THE RESTORATIVE POTENTIAL OF FARMERS MARKETS

By

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RESTORATIVE POTENTIAL OF FARMERS MARKETS – Abstract

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THE RESTORATIVE POTENTIAL OF FARMERS MARKETS <u>Abstract</u>

Restorative environments provide relief from accumulated strains on attention, according to Attention Restoration Theory and the work of Rachel and Stephen Kaplan. The Kaplans' framework has previously been used to assess restorative environments in terms of four characteristics: separation from daily demands; the environment's ability to hold attention; elements of the environment making sense together; and the environment meeting needs (R. Kaplan, Kaplan, & Ryan, 1998; S. Kaplan, 1995). Parks and similar areas have been identified as restorative environments, and this research was motivated by the idea that farmers markets, as natural sites, could also act as these environments. I employed an initial site analysis followed by a questionnaire expanding on Hartig et al.'s Perceived Restorativeness Scale (PRS) to determine the restorative capacity of markets. Results indicate farmers markets are perceived as restorative environments and that compatibility – the environment meeting needs – is the most perceived characteristic of restoration, closely followed by soft fascination - the environment's ability to hold attention. Comparison of site analysis and questionnaire results indicate the way people use the market, how their senses are engaged, the characteristics of other shoppers, and the characteristics of the market area most influence restoration. Notions of community and city were also derived from patron responses as an additional, important type of feature. The vegetative material of the market was not noted as important to restoration.

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<u>1. Introduction</u>

"Vegetation serves as a shock absorber for the human sensory system assaulted by the sights, smells, sounds of the city." – Charles A. Lewis

People are overtaxed by daily obligations, and unpleasant sounds, smells, and sights disorient their fatigued minds. Their energy decreases as they face these stressors, and their frustration makes required tasks even more difficult. People are often compelled to visit specific spaces to relax and temporarily escape these challenges, and more of these spaces could result in added relaxation for a greater number of individuals. Researchers have learned more about these stress-reducing sites, and they now know that many of these sites are parks, nature preserves, and gardens. Some researchers have also looked into indoor sites that help people feel refreshed: museums and monasteries have been studied. I have noticed the refreshing effects of farmers markets, which have features found in both the outdoor and indoor spaces previously studied, and I wanted to study farmers markets to add to the existing body of literature.

I discuss the project using theories and terms from previous research, and these require explanation. Attention Restoration Theory (ART) is the notion that humans' attention is drained by life's demands and that restoration – replenishment – of this attention is needed to increase productivity and healthy functioning. Restorative environments are the sites that provide relief from accumulated strains on attention (S. Kaplan, 1995). Much of the previous restorative environment research focused on natural sites, and here natural refers to outdoor sites with vegetation, both wild/untamed environments – those sites with little management – and manicured/cultivated environments – those sites with active management (Davis & Gatersleben, 2013). The research that did not focus on natural sites focused on built sites: typically indoor places with little or no vegetation (e.g. museums). Farmers markets are in between these two

types of sites: they are often outdoors and full of vegetation, but they are also frequently located in parking lots and other built settings. They are examples of temporary sites with natural elements located in built environments, and previous studies have shown that natural spaces act as restorative environments. Thus, the logic behind my study of farmers markets as potential restorative environments is that they are a type of natural environment, and therefore could be restorative.

Farmers markets may provide the additional psychological benefit of restoration alongside the hallmarks of seller contact, local produce, and socializing. Users seek out a particular experience when they visit, and markets in turn offer local, social, and ambianceinfluenced purchasing, providing consumers with a direct line to the caretakers of their food in a very particular environment. Some patrons are drawn to markets by nascent desires of localness and unique ingredients, but farmers markets are longstanding: markets have functioned as community events for generations, and provide more than point of sale connections with growers (Sommer, 1980, 1989; Sommer, Herrick, & Sommer, 1981; Stephenson, 2008). Despite this, most farmers market research has been done on the economic aspects – life cycle analyses of the produce, price comparison with grocery stores, and embeddedness as a cue for economic behavior – and various identity features, such as authenticity (Feagan & Morris, 2009; Hinrichs, 2000; Smithers & Joseph, 2009).

Regardless of location, many, if not all, farmers markets are comprised of similar produce offerings and nostalgic practices, but the physical setting of markets and their effects on users have received less attention than other public spaces. Increased study of these settings could reveal benefits that go beyond the nourishment and relationships provided by produce sellers. For instance, Oregon farmers market managers reported that the atmosphere was the most

important aspect of a successful market – more important than products or community – and that this atmosphere was developed via the constituent features of layout, vendors, customers, weather and climate, and product, namely produce (Corum, Rosenzweig, & Gibson, 2005; Stephenson, 2008). Research into restorative atmospheres is especially important in urban settings where people need more than food sources: they also need places to socialize, relax, and escape everyday challenges. This study illuminates markets' potential roles as these places.

Successful public spaces are places where people have positive experiences during frequent visits. Whyte, Francis, Cooper Marcus, and others note several qualities of successful public spaces: having basic comfort needs met, opportunities for safe socializing, connection to nature, and the presence of programming including food; most farmers markets undoubtedly demonstrate these qualities (Francis, 2003; Marcus & Francis, 1997; Whyte, 1980). If markets are successful public, and cultivated natural, sites, they may also be able to provide some of the restorative benefits previously found in natural settings.

Both cultivated and wild nature (see Davis & Gatersleben definition, above) have been shown to act as restorative environments (Berto, 2005; Han, 2003; Hartig, Kaiser, & Bowler, 1997; Hartig, Korpela, Evans, & Gärling, 1997; R. Kaplan et al., 1998; S. Kaplan, 1995; Laumann, Garling, & Stormark, 2001; Ulrich et al., 1991), but fewer studies have been conducted on restorative environments in the built environment (Abdulkarim & Nasar, 2014; S. Kaplan, Bardwell, & Slakter, 1993; Korpela, Ylén, Tyrväinen, & Silvennoinen, 2008; Ouellette, Kaplan, & Kaplan, 2005).

Of these previous studies, the work of Rachel and Stephen Kaplan is the base of my research. Attention Restoration Theory (ART) as conceived by the Kaplans maintains that particular site characteristics – being away, extent, compatibility, and soft fascination – facilitate

attention restoration and renew capacity to function during demanding tasks (R. Kaplan, Kaplan, & Ryan, 1998; S. Kaplan, 1995). My research also refers to these characteristics as subscales to align with the measurement tool used in this study (Hartig, Kaiser, et al., 1997; Hartig, Korpela, et al., 1997). The sites that embody these qualities are restorative environments.

Compatibility refers to the degree to which the environment matches the needs of the person and how well the environment satisfies their expectations. A site fostering soft fascination gives people the opportunity to focus their attention with little effort, allowing their mind to wander and relax. Extent, and coherence, a component of extent, refer to scope and connectedness, addressing both the range of the site and the degree to which components of the environment make sense together. Finally, being away addresses distance from the cause of the fatigue, and can refer to physical or mental distance from daily stressors (R. Kaplan et al., 1998; S. Kaplan, 1995).

This Research

This study bridges the previously researched fields of natural and built restorative environments by examining farmers markets as temporary, vegetation-filled restorative spaces in the built environment. In particular, this study is guided by the following research questions: *Are farmers markets perceived as restorative environments for patrons? How does perceived restoration differ between the two study markets? In what ways and to what extent do farmers markets function as restorative environments for patrons? Which farmers market site feature types may lead to restorative effects?*

To begin to answer these questions, I studied two markets: the Davis Farmers Market, located in Central Park in downtown Davis, and the Sacramento Central Farmers Market, located

beneath a concrete overpass and bordered by busy city roads ("At the Market — Davis Farmers' Market," www.davisfarmersmarket.org; "Sacramento Central Farmers' Market," www.california-grown.com). I chose distinct sites to determine consistent and variable aspects of the restorative qualities of farmers markets, and these two sites represent ends of the market location spectrum. I conducted a site analysis and determined categories of site feature types at both markets, and patrons were approached to complete a questionnaire.

Hypotheses.

- Are farmers markets perceived as restorative environments for patrons? I hypothesized that respondents perceive some of the characteristics of restorative environments in both farmers market settings given the inherent presence of fascinating items, compatible features, and perceptible extent at markets. Previous studies have also shown a degree of restoration in both natural and structured environments, including public squares with built features similar to farmers markets.
- *How does perceived restoration differ between the two study markets?* Given the prevalence and consistency of perceived restoration in vegetated areas, I hypothesized the Davis Farmers Market would be perceived as more restorative given its park location and therefore supposed greater alignment with the being away subscale. To move beyond this somewhat simplistic hypothesis, the most innovative proposition of this study is that the Sacramento Central Market underpass location will also provide patrons with measurable perceptions of restorativeness, likely in terms of soft fascination, compatibility, and extent, and less in terms of being away. The hardscaped setting itself is understood to be nonrestorative given previous studies' findings of low preference for stark urban settings. So, if perceived restoration is found during the market, that presence
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could be interpreted as the source of perceived restoration. Results indicating no difference in perceived restorativeness between the markets may show that perceived restorativeness is due to the presence of the farmers market and not its particular setting, thus indicating markets themselves can be restorative regardless of location.

- In what ways (i.e. in terms of which subscales) and to what extent do farmers markets function as restorative environments for patrons? The presence of produce vegetative material could contribute to restoration based on the findings of previous studies. This aligns with the soft fascination restorative environment subscale, and I hypothesized it will be the most identified restorative environment characteristic. The park location of the Davis market will result in greater perception of being away, and if the Sacramento market is found to be restorative, it will be via the final three subscales (as discussed above).
- Which farmers market site feature types may lead to restorative effects? I predicted four site feature types in particular will contribute to or detract from restoration: the Walkway and Market Structure (size of aisles, set-up), Sensory Elements (visual, aural stimuli), Market Purposes (why people visit the market), and External Infrastructure (park, freeway) of the sites are posited to be features identified by patrons as affecting restorativeness. For instance, if the walkway feels constraining and the sensory experience is unpleasant, patrons will likely feel less restored. If the market has an understandable layout, patrons will not have to worry about navigation and can focus on other features. Likewise, if people visit the market chiefly to shop for produce in a shaded area but the market is in direct sunlight and focuses on craft, the misalignment will result in a low perceived restorativeness score. If patrons do not perceive one or

more of the restorative environment characteristics due to a market's features, they will have lower perceived restoration.

New insights provided by this research will add to the body of literature on both farmers markets and restorative environments, and including a market-like setting in the restorative environment literature sets the stage for expanded research on similar pieces of the urban fabric: pedestrian streets and al fresco dining locations, to name two. This research will also provide descriptions of site feature types that influence restoration at markets, which is helpful information for markets interested in making adjustments. I hope this work will contribute to restorative environment theory, future farmers market practice, and an understanding of the ways these subjects interact with each other.

2. Background

Characteristics of restorative environments – places that relieve mental fatigue and provide attention restoration (S. Kaplan, 1995) – have been found to exist in wild/untamed and manicured/cultivated environments (Davis & Gatersleben, 2013), and I hypothesize farmers markets provide these services as well. This section explores the existing literature on both restorative environments and farmers markets, and goes on to provide evidence that farmers markets can be classified as a novel form of restorative environment.

Restorative environments and farmers markets share notable characteristics. This section looks at Restorative Environment Characteristics Related to Farmers Markets, beginning with nature and restoration followed by built environments and restoration. Because farmers markets concentrate vegetation within built structures and bridge these two research areas, a look at both angles of research is necessary. Site characteristics and user characteristics are explored next: these impact perceived restoration, especially in the market context, and lie within the categories of natural and built. Measuring perceived restoration, a key metric in determining restorative ability, is the concluding topic of this section.

The following section, Farmers Market Characteristics Related to Restoration, provides evidence of the market-restoration relationship from the perspective of market literature. Emphasis is placed on the nuances of market make-up (design and temporality) and representation (values, economics, and social constructs). Each of these has tones of restorative characteristics and I draw the connections below. The final section, Public Space Characteristics Related to Restoration, highlights restorative features of well-used public spaces. Public space literature provides a third node, connecting farmers markets and restorative environments in a broader sense, positioning this research in conversation with larger public space literature.

Restorative Environment Characteristics Related to Farmers Markets

Introduction. Two main theories typically describe the roles of restorative environments: Ulrich's research on stress and the parasympathetic nervous system, and Rachel and Stephen Kaplan's emotional-cognitive work. The Kaplans' work grounds this study, but research by Ulrich and others is discussed below to demonstrate the breadth of study sites and measurement approaches. Attention Restoration Theory (ART) – the notion that humans' attention is fatigued by repetitive demands from life's responsibilities and requires restoration in order to increase functional capacity – is key to Rachel and Stephen Kaplan's conception of restorative environments (S. Kaplan, 1995). Environments that provide attention restoration are needed to prevent emotional and physical trauma, and are characterized by four components: compatibility, soft fascination, extent, and being away.

A site with high perceived compatibility closely matches the needs and expectations of the user, and a site encouraging soft fascination allows the user to let their mind wander and easily focus their attention. A site with an ideal level of extent (an element of which is coherence, mentioned in this study) has a pleasing level of scope/visible range as well as connectedness – components of the environment make sense together. Finally, a site that gives the sense of being away provides physical or mental distance from daily stressors (R. Kaplan et al., 1998; S. Kaplan, 1995). These four components are the foundation of my study of farmers markets as restorative environments, and multiple market features could provide each of these elements. This study discovers the market features that provide the components of restorative environments, as described below in Results.

Nature and restoration. The four above components have been researched in different settings with varying methods. Studies often have similar formats: they take place in actual or

representations of natural settings, i.e. images or video presented in a classroom, digital site redesigns presented on-site, or questionnaires administered via mail. Participants in these studies are typically exposed to a gradient of restorative environments, at times following a stressor, and are then asked which setting they find most restorative. These studies have found that settings closer to pristine and typical conceptions of nature are perceived as more restorative for most people (Han, 2003; Hartig, Kaiser, et al., 1997; Hartig, Korpela, et al., 1997; Korpela et al., 2008; Laumann et al., 2001).

Korpela et al. (2008) separated natural features from the concept of nature; an important point for this thesis. The authors examined the connection between perceived health and selection of favorite places to determine if favorite places were visited to alleviate negative moods caused by health issues, and thus provide restorative benefits. People with more health complaints selected natural environments more often than those with few complaints, and those with selected natural environments benefitted emotionally from their selected places. Further, respondents associated those favorite places with the positive feelings they felt after experiencing relaxation in that place.

Korpela et al. importantly note that it may be the natural elements in settings, not natural settings themselves, that help to regulate emotions (2008). But they also caution jumping from correlation to causation in regards to natural environments functioning as panacea sites when experiencing health or emotional challenges. This is especially applicable to farmers markets: favorite places proliferating with natural elements – fruits, vegetables, plants, floral arrangements – that could function as restorative spaces despite not being inherently natural. Unlike all other restorative environment literature reviewed, Korpela et al. mention farmers markets directly, and

classify them as commercial settings. This research expands the interpretation of markets to that of a potential restorative environment.

Built environments and restoration. Restoration studies in built environments are especially pertinent given markets' hardscaped settings. Limited but notable studies have applied the values of restorative environments to built settings: museums (S. Kaplan et al., 1993), monasteries (Ouellette et al., 2005), public squares (Abdulkarim & Nasar, 2014), and gardening (R. Kaplan and Lewis in Francis & Hester, 1990). An extensive inventory of physical features across a range of restorative environments has also been completed (Hunter & Askarinejad, 2015). The authors found that the non-natural interior settings of museums and monasteries embodied the aforementioned components of restorative environments and therefore provided restoration. Kaplan et al. (1993)'s work on museums is particularly applicable to this research on farmers markets, as those individuals who had little experience with museums felt restored after visiting the space, but not as restored as those more familiar with wayfinding and general behavior in a museum setting. First-time or infrequent visitors to markets could experience similar feelings and thus not experience as much restoration. Accordingly, participants in this study were screened and only those with market experience completed the questionnaire assessing perceived restorativeness.

Abdulkarim and Nasar explored a middle ground between traditionally natural spaces and non-vegetated exterior settings: an assessment of perceived restorativeness of public plazas in the context of three of William Whyte's elements of successful urban spaces. Seating, food, and a triangulating attraction promoting interaction between passersby (i.e. a sculpture) were examined for their contributions to restoration (2014). Respondents were shown altered images of plazas and completed a questionnaire that measured feelings of restorativeness. The study found that

adding a triangulating factor or a triangulating factor *and* seating made the site feel more restorative, and adding any two elements also resulted in a sense of restorativeness. Images that depicted all three elements were interpreted as the least restorative options (Abdulkarim & Nasar, 2014).

Site characteristics of restorative environments. Abdulkarim and Nasar's results indicate the sensitive nature of restorative environments and that more site elements do not necessarily correspond with greater perceived restoration. Laumann et al. (2001) support this interpretation, as their work developing an alternative restorativeness measurement tool indicated that different values of restorative environments manifest in different ways in different settings, e.g. fascination in an urban setting may pertain more to the activities available rather than the essence of the urban environment. Runnerstrom touches on this ideas as well as she explores the idea of restorative environments as those that provide self-actualization, a particularly individual experience (2008). These findings suggest that not all farmers markets may be perceived as restorative, and that certain elements of those markets will promote or discourage that perception. This further supports greater examination of market site elements alongside perceived restorativeness to note correlation; one of the main objectives of my research.

Finally, Hunter and Askarinejad (2015) developed an extensive review of features of restorative and preferred environments by cross referencing multiple theories of beneficial and ideal spaces (like those above) with features of (often outdoor) environments. Their research is a significant work in the categorization of restorative environment site elements. The authors developed categories of restorative features– structure attributes, content attributes, and landscape attributes – that were incorporated into the open-ended portions of my study's questionnaire and interpretation of research sites.

User characteristics and restoration. Taking a closer look at the effect of user characteristics on restoration (rather than exclusively site characteristics), Scopelliti and Giuliani (2004) address aspects of relaxation and specifically include facets of leisure theory in their investigation of restorative environment selection across the lifespan. Their work considered gender, age, time available, and setting. Age and time available were found to be significant factors in selecting particular areas for restoration. Compatibility was found to be the most important of the four factors of ART, and adults more than youth or the elderly found socializing to be a strong component of a restorative environment. Farmers markets are intentionally visited sites that are uniquely experienced by each patron; they also inherently have at least some socialization. Having an experience that matches both the expectation and social needs of market patrons will result in a high degree of compatibility, potentially heightening the restorativeness of the space.

Measuring restorativeness. Hartig et al. (Hartig, Kaiser, et al., 1997; Hartig, Korpela, et al., 1997) have contributed significantly to the development of the Perceived Restorativeness Scale (PRS), which measures perceived restorativeness of a space. This tool asks respondents to rate statements about the environment using a seven point Likert Scale, has been deployed in other studies, and will be administered in this study. Laumann et al. (2001) validated an alternative to the PRS and showed their version also aligned with the Kaplans' four values, but noted further research was needed to confirm the interpretation of some values, especially across natural-urban gradients.

Berto (2005) also developed a tool subsequently used by a number of studies (e.g. Abdulkarim & Nasar, 2014), and Han (2003) created and tested a measure that combines the Kaplan's conception of attention restoration with Ulrich's notion of restoration via reduced

stress. The development of different measurement tools indicates multiple options for application: there are certain settings in which these tools are more or less appropriate. For instance, measures that take 40 minutes to complete are more appropriate for a classroom setting than the field. Thus, while a range of functional tools has been developed, the PRS was selected for this study due to its ease of execution and appropriateness for market settings.

Roger Ulrich has a particularly biological measurement method for measuring restorativeness. His work, like that of the Kaplans, is a base for many restorative environment studies. Psychosomatic, visceral responses to environments ground the work. One study involved measuring bodily responses like heart rate and blood pressure alongside self-reported affective states to determine stress reduction caused by videos of different environments (Ulrich et al., 1991). The greater the reduction in stress, the more restorative an environment might be.

Ulrich et al. also measured stress reduction in the context of different scenes, and found no significant differences in the amount of stress reduction when comparing water versus vegetation, heavy versus light traffic, or many versus few pedestrians (1991). So, natural features reduce stress in a certain way, as does traffic, as does the presence of people, regardless of the volume of each of these features in the setting. Although, they do not all reduce stress to the same degree. In the same study, subjects exposed to natural as opposed to urban environments had lower reports of fear and anger/aggression and had higher reports of positive affect.

Beyond overall stress reduction, the researchers also noted that the scenes interpreted as restorative required a significant amount of attention, contradicting the Kaplan's assertion that environments requiring low-levels of attention are the most restorative. This poses an interesting counter to soft fascination, one of the Kaplans' four values, and reinforces the idea that

restorative environments project different values, at different times, for different people (This is also posited by Staats et al. (2016), particularly in urban settings.) This point makes accessing a general categorization of a site more challenging, but a truly restorative environment will function as such for more than one person at a time, and more frequently than not. Likewise, the lack of significantly different stress reductions between varying intensities of natural, traffic, and pedestrian features suggests that widely varying market sites could provide similar restorative benefits despite differences in features.

Farmers Market Characteristics Related to Restoration

The summary above shows restorative environment features identifiable in farmers markets, and the following section responds to these initial points with market features that have restorative potential.

Design. An early inspiration for this research was the longstanding farmers market work of Robert Sommer and Mark Francis. Sommer et al. (1981) studied behavioral differences between farmers markets and supermarkets and noted that farmers markets provide 2.5 times as many interactions, 75% of customers arrived in groups, and that while supermarkets are designed for efficiency, farmers markets are designed for connection, thus promoting the observed social interactions. Sommer (1980, 1989) also notes that customers are attracted by the social piece of markets, the 'real' farmers, and the range of ages and backgrounds of people at the market; patrons find this to be 'fun,' which is not an accident of market design.

The larger geographic setting and its influences affect the layout and design of markets, resulting in characteristics familiar to local consumers, and produce variety (included for stimulation, i.e. soft fascination) and 'the scale and requirements of the pickup truck' influence

booth and site layout (Sommer, 1980, p. 15; Stephenson, 2008). Given the longstanding American association between pick-up trucks and farmers, the visual food source cue could likely remind consumers of the origin of their food. Related to the 'realm' of the pickup truck, Francis and Griffith determined a framework for farmers markets comprised of four 'physical realms' – the promenade, the working market, the market landscape, and the market neighborhood – which are then associated with permanency of design, flexibility, wholeness, and social life: principles to be used in the designing of farmers markets (2011). These authors' work is especially informative: it presents views of farmers markets that are readily observable but also backed by analysis. Along with Hunter and Askarinejad's work on restorative site characteristics, the above works helped to thoughtfully expand the site analysis of this research. Although all markets are different, previously developed typologies provide the base this research builds upon.

Physical features and setting. Ng (2003) notes differences between physical settings of markets – focusing on the spatial component mentioned above – in the United States and internationally. The study found that American markets have fewer odors, colors, and sounds to stimulate the senses (i.e. to provide soft fascination, in the terminology of ART) compared to international settings (also noted by Sommer, 1980), but farmers markets were recognized as still offering more physical interest than supermarkets, hence this thesis' interest in physical site features.

This sensory stimulation touches on the perceived authenticity of farmers markets, as researched by Smithers and Joseph (2009). Their work noted that localness of producers is often considered a factor of authenticity, but survey results also showed that respondents did not necessarily need a working definition of 'local' to feel as though the produce originated nearby.

Additionally, some survey respondents specifically mentioned markets as a way to form a greater connection to the environment through acquiring their food much closer to the source – a variation on local authenticity. In a more literal interpretation of local environment, Ng notes that farmers markets are typically open to the elements, at least in some capacity (2003), and this is a perceptible way markets demonstrate a connection to the natural settings emphasized in previous studies. The present study will not be examining localness and authenticity specifically, but these concepts are potential influences on restorativeness: greater comfort with a site may influence perceived restorativeness.

Temporality. Beyond farmers markets, localness and authenticity are characteristics of the larger event category of urban ephemera: those temporary constructs, whether physical or perceived, that are built and deconstructed over a short time span. Schuster notes that urban ephemera are most often local residents performing, volunteering, and representing for a local audience, and that the localness of ephemera is what make them distinct and meaningful (2001). He also notes that ephemera can draw interest from the outside, making these localized events tourist attractions and opportunities for increased revenue. Colomb expands on this idea of ephemera for outsiders in her analysis of temporary sites in Berlin, and notes that community organized temporary events, or temporary uses of particular spaces, have the power to entice outside visitors and attention (2013).

This conception of ephemera goes along with the economic and authenticity assessments mentioned above: these intangible characteristics truly influence perceptions of a site or event. Farmers markets likely would not have the same types or volumes of customers if they were constructed and run like shopping malls. There is something special about their temporality and ability to adapt, as well as the authenticity and embeddedness discussed above, that makes them

unique (Stephenson, 2008). Previously studied restorative environments do not have this ephemeral quality, adding another unique element to markets' overall character and to this research. The understanding that markets are not consistently available sites may heighten their effect on patrons – a special experience – and could affect restoration in an unanticipated way.

Atmosphere. Intangible but desirable features are common in ephemeral settings, and farmers markets are no different. Oregon market managers defined 'good' markets as those that have pleasing atmospheres (79% of respondents identified), product (66%), and community (63%) (Stephenson, 2008). The fact that atmosphere is identified as the most important feature by the majority of managers further supports farmers markets not only as successful public spaces but also as providers of something greater than products and opportunities for socializing: a perceptible but perhaps invisible and intangible benefit.

Values. The ideologies behind temporary events affect experience as well, and markets demonstrate distinct values via the way they are organized, the types of activities present, and the prevailing messages they promote. Alkon studied two farmers markets with different views on, and representations of, the environment: a market in North Berkeley was found to have an ecological, sustainability, and local foods focus, while a market in West Oakland established an environmental justice and equality focus (2008). These conceptions of nature manifest themselves not only in market features but also in the specific environment patrons believe is worth protecting: pristine wilderness in the case of North Berkeley, and where people live, work, and play in West Oakland.

This is an especially important point for this study: the natural environment of the market being studied is both the environment physically present on-site but also the environment represented through characteristics and beliefs of the market. There is a case for restoration to be

present in settings of many types, but it is important to note the duality of what is presented – particular types of produce and vendors – versus what is projected – the overall perspective or ethos. Additionally, there are invisible practices affecting and controlling who is present, and even a minor exclusion (although any exclusion is inappropriate), can cause detrimental ripple effects (Guthman, 2008). This paired conception of the environment – what is seen and believed – is challenging to study without deeply committing to and understanding the study sites, but the work of this research will take a first step by assessing the physical site and associated perceived restorativeness.

Embeddedness. Extensive research of buyers and sellers has been conducted in the typical retail settings of malls, department stores, and supermarkets. Studies of markets and farmers markets, while less ubiquitous, highlight key aspects of markets in particular that contribute to their overall character and the experiences of shoppers. Embeddedness is one of these market-specific characteristics. In economic terms, embeddedness is that characteristic that helps to explain consumer behavior when reaction to pricing does not convey the whole purchasing story (Feagan & Morris, 2009), and can be thought of in opposition to marketness, or the condition of prices acting as the dominant motivation for purchasing behavior (Hinrichs, 2000).

Hinrichs notes that successful markets need a balance of embeddedness, marketness, and a third factor, instrumentalism, which can be described as the motivation of the individual to prioritize opportunistic economic goals or non-economic goals such as friendship or connection (2000). Hinrichs goes on to say that power imbalances can be avoided if these three factors are considered, and that fair prices and meaningful social ties can result. Embeddedness – that factor influencing shopping behavior outside of pricing – is what encourages patrons to visit markets,

and restoration could be contributing to this. Conversely, embeddedness could be contributing to perceived restoration. This research will not measure embeddedness specifically, but it is important to consider economic factors present in the market that may affect results.

Feagan & Morris (2009) also consider the importance of market social ties, and studied three types of embeddedness in an attempt to determine why people visit a particular farmers market. Social, spatial, and natural forms of embeddedness were examined. Social embeddedness (e.g. relationships) ranked as more important than spatial embeddedness (e.g. localness), likely a result of a sense of tradition. Natural embeddedness (e.g. organic production, food miles) was only occasionally mentioned by respondents. It is interesting to note that the social characteristics of a market may be what draws people to visit, and to consider that this social factor could contribute to the restorativeness of the space (see Scopelliti and Giuliani, 2004, above). It is also important to note that the above study framed naturalness as what might be described as sustainability characteristics, and not a sense of naturalness in the space. Thus, consideration of farmers markets as natural sites themselves continues to be underexplored.

Connection to markets. Farmers markets have distinct personalities and atmospheres despite standard produce and plant material. Manzo (2003) notes that a sense of place is not predictable or static: relationships with places are composed of ranges of sites and associated feelings. These feelings are integral components of people's emotional lives, thus influencing how and where people choose to spend their time. Likewise, particular places can inspire deeper bonds that go beyond a sense of place and result in the perception of sacredness: sites are perceived as absolutely essential to the community through what they represent or provide, physically or symbolically (Hester Jr., 2010). Memory plays a strong role in the preference and reverence of market settings, with many patrons associating the market with a time of stronger

human connections and less present capitalistic controls. Pervasive associations are typically positive if they are still prompting market visits that elicit those same feelings.

Colding and Barthel (2013) assessed farmers market-like spaces to determine contributions to resilience, and noted that 'urban green commons' – collectively managed parks, community gardens, and allotment areas – fostered an unique type of learning, environmental care (stewardship), and social-ecological memory (i.e. the feedback loop between human actions and ecological reactions). Urban green commons proliferate in times of crisis and serve as connections to and visual reminders of the nature masked by damaged, densifying, or diversifying cities. Urban green commons can also function as third places: those places that satisfy a need of belonging outside the first place of home and second place of work (Oldenburg, 1989).

Russ et al. (2015)'s work on ecological place meaning – 'the extent to which ecosystemrelated phenomena are viewed as valued or important characteristics of places' – also notes the capacity of human-ecology connections to increase urban resilience and connection to place (p. 74). The interpersonal and social-ecological connections these natural spaces provide increase the resiliency of cities, and while not studied in the aforementioned work, this link to building connections can be applied to farmers markets as well: education, stewardship, and care result from some methods of market participation, and this greater connection to nature relates farmers markets to emotional-cognitive, community, and personal resilience.

Resolution of conditioned environmental emotions. Ulrich stresses that social conditioning promotes nature as a place to get away – that social norms manufacture the sense of restoration people often feel in wild or manicured vegetated environments. This factor cannot be

ignored in the research of restorative environments: people are trained to find natural areas relaxing (1991). Still, even with social conditioning, there are those who feel restored after visiting a natural area despite their opinion that the outdoors are frightening or dull. The frequent and consistent classification of natural environments as restorative prompts a deeper look at the roles nature, and representations of nature, play in humans' lives.

Thayer (1994) focuses on the triangular relationship between humans, nature, and technology, and notes that humans are drawn to technology designed for – and replicas of – nature, such as those found in sporting goods stores. These replicas act as hyperreal representations of nature humans can take advantage of with the provided technologies. Further, interactions with these types of proxy environments, e.g. farmers markets, assist humans in assuaging their landscape guilt: the cognitive dissonance experienced when attempting to reconcile the detrimental effects technology has had on the environment while also craving the benefits of that technology, e.g. the produce offered at the farmers market.

Revering and respecting nature, even in its replicate form, helps to resolve this cognitive dissonance (Hester Jr., 2010; Thayer, 1994). Farmers markets act as replicas of the bucolic farm consumers imagine their food coming from, and guilt about the agricultural process' effect on the land is resolved when purchasing locally and organically from people who have grown the produce. The sellers themselves provide transparency to the process while also obscuring the risky and stressful business of farming. This proxy connection to food origin is important to note, as a perception of the farmers market as near-nature could provide resolution of cognitive dissonance, which perhaps also contributes to restoration. Thus, the broader conception of farmers markets as sites of temporary vegetation could be affecting restoration in addition to the restoration encouraged by specific site characteristics.

Public Space Characteristics Related to Restoration

Farmers markets are public markets, and by extension, public spaces. Studying the use and experience of spaces is an enduring method to better understand cities, communities, and, at a base level, what people need. Close study of these spaces illuminates beautification efforts and opportunities for recreation, as well as ways to foster senses of community and opportunities for attention restoration (Marcus & Francis, 1997). Here, successful spaces are those that provide their users with benefits and are safely well-used. People's basic needs and expectations vary, but having simple needs met – safety, seating – allows for more advanced but not unreasonable amenities such as relaxation or socializing (Francis, 2003).

Properly functioning city features can reduce stress and eliminate some barriers to enjoyment. For instance, Lynch's five elements, four of which – paths, edges, nodes, and landmarks – factor greatly into farmers market organization (1960). While the specific term 'restorative' may not have been applied in much of this research, work on public spaces helps determine the qualities of places people spend time, and many of these features either link well with features of restorative environments, or are restorative features themselves (see above description of Abdulkarim and Nasar, 2014 for an application of restorative and public space features working in concert).

A welcoming, supportive atmosphere (see above for a specific consideration of market atmospheres) is a characteristic of all positively used public spaces, and while challenging to measure, it can be interpreted via proxies. William H. Whyte conducted studies of small urban spaces that do and do not function for users, and particular characteristics of these places lend themselves to the study of farmers markets. Whyte emphasizes the tendency of people to 'self-congest' and 'self-level' that congestion – to intentionally be amongst other people and to

unintentionally regulate the density of the crowd – and to be drawn to the activity inspired by the presence of food or another conversation stimulus between strangers (Whyte, 1980). These two features are the essence of farmers markets – people and food – and while the presence of prepared food is likely an understandable draw, there is an assumption that people would like to avoid others. People and food activate a space, and these elements are magnets to more people; drawing them into the experience of the space. People and food can act as soft fascination and compatibility features, and public squares can provide extent and a space to be away, at least to some degree. It is not a stretch then to think of busier settings like farmers markets as restorative, despite the limited research with this perspective.

Likewise, Francis notes five indicators of successful public spaces, as suggested by the Project for Public Spaces: people visit in groups, a higher proportion of women use the space (greater perceived safety), multiple age groups use the space concurrently and throughout the day, multiple activities proceed simultaneously, and more signs of affection are demonstrated (Francis, 2003). A more traditional conception of restorative environments are those that act as a solitary escape, but lively and social destinations can act as restorative reprieves as well, activating the restorative elements of fascination, compatibility, and separation from daily demands (see also Scopelliti and Giuliani (2004) for mention of socialization in restorative environments).

These features of well-used public spaces are present in farmers markets, and the exchange goes the other way as well: restorative effects, if found at markets, can be applied to public spaces more broadly. This research determines what market site elements especially contribute to restoration, and these elements could be emphasized and encouraged in other public spaces as well.

Conclusion

Parallel summaries of restorative environment and farmers market literature have shown that farmers markets have the potential to act as restorative environments in multiple ways: due to natural features like vegetation and outdoor locations; the social connections they provide as highlighted by Scopelliti and Giuliani, Sommer, and Francis; or the ephemeral, embedded, or authentic qualities identified via other fields (economics, marketing) but not well explored in ART. The literature above demonstrates the breadth of research on markets and restoration, but there is a noticeable gap in their overlap: farmers markets need not only function as points of sale.

3. Method

Research was conducted at two markets and consisted of site feature type observations and assessments of perceived site restorativeness. The study was comprised of four stages: site selection, site analysis, questionnaire deployment, and data analysis.

Site Selection

The Davis Farmers Market and the Sacramento Central Farmers Market were selected for this research. Located in Central Park in downtown Davis, the Davis Farmers Market is situated in a park space, while the Sacramento Central Farmers Market is located beneath a concrete overpass ("At the Market — Davis Farmers' Market," www.davisfarmersmarket.org; "Sacramento Central Farmers' Market," www.california-grown.com). These two markets were chosen to determine consistent – e.g. overall market presence, recurring site features – and variable – e.g. location – aspects of the restorative potential of farmers markets to determine what market components actually affect restoration. Management of each of these markets were notified via email or phone that the questionnaire portion of the study would be taking place on the public sidewalk nearby.



Figure 1. Locations of the Davis and Sacramento Farmers Markets. Davis (left) occurs within Central Park in downtown Davis; Sacramento occurs beneath a portion of Interstate 80 in Sacramento. (Source: Google Maps)

Site Analysis

Cooper Marcus and Francis' (1997) post-occupancy evaluations (assessments of a site after it has been in use for a significant amount of time) inspired the site feature examination at each market: activity observation and participant observation were conducted twice at each site, for at least one hour per site, prior to questionnaire deployment. Activity observations consisted of noting where people stayed, went, and what they did in different areas, while participant observation focused more closely on the users of the space themselves, e.g. their physical characteristics or demeanor. Areas of interest included vendor orientation, booth setup, congregation sites, location, amenities, and layout, as well as environmental features like music, weather conditions, perceived crowding, and noise (Stephenson, 2008). The resulting inventory of market elements was then organized first in terms of each site and second in terms of shared categories. These categories improved understanding and description of the sites, aided in hypothesis formation, informed open-ended questionnaire questions, and most importantly, guided the content analysis of open-ended responses. Table 1 summarizes resulting categories and descriptions.

Questionnaire Deployment

An augmented version of Hartig et al.'s Perceived Restorativeness Scale (PRS; 1997) was used to measure market patrons' perceptions of site restorativeness following site analysis. The PRS asks respondents to react to statements using a seven-point Likert scale and assesses perception of each of the four features of restorative environments according to Attention Restoration Theory (ART): being away, extent, compatibility, and soft fascination. Open-ended questions were added after each of the four feature sections to tease out narratives of which market elements are contributing to or detracting from perceived restorativeness. These openended questions were informed by the previous site assessment and the categories of restorative features developed by Hunter and Askarinejad (2015) – structure attributes, content attributes, and landscape attributes.

I added an open-ended question assessing the effect of people and crowds to identify some of the social dimensions not covered by the PRS, as well as three additional questions that asked patrons what they like and do not like about the market and why they visit. Closed-ended questions accessing regularity of visit, group size, gender, age, race, socioeconomic status, and distance traveled were also added to help better define the sample of respondents, and point in time data such as weather and time of visit were observed and recorded. Building on an

established, proven tool allowed for greater confidence in the resulting data while also affording flexibility and creativity in the added features.

The PRS has been assessed for internal validity and consistency with ART, but the authors note the limited types of environments assessed with the tool. This study deploys an augmented tool in a built, urban environment to collect quantitative data and qualitative openended responses pertaining to restorativeness characteristics and corresponding site feature types. The resulting data convey the perceived restorativeness of each market, the degree to which each subscale was perceived, and which features stood out to respondents, as further described in the Results and Discussion sections.

Selected markets were visited an equal number of times in the questionnaire sampling period: both markets were visited from opening to closing the weekends of April 2-3, 9-10, and 16-17, 2016. Weather anomalies and other unusual events were noted and care was taken to manage the sampling schedule such that the visits were uniform, although weather precluded any data collection from the Davis market during the weekend of April 9-10. Patrons were intercepted on their way into the market near farmers market entrances, and during low traffic times (roughly 8am-9:30am and 11:30am-12pm/1pm) every patron or group was approached to do the questionnaire, while during high traffic times (9:30-11:30am) every third patron or group was approached.

Respondents were screened: they were first asked if they have visited the market at least five times previously. The purpose of this approach was twofold: one, approaching patrons as they arrived (rather than as they left) encouraged them to reflect on multiple previous visits as a whole rather than the current visit. In this way, differences in environmental conditions are amalgamated across previous visits and survey responses more closely indicate an overall

perception of market visits. Two, restricting the questionnaire to experienced market patrons eliminated the effects of inexperience on lower degrees of restoration: as shown by Oullette et al. (2005), it is rare to experience meaningful restoration during a first or after few visits to a site. See Figure 4 for perceived restorativeness across the markets.

Data Analysis

Questionnaire responses provided descriptive evidence of any perceived restorative effects of farmers markets, and inferential statistical tests – independent samples t-tests – were conducted to identify any significant differences in perceived restorativeness between the Davis and Sacramento markets. Additionally, relationships between site feature types (identified via the site analysis and feature inventory) and open-ended question responses (coded and analyzed using content analysis to develop categories of restorative farmers market features) were compared and merged.

More specifically, the open-ended responses were analyzed and coordinated in two ways: responses were first coded with their corresponding site feature type identified via earlier analysis (see 'Site Analysis,' next chapter). Second, responses were aligned with the best-fit perceived restorativeness subscale. In this way, responses were synced between both site feature type and subscale. Following classification into site feature types, responses were coded again into more specific site features to further illustrate trends and more finely distinguish which perceived restorativeness subscales associated with each feature. This process resulted in a more precise alignment between restorativeness subscales and site feature types. See Table 3 below for a more detailed and quantified interpretation.

4. Results

The site analysis identifies and classifies objective features of the Davis and Sacramento Farmers Markets. Quantitative analysis of patrons' responses to the Perceived Restorativeness Scale (PRS) describes and compares perceived restorativeness of the markets. Qualitative analysis of open-ended responses to the PRS suggests site feature types and implicated elements of restorative environment theory (fascination, extent, compatibility, being away) that contribute to restorative potential. Responses to additional open-ended questions provide further support for important features to patrons.

Site Analysis

Inventory and organization of site analysis results yielded nine site feature types consistent across both markets, and observed features were iteratively organized by type, site, and shared features between the markets. Table 1 below consolidates the resulting categories and definitions of types, and those with asterisks indicate types initially hypothesized to affect perceived restoration.



Figure 2. Images of the Davis (left) and Sacramento farmers markets. (Photos by author)

Table 1

Walkway and Market Structure*	Those features pertaining to the path dictated by the market setup and the physical structure protecting or surrounding the market.
Programming, Management, and Coordination	Those features that demonstrate control and planning by a higher person or team, e.g. presence of ATM machines, entertainment, and resources.
Stall Characteristics, Location	Those features specifically relating to the appearance, setup, product, and other features of the stalls.
External Infrastructure*	Those features that affect patrons' access and amenities that are not part of the market grounds or structure, such as available parking, transit lines, and restrooms unmanaged by the market.
Market Purposes*	Why patrons visit the market, e.g. to see and be seen, eat breakfast or lunch, purchase produce for the week, find unique food items or gifts.
Sensory Elements*	Those features sensed using one or more of the five senses, e.g. cool temperature under the market structure vs. warmth on the lawn, sounds of music or sounds of traffic.
Uncoordinated Features	Those features that organically arise and/or are not planned by market management, e.g. existing features of the space such as concrete berms used by buskers in Sacramento or the lawn edges preferred for setting up personal blankets in Davis.
Patron Characteristics	The demographics and characteristics of the patrons – age, race/ethnicity, preparedness for the market, points of focus (shopping, eating, playing).
Groups, Busyness	The sizes and functions of groups at the market, as well as the level of congestion and action present.

Site Features Types: Davis and Sacramento Markets

Note. Types of site features at the Davis and Sacramento Farmers Markets. Features marked with * were initially hypothesized to affect restoration.

Questionnaire

Demographics. The demographic makeup of the 71 total respondents is representative of those market patrons interested in completing the questionnaire over the first three weekends in April 2016 (with only Sacramento visited the second weekend in April due to rain). The greatest number of responses was collected in the first weekend, with twenty responses collected from each market; the following weekends each yielded approximately ten additional responses from each market.

The intercept of every third person/group during busy periods and every person/group during slow periods helped diversify the patrons approached for surveys, but did not necessarily guarantee a similar level of diversity within the respondent population. A number of Sacramento patrons declined to participate because of a language restriction, and there were over 100 total declinations at each site over the three weekends. Thus, demographic data and questionnaire results are representative of the perceived restorativeness of those patrons who were approached, interested, and spoke or understood English (two respondents had the survey read to them). Demographic data are presented in Table 2 and Figure 3 to better describe the participating sample.

Table 2

	n	Sex (F, M)	Median Visits	Median Dist.	Mean Age	Median Inc.
Davis	32	22, 10	2-3/Month	2 Miles	49	\$50,000- \$74,999
Sacramento	39	25, 13	2-3/Month	4 Miles	46	\$50,000- \$74,999
N D		0 1				

Note. Demographic makeup of respondents.

Self-Reported Race/Ethnicity



Figure 3. Self-reported race/ethnicity from both farmers markets.

The relative similarity between the proportion of males and females, visit frequency, age, and approximate income at both markets eliminates some possible confounding variables. However, in terms of race/ethnicity, a possible confounding variable may still be present because of the language barrier.

Perceived restorativeness.

<u>Research Question 1</u>: Are farmers markets perceived as restorative environments for patrons?

Hypothesis: Yes.

<u>Results</u>: Yes. Overall and subscale mean PRS scores are in the restorative range, indicating patrons at both locations do perceive restorativeness at the farmers market (Figure 4).



Figure 4. Response means and standard deviations of overall Perceived Restorativeness Scale (PRS) scores and subscale scores per market. Figure inspired by Tenngart Ivarsson & Hagerhall, 2008.

<u>Research Question 2</u>: How does perceived restoration differ between the two study markets? <u>Hypothesis</u>: The Davis Farmers Market will be perceived as more restorative overall, and particularly in terms of the being away subscale, compared to the Sacramento Farmers Market. <u>Results</u>: There is no significant difference in overall perceived restorativeness between the markets: t(55) = -0.66, p = 0.51. There was also no significant difference between market locations on each PRS subscale: being away: t(67) = 1.34, p = 0.18; compatibility: t(64) = 0.11, p = .92; fascination: t(61) = -0.87, p = 0.39; extent/coherence: t(64) = -0.31, p = 0.76. Davis was not a statistically better provider of the sense of being away contrary to what was predicted given its location. Anecdotal open-ended responses collected via the questionnaire, however, do indicate differences between Davis and Sacramento patrons' interpretations of the market as a place to be away. Several Sacramento respondents noted the market is just part of their routine, while several Davis respondents stated the market is a relaxing break from their daily life.

Synthesis. Responses to the open-ended questions added to the PRS were coded with the best-fit subscale. They were then coded into the best-fit site feature type from the site analysis. Table 3 below contains: a) site feature types determined by initial site analysis, b) site features of those types as determined by open-ended responses (and respondent qualification if provided), c) the number of mentions of that site feature and d) the coordinated restorative environment subscale. The table is organized in descending order, with the highest-mentioned feature types at the top. The open-ended responses from both markets have been combined because there was no significant difference between the overall or subscale perceived restorativeness scores. There was also no noticeable difference between open-ended responses from both markets, outside of different ideas of being away.

Table 3

Site Feature	Relat	ted Responses	Number of	Aligned ART	
Type	Feature	Feature Qualification		Subscale	
		Not, So it's Relaxing	1	Being Away	
		Just Part of	9	_	
Ma slave	Routine	Part of, Support Farmers	2	Compatibility	
Market Purposes* -		Part of, But Relaxing	1	_	
Purposes*	Not Escape		2	Being Away	
	Enjoy All		3	Compatibility	
	Specific		3	Compatibility	
	Activities		5	Companionity	
	Visual		2	Fascination	
	Stimulation		2	1 dsemation	
Sensory Elements*	Taste & Smell	Flowers, Cheese, Citrus, Garlic, Bread, Fresh, Food, Highway	8	Fascination	
	Sound	Noisy Music/No Music/Quiet Kids Laughing	10	Fascination	
	Multicultural/ Diverse		5	Fascination/ Compatibility	
	Different	Interesting	2	Fascination	
	People	Don't Know You	1	Being Away	
Patron Characteristics	Good, Friendly People		6	Compatibility	
	Health Conscious		2	Compatibility	
	"Social"		2	Compatibility	
		Clear			
	Layout	Jumbled	9	Extent	
Walkway and		Location			
Market	Confusion to		3	Extent	
Structure*	Comfort		5	Extent	
	Mural		3	Fascination	
	Walkway Organization		2	Extent	

	Small Size		2	Extent
	Structured		2	Extent
	Chaos		2	Extent
Drogramming	Well-		2	Extent
Management	Organized		2	Extent
Coordination	Park		1	Compatibility
Coordination	Preference		Ŧ	compationity
		Music	6	 Fascination
	Programming	Astronomy	1	Tusemuton
		Info Availability	1	Extent
	Depends on		2	Compatibility
	Timing			F
	Crowded,		-	Extent/
	Navigation		5	Compatibility
Groups,	Hard			1 5
Busyness	People		1	
	Friendly, Not		1	Compatibility
	Bad	Unatio & Duatio		
	F	Hustie & Bustie	6	
	Enjoy:	Movement Deerle Wetching	0	Fascination
	Encal Ain/	People-watching		
	Fresh Alf/		5	Being Away
Uncoordinated	Kide		3	Compatibility
Features	Picnics		5	Compationity
1 catalos	Blankets		2	Compatibility
	Vibe		2	Compatibility
	Seeing		2	compationity
	Vendors/		_	
Stall	Artisans.		7	Fascination
Characteristics,	Orgs			
Location	Browsing,			
	Variety		4	Fascination
		Liking vs. Belonging	~	
Community	Community	Sense of Community	5	Compatibility
Citv**		Good City Function		
	City	City Come Alive	3	Extent
	<u>,</u>	Always Been Home		
	Nearby		6	
	Nature	Park, Garden, Arb	6	Being Away
External	Parking		1	Compatibility
Infrastructure*	(Lack)		1	Compationity
	Near Asian		1	Compatibility
	Market		Ŧ	Compationity

Note. Types with * hypothesized to affect restoration. Type with ** arose from patron responses.

<u>Research Question 3</u>: In what ways (i.e. via which subscales) do farmers markets function as restorative environments for patrons?

<u>Hypothesis</u>: Soft fascination associated with market produce and vegetation will be the greatest contributor to perceived restorativeness at both markets.

<u>Results</u>: Features providing compatibility were most frequently mentioned in open-ended responses (55), followed by soft fascination (49), extent/coherence (23), and being away (15) (see Table 3, above). While soft fascination was the second most mentioned subscale, respondents did not identify market vegetation as the cause. Fewer mentions of being away mirror the quantitative results showing it as the least perceived of the four subscales; an unanticipated result. A significant negative correlation was found between age and being away: r(67) = -0.29, p = 0.02 and correspondingly, age and overall perceived restorativeness: r(56) = -0.29, p = 0.03. This means that the older the respondent, the less perceived restoration (note: there was no significant difference between mean respondent age at each of the markets: t(67) = -0.55, p = 0.59).

<u>Research Question 4</u>: Which farmers market site feature types may lead to restorative effects? <u>Hypothesis</u>: Walkway and Market Structure (size of aisles, set-up), Sensory Elements (visual, aural stimuli), Market Purposes (why people visit the market), and External Infrastructure (park, freeway).

<u>Results</u>: The most mentioned site feature types were *Market Purposes, Sensory Elements, Patron Characteristics,* and *Walkway and Market Structure* (see Table 3, above). These results nearly align with the hypothesized top feature types, with Patron Characteristics replacing External Infrastructure. This indicates that the people present may have a greater effect on perceived

restoration than the setting and external infrastructure. (See below for an expanded discussion of the human element of the market.)

To illustrate these results more extensively, Table 4 below provides a collection of responses corresponding to each of the four restorativeness subscales in the context of the four highest-mentioned site feature types.

Table 4

Compatibility	Fascination	Extent	Being Away
"It is part of my	"The beauty of the	"I think the layout	"Not having it be part
Sunday routine. It is	flowers, the lavender,	makes it easy to	of my weekly routine
how I choose to	wonderful taste of	navigate the market."	makes it more
purchase my food."	cheese; all the	(Walkway and	special. It's so warm,
(Market Purposes)	different languages spoken." (Sensory	Market Structure)	friendly, and inviting." (Market
"My visit here is a	Elements)	"Large crowds, busy	Purposes)
part of my pattern of		vendor space,	
shopping. I do enjoy	"Variety of produce.	clustered layouts."	"It's not an escape."
supporting local	Trying new things. A	(Walkway and	(Market Purposes)
economy and	visual bounty."	Market Structure)	
farmers." (Market	(Sensory Elements)		"I always find the
Purposes)		"I'm familiar with	market relaxing, but I
	"Love the sounds,	this market, so I have	wouldn't call it an
"Upbeat attitudes of	DIVERSITY, smells;	a good sense of the	escape – it's just part
fellow shoppers.	all of it." (Patron	layout. It does feel	of what I enjoy doing
Vendors excited	Characteristics)	overwhelming at	on a Sunday."
about the		times, nonetheless."	(Market Purposes)
fare/services/goods."	"The variety of	(Walkway and	
(Patron	products – so many	Market Structure)	"Different people that
Characteristics)	different kinds. The		you don't see
	new mural!!"	"The tables are all set	everyday and don't
"I love the mixture of	(Walkway and	up, starting with	know everything
cultures, socio-	Market Structure)	fruits and vegetables,	about you." (Patron
economic		to food, then	Characteristics)
communities."		accessory items."	
(Patron		(Walkway and	
Characteristics)		Market Structure)	

Note. Selection of open-ended responses from the top four site feature categories organized by subscale characteristic.

Integration of additional open-ended questions. The above analysis resulted in the discovery of another site feature type, Community and City (denoted with ** in Table 3, above). This type is comprised of distinct responses that could not be classified elsewhere. While the original feature types pertained to physical characteristics, there was clear evidence of the importance of a) community and b) good functioning of a neighborhood or city – less physical characteristics. Responses inspiring this type include: "I feel a part of the Davis community when at the market;" "I get a sense of community at the market, and it is nice to feel like I am a part of the community;" "It is an urban environment. It is how a good city functions;" and "You get to see your city come alive." The preceding responses were collected via the open-ended questions specifically associated with the PRS subscales.

Responses from two of the open-ended questions not associated with the subscales – 'What do you like about the farmers market?' and 'Why do you visit the farmers market?' – further support the notion that the Community and City feature type is motivating for patrons. It should be noted, though, that motivation for attendance does not necessarily indicate a connection to restoration. The notion of community is the most frequently occurring theme in these open-ended questions, with eighteen specific mentions across the 68 responses; higher than any of the other categories (outside the response of 'food' being a motivation for visiting). A related feature – the social atmosphere – was also highlighted by five respondents as something liked about the market and a reason for visiting.

Responses to these supplementary open-ended questions also provide additional support for the highest ranking site feature types – Market Purposes, Sensory Elements, Patron Characteristics, and Walkway and Market Structure – as motivations for attending the market. Twelve of the 68 respondents noted they visit the market specifically to support local farmers

and growers, providing support to the Market Purposes type and the feature of supporting farmers, while seven of the 68 respondents specifically mentioned getting a break from their daily lives, again supporting the Market Purposes type. Two respondents noted they appreciated the diversity of the people at the market, supporting the Patron Characteristics type and the feature of diversity, and two people noted they did not like the setup of the market, adding to the Walkway and Market Structure feature type.

The final theme coming out of these additional open-ended questions pertains specifically to the question 'What do you not like about the farmers market?,' to which eight people responded that the crowd was something they disliked. This response was collected on the first page of the survey, prior to the targeted question asking about crowding and the PRS-associated questions. This indicates that crowding easily comes to mind as a negative feature for at least a small proportion of the respondents.

Crowding and people. A question specifically addressing crowding – 'In what ways, if any, does the amount of people at the farmers market affect your experience?' – was included in the survey to explore this market feature and access some of the social aspects the PRS does not inherently capture. It should be noted that this is somewhat a subset of the Groups, Busyness feature type, within which the features of timing, crowding, busy but not bad, enjoyment of the hustle and bustle, and people watching arose. These features of the Groups, Busyness type were identified by patrons without specific prompting to think about crowding. So, while these two approaches to data collection resulted in similar responses, one had a specific prompt and the other did not.

Turning then to the responses of the question asking directly about the effect of the number of people, twenty of 62 respondents replied that there was no effect on their experience

("none," "no effect," "not at all"), and thirteen responded that the number of people can affect their experience at times, but it does not bother them all of the time and/or they adjust their visit time ("I just go earlier," "I try to avoid the most crowded times," "Larger crowds make it harder to move around but don't change the overall experience much"). Twenty respondents shared that the number of people had an overwhelmingly positive effect on their experience at the market ("The more the merrier," "The people make it," "It's the right crowd," "More busy leads me to being more interested/excited about what's to come"), and just nine of 62 respondents stated they don't like crowds and the amount of people negatively affects their experience ("I hate crowds. Slow walkers," "I have trouble focusing if it's too crowded and hard to get through," "When I can't walk by groups of stopped people it bothers me," "I have anxiety – so sometimes I don't go because I'm afraid of people – or the crowds get overwhelming, and I leave early").

Expanded answers to this question had sentiments similar to both the Groups, Busyness feature type and the Patron Characteristics type, namely that people are friendly and interesting, and that the crowds make the market what it is. There were also several mentions of the crowd giving a sense of community, connecting interpretations of the number of people present to the feature type of Community and City – connections that had not come out in the other open-ended responses.

So, while each of these feature types – Groups and Busyness, Patron Characteristics, Community and City – and the specifically prompted crowding question have distinct response themes as they pertain to the human characteristics of the market setting, they also have notable overlap and similarities that occur with such prominence they cannot be ignored. It should be remembered, though, that these questions were answered outside of the questions directly

associated with the PRS sections. They provide additional evidence of what is important and motivating to patrons, but not necessarily what patrons think of in terms of restorative features. The data of Table 3 should be referenced for feature types and features affecting restoration.

5. Discussion

The original hypothesis prompting this research – that the vegetation and outdoor setting of farmers markets are restorative features – is incorrect. My study found that the main sources of restoration at farmers markets are the purpose, sensory, social, and layout aspects of markets. My results also indicate the importance of compatibility and fascination in perceiving restoration via these types of features, and that notions of community and city have potential as a type of market site feature. While the sensory elements perceived by patrons somewhat align with the hypothesized importance of produce functioning as vegetation and a natural characteristic, produce was not as readily identified as other fascinating features, like smells and sounds. It is possible the effect of vegetative features may be challenging for patrons to verbalize, but produce is more likely a vehicle for the feature types identified by patrons. Social features of the market were expressed as important – for restoration and attendance – to a surprising degree, and these social features are given additional attention below.

Location Not a Limitation

Farmers markets do function as restorative environments according to my results, and it may not matter if a market is under an overpass or in a city park. There were no statistical differences between the overall PRS and subscale mean scores of the markets, indicating that perceived restoration was not determined by market location. The possibility exists then that it is the farmers market that provides elements contributing to restorativeness rather than the market location. This disproves the shallow hypothesis that the Davis (park) market would be more restorative than the Sacramento (overpass) market based on location alone. Korpela et al. (2008)'s assertion that natural favorite places may be selected due to the natural elements within them rather than a natural location provides support for this finding in terms of the role of

vegetation. Although, as mentioned above, there was no patron recognition of the importance of this feature. Further discussion of identified restorative feature types follows.

Spatial and Social Pathways to Restoration

My study is not entirely unique in finding that social components can affect restoration, and the prominence of social- and people-based responses prompts further discussion. I found a significant negative correlation between age and being away, and age and overall perceived restorativeness. This finding aligns with that of Scopelliti and Giuliani (2004), who noted that older people find social environments less restorative than their middle-aged counterparts. It is possible the preference for social components was overrepresented in this study due to the mean market ages of 46 and 49 (middle-aged). Their study also noted that younger people find social environments less restorative than the middle-aged group, but this study had few respondents in a similar younger age range, so that comparison cannot be drawn. Further study with a focus on different age groups in the context of farmers markets may illuminate these differences more.

Hinrichs' (2000) and Feagan and Morris' (2009) work on embeddedness notes that social relationships can influence purchasing behavior more than price at markets in particular. This component of social embeddedness may also link with perceived restorativeness. A setting in which a social, congenial atmosphere is valued more than economic forces is bound to be more psychologically pleasant (Sommer, 1989; Stephenson, 2008). Taking Stephenson (2008)'s finding of the importance of market atmosphere one step further, the sensed characteristics of atmosphere can be conceived as a spatial component of markets: as a place-specific characteristic. Embeddedness and perceived restoration should be examined in conjunction with one another to tease apart their similarities and differences.

Particular market behaviors may also link to the theory of self-actualization as a means of recovering from stress. Runnerstrom suggests settings that provide opportunities for both active and passive socializing allow participants to engage as desired with people present – e.g. other visitors – and an extraordinary or symbolic environment – e.g. a temporary event – to achieve restoration in an urban setting (Runnerstrom, 2008, pp. 8–9). This framing of restoration to include social dimensions and self-actualization is a new view on farmers markets: perhaps they function more as a site of self-directed socializing rather than chiefly as a source of produce.

Francis and Griffith (2011) note the importance of farmers markets as functions of social life and contributors to healthy cities, which mental health and restoration easily fall into. They also note that markets help satisfy today's needs for a lively civic space, which connects to the Market Purposes and Community and City site feature types. It is clear that community is appreciated and yearned for on the ground and in theory, and markets may help to fill this void. It is important to note the connection between mental health and well-being, and community inclusion and appreciation. The lament of the loss of third places – those places that are neither home nor work but a third place of importance – is not new, but could easily be applied to market settings and the relationship between restored attention and sense of belonging (Oldenburg, 1989; Rosenbaum, 2006).

Scaling Restorative Features

The results of this study align well with the personal scale of restoration, but features of these results can be incorporated into larger planning theories and practices. Markets function as community events (Francis & Griffith, 2011) that bring people and goods together in a temporary event of interaction, and they fill a role as third places that support consumers' needs for socializing and acceptance (Oldenburg, 1989; Rosenbaum, 2006). In this way, markets

function at both community – gathering sites – and personal scales – social interaction. While markets were found to be restorative – another feature of the personal scale – their most impactful purpose may be as alternative community gathering spaces where people can engage in less formalized city life.

Implications of Research

This research and previous market studies indicate the need to cultivate a desirable atmosphere and appeal to patrons' inherent hope for community. Greater connection between markets and patrons can be achieved by developing meaningful but not over-managed markets that satisfy patron wishes to support farmers, experience diversity, and sense sights and sounds. Thoughtfully curated markets could positively impact perceived restoration, and motivating positive visit experiences should be prioritized: patrons identified their experiences (rather than the site, for example) as extremely important when considering both restoration and visit motivation. It must be noted that the essence of all markets are the people that organize, vend, and visit it, and these cannot be standardized. Developing a flexible environment in which a successful market can evolve may be the best approach; the conditions of this type of environment can then be manipulated to determine best-fit characteristics. What follows are recommendations along three lines: location, layout, and atmosphere.

In terms of location, this study suggests that farmers markets in seemingly undesirable locations can provide restoration and have high attendance as long as they offer opportunities for patrons to engage with people and place as desired. A goal for market organizers then should be to locate markets in areas and communities that could benefit from a frequent event that brings people together, acts as a third space, and provides a sense of pride and place. Urban ephemera are most successful when inspired and put on by the people of a place (Schuster, 2001), and

participants in this survey emphasized their appreciation of the market being theirs, a part of their routine, and a way to support their not-so-distant farmer neighbors. An appropriate location stabilizes makes sacred the site itself and the community that hosts it; thus, care must be put into location selection, beyond the practical considerations that often mire changes to the community fabric.

Market layouts are fairly standard: straight or looped paths are bordered by stalls of produce, crafts, and value-added products (Francis & Griffith, 2011). Patrons' desires for product variety, opportunities for socializing, and comprehensible composition mean layouts should be carefully considered, but they are also easily tweaked. Respondents mentioned the joyful stimulation of sounds, tastes, and smells, as well as their passion for the lively market community; layout is an opportunity to capitalize on the excitement of many bodies in between rows of colorful produce. Promoting diversity of farmers, patrons, and products in compact space could make some visitors uncomfortable, but my research shows that very few people have negative reactions to controlled chaos. Markets lose their casual and alternative essence when they too closely resemble supermarkets, and ever-elusive authenticity (Smithers & Joseph, 2009) should be curated via thoughtful market organization.

Finally, atmosphere is one of the least tangible but most important features of the market (Stephenson, 2008). What *is* atmosphere? Here it is helpful to think about 'vibes' – a term found in several patron responses – and the feeling one gets in a space. The atmosphere of a particular event is tied to that event, and does not exist when the event is over. For instance, the atmosphere under the overpass is much less jovial when the market is not running. Many patrons expressed enjoyment of the social atmosphere and made specific note of seeing and experiencing personal and lively interactions. Increasing patron interaction without making

conversation inauthentic is challenging, but looking to Whyte's suggestion of a triangulating feature – an object or act designed to spur conversation among viewers – may be the answer (1980). Implementing varied features to encourage interaction can help construct a recognizable and positive atmosphere.

Limitations

While this work has been thoughtfully planned and constructed, there are inherent limitations and assumptions at play. An analysis of two markets is not representative of all markets: i.e. different patron demographics, physical accessibility levels, location, and produce and products available. Potential confounding variables in this study include the nature of respondents (their diversity; the type of person willing and able to complete the questionnaire may not be representative of all market patrons), the type of respondents (the study was limited to patrons and did not include vendors or management), and my positionality as a researcher: I may have been more or less approachable to potential respondents, and likewise, they may have seemed more or less approachable to me.

This study does successfully act as a first look at markets in this context and focuses on two large, well-attended markets as case studies. Additionally, markets, like the communities that house them, are diverse in different ways – or not – and these matters are significant in terms of justice, equity, and access. This study did not aim to address these issues, but the need for understanding and improvement of market diversity and access is paramount (Alkon, 2008; Guthman, 2008). Ideally, the market of the future would recognize its potential as a restorative environment for all, and this work contributes to that mission.

Future Research

The manipulation of certain market features and their effects on perceived restorativeness is a ripe area of further research, as is study of a wider variety of markets. A version of the Perceived Restorativeness Scale that more directly incorporates a measure of social conditions within each subscale would also move this research forward. For instance, being among strangers could be a condition of being away, seeing new people could be a function of fascination, crowding could be a characteristic of extent/coherence, and socializing could be aligned with compatibility. Responses to statements measuring each subscale may include consideration of social features, but without specific mention it is challenging to determine if it is the people or non-living features of the site that are influencing each subscale.

It is necessary to obtain the opinions and experiences of market managers, volunteers, and vendors to more fully understand how and for whom farmers markets can provide restorative benefits. While challenging to study in terms of perceived restoration, failed farmers markets may also be an interesting addition to this line of research; determining what they were lacking could help improve other markets. Finally, within all of these proposed topics it is important to obtain truly representative samples, and care should be taken to have translation services available for those patrons who do not speak or read English.

6. Conclusion

This research shows that farmers markets have the potential to act as restorative environments, and that the market site feature types most influencing restoration are Market Purposes, Sensory Elements, Patron Characteristics, and Walkway and Market Structure. The feature type Community and City was an unanticipated result of the questionnaire responses, indicating its importance to patrons, but its association with restorativeness remains less clear. Compatibility is the most perceived restorative environment quality, closely followed by soft fascination; extent/coherence and being away were perceived less frequently. This research also shows that market location may not play a role in perceived restorativeness, and it may be the market and its associated features that provide restoration.

This study is an initial look into the potential of farmers markets as restorative environments, and while not a final word on the question, it does provide clear evidence that markets could provide restoration in particular ways and via particular features. To access this potential, market management should engage patrons to determine which motivations drive market visitation, and then incorporate those or related features to encourage the desired effects. The feature types identified in this study can act as a starting point, but particular features need to be determined market by market. Markets are unlikely to satisfy patron needs and interests without proper understanding of the key role they can play in the community.

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8. Appendix

Visitor Experiences of Farmers Markets

Thank you for taking the time to complete this survey! I am collecting responses to help determine how visitors experience farmers markets in order to make recommendations for improvement. Let me know if you have any questions or concerns.

**Consider all previous market visits as you respond to the statements in this survey.

How often do you visit the farmers market? (Circle One Choice)

Every week 2-3 times a month About once a month Less than once a month

How far do you travel to visit the farmers market? (Circle One Choice)

1 mile 2 miles 3 miles 4 miles 5 miles 6+ miles

What do you LIKE about the farmers market?

85

What do you NOT like about the farmers market?

Continue to think about your previous visits to the farmers market as you respond to the following statements. Circle the **one** response in **each row** that is true for you for each statement.

	Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
Being here is an escape experience.	1	2	3	4	5	6	7
Spending time here gives me a break from my day-to-day routine.	1	2	3	4	5	6	7
It is a place to get away from it all.	1	2	3	4	5	6	7
Being here helps me to relax my focus on getting things done.	1	2	3	4	5	6	7
Coming here helps me to get relief from unwanted demands on my attention.	1	2	3	4	5	6	7

	Strongly	gly Somewhat			Somewhat		
	Disagree	Disagree	Disagree	Undecided	Agree	Agree	Agree
This place has fascinating qualities.	1	2	3	4	5	6	7
My attention is drawn to many interesting things.	1	2	3	4	5	6	7
I want to get to know this place better.	1	2	3	4	5	6	7
There is much to explore and discover here.	1	2	3	4	5	6	7
I want to spend more time looking at the surroundings.	1	2	3	4	5	6	7
This place is boring.	1	2	3	4	5	6	7
The setting is fascinating.	1	2	3	4	5	6	7
There is nothing worth looking at here.	1	2	3	4	5	6	7

	Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
There is too much going on.	1	2	3	4	5	6	7
It is a confusing place.	1	2	3	4	5	6	7
There is a great deal of distraction.	1	2	3	4	5	6	7
It is chaotic here.	1	2	3	4	5	6	7

	Strongly		Somewhat		Somewhat		Strongly
	Disagree	Disagree	Disagree	Undecided	Agree	Agree	Agree
Being here suits my personality.	1	2	3	4	5	6	7
I can do things I like here.	1	2	3	4	5	6	7
I have a sense that I belong here.	1	2	3	4	5	6	7
I can find ways to enjoy myself here.	1	2	3	4	5	6	7
I have a sense of oneness with this setting.	1	2	3	4	5	6	7
There are landmarks to help me get around.	1	2	3	4	5	6	7
I could easily form a mental map of this place.	1	2	3	4	5	6	7
It is easy to find my way around here.	1	2	3	4	5	6	7
It is easy to see how things are organized.	1	2	3	4	5	6	7

Why do you visit the farmers market?

In what ways, if any, does the amount of people at the market affect your experience?

What is your age in years?

What is your approximate annual household income? (Circle One Choice)

Less than \$20,000\$20,000 to \$34,999\$35,000 to \$49,999\$50,000 to \$74,999\$75,000 to \$99,999

\$100,000 to \$149,999 \$150,000 to \$199,999 \$200,000 or more

What is your sex? (Circle One Choice)

M F Not That Simple

What is your race?

63

Thank you for your time and assistance!

For Researcher Use: Time of Day: Weather/Temperature:

Group Size: 1 2 3 4 5 6 7+