Local Wisdom: Unearthing Urban Nature through Community Research + Design

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Abstract

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Using case study methodology, this paper analyzes site history and research, planning, and (re)design processes for Bishan-Ang Mo Kio Park in Singapore to explore the value of experiential, participatory, field-based methods for planning for urban parks and nature areas. In addition to the case study, this paper explores other examples of experiential planning methods for parks and nature areas in the U.S. and internationally. Benefits of experiential, participatory, field-based methods may include inspiring people to care about cultural and ecological history, increasing a sense of community ownership of urban parks and nature areas, and design outcomes more responsive to people and place. Limitations include that such methods are time consuming and financially intensive, are subject to availability, interest, and motivations of participants and design and planning professionals, and may be difficult to conduct at a community-wide or regional scale.

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Introduction

Urban parks and nature areas are important public spaces in cities, and are often sites for building critical socio-ecological connections. Increasingly, scholars have developed arguments countering common perceptions that "the city is where nature stops," calling for expanding thinking to encompass the "multitude of urban natures" and the "tapestry" of meanings of nature in cities (Kaika and Swyngedouw, 2011, 98, 102). Urban parks are not always the most "nature-ful" spaces - some are devoted exclusively to recreational use - and represent only one aspect of the complex ways ecological processes and nature are apparent in cities. The process of creating, developing, re-developing, and managing parks, however, is one opportunity for people to participate in and carry out visions for how humans and nature will interact in urban spaces.

Most commonly, professional experts develop plans and ideas for urban parks in accordance with city officials' visions, and invite (requisite) community participation in the form of feedback during comment periods at public meetings. In some cases, designers and planners will engage participants in more active methods to receive feedback, such as workshops and charrettes during which community leaders and citizens might comment at greater length on design ideas and use other means such as voting on a set of options using colored dots. An even more rare participation strategy is one in which designers and planners engage community leaders and citizens in experiential or "hands-on" participation on the actual site of the current or future park. John Liu and Randolph T. Hester assert that participatory design is a "medium for expressing native wisdom," one that allows "a reciprocal relationship between place and wisdom as well as a learning relationship between the native wise person and the outsider professional" (Hester and Liu, 1999, 449).

The paper that follows explores the value of experiential, participatory, field-based models that designers and planners might use to engage people in building and re-making urban parks and nature areas. Experiential methods involve phenomenological or conscious, direct experience with a place and with one another – an example might be a walk through or direct observation or experience of a site. Participatory methods may have varying types and intensity of participation, but involve some level of collaboration and exchange between designer and planner and participants, and among participants. Field-based methods are those specifically conducted on site, as opposed to more common methods where workshops and charrettes are conducted indoors, often significantly removed from the actual conditions of a place. Field-based methods allow participants and designers and planners to consider a range of sensory experiences such as smells, sounds, textures, and sight lines; potential connections within and between urban parks and nature areas and their surroundings; and phenomenological sense-of-being in a place that might jog community members' memories and deepen designer's and planner's understanding of cultural and ecological significance.

The ultimate argument is that even the examples studied at some length below only begin to approach the potential that might exist for experiential, participatory design practice. As cities continue to develop and populations increase, the importance of designing and planning urban parks and nature areas sensitive to people and place will increase as well. Experiential, participatory, field-based design and planning techniques are not the only way to achieve this, but represent an important possible approach as we strive towards Kaika and Swyngedouw's (2011) vision of a more "egalitarian and democratic production of socio-ecological commons" (104).

Research Problem

Many current urban park planning projects employ standard or "traditional" public participation models (coming closer to what Sherry Arnstein describes as "empty ritual" than "citizen power" in her formative 1969 article, "A Ladder of Citizen Participation"). While there are more progressive approaches to engaging citizens in design and planning, there is limited literature available describing or analyzing participatory, field-based models for engaging community members in planning for urban parks and nature spaces.

Experiential, field-based participatory engagement offers strong possibilities for creating urban parks and nature areas deeply resonant with community needs, both cultural and ecological. What value might such alternative participation modes add to design and planning processes and outcomes? How (do) we engage community members in planning and designing for parks in cities, and how might exemplary community engagement approaches be integrated into typical practice? What are the benefits of be employed in a park planning process with "official" planners/designers/leaders, or are they found more easily in more organic, citizen-led park-making efforts? How (are?) (can?) community members' thoughts, efforts, desires be reflected in park-making (physically, programmatically, culturally)?

Without a hands-on approach to community engagement in planning for urban parks and nature areas, these places run the risk of being generic, lacking community interest or support, and prioritizing individual designer's and planner's visions and ideas over those of the people and creatures who will inhabit the places and make them their own.

Thesis Objectives

The objectives of this project are:

(1) To identify and document experiential, participatory, field-based models used for planning and designing parks and nature areas in the United States and internationally.

(2) To explore the planning and design process for re-designing Singapore's Bishan-Ang Mo Kio Park, and situate findings in the context of the rise of participatory practice in planning and design in Singapore.

Methodology

This project adopted an exploratory approach, incorporating case study methodology, triangulating data gathered through the use of interviews, field observations, archival research, and a brief survey to experts in the field (Figure 1).

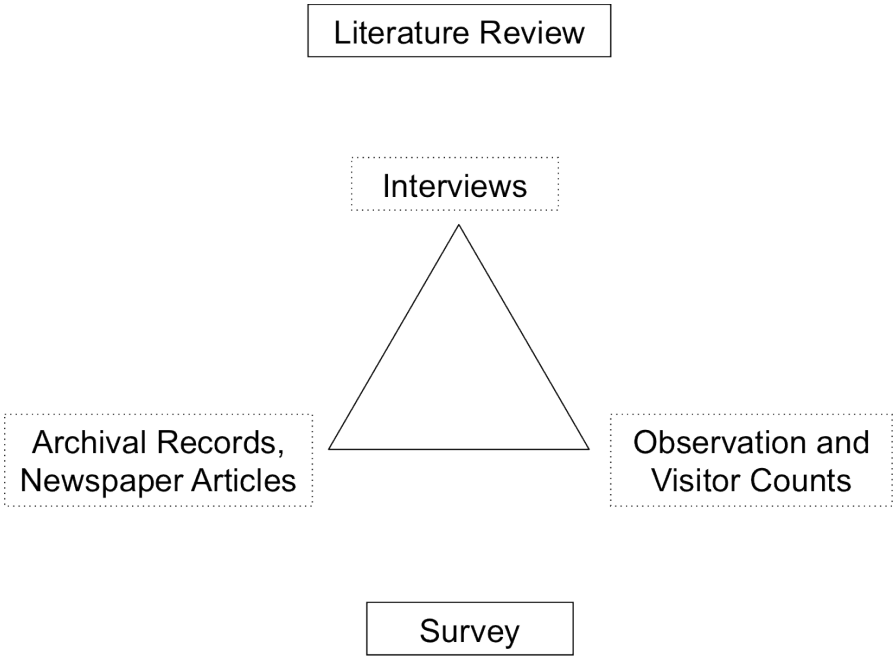

Figure 1. Methodology

In order to identify a case suitable for study, the researcher first conducted a scan of existing literature and conducted informal informational interviews with identified experts in the field of urban park studies and practice in the United States. A list of individuals consulted is found in Table 1 of the Appendix. Although approximately 60 percent of individuals contacted responded, conversations with these individuals did not yield a case appropriate for this study, although Randolph T. ("Randy") Hester provided several examples of past projects that fit the requirements of the study, and have been included in the literature review. The researcher conducted a follow-up interview with Randy Hester and Marcia McNally, to further delve into issues uncovered in initial conversations and uncover additional resources and information.

In the absence of a case recommended by a group of neutral experts, the researcher determined that a park re-design case she had previous knowledge of, Bishan-Ang Mo Kio Park in Singapore, might be an option for the study. The researcher conducted an informational interview via Skype with Herbert Dreiseitl, the landscape architect for the park's re-design, who confirmed that the case, which is recently completed (2012), would meet the requirements of the study.

In order to study the case, the researcher traveled to Singapore and conducted a series of site visits over the course of six days (February 3-8, 2014), interviewed seven individuals, both on site at Bishan-Ang Mo Kio Park and at Public Utilities Board and National Parks Board offices, consulted records at the National Library of Singapore and the National Archives of Singapore, and conducted several user counts of Bishan-Ang Mo Kio Park visitors in order to ground truth comments about park usage from interviews (results in Table 2 of the Appendix).

Finally, in order to develop a more robust collection of current community research and design projects employing experiential, participatory, field-based methods, the researcher conducted a brief survey of practitioners and academics identified through a "snowballing" technique, requesting examples of cases fitting the criteria of the study. Survey questions are in Table 3 of the Appendix; list of individuals consulted for the survey is in Table 4 of the Appendix.

Literature Review

Historically, urban parks and nature areas were created with intent to provide green spaces for growing urban populaces to find respite from city life, often as a form of social control and as real estate prospects. Great landscape architects and planners, such as John Nash and Joseph Paxton in England, Peter Joseph Lenné in Germany, and Andrew Jackson Downing and Frederick Law Olmsted, Sr. in the United States carried out bold visions for incorporating constructed natural landscapes into rapidly developing cities. Despite the myriad aesthetic, recreational, and cultural benefits urban parks have claimed since their inception, Jason Byrne and Jennifer Wolch assert that parks are not "neutral" places, rather "park-making ventures have molded socio-ecological and ethno-racial relations of power within cities" (Byrne and Wolch, 2009, 744-5). These power relations have been most commonly established through execution of "top-down" design and planning, with a designer's vision endorsed and approved by the people in charge of the city – Mayors, directors, and other members of the powerful elite.

Increasingly, particularly since the 1960s, involving the general public in design and planning decisions has become more and more a common practice, and in many cases is now required by municipalities. However, the form that this participation takes is often primarily reactive rather than generative, with scenarios such as community members responding to already-drafted plans in public meetings, commenting on the plans and making requests for changes and adaptations. Sherry Arnstein's (1969) "A Ladder of Citizen Participation" offers a typology of citizen participation, asserting the critical importance of participation as enabling "the have-not citizens, presently excluded from the political and economic processes, to be deliberately included in the future" (216). Arnstein's ladder articulates the range of participation

methods, from what she calls "empty ritual" at one end to approaches that offer citizens the "real power" they need to effect significant change. Arnstein points to largely practiced methods of public participation: informing and consultation (soliciting citizen opinion), but she holds that these methods, while in theory are part of a legitimate participation process, when taken alone are no more effective than "window-dressing ritual" (219). The top rungs of Arnstein's ladder are partnership, delegated power, and citizen control. Arnstein describes the top rungs in this way:

- **Partnership**: Power is redistributed through negotiation between citizens and powerholders (221)
- **Delegated Power**: Citizens achieve dominant decision-making authority over a particular plan or program (222)
- **Citizen Control**: Degree of power (or control) guaranteeing that participants can govern a program or institution (223).

While Arnstein's work was grounded in and analyzing the successes and failures of the Model City program planning and implementation in the late 1960s, the conclusions she draws about the importance of a high degree of citizen control have relevance to planning and design applications far beyond her scope of study.

Some of the most powerful community spaces are those created by and for the community themselves, without intervention from or sanctioning from governmental authority or design and planning practitioners. Pomegranate Center, a non-profit organization based in Issaquah, Washington, has led and supported community-based design and creation of gathering spaces since its founding in the 1980s. One recent example is the Cambie Gathering Space in Richmond, British Columbia, conceived of and created by over 100 community volunteers, and incorporating local and regional materials such as Ocean Pearl stone for the amphitheater and cedar posts for the entryways (Pomegranate Center 2014). Another example is "Share-it Square," a collaborative project between City Repair and neighborhood residents in Portland, Oregon to

create a public gathering space and re-balance a busy intersection for community use (City Repair 2014). Still other models of community-created spaces include Karl Linn's diverse variety of Neighborhood Commons (Linn 2007) and countless community gardens throughout cities all across America (Lawson 2005). While these highly successful and well-loved community spaces represent important models for community building, urban parks and nature areas "legitimized" through design and planning processes often occupy more central spaces in communities and are also subject to greater protections and more formalized funding and maintenance streams, making it just as important for community members to participate in designing them.

In his (2010) *Democratic Design: Participation Case Studies in Urban and Small Town Environments*, Henry Sanoff, also founder of the Environmental Design Research Association, posits that democratic participation in formal design and planning processes is often most effective for "the physical and environmental projects that citizens see directly affecting their lives" (1). Sanoff details over a dozen cases of democratic participation in community design, from the small town of Selma, North Carolina, to urban neighborhoods and community facilities like the Cap School in Rio de Janeiro, Brazil. Sanoff's cases often include walking tours of the sites, design and planning games, surveys of neighborhood residents and existing conditions, and other methods of community participation in neighborhood planning and design.

Randolph T. Hester's (2006) *Design for Ecological Democracy* laments the departure of modern design and planning practice from community-centered roots. Hester claims:

> In the process of city building, building community has been lost. Traditions of barn-raising, through which both physical and social communities were nurtured simultaneously, have been replaced by technical experts, none of whose specialties include making community. (2)

Hester, who has written extensively about and has himself conducted a wide range of community-centered practice (Hester 1984, Hester 1990), presents fifteen categories of design practice that ideally guide decision-making. For Hester:

> Hands-on participation shows ecology how to recultivate fallow community and environmental caring. Involvement awakens us to the poetry of place and civic creativity. Enhanced by ecological knowledge, active engagement reveals the joys of nature itself. (7)

Hands-on participatory approaches show great promise for re-connecting urban residents with "the poetry of place" and "the joys of nature," particularly for many people who live lives increasingly disconnected from the natural world. However, the current participatory framework widely practiced today faces serious limitations. Jeffrey Hou and Michael Rios describe some potential problems thus:

> By taking on an increasingly narrowed scope and by focusing primarily on the interaction between professionals and users, the dominant participatory model has overlooked the broader cultural, social, and political dynamics in the changing institutional framework and public processes (Hou and Rios, 2003, 20).

Expanding the scope of the dominant model, both through the use of different types of methods and reconsidering broader dynamics is a serious challenge, particularly as time and financial capacity for projects are often quite limited. The orientation, style, and approach of designers and planners can counteract this, as well as citizens actively committed to change in their communities. Ultimately, the Ecological Democracy Hester (2004) envisions ideally transcends limitations of current practice, promoting:

> …a design process that is participatory, scientific, and adventuresome. Because ecological democracy stresses the direct involvement of citizens in local decision-making, future habitation will be designed at the grassroots level through direct face-to-face participatory actions. These actions will be holistically informed by local wisdom, attachment to place, and networks of interconnectedness and ecological thinking. (10)

While a wide variety of approaches might be used to involve stakeholders in pursuit of ecological democracy, this paper is particularly concerned with experiential, participatory, field-based models for engaging community members in planning for urban parks and nature areas. Lawrence Halprin, a landscape architect highly productive for much of the latter half of the twentieth century, was well-known as a proponent of experiential participation methods. Halprin's experimental methods first started after a month-long "Experiments in Environment" workshop co-led with his wife, Anna, an innovative modern dancer and choreographer in 1966. Peter Merriman (2010) describes the workshop:

> …29 dancers and 15 architects were led through a series of experimental, participatory, largely field-based communal sessions designed to heighten their environmental awareness and generate new forms of interdisciplinary collaboration and collective creativity. (435)

As an outgrowth of these experiments and as part of his growing conviction of the value of hands-on field-based methods, Halprin developed a participatory method he called "RSVP Cycles." Intended as "a holistic, multi-disciplinary approach," (Halprin et al., 1999, 43) and a tool to improve design through engagement, in his (1969) *RSVP Cycles*, Halprin explains the meaning behind each letter:

> *Resources* which are what you have to work with. These include human and physical resources *and* their motivation and aims
>
> *Scores* which describe the process leading to the performance.
>
> *Valuaction* which analyzes the results of action and possible selectivity and decisions. The term "valuaction" is one coined to suggest the action-oriented as well as the decision-oriented aspects of V in the cycle.
>
> *Performance* which is the resultant of scores and is the "style" of the process. (2)

Halprin would develop a "score," loosely based on the idea of a musical score: a pre-determined sequence of actions and experiences for workshop participants to follow throughout a site.

Workshops would typically start with "awareness walks" that Halprin would take along with participants, to develop a sense of the place through actual experience of it. Halprin describes his intention for participatory practices:

> Workshops for me are a way to reveal deep seated needs and desires…the basis of our workshop is a sensory-emotional experience process, which uses all the senses. The workshops are based on the idea of experience, interaction and communication, not just talking (Halprin et al., 1999, 42).

Halprin considered experiential participation a way to uncover and address people's most deeply held values, and fine-tuned his techniques over many years of practice. According to landscape architect and scholar Randolph T. Hester, Jr., "Halprin arose as the champion of participatory design. He justified public involvement to a profession overwhelmingly hostile to the idea" (Hester, 2012, 135).

Hester himself collaborated on a number of participatory design projects, in many cases collaborating with his wife, Marcia McNally. They developed a twelve-step process about how to do participatory design, and implemented this for projects such as Runyon Canyon in Los Angeles, California. McNally, in a 2011 article reflecting on decades of practice, describes that they found "the primary responsibility of a participatory designer is the creation of activities that bring forth visions with tangible connections that bind citizens to landscapes, to nature big and small" (19). McNally and Hester worked to develop a master plan for the 133-acre canyon, and they describe part of that process as "taking a page" out of Lawrence Halprin's ideas about scored walks: they created scored sheets for participants with maps of where to go. At certain points along the way, participants would be asked what they thought should happen in a particular place, or questions like "if this place could talk, what would it tell you about itself?" Hester describes how local knowledge of participants greatly informed design decisions, such as when a

local resident knew where a series of springs were on the site that was identified only as a desert landscape on official maps. McNally and Hester scaled this work up with a scored bus ride for hundreds of participants to visit and get to know a 20,000-acre piece of land that was under consideration for a new stretch of freeway. McNally and Hester explain that the phenomenological experiences people had on the site inspired them to an overwhelmingly positive view in favor preserving Big Wild, which directly influenced legislative action to create the park.

Experiential, participatory, field-based models for participation in designing and planning urban parks and nature areas have advantages embraced by practitioners and scholars such as Randolph Hester and Jeffrey Hou. Part of an ongoing dialogue known as "Democratic Design in the Pacific Rim," Hester, Hou, and others started exchanging ideas at their first meeting at the University of California, Berkeley in 1998. In the sixteen years since the group's inception, many cases have been presented and papers published about democratic and participatory design practices in Asia and the United States. One example of this work is the "rebirth" of Kitazawagawa Stream in the Setagaya neighborhood of Tokyo, Japan. Community members were intimately involved in the re-design process for the stream, through a series of community meetings and workshops, on-site plan checking and design confirmation tours, storytelling, and community-initiated seminars about ecology and the urban environment (Asanoumi 1999). Yoshiharu Asanoumi explains that through the process of creating this project, citizen participation was shown to "broaden ideas and values to be addressed, gather idiosyncratic local information and help create a locally appropriate design, and help to cultivate a responsible relationship between people and places," among other things (Asanoumi, 1999, 113).

Randolph Hester, in a review of 101 papers published by participants in the Democratic Design in the Pacific Rim conferences, identified five "domains of skill especially critical to democratic landscape design." These include: (1) Representing People; (2) Exchanging Professional Knowledge and Local Wisdom Spatially; (3) Coauthoring Design; (4) Empowering People to Represent Themselves; and (5) Visualizing Deep Values: Community, Stewardship, Fairness and Distinctive Place (Hester, 2004, 177). The "local wisdom" and "deep values" emerging from the professional and scholarly work on democratic landscape design can also be extended to recognizing the importance of designing with and for local ecological health. William H. Whyte, a sociologist famous for his innovative methods for studying the life of urban spaces (Whyte, 1980), also wrote a book titled *The Last Landscape*, in which he argued that "open-space planning should take its cue from the patterns of nature itself – the water table, the flood plains, the ridges, the woods, and, above all, the streams." (Whyte, 1968, 12). This ecological orientation to planning, when combined with Whyte's careful methods of observing and documenting the way people use urban spaces, underscores the benefits of a more hands-on, physically engaged approach to designing and planning for urban nature.

While such techniques might have great power and significance, particularly for those able to participate in them, it is important to recognize at the outset at least one major issue with such hands-on techniques: scalability. In most cases, it is simply not possible to engage an entire city or region's population in intimate, site-based hands-on participation. This raises issues of representation, and experiential, participatory, field-based models may not be the most representative, depending on the group or groups involved. Indeed, some of the most powerful and far-reaching engagement initiatives by definition are considered successful by measures of how many people participate (Levine 2013).

Results and Significance

Bishan-Ang Mo Kio Park: A Case Study

Bishan-Ang Mo Kio Park is a 62-hectare park in the "heartland" of Singapore, an independent city-state about 140 kilometers north of the equator in Southeast Asia. Singapore, an island of approximately 700 square kilometers, is home to 362 parks and park connectors, totaling over 2,300 hectares (Singapore National Parks Board, 2012, 45).

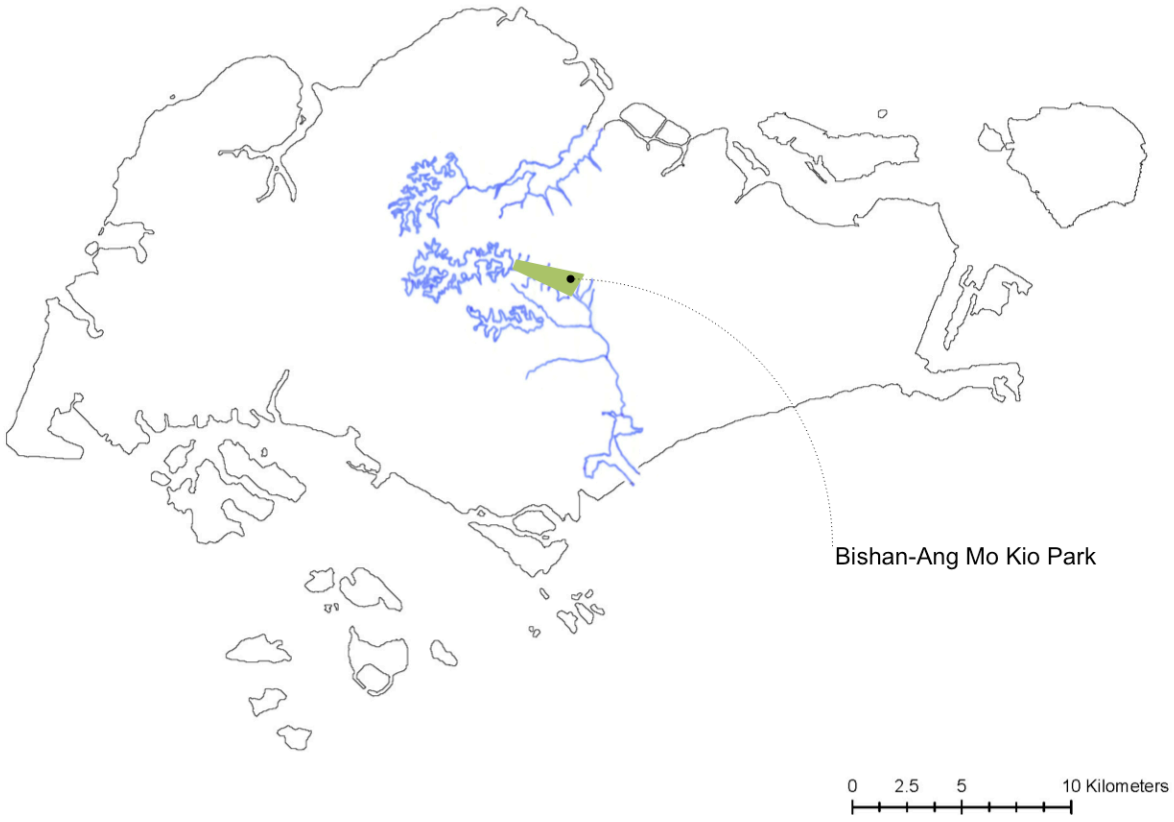

Figure 2. Bishan-Ang Mo Kio Park Context

Bishan-Ang Mo Kio Park is one of the best loved and most frequently visited parks in the city: officials estimate that the park receives about 3.8 million visits per year, which is comparable to the number of visits to the Singapore Botanic Gardens, one of the city's heritage treasures and

main attractions. A key difference is that Bishan-Ang Mo Kio Park is considered a "people's park," visited primarily by local residents who live in the surrounding area.

When British explorers Sir Stamford Raffles and William Farquhar landed in 1819, what is today the modern metropolis of Singapore was "an island covered with vegetation so dense that only the muddy coastline and the estuary were accessible" (Sanson, 1992, 2). Over the course of just under 150 years, the wild island landscape was significantly altered by colonial occupation. Although the developed area remained quite contained for many years (as late as 1950, only 52 square kilometers of the island was developed), establishment of British military bases and the proliferation of agriculture caused drastic changes to the landscape (Savage, 1992, 6). Very little native vegetation was preserved as vast tracts of land were cleared for agriculture and logging. By the time Singapore became an independent nation in 1965, development had taken off in the city; one historian characterizes the difference between landscape development before and after independence as shifting from the "slow evolutionary change" of the Colonial era to "rapid, dramatic revolutionary change" following independence (Savage, 1992, 28). Prime Minister Lee Kuan Yew inherited a city with enormous potential but also with a great deal of poverty and unsanitary conditions. The newly elected Prime Minister, along with committing early on to make Singapore a "City in a Garden," also established bold plans to modernize the city-state. Within a span of less than twenty years, major shifts took place with the establishment of the Housing Development Board (HDB) in 1960 and massive relocation and redistribution efforts of residents. Belinda Yuen describes Singapore's rapid transformation from: "a largely low-rise, British colonial trading post of congested slums and squatter settlements to a predominantly high-rise, modern post-industrial garden city-state" (Yuen, 2011, 202). Among the areas that underwent such significant change are the Bishan and Ang Mo Kio neighborhoods.

As of the mid-to-late 1970s, when the Singapore government was studying the existing conditions of the Singapore River in preparation for a major clean-up, the area that is today occupied by Bishan HDB highrises and Bishan-Ang Mo Kio Park was home to a long-standing settlement or "Kampong" known as Kampong San Theng.

Figure 3. Singapore Kampong
Image Credit: Hon, *Tidal Fortunes,* 1990

Homes in the Kampong were relatively simple, primarily constructed from wood, and in this particular part of the city, pig and duck farms were common.

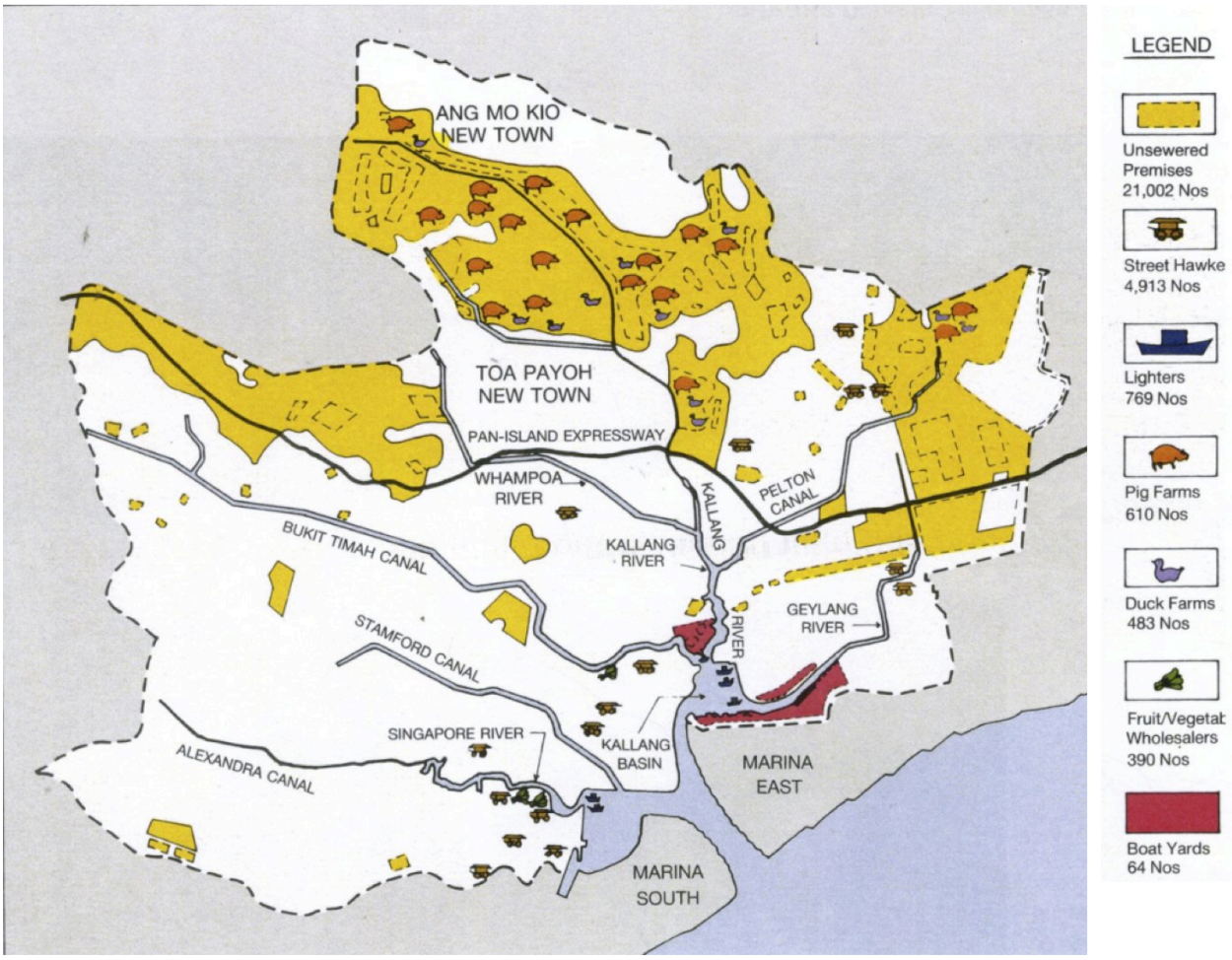

Figure 4. Conditions of the Singapore River and environs; Bishan Park top center
Image Credit: Ministry of Environment, *Clean Rivers*, 1987

As growth and development pressure increased in land-scarce Singapore, one likely reason that the land today occupied by Bishan-Ang Mo Kio Park remained open space as long as it did is the historic Kwong Wai Siew Pek San Teng Cantonese Cemetery. Founded in 1870 by the Kwong Wai Siew Association, the cemetery was at one time the largest on the island, with more than 100,000 graves (Koh 2006). Pek San Teng and similar cemeteries in Singapore occupied land considered desirable for development; Brenda Yeoh (2003) describes that in many areas:

> Most of the high ground had been appropriated for Chinese burial grounds… where one would expect a network of roads, we find nothing but a space that is barren and waste, because almost all that is not swamp is given over to the dead (284).

Figure 5. Kwong Wai Siew Pek San Teng Cantonese Cemetery, 1951
Image Courtesy of *The Straits Times*

The Kampong and cemetery grounds were acquired by the Singapore government in 1973, and in the years following, many graves were exhumed in preparation for construction of Bishan New Town. When construction crews excavated large areas of land between 2009-2012 in order to re-naturalize the Kallang River at Bishan Park, additional graves were uncovered, along with tiles and other remnants of Kampong life (Herbert Dreiseitl, pers. comm.).

In the 1970s, Singapore underwent a major effort to clean up the Singapore River and upgrade the storm water drainage system throughout the city. Over a ten-year period from 1977-1987, a significant number of modern drains were built, diverting formerly polluted waters,

including the Kallang River, into concrete channels. The river clean up effort was a success by many measures; Prime Minister Lee Kuan Yew explains:

> Only ten years ago our rivers were like sewers, smelly, dirty and devoid of fish or any aquatic life…It was a triumph to have diverted all toilet and sullage (bath and kitchen) water into sewers, and to have resettled hawkers, boatmen, pig and duck farmers. We now have pleasant riverscapes. We can walk along the river sides and fish or boat, ski and swim, all unthinkable only a few years ago. It is an achievement many societies cream of, but few have achieved. (Ministry of the Environment, 1987)

While rampant pollution and frequent flooding were addressed, the drainage system also had the effect of turning formerly meandering rivers into straight, inaccessible, deep (and dangerous) infrastructure. People no longer had access to the rivers in the way they were accustomed to, which despite the incredibly important need filled by the drains, also represented a major cultural shift, what some historians call a "critical transformation" in people's access to water and nature in an increasingly urbanizing environment (Luan and Huan 1986). Like countless other world cities, Singapore was founded along its river, and according to Luan and Huan's (1986) oral history project:

> The Singapore River once played a vital role in our history…it was an economic and trading artery of colonial Singapore…the river was also a mart where the diverse migrant communities which made up colonial Singapore worked out how best to live harmoniously with their fellow men and trading rivals, and conduct their affairs, as far as possible, to everyone's benefit (v).

These and other historians appreciate that the Singapore River and other waterways were not always harmonious spaces and were subject to many of the same technological and cultural shifts as other urban rivers globally. However, it is striking to note, as Luan and Huan (1986) do poetically that old ways of life – "all traces of the river trade – sinewy and weatherbeaten twakowmen, boat owners, coolies, merchants – have vanished. Gone the quickening pulse, the daily hum of activity… (111).

The impetus to re-design Bishan Park came with the opportunity to implement a number of pilot projects as part of Singapore's new Active, Beautiful, Clean (ABC) Waters Programme. Bishan Park was originally designed and built primarily as a scenic and exercise park for local residents. A Japanese architect designed the park, which opened to the public in 1988. In 2006, with the launching of ABC Waters Programme, Singaporean officials sought professional consultants to assist with master planning for the city's three major water catchment areas. Herbert Dreiseitl, and his firm, Atalier Dreiseitl, were selected to assist with master planning efforts for Singapore's Central Catchment area. Khoo Teng Chye, who was CEO of the Public Utilities Board (PUB) from 2003-2010, describes the ABC Waters Programme as an effort to provide additional recreation opportunities, address environmental issues, and also raise awareness about water throughout the island:

> We wanted people to be aware that we are all living in a watershed: that the water that falls in their neighborhood, in their gardens goes into the stormwater drains and then on into the rivers and canals and ultimately ends up in our reservoirs. We wanted people to have that sense of knowing where the water comes from and that there could be opportunities to enjoy the water, to get close to the water. (Khoo Teng Chye, pers. comm.)

Among the objectives outlined in the ABC Waters Master Plan (2008) is "to get the community closer to the water so that in the process, they will learn to treasure and take ownership with it." Prime Minister Lee Hsien Loong, in a speech at the Active, Beautiful, Clean Waters Public Exhibition Opening Ceremony in 2006, underscored this intention:

> In the past, we protected our water resources by keeping people away from them; now, we will bring people closer to water so that they will enjoy and cherish it more. By linking up our water bodies and waterways, we will create new community spaces that are clean, pleasant and bustling with life and activities. (Active, Beautiful, Clean Waters Master Plan, 2008, 3)

Dreiseitl's vision for the Central Catchment is one of "Nature & Humanity in Harmony – Confluence of Vitality" (Active, Beautiful, Clean Waters Master Plan, 2008, 24). This vision imagines the rivers proceeding through life cycles from "birth" at the Peirce Reservoir through "youth," "maturity," and finally "rebirth" at the sea. Concurrently, the water exhibits different characteristics along the journey through the Central Catchment from the "tranquil" experiences of the reservoirs to the "dynamic" rivers and canals, and finally the "joyous" arrival at Marina Bay (Active, Beautiful, Clean Waters Master Plan, 2008, 24).

Bishan Park, already a well-loved local park, was selected as the initial pilot project for the ABC Waters Programme due to its proximity to the Lower Peirce water reservoir and its location near a large population of local residents. The Kallang River is part of the Central Catchment's "dynamic" section, and is also considered a "youthful" part of the water system, described as a place where the river is "dangerous and wild…learning and searching for shape" (Active, Beautiful, Clean Waters Master Plan, 2008, 23). The ABC Waters Master Plan imagined how the park would express this youthful dynamic: "Bishan Park provides us with the perfect space to express the youth of the river. This will be symbolized by wild and playful streams and meandering river forms" (Active, Beautiful, Clean Waters Master Plan, 2008, 14). One of the explicit intentions from the start, in addition to piloting the recreational, aesthetic, and environmental goals of the ABC Waters Programme, was to highlight the re-naturalization of the river as an education tool, so local residents would both have a closer relationship with the water and develop a deeper understanding of the relationship of the water to the site and as an important source of drinking water for the entire city.

The monsoon drain encasing the Kallang River was constructed around the time that Ang Mo Kio and Bishan New Towns were being constructed, in the mid-to-late 1970s. This means the

drain and the original Bishan Park date from approximately the same decade, and were both in need of upgrades around the time of the launch of the ABC Waters Programme. In addition, the monsoon drain literally acted as a barrier between residents in Bishan HDB housing wishing to access Bishan Park. When the park was in design and planning stages, Tay Suan Chiang reported in *The Straits Times* that along with other exciting plans for ABC Waters projects throughout the city, "Bishan Park will no longer have the gaping maw of a concrete canal separating it from Bishan housing estate" (February 3, 2007).

At the outset of the planning process for Bishan Park, Herbert Dreiseitl quickly learned that he would need to adapt participation approaches he was familiar with from projects in western countries to the specific political and cultural situation in Singapore. Meetings with people involved in local community organizations tend to be structured more as a forum for quick agreement and approval of design and development plans, rather than as a setting for discussion and conversation that Dreiseitl was accustomed to. Dreiseitl describes how, during the initial week he spent on site in Bishan Park, he spent a great deal of time observing and interacting with park visitors in a casual, informal way, trying to gain the crucial cultural information that would help inform his "outsider" perspective. One productive encounter Dreiseitl had was a discussion with community gardeners tending the garden plots at the eastern end of Bishan Park. Dreiseitl's informal discussions with the gardeners deepened his understanding of the importance of their particular location: the soil in the garden plots had taken years to develop into a rich and fertile place to grow plants in, so retaining the community gardens in that particular location became an important part of Dreiseitl's final design for the park.

Dreiseitl and his team from Atalier Dreiseitl Asia, held a week-long charrette with stakeholders from several agencies, including PUB and the National Parks Board (NParks). During the sessions, which were held on-site at Bishan Park in a small NParks office, not much larger than a shed, participants discussed cultural values and principles important for the project, and used crayons and pencils to hand-sketch ideas for how the "blue" of the river might be integrated with the "green" of the park. At the end of the week, a presentation was made to the CEOs of the two agencies; Herbert Dreiseitl described in a phone conversation how the CEOs were very impressed by the work:

> These two gentlemen…were really thrilled by the presentation - they said: 'That's really amazing the ideas you have come up with, and it is even more convincing that you have not been in an air conditioned place somewhere, but that you really did it out there where you have every day at least two times pouring rain, where everything gets wet…you are sweating, your pencils and crayons start almost to float away because of the sweat you put on the papers.'

Figure 6. Initial brainstorming session for Bishan-Ang Mo Kio Park
Image courtesy of Atelier Dreiseitl.

The presentation was made using powerpoint, but all of the slides were scans of hand sketches produced during the week-long charrette.

At the conclusion of the presentation, the two CEOs agreed to combine their budgets for renovating the park and revitalizing the river, launching a collaboration between the agencies that would continue throughout the design and planning process and that still exists today for park maintenance and operations. Previously, Bishan Park was a 52-hectare park managed exclusively by NParks, adjacent to about 10 hectares occupied by the Kallang River monsoon drain, managed by PUB. Since the re-design and re-construction, the park and river have been integrated into a continuous 62-hectare space, managed and operated jointly by the two agencies.

Over the ensuing months and years, Herbert Dreiseitl and ADA, along with engineers from CH2M Hill, drafted and refined designs and plans for the river and the park. One of the most important aspects of the revitalized park would be the implementation of bioengineering techniques, which had never been implemented on a large scale in a tropical climate before. In order to address this, the project team conducted a nine-month test reach, constructing and planting eleven bioengineering techniques known to succeed in more temperate climates. At the conclusion of the test reach, six of the techniques were determined to fit the context, and these have been implemented throughout the project. These include (explanations excerpted from Bishan-Ang Mo Kio Park ABC Waters interpretive panel):

- **Fascines** – bundles of young shoots tied together to prevent erosion
- **Brush mattress with fascines** – thick mats of cuttings to prevent erosion
- **Gabions** – steel wire baskets filled with rocks to prevent erosion and protect riverbanks
- **Rip-rap with cuttings** – rocks placed along banks with plantings inserted between them

- **Geotextile wrapped soil-lifts** – alternating layers of plantings and permeable fabric filled with soil
- **Reed rolls** – geotextile fabrics planted with vegetation and soil and secured with wood stakes

In this way, and with the dedication of a significant amount of time to testing the techniques to see what would fit, the designers and engineers went beyond common practice to seek solutions that would specifically fit the local context. In some ways, the challenge of doing something that had never been done before actually became an asset because selected interventions now fit the site and conditions more appropriately than they would had the designer and engineers simply guessed what might have worked, rather than having the time and patience to seek out and pay attention to the wisdom of the local ecology.

Figure 7. Test reach area of Bishan-Ang Mo Kio Park

The results of the test reach have been largely successful, but NParks Riverine Parks Director Ang Chien Hong is quick to point out that the Kallang River is a "live" river, and long-term maintenance strategies and techniques must be constantly reevaluated over time. Since the park was re-planted, the plants have grown, some have survived and some have been replaced, and the river moves, ebbs and flows as the years go by and things in the park change. As of February 2014, the River has not yet flooded past the high water mark, despite a record deluge of 1 hour 20 minutes of rainfall in February 2013.

While the test reach was being implemented, the design team held a workshop with local schoolchildren and their families to explore the waters of the Kallang River and learn about the local river life and ecology (Figure 7). The children then worked to create pieces of art that reflected their own interpretation of the river (Figure 8). These art pieces were cast in plaster, and quite a few of them have been implemented into the design of the new "Bubble Playground" at the center of the east section of Bishan-Ang Mo Kio Park (Figure 9). Dreiseitl has a background in art and sculpture, and has incorporated community artwork, particularly children's artwork, into several other landscape designs, including Tanner Springs Park in Portland, Oregon. While the hands-on workshop itself had the potential to inspire children and their parents to deepen their understanding and care for the creatures in and conditions of the river, ultimately, physically embedding local children's creations into the playground's infrastructure also serves to reify the importance of community input in the making of parks. Dreiseitl's vision is that someday the children who experienced the river as it was changing and created the sculptures will bring their own children to the park, solidifying a sense of ownership and care and connection to the experience of re-making the park for many years to come.

Figure 8. Children and families exploring the Kallang River
Image courtesy of Atelier Dreiseitl

Figure 9. Children's artwork inspired by the Kallang River
Image Courtesy Atelier Dreiseitl

Figure 10. Children's art interpreting the Kallang River in Bubble Playground

While it may be difficult in all cases to draw direct correlations between these instances of personal involvement in the design and planning of Bishan-Ang Mo Kio Park and the design outcomes, the park today is an extremely successful public space. The river is re-constructed and now meanders sinuously along for about 2.7 kilometers between still-existing monsoon drains. In particular, when you approach the park from the far southeast corner, where Bishan Road meets the park connector, you are met with an incredible view of the existing monsoon drain in the foreground and the new Kallang River and Bishan-Ang Mo Kio Park beyond (Figure 10). This vision, of unearthing the river from its former concrete confines and revitalizing natural spaces in proximity to so many local residents living in high-rise apartments, represents not only a significant transformation of the park itself, but also a larger cultural shift towards re-inventing and re-constructing nature's role in the city. Part of this shift will also include an even more explicit focus on incorporating Singaporean's ideas for future parks into future designs and plans; at the opening day for Bishan-Ang Mo Kio Park, Prime Minister Lee Hsien Loong asked that residents to:

> Help us co-create our national plans…share with the National Parks your ideas…what do you want to see in your parks? Not just ideas for the physical landscape but for developing an open and neighborly culture…let's work hard to make this a truly inclusive society (Chang 2012).

Figure 11. Bishan-Ang Mo Kio Park, view looking west from Bishan Road

Undoubtedly part of this new role is a far more intimate connection between people, particularly children, and the water than was possible when the park and the river were separate entities managed by separate agencies and the flow of the river was controlled by the concrete canal, inaccessible to people (at least legally). On several visits to the park in February 2014, multiple children, often with parents and elderly relatives, were playing in the river, digging for shells, and using nets to catch minnows and small fish (Figure 11; Appendix Table 2). On one occasion, the researcher overheard a small child, who was wading in the river searching for shells exclaim: "So many conch shells! It must be my lucky day!" These new multi-sensorial opportunities to interact with the river - visual, haptic, aural – celebrate the beauty and sense of discovery possible in nature, and are also inspiring a new generation of Singaporeans to care

about what happens to that nature. In February 2014, an unusual number of dead fish were found floating in the Kallang River, and residents were quick to demand answers about what had happened to the fish. Lim Yan Liang reported in *The Straits Times* that PUB "said the deaths could have been caused by reduced levels of dissolved oxygen in the water arising from [a] recent dry spell" (February 7, 2014). The article also quotes wildlife consultant Subaraj Rajathurai regarding the tenuous condition of constructed nature: "artificial ecosystems need to be managed with more regular and stringent checks so any adjustments needed can be carried out sooner, rather than waiting for mass deaths to trigger a response." While re-naturalizing the river has created new opportunities to interact with and care about the water, it also presents new and complicated ecological conditions that challenge previously suitable engineering solutions and have the potential to raise public awareness about shifting technological and ecological landscapes.

Prior to the revitalization of the river and the park, the Kallang River canal posed serious flood risks and flooded frequently. A major concern with re-naturalizing the river was to reduce flood risk and increase safety for people visiting and passing through the park on a regular basis. While some advocated for a fence to protect people from the river's flow, Herbert Dreiseitl was adamant that the riverbed be open to people to walk through. As a result, warning speakers that will project warning messages in multiple languages in the event of an impending flood event as well as red high water markers are installed along the river banks throughout the park. The new riverbed is designed in such a way that even in the most dramatic storm events, the water seeps up the gradually sloped banks slowly, and should be quite easy for people to retreat from if they are in the riverbed at the time when a heavy downpour begins.

Figure 12. Bishan-Ang Mo Kio Park visitors interacting with the Kallang River

The actual unearthing of the water in the park was more extensive than just the Kallang River monsoon drain. As the topography of the park was re-shaped, additional existing box drains were uncovered and re-constructed as naturalized stream beds (Figure 12).

Figure 13. Re-naturalized drainage; existing box drain top center

None of the concrete excavated from the drains was removed from the site – it was re-used in several ways: as material for the construction of Recycle Hill (Figure 13), as stepping

stones and other park infrastructure (Figure 14), and for stabilization purposes in the newly constructed stream beds and along the river banks. Though the concrete is integrated throughout the park's new features, it has the appearance of being part of the landscape. Upon closer inspection, though, rough pieces of concrete lie scattered near some of the banks, which evokes an image of the former monsoon drain having exploded in a dramatic eruption, spewing shards of the past condition but breaking apart the very foundations of an older, more controlled, less organic existence (Figure 15).

Figure 14. Recycle Hill

Figure 15. Concrete re-used as Recycle Hill (lower left) and stepping stones (center)

Figure 16. Pieces of concrete from the former monsoon drain and box drains, scattered around the park for stabilization purposes, evoke the feeling that the drains have "erupted," representing a dramatic shift from a highly controlled human-dominated approach to managing water and nature to one much more balanced with natural cycles and flows

The new layers unearthed and re-formed at Bishan-Ang Mo Kio Park provide ample opportunity for re-imagining socio-ecological connections in the densifying city-state of Singapore. One slightly darker side, however, is the layers left unexplained and uninterpreted: the long history of a working relationship between Singaporeans and the river and the land, the stories of people whose remains were formerly buried at the Pek San Teng Cantonese Cemetery (and memorial space(s) for decedents to visit and pay their respects), and the dramatic demolishing and removal of entire villages, including Kampong San Theng, in order to make way for new towns, and relocation of thousands of residents to high rise housing. New recreational connections with water and local ecology will likely provide ample benefits to millions of Singaporeans each year, young and old, but the privilege of this place is built on a site of deep spiritual and cultural history that is not necessarily realized as part of the design.

Other Examples of Experiential Participation for Urban Parks

Several additional cases of experiential, site-based participation for designing and planning urban parks were uncovered through the survey deployed to academics and professionals (Table 4 of the Appendix), as well as a presentation by Ram Eisenberg as part of the Spring 2014 Transduction Lecture Series at the University of Virginia. These examples: Chavis Park in Raleigh, North Carolina, Union Point Park in Oakland, California, and Kiryat Sefer Garden in Tel Aviv, Israel are profiled briefly below.

Chavis Park

Chavis Park, in the South Park East neighborhood of Raleigh, North Carolina, is a park like many others with a significant community and environmental history. In 2010, North Carolina State University's Downtown Design studio engaged long-time senior African-

American residents of the local community in a number of ways to identify and prioritize community assets in order to develop a community vision plan. The methods used for identifying and cataloging community assets: interviews, diagramming, and collection of artifacts representing community history were successful and provided "rich and useful narratives," but lacked important connections to actual geographic location (Boone, 2012, 176).

Kofi Boone and his team of landscape architecture graduate students initiated a participatory video project titled "Cellphone Diaries," training local residents to use smartphones to capture on-site impressions and memories of places that had meaning to them in Chavis Park. Boone describes the potential of this method: "participatory video provides insights on community perceptions and attitudes that face-to-face workshop settings, typically off-site from the study area, cannot" (Boone, 2012, 174). One of the stated objectives of the project was to compare results gleaned from the participatory video experiment with other off-site engagement methods ongoing as part of the development of the community vision plan.

Local residents documented stories and memories throughout the park, including references to the importance of the park as a gathering place for African-American people during the Jim Crow era of segregation, the significance of the location of the carousel, the original park's one remaining asset, and descriptions of many activities that once took place throughout the park, including parades, dance and swim competitions, and large Sunday picnics. While the participatory video methods were not perfect, Boone suggests that themes were discussed longer and deepened through this exercise than through other off-site means, and that "with improved training protocols, stakeholders could provide a self-paced and poly-vocal interpretation of places" not possible through traditional workshop and interview methods (Boone, 2012, 181).

Figure 17. Photo montage of places of meaning in Chavis Park
Image: Boone, Cellphone Diaries, 2012

An unintended benefit of the Cellphone Diaries project was increased visibility of the participatory method: videos were uploaded to YouTube and placed geographically on an interactive online map, making the memories and stories more publicly accessible and reinforcing participants' sense that their voices were being heard.

Union Point Park

The process of creating Union Point Park in Oakland, California involved community participation at multiple scales and over a significant period of time. Designers describe the design and planning for the park as a "collective discourse-building process," an alternative preferable to common participatory practice (Hou and Rios, 2003, 26). In the late 1990s, the city of Oakland established the Fruitvale Recreation and Open Space Initiative (FROSI) and also initiated major planning for the Oakland waterfront. The Unity Council, a community organization, circulated petitions, organized meetings, and arranged for significant public participation at events in support of the development of Union Point Park as a community space. In addition to considerable mobilization efforts, including community organizing techniques like

going door-to-door with a "campaign" for the park, the Unity Council and others organized an Earth Day event, inviting community members to visit the formerly industrial site for Union Point Park, many for the first time. Students from the University of California, Berkeley designed surveys to elicit public comments on-site with multi-lingual walking and boat tours (Hou and Rios, 2003, 23). Significantly, Hou and Rios (2003) also suggest that "the Earth Day celebration provided a crucial context within which to articulate the ecological connection of the site" (23).

The design process and outcomes for Union Point Park directly reflect community participation, and in several ways add complexity to what might otherwise have been a straightforward design process. Union Point Hill, a significant (and popular) topographical feature of the park, was inspired by ideas generated in one of a series of youth charrettes. The park design is also said not to separately represent the diverse cultural traditions of the neighborhood, but to "reflect the transcultural identities and hybrid conditions that give meaning to new immigrant experiences" (Hou and Rios, 2003, 25). One example of this is a prominent sculpture in the park, that originally was intended as a memorial to a historic figure in the founding family of the neighborhood. The Unity Council and others inspired creation of an alternative sculpture of a woman dressed in multiple types of clothing of different racial and ethnic traditions and celebrating women's contribution to the neighborhood (Hou and Rios, 2003, 25). Ultimately, Hou and Rios (2003) contend that the approach taken for Union Point Park represents a "multifaceted social and political process and purposeful framing and identity building…[embodying] the complexity and richness of contemporary social, cultural, and political spheres," one that should be emulated as limited urban land and growing and diversifying urban populations continue to negotiate design, development and construction of recreational and nature spaces in cities (27).

Kiryat Sefer Garden

Early in the design process for Kiryat Sefer Garden, in Tel Aviv, Israel, designer Ram Eisenberg adopted an explicitly community-centered approach to the park's creation. A community space from the start, Eisenberg describes how before the tiny plot of land was anything more than a concrete slab, before it was even written as an official government plan to make it one, residents made their own sign declaring "Here exists a democratic ecological park." Eisenberg sought to uncover as many layers as possible, to realize and deepen existing connections between passionate community members and the ecology of the site. In order to achieve this, Eisenberg and his team embraced what he describes as an "intense" participatory process over the course of about six months, prioritizing experience of the existing ecology as a way to elicit democratic decision-making about the future of the space.

Eisenberg describes an important point of departure being that "public participation begins with the young," and indeed many of the most hands-on, experiential techniques and outcomes of the process had to do with children and their interaction with the existing site and their vision for its future. Eisenberg describes his initial plan that when the community came together on the site, they would build models together, but that what happened that day was a bunch of children playing in the mud, with what he can only describe as "delight." That sense of delight and wonder the children took with the physical material of the site inspired a series of interventions designed to continue to evoke such delight even when the pile of mud on the site was gone. These interventions included the children's vision of a spaceship for bugs being realized in the form of a "bug motel," embossing the shapes of leaves into the otherwise smooth concrete plinths of the garden (which Eisenberg describes the contractors executed as "a labor of love" with great care and artistic sensibility), and most exceptionally, the creation of thousands of

cast concrete "treasure boxes." These small boxes each enclosed a small "treasure" that a child had found, such as a stone or a leaf, and when completed, the boxes were buried throughout the park, as secrets under the earth. While the original plan included community members as participants in the actual construction of the garden, when this was not permitted, the cubes became a tangible physical artifact that each person contributed, and in some ways the ultimate invisibility of the contributions strengthens the symbolism of the community's intimate knowledge of the place and the process, and ensures greater longevity of the pieces (despite those that eager children dug up in excitement immediately after the park opened!)

In the same way that Eisenberg and his team sought local wisdom of the people, they also unearthed the wisdom of the local ecology in several powerful ways. Small, clear ceramic tiles cover and preserve tiny treasures such as a dead lizard, a small skeleton, or fungi that are revealed if one looks closely. Concrete, re-used from a nearby construction site, is placed strategically to allow people closer and more intimate access to the garden's water features. Finally, Eisenberg engineered a wire sculpture to exact specifications that will attract birds to rest, with an eight-meter radius of safety from human interference on all sides.

Figure 18. Bird perch in Kiryat Sefer Garden
Image credit: http://reed.co.il/blog

In these ways, Kiryat Sefer Garden unearths and celebrates even the tiniest forms of urban nature, constructing new ways of interacting with, treasuring, and connecting with the site, firmly based in respect and collaboration with both human and animal needs and delights.

Comparing Cases of Experiential Participation for Urban Parks

Cases discussed above (and reflected in Table 1 below) represent a sample collection of experiential, participatory, field-based models for engaging community members in planning for urban parks and nature areas. While the cases under consideration are by no means exhaustive of methods and models possible, each case articulates a different approach, and each approach presents unique advantages and limitations that might inform the other cases and future practitioners and/or community members hoping to undertake experiential participation for urban parks and nature areas. In addition to suggesting cases, survey respondents also suggested several benefits of experiential, participatory, field-based models. Maren King, Director for the Center for Community Design Research at the State University of New York College of Environmental Science and Forestry suggested the following possible benefits:

(1) Allowing neighborhood residents to make a contribution to and improve the quality of life of their communities;

(2) Increasing designer and planners local knowledge of existing conditions, history, patterns of use, and sacred places;

(3) Designing parks and nature areas more responsive to people and place;

(4) Learning and sharing new skills, information, and perspectives, increasing dialogue among participants and between designers, planners, and participants;

(5) Deepening community members' understanding of why decisions are being made, and inspiring them to stay involved with projects through implementation and/or be involved with other projects in the future.

Mia Lehrer, principal of Mia Lehrer + Associates, suggested that experiential, participatory, field-based models benefit the design process through:

(1) Promoting local action and engagement;
(2) Understanding the whole community and the full range of issues shaping its future;
(3) Reflecting core community values and deeply held community believs and ideals shared by its members;
(4) Addressing emerging issues not previously assessed;
(5) Envisioning a preferred vision moving forward.

Key findings when comparing cases of experiential, participatory, field-based methods include: (1) the importance of designer and planner orientation towards community involvement as a means for encouraging the practice, (2) the value of creating artifacts as a result of community engagement (children's art for bubble playground, videos produced by community members at Chavis Park, treasure boxes buried under Kiryat Sefer Garden), (3) the potential for deeper insights gained into cultural significance and ecological knowledge when participation and designer-community member interaction happens on-site, and (4) challenges faced such as different cultural models for participation, interpreting lay participants' ideas and values into design, and devoting the amount of time and financial resources needed to adequately involve community members in the design and planning process.

Table 1. Cases of Experiential Participation for Urban Parks

Project	Location	Point in Process	Methods	Duration	Advantages	Limitations	Outcomes
Bishan-Ang Mo Kio Park	Singapore	Pre-design	- On-site charrette with stakeholders - Children's art workshop (Bubble Playground)	One week; One day	- Designer attuned to cultural values - Physical manifestation of community learning and ideas	- Lack of local resident participation	Solicited stakeholder input regarding cultural significance and values; children's art embedded in playground
Chavis Park	Raleigh, North Carolina, USA	Post-occupancy	- Cellphone diaries: storytelling using smartphones	Several weeks	- On-site storytelling provided outlet for information not gleaned through other means	- Technology difficult for older community members to use	Solicited community members' stories and memories of the historic park
Kiryat Sefer Garden	Tel Aviv, Israel	Pre-design	- On-site charrette with community members - Children's art (Treasure Boxes)	Six months	- Physical manifestation of community learning and ideas - Deep designer and community learning/exchange	- Subject to community members' interests and enthusiasm	Solicited community members' input regarding cultural significance and values; children's art buried underneath the garden
Union Point Park	Oakland, California, USA	During design phase	- Earth Day event	One day	- Large-scale, involved hundreds of community members	- Pre-determined design; soliciting feedback rather than incorporating community ideas from the start	Solicited community feedback on-site; first time many had visited the site

Conclusion

Experiential field-based participation for planning and designing urban parks is not the norm. Several factors seem to be common indicators of when such methods might be used, including desire for community buy-in for designer and/or government-sponsored plans, some kind of threat or crisis to something meaningful to community members, and in some cases, community demand for a space of their own and participation in the process of making that space. In the case of Bishan-Ang Mo Kio Park, the participation process was driven primarily by the designer's desire to deepen understanding of the local culture and to give local children the opportunity to experience and interpret the evolving urban ecological conditions of their park. In the case of Chavis Park, the initial participation plan was for the entire South Park East neighborhood, but when elected officials announced plans to re-locate the historic carousel in the park, the Cellphone Diaries adopted much more specific focus on Chavis Park, and participants made many references to the historical importance of the carousel as the last remaining feature of the original fabric of the park. Kiryat Sefer Garden was "occupied" by the community, who established a "park" on the site even before it was officially sanctioned. The highly participatory community process on the site was both a reflection of the community's commitment to the space as a community gathering spot and their demand to be included in the democratic process of shaping what it would become.

As the impetus for experiential field-based participation varies, so do motivations of designers, planners, and other leaders involved. The most commonly cited reason for engaging participants is to garner support for a plan or proposal, and often working with community members up front is seen as a way to avoid lengthy political battles and stalling of projects that

might ensue if community members are dissatisfied with design and planning outcomes. A more subtle and arguably more compelling motivation for involving the community in design and planning for urban parks and nature areas was keenly evidenced in the process for re-designing Bishan-Ang Mo Kio Park: designers' attempts to understand and interpret local cultural significance into design outcomes. Herbert Dreiseitl described in a conversation the importance of on-site participation for Bishan-Ang Mo Kio Park, which, along with master planning efforts for the Central Catchment, was his first major project in Singapore:

> For me and my team, it was extremely important - because we were coming from a totally different culture - to understand what the local people feel and think and to be part of that discussion and basically to listen and ask questions.

Today, Dreiseitl is pleased with the design outcomes for Bishan-Ang Mo Kio Park, which he feels in many ways evidence both a universal or global connection with water, and also specific psychological and spiritual significance for the multi-cultural residents of Bishan and Ang Mo Kio New Towns. While Dreiseitl admits that public participation generally in Singapore is quite different from what he was used to dealing with in Europe and North America, in some ways not achieving expected results through formal processes opened up new ways of thinking about how to engage with people in an effort to design the park. He asked himself: "what kind of participation or involvement fits here?" and sought ways to translate processes familiar to him in different ways and at human and informal scales, arguably deepening and strengthening his own personal connection to the people and the site, and ultimately greatly benefiting the project as a whole.

Each case discussed above, as a result of designer and community motivation, funding, and other reasons, engaged in experiential site-based community participation for varying lengths of time – from one day to several weeks to nearly 6 months. Regardless of the amount of

time spent, each case does seem to reflect significant values addressed through experiential site-based participation. Among these are:

(1) Inspiring people (designers, planners, and community members) to care about cultural and ecological history of the site, the city, and the region;
(2) A greater sense of community ownership of and personal investment in urban parks;
(3) Design more authentic to the local culture and ecology, more responsive to people and place;
(4) Design that reflects community values, beliefs, and ideas, through physical manifestation of community members' ideas (e.g. saving trees uprooted during excavation for the Kallang River in Bishan-Ang Mo Kio Park, creating the "bug motel" as a result of imaginative child-participants for Kiryat Sefer Garden, and creating a "tower" based on youth ideas for Union Point Park).

Experiential, field-based models are also subject to limitations, including:

(1) Often require additional time and financial investment;
(2) Availability and interest of potential participants;
(3) Difficulty of replicating at larger community-wide or regional scale
(4) Subjectivity and reliance on designer/planner/participant motivations.

While positive community change resulted from each of the cases profiled, it is difficult to determine whether the experiential, site-based participation specifically was a causal factor, or, more likely, if the community orientation of the designers and the overall processes were equally responsible.

Galen Cranz, a well-known writer on urban park history (Cranz 1982, Cranz and Boland 2004), suggests in her 2004 article "Defining the Sustainable Park: A Fifth Model for Urban Parks" that a new type of park is emerging in the modern city. Cranz imagines this new type of park, the "Sustainable" park, departs from earlier park-making traditions, and she holds that

contemporary park advocates support a participatory approach to park stewardship and increased contact with local ecology. Ultimately, Cranz envisions a departure from traditional methods of planning and design supporting an "evolutionary aesthetic" and greater incorporation of multiple voices and visions in pursuit of "urban harmonies":

> Because Sustainable Parks involve the community broadly and in myriad ways, they are no longer the specialized domain of experts and managers. Community involvement necessarily brings a different set of form-giving forces to bear on park design and management, suggesting that the idea of a developmental or evolutionary aesthetic has enormous social application. An evolutionary aesthetic necessarily shifts the purpose of design and the role of the designer from artist-visionary to a medium through which the forces of nature and society express themselves. If designers see themselves as weaving new, unexpected developments into a pattern, even shifting the pattern itself, they would embrace a role that has been likened to jazz and other improvisational performance arts. The park, gardening, and landscape professions may attract those who are gratified by working with laypeople and other experts over time to create urban harmonies on the spot (Cranz and Boland, 2004, 118).

While Bishan-Ang mo Kio Park and the other cases profiled here are not idealized or perfect cases to emulate, traces of Cranz's "evolutionary aesthetic" and "urban harmonies" may be found throughout the design and planning process and embodied in the parks today. Experiential field-based participation for planning and designing urban parks is not common practice, but adopting such techniques and methods, even on a small scale, may represent a significant step towards authentic, relevant, sensitive and sustainable urban nature.

Limitations

One of the most important lessons learned from this project is the inherent challenges in studying experiential, participatory methods for designing and planning urban parks. Ideally, one would study such methods *in situ* as they are happening, but there is no guarantee before participating in a project or observing the participation process that the methods used will truly be participatory, that community members will participate, and that participation if it does occur will have any measureable effect on design and planning outcomes. Consequently, it seems logical to study participatory practices after they have occurred, but several methodological limitations may be important to consider.

Such methodological limitations include gaining access to records and information about the participatory process, such as photographs, drawings, video, and notes, which may exist to varying degrees but be difficult to obtain. While the process may have been documented in some way, in most cases it will not have been documented with all of the details one might be seeking months or years after the participatory process took place. Depending on the time elapsed since the participatory process occurred, another limitation is necessarily imposed by the availability of participants (Do they still live in the project area? Do they still work at the same firm or organization?), and their interest in being involved with a study. If participants are available and willing to engage in the research process, another limitation is the memory participants do or do not have of the participatory process. Design and planning firms and government offices are busy places, with many projects, and it may be difficult or impossible for people to recall the details of a particular process given the lapse of one or more years.

Recommendations for Future Research

In order to address the limitations discussed above, the most ideal scenario for studying experiential, participatory processes would be to identify a practitioner and/or project and become a participant/observer of the process. Another approach might be to identify designers and/or planners conducting the desired types of processes as part of their work and study the arc of a practitioner or firm's practice over time, rather than focusing on individual projects. This type of approach might allow for studies with greater data points and the ability to compare outcomes of similar participatory processes in different political and environmental circumstances.

Additional future directions include development and deployment of a comprehensive survey of design and planning professionals involved in urban park design and planning to understand the current "state of the art" for public participation. What types of methods are being used, with what aims, and how do design and planning professionals perceive the effectiveness and/or usefulness of the methods and of the participation itself? What are design and planning professionals' attitudes toward community participation and involvement in the design and planning process, and how are these reflected in the types and qualities of methods used?

A final recommended area for future study is an in-depth analysis of post-occupancy evaluation measures for urban parks and nature areas. Understanding how urban parks are and are not being used, and how and why design and planning professionals evaluate use of and effectiveness of adopted designs and plans will afford a greater understanding of the relationship between new and evolving forms of urban nature, and suggest future directions for participatory

design practice. Post-occupancy research of urban parks and nature areas in combination with one of the other methods suggested above might also provide as neutral a way as possible for discerning effects of participation methods adopted by different design and planning teams for different projects in different locations and cultural contexts.

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Appendix

Table 1. List of individuals consulted for initial identification of case
(individuals in italics did not reply to inquiries)

Name	Organization
Ernest Cook	Senior Vice President, Conservation Director, Trust for Public Land
Scott Dvorak	Program Director, Parks for People-Newark, Trust for Public Land
Tom Eitler	President, Research and Advisory Services, Urban Land Institute
Peter Harnik	Director, Center for City Park Excellence, Trust for Public Land
Randolph T. Hester	Professor Emeritus, University of California, Berkeley, Landscape Architect, Scholar
Fred Kent	Director, Project for Public Spaces
Tori Kjer	Program Manager – Parks for People- Los Angeles, Trust for Public Land
Ann Looper	*Managing Director, Publishing and Resource Development, American Society of Landscape Architects*
Setha Low	*Author,* Rethinking Urban Parks
Jerry Meier	*Director of Research, National Recreation and Park Association*
Catherine Nagel	*Executive Director, City Parks Alliance*
David Rouse	*Research and Advisory Services, American Planning Association*
Paulina Sosa	IAP2 USA Administrative Coordinator

Table 2. User counts at Bishan-Ang Mo Kio Park

Bishan-Ang Mo Kio Park User Count
Monday 3 February 2014
11:00 AM – 12:00 PM
Location: Picnic Tables near Foot Reflexology

Activity	Adult		Teen		Child		Total
	Male	Female	Male	Female	Male	Female	
Biking	6	2	3	1	5	3	20
Dog walking	1		1				2
Exercise (walking, jogging, etc.)	1	1					2
Kite flying	1				1	1	3
Maintenance	1						1
Playing in river	2	1			7	2	12
Scooter					4	2	6
Sitting/reading	2	1					3
Skateboarding	1		4	1	5	2	13
Strolling	6	7	2	2	2	2	21
							83

Bishan-Ang Mo Kio Park User Count
Tuesday 4 February 2014
5:00 PM – 6:00 PM
Location: Lounge chair near bridge opposite McDonalds

Activity	Adult		Teen		Child		Total
	Male	Female	Male	Female	Male	Female	
Biking	11	3	5		4		23
Dog walking	1	2	1		1		5
Exercise (walking, jogging, etc.)	34	9	4	6			53
Kite flying							0
Maintenance	5	3					8
Playing in river	3		2		1	3	9
Photography				2			2
Rollerblading					1		1
Scooter					1		1
Sitting/reading							0
Skateboarding			1				1
Strolling	49	29	8	13	17	5	121
							224

Bishan-Ang Mo Kio Park User Count
Saturday 8 February 2014
8:00 AM – 9:00 PM
Location: Throughout Park

User count was attempted on Saturday 8 February, but there were far too many people to capture given the limitation of a single researcher. Activities observed on other days and times, such as biking, dog walking, exercise, playing in the river, and strolling, were also observed on Saturday morning. One distinction not observed on other days was large groups conducting exercise classes in different areas of the park.

Table 3. Survey Questions

Survey Questions

e-mail Body: Greetings: I am conducting a research project about experiential, field-based methods for urban parks and nature spaces. [NAME] recommended that I contact you to see if you might be able to recommend projects that fit the parameters of my study.

1. **Have you led or participated in experiential, field-based public participation methods for urban parks and/or nature spaces, such as participatory research and design and/or other**

active, field-based methods? If so, please describe the nature of these methods, when and where they were used, and where and how I might find additional information about the project(s).

2. **What benefits, if any, do you think are gained from the use of experiential, field-based public participation methods for urban parks and/or nature spaces?**
3. **Is there anyone else you would recommend I consult with who may have led or participated in experiential, field-based public participation methods for urban parks and/or nature spaces?**

Table 4. List of individuals contacted for survey
(individuals in italics did not reply to inquiries)

Name	**Organization**
Cheryl Doble	Syracuse University
Rula Awwad-Rafferty	University of Idaho
Dianna Balmori	*Balmori and Associates*
John Beardsley	*Dumbarton Oaks*
Kofi Boone	North Carolina State University
Mallika Bose	Portland State University
Susanne Cowan	Washington University at St. Louis
Galen Cranz	*University of California Berkeley*
Roberta Feldman	City Design Center, University of Illinois at Chicago
Mark Francis	*University of California Davis*
Mathias Heyden	*Author, Community Design in the United States*
Paula Horrigan	Cornell
Jeff Hou	University of Washington
Maren King	Center for Community Design Research, SUNY College of Environmental Science and Forestry
Mia Lehrer	Mia Lehrer and Associates
Robin Moore	*North Carolina State University*
David Perkes	Gulf Coast Community Design Studio
Michael Rios	*University of California Davis*
Deni Ruggeri	University of Oregon
Henry Sanoff	North Carolina State University
Ron Shiffman	*Pratt Center for Community Development*
Daniel Winterbottom	*University of Washington*