva/kollel* (an institute for full-time advanced study of the Talmud, specifically for married men). Thus, these buildings mark population and priority shifts within the town.<sup>12</sup> The walkway has short flights of stairs and wide concrete landings, as well as poured concrete ramps, making it easy to move strollers, bikes, scooters, and shopping carts up and down its long, gradual incline. Throughout the day, it is frequented by young Orthodox men



rushing back and forth to their studies, preschoolers heading in and out of the public preschool buildings or playing in the enclosed yards on the side, and a few art students and residents taking shortcuts. Particularly after the heat of midday has passed, young religious mothers with long skirts and heads modestly covered with scarves care for their small children along the edge of the walkway. They spend hours outside with strollers, perched on low walls outside of several stone-faced housing blocks. These walls serve as a natural public outdoor extension of their often cramped private indoor space.

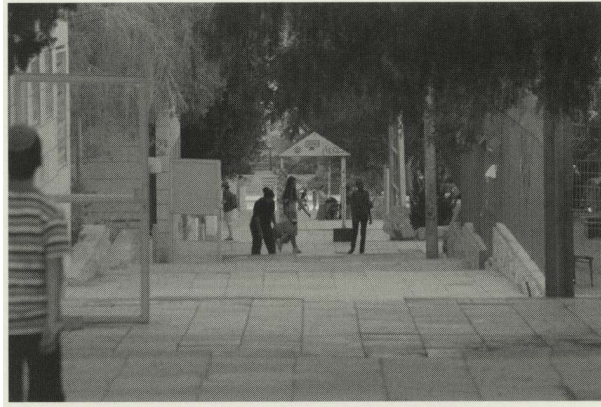


FIGURE 6. Pedestrian walkway flanked by buildings that now primarily house religious *kollel* families (location “E” on the map in Figure 1), which elicited mixed feelings ranging from “good” to “very bad.”

Strolling down the walkway elicited a range of comments and feelings: “This used to be an active center [passing the dining hall associated with the art school] with big meals, something has really dwindled”; “It’s not clean and cared for, though I see a lot of potential. Still, there are broken stairs, cracked, damaged sidewalks, lots of trash, places for gardens and trees that are not used”; “I know and like this area, it has positive energy for me and it is a pathway without traffic [stops to speak to a teacher she knows over the fence]”; “This is now a religious area, with blocks of identical apartments”; “a neighborhood within a neighborhood”; “I see the park at the end of this walkway, and it is a regular, familiar gathering place for me, but on the other hand, it is also very predictable”; “You know, I don’t usually like this area, but at this moment, for some reason, I don’t feel as bad as I usually do. But this is still a dirty area that lacks flowers, gardens, trees, the yards are trashed, there is a lack of color.”

The narratives highlight the variety of feelings about and associations with this walkway as a physical space. More often than not, however, the narratives also reflect an individual’s relationship to the religious community itself, as well as shared social memories of the place before the religious community’s arrival (depending on the participant’s group membership and length of residence in town).<sup>13</sup> Few areas of town have had such a recent and visible turnover in population or are so clearly marked as “belonging” to one group. Moreover, the group in this case is also relatively insular. The feeling maps easily picked up on these narratives about change. The maps can elicit narratives concerning group belonging, boundaries, and population changes as they relate to space. These changes may be pronounced in some urban areas but can also be more subtle, requiring residents to explain their social, cultural, or historical importance.

The second mixed-emotion cluster is one of the older public spaces, the nearly empty, nameless, original commercial center of town, shown in Figure 7 (location “F” on the map in Figure 1). Two of the five participants who reported a change of feeling in this location reported feeling “bad” (rating it a three), one reported feeling “very bad” (rating it a four), one reported feeling “very good” (rating it a one), and one reported feeling “good” (rating it a two).

The center appeared to be carefully designed, had been refurbished at one point, and contained what some participants described as attractive built features, with its circular brick plaza and a green metal pergola. Yet, it was also deemed a depressing place with a series of abandoned and boarded up shops, no vegetation, and few signs of social life. In a move to revitalize development towns throughout the country in the 1980s, investment was put into the larger center described above, and this smaller version was left to decline. The only active place of commerce is a cramped





FIGURE 7. The old town center (location “F” on the map in Figure 1), which participants said has some appealing built features but is practically unused and which elicited mixed feelings ranging from “very good” to “very bad.”

kiosk with irregular hours and merchandise that one person described as “displaying helplessness, selling too many things, everything . . . Typical,” she added, “of floundering small-town economies in Israel.” One participant and long-term resident asked an older man standing outside the kiosk, “What is the name of this center, anyway?” The man did not know but claimed it was marked on tourist maps as “number 54” and maybe had some historical importance. “I appreciate its rounded shapes,” commented another participant, who gave it a rating of one, “but it’s no longer active, though it sometimes serves as a meeting-up place for youth clubs.” Another participant

paused, looking around before rating the area a three: “It’s hard to say. The area would be pleasant if it were alive. I mean, but . . . pleasant compared to what? Auschwitz? Paris?”

Attractive built features in an otherwise unused area that is not cared for by the municipality or used by residents were not enough to consistently elicit positive ratings. However, the center was not seen as unpleasant enough to receive consistently negative feelings either, suggesting the importance of the relationship between physical design features, sociality, and perceptions of vitality (see also Al-Homoud and Abu-Obeid [2003] and Skjæveland [2001] for similar conclusions regarding neighborhood and campus settings respectively).

## CONCLUSION

The feeling maps in Mitzpe Ramon demonstrate that the physical features and characteristics of a place influence people’s emotions. Particularly striking are the affective clusters, where a number of people with a variety of social characteristics reported strong feelings in the same locations. Affective clusters and the narratives that accompanied them revealed that areas that are verdant and cared for, offer views of the open desert or crater landscape, and show signs of children’s play received the most positive ratings. Affective clusters that elicited overwhelmingly positive feelings were associated with spaces or scenes in which the natural world was present in some form but hung in balance with the built environment. Alternatively, areas that harbor “ugly” buildings and trash or that are otherwise dirty, unkempt, uncared for, neglected, or abandoned received the most negative ratings. Finally, areas that elicited strong but mixed emotions suggested the importance of understanding the relationship between physical design features, sociality, and perceptions of vitality.

This case study has proven useful for gaining a deeper understanding of feelings about particular locations in a given town, but it also has broader implications and raises questions related to planning and design. First, it highlights the need to combine the results of feeling maps with a contextual understanding of a place and more user-oriented plans and designs for any given city, town, or neighborhood. We need to know not only whether people feel good or bad about particular areas but also why these areas evolved or declined. Were they a product of good or bad designs? What broad economic and social factors influenced these areas? And what plans and designs are in place to address identified deficiencies?

Second, and more generally, since the technique of mapping feelings is simple to use and easily replicable, it could be applied to various types of settings (both urban and rural) and in other parts of the world (developed and developing). Broader application would enable the collection of comparable data sets<sup>14</sup> to see whether the results of a given study are consistent across a variety of settings and generate new questions invigorated by a technique that makes cognitive, evaluative, and affective responses in space empirically measurable.<sup>15</sup>

Third, similar studies using the feeling map technique but designed to illustrate how social diversity (e.g., race, class, gender, country of origin) specifically relates to divergent feelings about space would be useful for both planning and social scientific knowledge more broadly (see also Appleyard, 1976; Low, *et al.*, 2005; Sandercock, 1998). Finally, the practical application of this technique can be used to promote collaboration between design professionals and social scientists in designing and maintaining multicultural public spaces that are beautiful, inviting, and pleasant to a variety of people.

## NOTES

1. Black Hebrew Israelites or "Black Hebrews" identify themselves as descendants of the ancient Israelites. They began emigrating from the United States to Israel in the 1960s, but most arrived in the early 1970s, settling in cities in the country's southern region, such as Mitzpe Ramon, where they created tight-knit cooperative communities (see Markowitz, *et al.* [2003] for a general overview with a focus on this group's relationship to the state of Israel).

2. In contemporary Israeli usage, *Mizrahim* (singular, *Mizrahi*) — Jews from Muslim-majority countries in North Africa, the Middle East, and the Caucasus — are often placed in contrast with *Ashkenazim* — Jews from Christian-majority countries in Western and Eastern Europe. *Mizrahim* have become associated with lower socioeconomic and educational attainment and less active leadership in the founding of the modern state of Israel relative to *Ashkenazim*. (For historical context and an analysis of current conditions that are maintaining these ethnic disparities and differences in Israel's cultural identity, see Khazzoom [2008]).

3. The dominant finding of these works is individuals' shared EPs (see, for example, Gifford, *et al.* [2002]; Tucker Cross [2007]; and Tucker Cross and Küller [2004] on professional versus nonprofessional responses; Zube and Pitt [1981] on EPs of Yugoslavians, West Indians, and Americans; and Yang and Brown [1992] and Yu [1995] on Western versus non-Western cultural variations in EP). Due to the scope of this study and the nonrepresentative sample of participants, we did not focus on cultural variations in EP, though such a focus would be a logical extension of the study and application of the technique used herein.

4. Complex order includes features in both the natural world and manufactured artifacts that, in their design or appearance, (1) are complex (as opposed to simple); (2) are ordered (as opposed to chaotic); (3) simultaneously exhibit unity and diversity, simplicity and richness, and wholeness and multi-scalar detail (Arnheim, 1977); (4) are found experimentally to increase aesthetic affect (Alexander, 2005; Lewis, 2010; Nasar, 1992, 1994; Stamps, 1999; Yang and Brown, 1992); and (5) when they exist in an individual's consciousness, are found to lead to happiness and well-being (Csikszentmihalyi, 1990, 1993).

5. Rofè (2004) allowed his subjects to roam freely in their neighborhood and decide which route they would take and then marked their feelings as they changed the route. Residents were unaccompanied when they completed the survey. This technique is susceptible to some errors and inaccuracies. For instance, the subjects may rely on memory rather than actually walking the whole route, and they may err with regard to their position on the map. Another difficulty arises in the analysis of the maps. Because each subject chooses his or her own route, more subjects are needed to fully cover the area. In the ethnographic version of the feeling map technique described here, we enhanced the reliability, validity, and maximum comparability of the maps. Specifically, Weinreb, who adapted this technique to enhance her ethnographic study, accompanied participants on fixed routes, marking the maps herself and gathering explanations of the ratings that clarified what the participant was looking at, perceiving, or describing emotionally at the time the rating was provided. It is also possible to use GPS receivers to mark rating locations, which would be helpful for mapping in the future. This type of automated geocoding, however, does not indicate what the participant is looking at, which could include something distant, such as a vista.

6. The duration of the walks for the study was 20-30 minutes on average. However, some walks were as short as 15 minutes, and a few, in which the participant was walking slowly or stopping for long periods of time to comment on particular landscape features, took over an hour.

7. Each walk in this study was conducted individually (with the participant and the ethnographer walking together) to avoid bias or influence from the presence of a third party.

8. Much of Weinreb's success in soliciting 55 volunteers to participate in the walks was because she involved participants with whom she had already established rapport and with whom she had ongoing social ties from the previous year of research. The group of volunteers in the study was diverse, but the sample, maximized for variability within her social network, does not represent the local population in terms of ethnic, religious, or socioeconomic characteristics.
9. For this study, Weinreb took handwritten notes during the walks, which she then typed up for analysis immediately after completing each walk. She assured each participant that his or her anonymity would be protected and refrained from recording narrations digitally or electronically. This generally put participants at greater ease, particularly when they wished to relate personal information and opinions or to criticize individuals, local leaders, or public assemblies by name, which several participants did.
10. In assigning numerical values to affective states, one should not assume that a "very good" feeling, for example, means the same thing to different people. Therefore, if two people experience an area as "very good," it does not necessarily mean they feel very good about it for the same reasons. But if moments of shared affect are reported in the same place, they are worth exploring in concert with the narrations.
11. A common feature of most towns in Israel is a *gan habanim* or memorial garden that pays homage to fallen soldiers and sometimes also contains memorial sculptures for Holocaust victims. These parks and gardens are the locations for Memorial Day and Holocaust Remembrance ceremonies each spring. For an extended discussion of landscapes of collective memory and commemoration, see Foote (1997) and Foote and Azaryahu (2007); for spaces of mourning and remembrance, see Maddrell and Sidaway (2010); and for sacred places in contemporary Western culture, see Post, *et al.* (2011).
12. Indeed, few areas of town have had such a recent and visible turnover in population or are so clearly marked as "belonging" to one group (in this case, young religious families associated with the *yeshiva*). There is significant — but not total — social segregation between the religious and secular populations in Mitzpe Ramon. The *kollel*, which was established in town only a decade ago, is a new presence and indicates a demographic shift. The community as a whole is insular and is not involved in outreach. The dirty appearance and lack of maintenance has become a stereotype of the areas around the religious community, about which there are also mixed feelings. One participant laughed while watching people walk by trash, expressing a common sentiment: "The *yeshiva bochers* [boys] don't notice," or as another stated, "They are taking over and not caring about where they live. If they are sitting under a tree that doesn't provide enough shade, they don't care. What they have is enough for them."
13. In this case, where there was a diversity of emotion related to a place, comments were related to the individual's relationship to the religious community. Positive and negative feelings did not, however, distribute neatly along religious and nonreligious lines, as there were some religious individuals who thought the area needed more care and attention, as well as secular individuals who really liked the area.
14. A city agency or design firm could employ an ethnographer to carry out this research. An ethnographer has the potential to maximize the familiarity with the context; establish rapport with participants over time; and therefore, more easily solicit volunteers for the study. That said, the feeling map technique could presumably be conducted in-house with success but perhaps less contextual depth.
15. Mapping feeling is a technique that has thus far emphasized — but is not limited to — public outdoor spaces. To date, the only publications discussing results based on this technique have been based on studies in four locations: the town of Mitzpe Ramon, Israel (this publication); neighborhoods in the San Francisco Bay Area (Rofè, 2004); the Francisville neighborhood in Philadelphia (Rofè, 2012); and various public open spaces in Israeli neighborhoods (Rofè, *et al.*, 2012).

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