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Connecting food environments and health through the relational nature of aesthetics: Gaining insight through the community gardening experience

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Abstract

Current environmental and health challenges require us to identify ways to better align aesthetics, ecology, and health. At the local level, community gardens are increasingly praised for their therapeutic qualities. They also provide a lens through which we can explore relational processes that connect people, ecology and health. Using key-informant interview data, this research explores gardeners' tactile, emotional, and value-driven responses to the gardening experience and how these responses influence health at various ecological levels (n=67 participants, 28 urban gardens). Our findings demonstrate that gardeners' aesthetic experiences generate meaning that encourages further engagement with activities that may lead to positive health outcomes. Gardeners directly experience nearby nature by 'getting their hands dirty' and growing food. They enjoy the way vegetables taste and form emotional connections with the garden. The physical and social qualities of garden participation awaken the senses and stimulate a range of responses that influence interpersonal processes (learning, affirming, expressive experiences) and social relationships that are supportive of positive health-related behaviors and overall health. This research suggests that the relational nature of aesthetics, defined as the most fundamental connection between people and place, can help guide community designers and health planners when designing environment and policy approaches to improve health behaviors.

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Keywords

community gardens; health; aesthetics; ecology; relational; food environments; therapeutic landscapes; USA

Introduction

Food is our most basic need and most fundamental connection with our environment and yet modern conveniences and an industrialized food system have created a culture of cheap food while alienating people from the landscapes that sustain them. Some of the most apparent health consequences include rising rates of obesity and concomitant chronic diseases such as diabetes and heart disease. For example, among children, increased rates of type 2 diabetes are due almost entirely to the obesity epidemic (Olshansky, Passaro, Hershov, Layden, Carnes, Brody et al., 2005). Changes in shifting dietary and activity patterns are most proximally related to these health conditions and are due to an array of factors that span individual lifestyle, cultural, social, ecological and economic conditions as well as the range of policies, structures, services and amenities within our communities (Joint WHO/FAO Expert Consultation on Diet Nutrition and the Prevention of Chronic Diseases, 2003; Lang, 2009; Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008). A multi-level, ecological framework is necessary to understand the complex web of factors that shape health behaviors and population health and inform the design and evaluation of health promotion strategies (Story et al., 2008). At the neighborhood scale, community gardens and the gardener experience provides an opportunity to shed light on a potentially healthy and productive landscape within the urban food environment.

One way we can understand the multi-level, physical and social factors that shape health is by recognizing the relational nature between people and places (Conradson, 2005; Frumkin, 2005; Gesler, 1992; Kaplan & Kaplan, 2005). From this 'relational' view, health landscapes at once constitute and are constituted by the relationships between physical (e.g., biological, environmental factors, and man-made objects) and social structures (e.g., political, economic, cultural) (Cummins, Curtis, Diez-Roux, & Macintyre, 2007). Whether considering people and places, mind and body, past and present, or social and physical, the relational perspective is similar to other attempts to circumvent a dualist view of the subject and the object (e.g., 'reciprocal' (Story, Neumark-Sztainer, & French, 2002); 'recursion' (Harries-Jones, 2008); 'bidirectional' (Bandura, 1986); (McLeroy, Bibeau, Steckler, & Glanz, 1988)). To reach this holistic appreciation, these approaches pay special attention to associations, processes, and transactions between subjects and objects such as people and place (Duff, 2010). For the sake of consistency, we use the term 'relational' to represent these notions, which are drawn from the disciplines of anthropology, sociology, geography, ecology, environmental psychology and public health.

Additionally, we turn to the concept of aesthetics as a way to help understand the relational unfolding between people and places. This includes a broader understanding of aesthetics – one concerned with what the senses notice, how these sensory experiences are interpreted, and the way these guide future aesthetic experiences. The melding of these two concepts contributes to our understanding of health promotion by helping unearth the experiential therapeutic qualities of the community garden landscape and the aesthetic values that these landscape experiences may contribute to. Specifically, we focus on the meaning-making, tactile, emotional, spiritual, and value-driven experiences and their role in shaping health beliefs, behaviors and overall health and well-being.

Environmental aesthetics refers to the study of affective responses to the environment, how they evolve as people interact with the social and physical environment, and how they mediate people's environmental experiences. It can be categorized in two ways: engagement and cognitive interpretations (Foster, 2009). Engagement interpretations are primarily concerned with the immediate sensory experiences of individuals while cognitive interpretations are focused upon socially guided or value driven interpretations. Together, they shape the way we interpret and respond to our surroundings (Foster, 2009; Harries-Jones, 2008) creating a reciprocal exchange of embedded meaning (Barrett, Farina, & Barrett, 2009; Foster, 2009; Harries-Jones, 2008; Neves, 2009).

From an ecological perspective, landscape planners are concerned about the relationships between aesthetics and ecology, its impact on landscape change, and the various scales at which environmental phenomena are experienced (Gobster, Nassauer, Daniel, & Fry, 2007). Many have called for landscape designs aimed at reconciling scenic aesthetic experiences and ecological health (Gobster et al., 2007; Nassauer, 1997). As Nassauer states, "Bringing aesthetic expectations into play in a way that benefits landscape ecology requires designing strategies, landscapes, and policy with an awareness of what people enjoy and value in the appearance of the landscape (p. 73)".

As a fundamental human experience, aesthetics influences all ecological layers of human-environment contexts (Barrett et al., 2009; Foster, 2009; Harries-Jones, 2008), and is foundational for health related behaviors. When designing for health, the challenge becomes creating places aimed at fostering aesthetic experiences that connect individuals to places that support and sustain healthy behaviors. As Neves (2009) explains, our sensory experiences, and related aesthetic values, shape the way in which we learn. She argues that aesthetic experiences of urban places such as botanical gardens can create an aesthetic of ecological learning, or a way of learning how to learn about one's own ecological experiences, where "human selves become aware that their actions and existence are not separate from those of the non-humans with whom they engage and interact (p. 150–151)". Further, gardens can become a place for people to simultaneously create emotional connections to other people and the garden. Our analysis expands upon these notions by considering how learning about biophysical and social processes in a community garden may also help gardeners have a more holistic understanding of the biophysical and social process that affect the health of our own bodies.

Designing and evaluating place-based health promotion strategies such as community gardens requires researchers and practitioners to contemplate the qualities of a healthy place and whether a particular place embodies these qualities. Seeking to gain such an understanding, many begin by considering 'place' as socially and physically co-constructed (Cattell, Dines, Gesler, & Curtis, 2008; Conradson, 2005; Gesler, 1992; Nowell, Berkowitz, Deacon, & Foster-Fishman, 2006). For example, Milligan used this relational view to explore the garden experience of older adults. She found that participants ascribe a 'deeper meaning', or emotional and experiential connections, to the social and physical aspects of the communal garden experience (Milligan, Gatrell, & Bingley, 2004). Also recognizing the important relationship between the physical and social settings in his work on therapeutic landscapes, Conradson explores what makes up a healthy place by distinguishing between a 'therapeutic landscape' and a 'therapeutic landscape experience' (Conradson, 2005). This distinction posits that the therapeutic qualities of a particular landscape are relational rather than inherent in the landscape itself and thus accounts for differences in individual landscape experiences. For example, there may be physical characteristics of a landscape that can be therapeutic. However, individuals' interactions with the landscape depends not only on its physical attributes but also socio-emotional factors such as the way these individuals experience others interacting within the landscape. Fusing this understanding with the

aesthetics literature, a positive cognitive association of a landscape with therapeutic qualities might be referred to as a ‘therapeutic landscape aesthetic’.

The diversity of landscapes people experience throughout their lives also affect the way that they relate to a space (Cummins et al., 2007). It is therefore important to understand personal histories and cultures, as well as how the affirmation of these histories and cultures, may affect health. Further, our analysis considers how these socio-cultural histories are expressed in the garden and the broader neighborhood.

Community Gardens as a Therapeutic Landscape

Examining the relationships between food environments and health has become the centerpiece for work by nutritionists and public health researchers concerned with rising rates of obesity and obesity-related health concerns (Story et al., 2008). Local food environments, and therefore health, are inevitably affected by the way food is grown, distributed, and accessed. Responding to concerns about the current food system in the United States, Delind, Berry and others have called for a renewed connection between people and productive landscapes (Berry, 1996; Delind, 2006). Community gardens may serve as one such landscape and are especially relevant in urban settings where residents often lack experience with the fundamental processes associated with growing food (local farms, gardens), lack opportunities to purchase food from alternative sources (farmers’ markets, community-supported agriculture, small-scale grocery venues, food cooperatives), and experience other barriers to sustain healthy food practices (Brown & Jameton, 2000b). Further, many urban residents place aesthetic value on less productive and ecologically degraded landscapes such as lawns to those that provide biodiversity (Clayton, 2007). These conceptions of land and food are particularly concerning given that in the last 45 years, one-third of the world’s arable land has been eroded and 10 million hectares per year continue to be lost due to ineffective land-use practices such as conventional agriculture (Jackson, 2002). Though technological advances associated with conventional agriculture have arguably enabled the production of more food, the inputs (i.e. fertilizers, pesticides, food miles) have increasingly put strains on the environment through the consumption, and associated pollution, of fossil fuels (Gever, Kaufmann, Skole, & Vorosmarty, 1991). Moreover, changing food systems and concomitant changes to the built environment are giving way to unhealthy lifestyles, obesity and consequently rising rates of chronic diseases such as diabetes and cardiovascular disease across the lifespan (Ludwig & Ebbeling, 2005; Olshansky et al., 2005).

Participating in community gardens provides an alternative experience in the process of producing and accessing food, potentially affecting the way communities think about food, environment and health. As a component of urban food systems, community gardens (defined as “a single piece of land gardened collectively by a group of people”) (American Community Gardening Association, 2010), have been praised for their therapeutic qualities. Community gardens have been associated with increased consumption of fruits and vegetables (Alaimo, Packnett, Miles, & Kruger, 2008; Lautenschlager & Smith, 2007; Litt, Soobader, Turbin, Hale, Buchenau, & Marshall, 2010), physical activity (Park, Shoemaker, & Haub, 2009), and improved mental health (Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007). Gardens represent a behavior setting that has purpose and coherence, promotes social inclusion and gives rise to positive social and psychological processes that ultimately lead to health (Ferris, Norman, & Sempik, 2001 2001; Hill & Daniel, 2008; Milligan et al., 2004). Community gardens have also been shown to increase collective efficacy (Teig, Amulya, Buchenau, Bardwell, Marshall, & Litt, 2009), strengthen sense of safety (Ferris et al., 2001), associate with stronger neighborhood attachment (Comstock, Dickinson, Marshall, Soobader, Turbin, Buchenau et al., 2010), build social capital (Hancock, 2001) and provide a platform for organizing around other urban issues (Pudup,

2008; Saldivar-Tanaka & Krasny, 2004). Further, gardens have the potential to save money (Brown & Jameton, 2000), foster local environmental knowledge (Andersson, Barthel, & Ahrne, 2007) and serve as an alternative to the environmentally unsustainable aspects of conventional agriculture (Andreatta, 2005; Brown & Jameton, 2000a; King, 2008).

Responding to others who have expressed the need for integrating aesthetics into academic investigations (Delind, 2006; Gobster et al., 2007; Lockwood, 1999), this analysis further documents the aesthetic meaning-making experiences of community gardeners to help us understand how these experiences may connect gardeners to the therapeutic qualities of the garden. Complementing the 'relational' concept, this paper interprets aesthetics as the most basic way people experience the embodiment of place. It focuses upon the therapeutic landscape aesthetic experiences of community gardeners as a way to understand how a community garden may facilitate ecological learning, the affirmation and expression of individual and cultural aesthetic values, and the impacts these processes have on health.

Methods

"Gardens for Growing Healthy Communities (GGHC)" is a community-based participatory research initiative that examined the interconnections between community design and neighborhood health, with a particular interest in the health and social aspects of community gardening. This collaborative project involved five core partners – Denver Urban Gardens (DUG), Front Range Earth Force (FREF), the Colorado School of Public Health (CSPH), the University of Colorado College of Architecture and Planning (CAP), and the Healthy Neighborhood Network (HNN). These partners worked together over the course of the initiative to design, implement and evaluate the various research elements. Through this process, the partners identified a range of domains of theoretical interest as they related to community gardens – social structures (e.g., social networks), social and psychological processes (e.g., collective efficacy, neighborhood attachment and environmental aesthetics) and the physical environment (design features, structural resources, and incivilities) in shaping perceptions, behaviors and health.

As such, this project employed a range of methodologies to generate local knowledge about neighborhood environments, gardening, active lifestyles, healthy eating and health. We used a qualitative approach, which was resonant with the underlying philosophy of phenomenology, to understand the lived experience of gardens (Husserl, 1970). Semi-structured interviews with a series of probes allowed us to gain insights about the gardener experience within each of the aforementioned domains. This approach led to the development of research questions about the aesthetic-health dimensions within gardener-garden experience. These formative interviews shaped subsequent goals of the larger project, including the development of a neighborhood population-based survey and a community-based intervention.

GARDEN SAMPLE

During this time, Denver Urban Gardens, as the lead garden non-profit organization in Denver, Colorado, generated a list of gardens (n=44) to be invited to participate in the in-depth interviews. These gardens were selected based on neighborhood socioeconomic status and garden size (small, medium and large gardens) with an overarching goal to represent Denver's diverse set of community gardens. Staff from the University and the lead garden organization contacted garden leaders to introduce the study and provide information about the interviews. Through our recruitment process, we enrolled 67 individuals from 28 gardens to participate in the study. Within this sample, we conducted fifteen interviews with individuals and 14 interviews with groups from 2 to 8 participants. In general, demographic

characteristics of interview participants for each group interview were consistent with the demographic characteristics of interview participants for individual interviews.

INTERVIEWS

Interview questions were developed and reviewed by community and academic grant partners and pre-tested prior to the launch of the gardener interviews. Field staff received 30 hours of training, which included opportunities for practice interviews using individual and group interview formats. Interviews were conducted from August through November 2005 and were designed to document the meaning and history of gardens, the social aspects of community gardening, and garden-community relationships. Some examples of specific elements covered in the questionnaire included reasons for gardening, experiences in the garden, whether gardeners introduced others to the garden, perceptions about what the garden meant to the gardeners themselves and to people who do not garden, and perceptions about the benefits of gardening.

Interviews lasted an average of 90 minutes and took place either in the garden setting or a gardener's home. All interviews included a gardener-led guided tour through the garden setting, which involved a walk-through of the garden to gain a sense of the physical layout of the garden, the range of amenities in the garden and a snapshot of observed garden productivity. Interviews followed a script to assure consistency. All of the interviews were tape-recorded (with consent from the respondents), transcribed verbatim, and later verified by the interviewer and interviewees.

QUALITATIVE ANALYSIS

Given the exploratory and community-based nature of this study, we employed a qualitative and inductive analysis approach (Weller, 1998). We used NVivo7 (QSR International Pty. Ltd., <http://www.qsrinternational.com/>) to code, sort and analyze the data. Coding is a commonly used qualitative analysis method that allows researchers to track themes of interest across interviews (Neuman, 2002). We began with a preliminary list of codes to capture the aesthetic experience in community gardens based on the published peer-reviewed literature (Fig. 1). We added emergent themes as we coded the interviews (Miles & Huberman, 1994). Two independent researchers coded the transcripts followed by discussion and resolution of discrepancies. Our last step involved searching interviews for negative cases and discrepancies to confirm our understanding of the interviews and to ensure that we included the full range of experiences expressed by gardeners (Strauss & Corbin, 1998). After the transcripts were coded, we generated reports of the material assigned to each code, organized these quotes into tables and created reports to analyze relationships between codes (e.g., intersection between engagement and ecological worldview).

HUMAN SUBJECTS PROTECTION

The Colorado Multiple Institutional Review Board approved this study. All participants gave informed consent and received a \$10 cash incentive.

Results

PARTICIPANT AND NEIGHBORHOOD CHARACTERISTICS

We asked gardeners who participated in the interviews and focus groups (n=67) to complete information cards that asked about gardener attributes such as age, gender, race/ethnicity, and occupation. Seventy percent of participants completed the survey (n=47) (Table 1). For the block groups represented by our sample of gardens, approximately 20% of the population lives below 100% of the US poverty line, compared to 13.4% in block groups without

gardens. Figure 2 illustrates the distribution of community gardens at the time of the interviews and the broader context of neighborhood “wealth” as measured by block-group averages of family income greater than \$50,000 (Krieger, Williams, & Moss, 1997). Table 2 provides a summary of garden and participant attributes. Because of the group interview format, we were not able to attribute quotes to the individuals but rather to a garden more generally. For each quote, we assign a general garden ID to represent from which garden the interviewee came.

DEVELOPING AN ECOLOGICAL AESTHETIC OF COMMUNITY GARDENS

Community gardeners describe a number of aesthetic values and experiences in the garden that impact their own, and potentially the broader community’s ability to learn about ‘natural’ processes, including their own health. As the results demonstrate, many expressed an implicit sense of reciprocity between the physical and social aspects of the garden. We will explore these aspects as follows: first, we will describe the hands-on aesthetic learning with physical and social aspects of the garden including learning about the biophysical processes in the city through growing food, learning from watching and interacting with other gardeners, and the relational understanding these commonly create between gardeners and the garden; second, we will explore how the garden experience may affirm and/or allow gardeners to express more cognitively driven values and the ways these values may be shared with the immediate and/or broader community. These values are explored through the respondents’ personal histories, cultures, and aesthetic judgments in the garden; lastly, we will bring together the learning, affirming and expressive components in the final section to understand how the garden may foster a holistic sense of health and well-being.

A place for learning ‘natural’ processes in the city—Community gardens are unique places within urban settings. The experience of escaping to the garden from the rest of the urban environment was a common theme among gardeners. One said, “You’re here in the middle of the city, (and you) look around and see all the buildings and everything, but then yet when you’re in this garden, it just all goes away¹”. Many gardeners used sensory descriptions to contrast the city, a place of traffic noise, pollution and heat, with community gardens, as a place of birdsong, silence, and clean, cool air. As one gardener described, “I don’t know if they’ve ever noticed that when you’ve had a nice garden...how nice and clean the air seems to be, how much cooler it is¹”. In relation to the broader urban environment where they live, these contrasting aesthetic experiences provide the gardeners with a distinctive opportunity for hands-on learning about the biophysical systems that support biological entities such as plants, animals, and microorganisms. This point is further emphasized through the engaging processes gardeners participate in while growing food in the garden.

Gardeners explained things like, “It’s a different time. Sense of time I think, you know, versus when you’re a kid and you don’t have any involvement with nature, it’s hard to get the sense of that, you know, tempo²”. This tempo implies an acquired tacit aesthetic understanding of the processes and rhythms of nature and is a good example of how gardeners relate to the maintenance and benefits of the garden. Through their aesthetic experiences, they learn about composting materials to improve the soil, how to identify, nurture and harvest specific plants, and disease and pest control. All of these contribute to a different ‘sense of time’, or a more cyclical and tempo based understanding that arises through the engagement with biophysical processes of the garden. As one gardener shared, “You follow [the garden] through from the initial stage of preparing the soil, planting, all the way through to the harvest and ...that is very satisfying to me².” The ebb and flow of the seasonal garden cycles (generally more work during the spring, less during the fall), help gardeners gain a more embodied understanding of the natural processes that food production

is dependent on. As one gardener described, “In the spring till mid summer, we’re over there five or six times a week because things are trying to grow. We have to be sure they’re well watered and weeds don’t get started. But after that as summer wanes and things are at their harvest peak then people don’t continue to come over very often³”.

While a great deal of ecological learning in the garden takes place by directly engaging with the processes necessary to maintain a garden plot, gardeners also learn by watching each other, asking each other questions and experimenting and then sharing the results. One gardener explained that when he began gardening, “I didn’t know what I was doing. And then, over the years, I just sort of, watched what other people were doing and observed that, and [thought] ‘Well, that seems to work pretty well; I’m going to try that’. And so each year I got a little bit better, little bit better, and, and [now I am] doing pretty well, beginning to get the hang of it, finally⁴”. The lessons learned by observation and implementation foster a socio-ecologically embedded sense of connection to the process of growing food; it is process that is developed and shared with other gardeners. As one gardener explained, “I really enjoy the social aspect of talking to other people who are from all walks of life who have enjoyed gardening. And you learn different things about gardening you never knew before⁵”.

Some of this socio-ecological learning coalesces around shared expectations about the process and desired outcome in the garden. Gardeners describe how they want to be able to trust one another to maintain the garden, and desire to be proud of the appearance and productivity of the garden. While some of these expectations are formalized (e.g., required community work days), most are based on interpersonal relationships and trust. One gardener explained, “If you don’t come over and water, you’re not only hurting your own plot, but everybody else’s plot. So, it helped build accountability to the garden and to each other⁶”. Gardeners see their dedication to garden activities as part of a social agreement that builds cohesion within the group and further strengthens a common aesthetic judgment of the garden (as we will explore further in the next section). One gardener explained, “But all in all the people work the garden good. They love it. Early in the morning and late in the evening when the sun goes down we have a lot of shade over here. So they sit around out here and they water the garden and they sit around and talk and enjoy one another⁷”. For many, it is a space where biophysical and socio-emotional processes develop hand in hand with being around others in the garden. These processes play an important role in bringing people back to the garden, as well as fostering a sense of reciprocity among people and the landscape.

Gardeners talk about a give-and-take that happens through the process of learning in the garden (e.g., between the gardener and plants; among individual gardeners). By experiencing the physical and social relationships in the garden, community gardeners often gain a part-whole view of the world and their place within it. As one gardener expressed, “It kind of gives you, you know, reminds you of the cyclical nature of things and that, you know, you’re a part of the whole thing, not separate from it⁸”. Gardeners also speak about feeling embedded within nature and being able to contribute to and profit from natural cycles. One gardener described, “I feel like I’m a co-creator in the world with my garden, helping bring forth life, nurturance. It nurtures me as much as I nurture it. And it gives me hope¹”. The reciprocity gardeners experience in gardens can provide a metaphor for other values in their lives, from caring for their bodies, to caring for the environment, as well as insights about other cycles that are a part of the human condition (health/illness, birth/death). In most interviews, these messages are described with a more implicit understanding of reciprocity, like when this gardener explained the tactile experience of growing food, “I just like digging in the dirt and watching things grow and ... eating my own vegetables⁹”. Or, as another gardener said, “to me it’s, you know, you have an intention and you take care of that

intention and it comes to fruition¹⁰". The intention spoken of here refers to taking responsibility for garden tasks. This is interwoven with the physical benefits, such as growing vegetables and herbs, and emotional benefits such as pride. The next section demonstrates that this type of intention often has its roots in personal and cultural histories of growing food, is supported by the garden, and allows for sharing of intentions with others.

A place of affirmation and expression—The garden is a place where individuals and cultures are able to affirm and share their aesthetic values. Most of the gardeners expressed that gardening was “in their blood” or that they were “born into gardening”. Previous experiences in gardens foster a cognitive affinity for gardening, an appreciation of nature, and a sense of the work it takes to grow food. As one gardener explained, “I used to be the one that would cut the grass, plant the flowers around the house and pick the grapes we had on the side of the garage. So I’ve grown up with an affinity for growing things. It does a lot psychologically for me so I decided to experience, to see this happening every year³”. For most gardeners, these childhood experiences create emotional and physical relationships that lead to a yearning to be close to nature. As another gardener noted, “So to me it also, since I grew up on a farm and then, you know, really related to being in the dirt but to me it’s kind of my sanity to, just kind of brings me back to where I’m grounded. So I definitely enjoy that¹¹”. This quote illustrates how early positive experiences in gardens may lead to improved mental health by providing an activity that stimulates memory and triggers positive associations.

Many gardeners also describe how gardening connects them to their cultural roots. As one concerned gardener stated, “We started thinking about how our children were culturally and spiritually deprived. When they don’t have a culture they’ll create their own culture and it’s our responsibility to teach them the traditions and the culture of their people and so that’s how the design of the garden came to be¹²”. Some gardeners explained how the act of designing, planting and tending the garden helps them affirm cultural gardening practices and therefore express an important part of their heritage.

Community gardens are visible public places, so in addition to the tangible products of the garden, gardeners are also able to express a sense of beauty or other aesthetic values with the immediate and broader community. Or put another way, gardens are a place where gardeners can participate in the discourse of urban landscape aesthetics. As one gardener said, “I’m impressed with the effort, time and money that people put into it, people sitting right here, just to make it look beautiful, you know. And they get stuff out of it but mostly the goal is just beauty, you know, and everybody can share it here¹¹”. Gardeners invest time and effort into their plots to make them look a certain way, reflecting gardeners’ desire to share their aesthetic impressions with neighbors. This emphasis on expression is explained by gardeners who described the public setting of community gardens as providing benefits not generated by backyard gardening. A gardener explained this difference when she said, “I really enjoy my home garden but to be truthful hardly anybody ever sees it. I mean we’re not huge entertainers or anything like that. And when I occasionally will have somebody come in the backyard, they’re like [saying] ‘Okay this looks like the botanic garden’. [And I think], ‘Why? Why is this just sitting here’¹³”? The public experience of garden aesthetics has the potential to generate an increased sense of community. One gardener explained, “Well, I think just our presence...people walking by. I’ve had people say, oh, this is so beautiful... They get a sense of something really nice happening in the community...I think it’s just our presence, the fact that we provide a service and...most of us give away more than we consume⁴”.

When the gardeners perceive the garden landscape as providing an aesthetically pleasant experience, it results in feelings of joy, pride, purpose, peace and awe for the gardeners.

Abundant and beautiful gardens are expressions of their accomplishments as demonstrated in the following quote: “You know, cause I know I’ve seen a lot of people who take a lot of pride in being able to come by and stuff and say, ‘I did this, this is mine’¹¹”. This sense of pride comes from being part of a transformation. Gardeners also speak of the opposite experience, where feelings of guilt and sadness arise when their experience does not work out as planned. One gardener explained, “I’m embarrassed. I usually don’t have a garden that’s got weeds in it. And this year I just don’t have enough time⁹”. While this disappointment may lead to increased commitment in the garden, it may also tempt gardeners to quit. Gardeners care deeply about how their gardens look because they view the appearance of the garden as being a symbol of their commitment and ability to be responsible and productive. It is something that arises through the garden experience and can create an embodied relationship between the expectations of the garden and the maintenance and productivity that follows.

The pressure gardeners feel to create a certain aesthetic relates to the garden’s ability to strengthen social ties. Gardeners explain that in order to maintain the gardens, they also need to nurture the social support from the community. One gardener stated, “this garden was untouched for many, many years but as the community changes ... we have to get back out there and we have to talk to the kids and we have to tell them, you’re welcome to come work here with us¹²”. Community gardeners describe the garden as a place to meet neighbors, build social networks and share the fruits of their labor. One gardener said that community gardens “let [gardeners] meet the people in their community... a lot of people that come home go in their houses, shut the doors. So, this kind of brings everybody together¹¹”. Garden and community ties are able to break down the visible barriers and highlight how the relational qualities cultivated in the garden can reach the surrounding community.

Gardeners often describe the garden as providing a place for them to give something they might not be able to share otherwise. As one gardener stated, “You have so much of it, you share. And when I grow and when I plant it, I can have more to share than I would if I went to the store and bought⁷”. Many of the gardeners explained that they had formal systems for giving excess produce to community groups, while others had informal baskets for free produce or distributed to friends and family. Gardeners also described how they shared with people walking by the garden, as demonstrated here, “We hand food over the fence. I’ve done that in the past. A lot of immigrants will walk by and their English is very bad. So I’ll show them, you know, a squash or something and kind of speak some kind of English to them saying, ‘Hey go ahead and take it.’ They’re very gracious in their own language they say, ‘Thank you’¹⁴”. Gardeners view the food they grow as something that is not only for their own consumption but also to be shared with individuals and charities that support individuals in need. By providing a place where people can develop relationships while working in the garden, emotionally connecting to personal histories, and sharing a sense of beauty, gardens become a place that can affirm and allow the expression of a therapeutic landscape aesthetic.

A place for a holistic sense of health and well-being—The garden is not only a place where gardeners can develop different aesthetic relationships; it is a place that embeds this garden-related aesthetic in ways that inevitably affect personal health. This is a necessary part of the biophysical and social learning that comes along with garden participation, including the relationship these processes have on health of the gardeners’ themselves (e.g., nutrition, physical activity). Many of the gardeners attributed unique health-related processes to the garden by implicitly comparing experiences (i.e. taste, physical activity) in the garden with those encountered elsewhere; leading to an alternative, and often more holistic, sense of well-being.

These processes have a part-whole relationship with gardeners' eating preferences and practices, physical activity behaviors, and mental health. As one gardener said, "When you grow it, like you said, it's just so much better. And so you want to eat more of it. It's not yucky vegetables. It's wonderful and plus you grew it"⁵. This quote illustrates how the emotional (e.g., sense of accomplishment) is interconnected with the sensory (e.g., taste) to support gardeners' perceptions that the food they grow is "better" than other food. Garden vegetables are perceived differently than store-bought vegetables, and gardeners commented that their children more readily ate vegetables that they could pluck off the vine. One gardener spoke about her child's learning by stating, "He [her child] is interested in trying new stuff, so you know, like the kohlrabi [type of cabbage] or you know, if we are growing sugar snap peas or something, he usually doesn't eat vegetables but to be able to pick something or let him pick it; then he'll actually eat it"¹⁵. Gardeners consistently remarked that the food from their gardens was more flavorful, fresh and desirable than other produce. Regardless of the type of vegetable or fruit, gardeners often made remarks such as: "and just the taste...the flavor of your own green beans"¹⁶. Gardeners described how their produce was grown and several explicitly said that they valued that their produce was organic. As one gardener explained, "Oh definitely because it's something pure, you know. Nothing is added to the vegetable plant to help it grow anyway. Everything's natural"¹⁷. Gardening provides ready access to produce, which can influence the quantity and diversity of vegetables consumed. As one gardener related, "I know this summer I ate more vegetables than I have eaten in many summers because there they [the vegetables] were"¹⁷. Gardeners describe taste as an intrinsic part of the garden experience. One gardener explained how the garden is a good place, "to learn, to play, to taste. ...Gardens should be tasted, you know"⁶. Community gardens provide a place that fosters both positive aesthetic experiences (taste, smell, touch, sight) and the satisfaction of growing good food. These experiences shift the relationship that gardeners have with food, supporting processes necessary for healthy eating behaviors.

As gardeners engage with the process of growing their own fruits and vegetables, they also develop positive emotional and aesthetic experiences with physical activity. A productive garden requires physical labor, and gardeners described how they get exercise through various garden chores including digging, raking, bending and planting. As one gardeners related, "we have to turn the soil over every [year], in the fall and usually in the spring. And rake and dig holes and all that is quite a bit of exercise, physical exercise"³. The process of gardening is described as fulfilling and pleasing, because it is a more productive and integrated form of exercise. Gardeners referred to the process as work, but work that is enjoyable. As one gardener remarked, "I like physical work. I do like it. I like walking, I like being in the garden and I like pulling weeds even"¹⁸. They also contrasted work in the garden with other forms of exercise and speak of it in a holistic manner. As one gardener stated, "It's better than, 'Ooh, I spun the treadmill belt for a half hour'⁵". Many gardeners discussed how they walk or bike to the garden, demonstrating how visiting the garden helps to increase leisure-time physical activity. As one gardener described, "It takes me probably about 30–35 minutes to walk here from my house, which to me that really isn't bad; it's nice because I can walk down the Cherry Creek bike path"¹. The gardeners view their health holistically as demonstrated here: "Yeah, and I said that it is exercise. It's good. It's good. It's healthy thinking. It's healthy doing"⁶. The description of gardening as "healthy thinking" and "healthy doing" suggests that gardeners relate to this activity as something with greater value than purely physical.

Gardens are spiritual and healing places that help gardeners to process emotions, provide a sense of purpose, and foster stability through the regular cycles of the garden. One gardener opined, "There's just something about connecting with the earth that keeps me kind of centered. It's one of those more of an 'it's good for my soul' kind of thing"¹⁶. Many of the

gardeners relate to the gardening experience as being therapeutic—allowing them to work through pain and express emotions in a healthy manner. Another gardener stated, “I can be stressed or worried or upset about something and I can come down here and start working in the soil, working with the plants and it’s like the soil just absorbs all that anger¹¹”. This quote shows how the tactile experience of gardening can relate to the emotional state and mental health of participants. Gardeners find purpose in the gardening process as well. One gardener explained, “I think for some folks it’s what gets them up in the morning. You know, they just are passionate about gardening¹⁵”. These therapeutic aspects of community gardens directly relate to the aesthetic processes in which gardeners are involved. Gardeners take comfort in watching seeds grow, tending their growing plants and understanding the cycle of life in the garden. One gardener explained, “But I think the big one probably for all us again probably not voiced is there is something magical about healthy, growing, green plants. And it almost doesn’t matter whether there’s an end product. There’s something about just tending them that I think is inherently therapeutic¹³”.

Discussion

Our research sought to learn about the aesthetic experiences of gardeners by following gardeners into their plots and uncovering the co-constructed meaning formed within community gardens as a therapeutic landscape. We found that gardens have distinct holistic qualities that can physically and socially connect gardeners to the world in ways that encourage healthy lifestyles. These qualities arise out of ecologically rich aesthetic relationships that are generated and supported by community gardeners’ participation in gardening. When we bridge our understanding of urban food environments with health through an ecological approach to public health, aesthetic connections to the local and broader ecology emerge as vital health-promoting processes.

Gardeners relate to the garden as having more pleasant qualities than other urban landscapes. The relationships that support this arise out of a desire to connect with contrasting natural and social systems within an urban setting (Wakefield & McMullan, 2005). Following Foster’s (2009) aesthetic distinctions outlined in the introduction, gardeners engage physically and emotionally while learning about their environment through the process of growing food (Foster, 2009). Feelings of pride, disappointment, and excitement guide relationships within the garden landscape. These relational patterns arise while working in the garden and embed gardeners in a place that has been shown to promote healthy eating and active living (Alaimo et al., 2008; Armstrong, 2000; Wakefield et al., 2007). For example, they enjoy the feeling of the dirt (e.g. meaning soil or earth), the way the vegetables taste, and the view of the garden.

Gardeners feel they learn how to facilitate the productivity of the garden by reacting to the tempo and functions of the biophysical systems within the garden, potentially increasing their understanding of the local ecology (Andersson et al., 2007; Neves, 2009). They are also able to learn by watching and talking to one another. It has been suggested that this direct learning from relationships with personal role models may lead to more effective and long-term behavior change than other less direct ways of learning (Bandura, 1986). Many enjoy working in the garden and find the gardening process to improve their emotional and physical health. These sensory and emotional relationships work to sustain the garden landscape and foster a sense of reciprocity between individuals and the garden. It is not intervention that can be done *for* a community; instead, it is an environmental intervention that is collectively created and sustained by community members.

Cognitively, the gardeners’ aesthetic experiences encourage and support the expression of their values. For example, they share food, trust one another, hold each other accountable,

and express a sense of beauty to passersby. These values influence, and are mediated by, personal histories, worldviews, and social experiences of contexts and places that have evolved over time (Cummins et al., 2007). Many respondents described their motivation and even gardening methods in relation to historical and/or cultural background in gardening, such as growing up on a farm. They continue to come back to the garden as a place to connect with their past and the garden related aesthetic these past experience helped form. Such associations also support a holistic worldview for a number of gardeners; one that values the connection between themselves, their food, their health, and the environment. Further, personal histories with places such as gardens can have significant impacts on food-related choices and behaviors (Devine, 2005).

Previous research on community gardens has documented the presence of social processes, including social connections, mutual trust, reciprocity, social norms, collective decision-making and community building, which are necessary for generating and supporting neighborhood collective efficacy (Teig et al., 2009). The sensory and emotional relationships described in the present analysis deepens our understanding of ways in which the relations gardeners establish in and with the garden promote expressive and affirmative competencies (Duff, 2010). By helping foster a more therapeutic aesthetic, garden-gardener experiences give way to the development of competencies that are important for forming and strengthening social and relational networks, which are the necessary building blocks for neighborhood-based social cohesion and social capital (Forrest et al., 2001; Carpiano 2006). These latter processes enable residents to cope with everyday life experiences (Altschuler, Somkin, & Adler, 2004; Cattell et al., 2008), to become more involved in public life (Forrest & Kearns, 2001) and importantly promote health by improving access to services and amenities, psychosocial processes and health-related behaviors (Altschuler et al., 2004; Cattell, 2001; Cattell et al., 2008; Cohen, Finch, Bower, & Sastry, 2006; Kawachi & Berkman, 2000; Kawachi, 1999; Sampson, Raudenbush, & Earls, 1997).

Community gardens are local places of active and continuous social and physical creation, in which individuals and communities work to maintain both their individual and collective aesthetic expectations of the garden. Considering the therapeutic qualities of community gardens and most gardeners' experience of them, we could call the aesthetic that they come to know and value a 'therapeutic landscape aesthetic'. Still, while the current garden literature suggests that the garden landscape has therapeutic qualities, it is important to recognize that what may be therapeutic to one individual, may be damaging to another. As Conradson has observed, while a particular landscape may have potential therapeutic qualities, the experience of that landscape can differ, thus placing an emphasis on the therapeutic experience of participants rather than solely on the landscape itself (Conradson, 2005). Many gardeners spoke of the ongoing process of community gardening as requiring persistent work in production (planting, weeding, cultivating, harvesting, fertilizing) and community building (recruitment, social events, work days). Psychological responses to this work can be significant motivators or barriers to garden participation. Some gardeners spoke about wanting their plots to be beautiful, tended and productive, but found it difficult to maintain their own, and/or the community's expectations due to lack of time, knowledge, or physical capabilities.

These personal and shared expectations about the process and outcomes of the community gardening experience can lead to cohesion and commitment to a particular outcome, but also disappointment when expectations are not met (Glover, 2004). Milligan and others found that physical barriers to working in communal gardens, such as the limitations that come with aging bodies, can create difficulties in meeting the gardeners' expectations of the gardening experience (Milligan et al., 2004). Similarly, we found that while most community gardeners experience a number of therapeutic qualities in the garden, some have

difficultly maintaining their participation as a result of conflicting personal and social expectations. Such detachment could overshadow individuals' ability to benefit from the therapeutic qualities of gardening. Still, some new gardeners see a learning opportunity in the presence of more experienced gardeners and, reinforcing Milligan's work, we found that even gardeners who were unable to participate fully in the garden mention therapeutic aspects of the garden (Milligan et al., 2004).

For gardeners, lifestyle choices such as being outside in the community, learning about natural rhythms, connecting with one's roots, and sharing food support a broader notion of health. This has less to do with the physical health benefits of increased physical activity or fruit and vegetable consumption and more to do with relational associations they view as contributing to their overall well-being. For example, many gardeners talk about how good the soil or nurturing plants or being in nature makes them feel, before relating these connections to others values such as reciprocity, healthy food, learning, and sharing. These broad notions illustrate how gardeners' social-ecological relationships and personal motivations have positive and holistic health implications (Cattell et al., 2008; Devine, 2005).

Study Limitations

In our analysis, we presented general experiences shared by community gardeners in an urban environment. While detailed analysis by social group (i.e., gender, race and ethnicity) would offer insights about how socioeconomic and demographic differences impact garden-based experiences, this type of analysis was beyond the scope of our work. Further analysis of the influence of compositional characteristics (i.e. cultural, socio-economic) on gardeners' experiences is warranted. Moreover, because all interviews were conducted in English, we were unable to adequately include recent immigrant gardeners in the interview phase of our study. Such perspectives may have provided us with different stories about the way gardeners engage in the garden and related cognitive associations. Despite these limitations, the results generated through this process provided us with an important cross-section of patterns in the aesthetic experiences of community gardeners.

Future research is needed to help us understand how the broader community surrounding the garden influences gardeners' aesthetic experiences. This may help further contextualize the views of the gardeners as they relate to the surrounding physical and social dynamics. More generally, by examining the mediating role of aesthetics, health research can shed light on the relational way in which health and place are embedded in one another. Similar to the suggestion of Cummins and others, physical place-based audits using indicators aimed at measuring the biophysical systems of the gardens and gardeners may also provide insight into how the gardeners' aesthetic relationships influence ecology and health at micro and macro scales (Cummins et al., 2007). Though challenging, we believe that the development of such mixed methodologies can help us understand how aesthetics engage the broader physical and social environments, and believe that this would make significant contributions to the design and evaluation of health promotion strategies.

IMPLICATIONS—If gardens are to be successful (e.g., productive & aesthetically pleasing), gardeners are required to become engaged in an ongoing process that links them to biophysical and social processes, which in turn promote physical and mental health. Organizations facilitating the development of community gardens and other neighborhood-level changes around active living and healthy eating must balance physical interventions with strategies that empower and engage residents. Such balance requires organizations and partnerships to work in collaboration with communities in an effort to design, build, and

sustain places in ways that ensure the long-term sustainability and community ownership of the strategy.

Gardens are a potential urban resource for active and passive learning about ecological processes. In an increasingly industrialized food system, children are disconnected from opportunities to grow their own food and the related experiences that ensue as a result of growing one's food. Consequently, current and future generations of young people may lack the experience of gardening and a deeper understanding of our food system, ecological knowledge and a holistic appreciation of food and nutrition (Devine, Connors, Bisogni, & Sobal, 1998). This is especially crucial as many of the gardeners described how they learned their gardening skills from relatives and many expressed that they continue to garden because of personal connections to memories and traditions.

In order to contextualize the health impacts of direct (engaging) and social (cognitive) aesthetic experiences of communities, we suggest that these components be studied through intervention research that considers both the physical and social components of the environment, as well as the aesthetic experience of community members. Such studies will require further development of interdisciplinary methodology that draws on the expertise of environmental and social psychologists, ecologists, sociologists, biologists, geographers, anthropologists, urban planners, architects and epidemiologists among others. Moreover, disciplines should continue to work together to design and establish local behavior settings that serve to align ecology, health and aesthetics. From a practice perspective, community gardens, as a neighborhood setting for health related behavior, demonstrate that design can create places that develop and support healthy socio-ecological connections. We encourage health practitioners and policy makers to identify barriers to and help facilitate citizen participation in the design and use of such places.

SSM Research Highlights

- Uses a multi-disciplinary theoretical approach to understand the relationship between aesthetics, landscape and health in community gardens.
- Defines the learning, affirming and expressive aesthetic experiences of community gardeners in gardens as a social and physical place.
- Community gardens have therapeutic qualities that contribute to a more holistic sense of health and wellbeing.
- Explores the experiential processes in which community gardening may increase healthy eating and active living.

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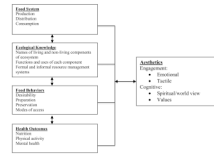


Figure 1.
Preliminary Coding Structure for Qualitative Analysis



Figure 2.
Gardens by interview participation and income distribution by census block group

Table 1

Respondent Demographics

Demographic Information	Respondent %
<i>Gender</i>	
Male	36
Female	64
<i>Race</i>	
Caucasian/White	77.6
Hispanic/Latino	12.2
African American/Black	8.2
American Indian and Alaska Native	2
Asian	0
Native Hawaiian and Other Pacific Islander	0
Other	0
<i>Age</i>	
Median	46.8

Table 2

Garden and Participant Attributes

Garden Identification	Year Established	Number of Plots	Size of Garden (Sq. Ft)	Gender			Race/ Ethnicity			Age					
				M	F	W	Non-White	Not Specified	18-24	25-34	35-49	50-64	65-90	Not Specified	
1	1999	14	3,000	0	1	0	1	0	0	0	0	1	0	0	0
2	1997	19	9,000	1	1	1	1	0	0	0	0	0	2	0	0
3	1985	60	20,520	1	1	2	0	0	0	0	1	0	1	0	0
4	1976	90	60,000	3	2	3	0	2	0	0	0	0	1	1	3
5	1979	50	25,000	4	4	4	3	1	0	2	2	0	2	2	2
6	2004	10	1,000	0	1	0	0	1	0	0	0	0	0	0	1
7	1995	30	1,000	0	1	0	1	0	0	0	0	0	0	1	0
8	1997	7	6,400	0	1	1	0	0	0	0	0	0	0	0	1
9	1997	18	6,000	1	3	2	0	0	0	2	0	0	0	0	2
10	1996	6	5,000	0	2	1	0	1	0	1	1	0	0	0	0
11	1975-2007	42	12,500	3	1	2	0	2	0	0	1	1	1	0	2
12	1995	35	10,000	0	1	0	1	0	0	0	0	0	0	0	1
13	2001	14	5,400	0	1	1	0	0	0	0	0	0	0	0	1
14	1995	55	28,000	3	2	4	0	1	0	0	0	3	0	1	1
15	1985	60	20,520	1	0	1	0	0	0	0	0	1	0	0	0
16	1994	39	9,000	0	3	1	1	1	0	0	0	0	2	0	1
17	1997	22	26,550	1	0	0	1	0	0	0	0	0	0	1	0
18	1995	7	3,500	1	1	1	0	0	0	0	0	0	1	0	1