JOURNAL

OF LIVING ARCHITECTURE

A GREEN ROOFS FOR HEALTHY CITIES PUBLICATION

Volume 7 Number 1 Pages 1-26

2020

Carrying the ball: A portrait of leadership in urban rooftop agriculture

Michael Sánchez ^{1*}, David Wang ¹

¹ Assistant Professor of Landscape Architecture, Washington State University, School of Design and Construction, USA

² Professor Emeritus of Architecture, Washington State University, School of Design and Construction

*corresponding author: michael.sanchez@wsu.edu

ABSTRACT

Rooftop agriculture has seen a surge in development, especially over the latter half of this decade. By involving committed leadership, urban rooftop agriculture can advance awareness of food production and food security while creating a new kind of social engagement. This paper reports on common traits of ten North American activists (a.k.a. ball-carriers) who make urban rooftop agriculture initiatives their primary work. We provide a trait analysis and describe the recurring features of leadership through three heuristically-developed models. This research helps clarify the profile of individuals who are currently pioneering the movement and provides information to aid efforts for urban rooftop agriculture as a mainstream practice.

Key words: urban rooftop agriculture (URA), leadership characteristics, ball-carriers

INTRODUCTION

For purposes of this paper, we define urban rooftop agriculture (URA) as the cultivation of food-producing landscapes on rooftops, ranging from open-air semi-intensive and intensive structures to hydroponic greenhouses, to provide local nutritious foods to an urban community. Still an emerging trend, URA contributes a range of environmental benefits common to roof greening, and can provide an alternative for productive surfaces within the urban landscape (Whittinghill and Rowe 2012). It provides infrastructural benefits such as reduction of noise pollution and mitigation of urban heat (Peck and Richie, 2009). Rooftop agriculture increases insulation values for the upper floors of buildings, reducing HVAC costs (United States General Services Administration, 2011). It extends life-cycles of roofing membranes by reducing exposure to ultraviolet light (Green Roof Design and Installation Manual, 2013). Through interviews with several designers, green roof builders and owners it was observed that URAs cultivate greater awareness of food production through classes, social events and gardening, and thus sociologically, have an educational impact on the present and next generations. In addition, URA also creates opportunities for outdoor dining and social interaction. (Mandel, 2013)

There are myriad of constraints involved in bringing a rooftop farm to fruition. For example, a recent study on URA cites barriers such as lack of confidence and insufficient experience on the part of operators, structural limitations of buildings, high winds and airborne pollutants, and the concern that “building owners do not want to be left with a farm on their roof with no one to tend to it” (Reese 2014, 37). Yet URA associated with restaurants and hotels are becoming commonplace nationally, and rooftop community gardens and rooftop farms are now active in many cities. What accounts for the emergence of these food-producing landscapes despite the barriers? This paper reports on ten individuals—we call them ball-carriers—who have made URAs their primary work. We want to understand more clearly the kind of individual currently pioneering URAs, in hopes that this information can contribute to the emerging rooftop agriculture movement.

The research literature provides precedents for examining the “profiles” of key individuals in the context of professional endeavors. One example dealt with construction management (Gunderson and Gloeckner, 2011), and another study explored the composite differences between consultant (design) cultures and contractor cultures (Rameezdeen and Gunarathna, 2012). The second author of this study, David Wang, advised two master’s level theses of this nature: *Choosing a Career in Landscape Architecture: Dimensions of Fit* (Shaffer 2010), and *Who Teaches Environmental Systems in NAAB Accredited Architecture Programs?: A Profile Developed from Surveys of Faculty in 130 Architecture Programs in the U.S.* (Lima 2018). These examples of leadership and/or demographic profiles in allied disciplines that informed the present study.

Figure 1 Washington State University Students visiting Eagle Street Rooftop Farm, Queens, NY, 2016.

For this study, the term “ball-carrier” derives from an analysis of 12 case studies of re-invigorated sense of community in challenging social venues (Wang et al. 2014). The cases were originally described in *Better Together: Restoring the American Community* (Putnam et al. 2004). Among these cases are a branch library becoming a “third place” for two demographically different communities in Chicago; creating sense of community between citizens of a progressive neighborhood and military personnel at an adjacent naval base; changing the corporate ambiance at UPS; and the success of Portland, Oregon’s urban growth boundaries initiative. Wang et al.’s (2014) analyses of these twelve cases identified nine traits common to all twelve. The traits are as follows: 1) a unique social need; 2) visionary individual(s); 3) ball-carriers; 4) funding; 5) catchy slogans; 6) an incubation period; 7) shared stories; 8) innovative ways to operationalize the vision; 9) serendipity.

This study’s use of the term “ball-carrier” combines Wang et al.’s (2014) second and third categories (visionary individuals and ball carriers). Visionary individuals in this sense are “persons who identify the social need, are in positions to affect positive change, and exert influence to bring about the change.” However, they might not themselves be the worker-bees enacting the desired ends. Ball carriers in Wang et al.’s earlier study are in fact “on-the-ground workers instrumental in enacting the change.” In the present study, we found that URAs tend not to have visionary individuals in the sense just defined. In many cases, aspects of the visionary individual and the ball-carrier conjoin, with both qualities expressed through a single person. In sum, “ball-carrier” for us is simply a heuristic term describing a type of bottom-up leader, one who leads by doing. Indeed, one obvious trait shared by all of the individuals we interviewed is the willingness to do hard work regardless of public acknowledgement. This study contrasts with the majority of research literature on URA which mostly focus on the physical aspects of URA (growing medium, plants, roofing systems, environmental factors, etc.). Of vital importance to URA and its future growth, this research underscores through this study the people integral to the operation and success of these rooftop spaces.

THEORY AND METHOD

We identified and selected a diverse study group of ten URA ball-carriers. The selection focused on having a cross-section of individuals based on gender, profession and background, as well as representing projects or involvement by scope, size and geography. Because the number of operating URAs in the United States is limited, the need was not so much to identify a statistically significant sampling, but rather to make sure we engaged with current leading examples of URA practice. Our interviewees included the following (numbering reflects the chronological order of interviews):

1. Elizabeth Graff, PLA, a landscape architect, educator and green roof proponent in Moscow, Idaho.
2. Lauren Mandel, PLA, ASLA, a landscape architect and researcher in Philadelphia, and author of *Eat Up: The Inside Scoop on Rooftop Agriculture* (Mandel 2013).
3. Colin McCrate, co-owner of Seattle Urban Farm Company (SUFCo), an urban agriculture entrepreneur and co-author of *High Yield Vegetable Gardening* (McCrate and Halm 2015) and *Food Grown Right, In Your Backyard* (McCrate et al. 2012); he installed and manages several URAs in the Seattle area.
4. Marc Boucher-Colbert, accredited Green Roof Professional (GRP), who operates Urban Ag Solutions, a URA and Urban Agriculture consulting firm in Portland, Oregon.
5. Eric Higbee, PLA, a landscape architect who co-designed the UpGarden, a Seattle P-Patch URA community garden, and serves as design director of Pomegranate Center in Seattle, Washington.
6. Serena Galleshaw, a media and marketing specialist with Recover Green Roofs in Somerville, Massachusetts.
7. Mary Ostafi, architect, LEED AP and executive director of Urban Harvest STL which built Food Roof, St. Louis' first rooftop farm.
8. George Skandalos, a restaurateur and co-owner of Sangria Grille and Maialina Pizzeria in Moscow, Idaho.
9. April Philips, PLA, FASLA, a landscape architect, author of *Designing Urban Agriculture* and self-described "change agent" in San Rafael, California.
10. Marjorie Hess, garden manager of the Gary Comer Youth Center rooftop farm in Chicago, Illinois.

The lead investigator interviewed these individuals (two in person, eight by telephone) over the course of three months in 2017. Rather than ask these questions in order and in the precise words given in Appendix I, Sánchez encouraged open-ended conversation, while keeping these questions in mind, raising them as flow of conversation allowed. Each interview ranged from one to one and one-half hours. The interviews were recorded and audio files transcribed using software by Trint.com. The study itself consisted of three phases: 1) a preliminary phase using a

subsample of four of the transcripts; 2) a sorting phase involving all ten transcripts; and 3) mapping phase where the data from the ten transcripts are mapped onto three extant models of leadership. Results enabled us to identify composite characteristics of current URA ball-carriers.

Pilot study phase

The first part of our study focused on a subsample of the ten interview transcripts. Initially 4 interviews with Mandel, Hess, Ostafi, and McCrate were selected for content analysis. Generally, by “content analysis” we mean processing a large amount of spoken (transcribed) interview information into thematic categories based on sorting and coding procedures (Stemler 2001); this process is elaborated on in the next paragraph. The authors independently read the four transcripts, highlighting and coding key words and concepts, and identifying provisional shared traits among them (Figure 2).

Comparing and cross-checking individual tallies generated eight provisional characteristics of URA ball-carriers (Sánchez and Wang 2017). These results were presented at the CitiesAlive Conference, held in Seattle, September 18-20, 2017. Reviewer comments from this conference submission were then taken into account during the next phase of content analysis, which we call the Sorting Phase.

Content analysis has been in the literature since the 1950s (Mitchell 1967), but practiced in various forms as early as the eighteenth century (Rosengren 1981, cited in Hsieh and Shannon 2005). An overview of the history of content analysis can be found in Krippendorff (2004), who traces it to earlier centuries in which church organizations monitored written content to protect doctrine. Today, computer analysis enables massive digitization of information, making all of it readily analyzable. Perhaps the most illustrative example of content analysis by computer is Facebook’s ability to monitor the emotional outlook of mass groups of individuals (Booth 2014). Needless to say, the range of outcomes for studies using content analysis has increased, from the purely descriptive for a given sample, to explanatory observations with potential for broader applications, to statistically-based projections with generalizable power.

Sorting phase

The two authors recruited six individuals to perform content analyses of the ten transcripts. The group included one 2016 graduate (subsequently referred to as “alumna”) of the Masters of Landscape Architecture Program at Washington State University and five current graduate students in the WSU Masters of Architecture Program. They worked under an independent study arrangement with the authors. The authors met with the students regularly and described the content analysis procedure, taking care not to influence their findings. Each student worked independently to generate his or her own coding of key terms and traits from the ten transcripts.. The authors also analyzed the six transcripts that were not included in the pilot study. This second phase resulted in eight separate coded categories. From these results, the eight composite

traits for URA ball-carriers from the Pilot Phase (Figure 2) were consolidated into five categories (Figure 3):

	Personality	Background	Social justice / community building	(diversified) Business plan	Stories of improved social capital	Education / awareness	innovations	Health
Hess #10	High productivity person; extrovert – diverse interests, visionary;	Germany, travel in Europe, just visit farms and gardens; city / rural childhood, fell in love with rural	Pocket Town – changed from food desert – 0 lbs to 20,000 lbs of food; URAs as catalysts; rehab abandoned lots for farm; Student safety	Major supporter: Gary Comer; Social service programs – partner with hospital Cast wide net / partnership (so others can do the grant applications) Grants: USDA farmers' market	The impact on Pocket Town From 1 rooftop to a campus; built a high school in fourth year; created a farmer's market	Help young people (8-24 years of age) Employs / involves 200 young people; eat free while working; 2 for 1 purchases Environmental consciousness, Students learning to grow food; sell food; business skills; culinary skills	Go literally from farm to table: students take part in every stage of the process (serving food at the Gary Comer Youth Center),	prescribe food rather than medicine;
Mandel #2	No urgency to get additional certifications. Pioneer: wrote first book on rooftop agriculture. Help clients achieve their goals (more than about the URA per se),	Landscape architect; its about bringing in the designer's perspective designed and oversaw the construction of over 55 green roofs around the country	"Some of the most successful rooftop farms are addressing food justice needs"	High-end client a source of support; Angel investors; Donors; grants; multiple financing sources; diversity services; Need alternative revenue streams; Need strong business plan; good to have a strong business person/ CEO type; subsidized; developers in the know are helpful really hard to make straight farming work; "multiple streams of revenue are critical	Access Point at Danforth in Toronto; 6500 sf rooftop garden for community development; educational opportunities; community health	Wrote the book Eat Up – this is a kind of story making Access point in Toronto; Refers to Marj Hess at Gary Comer Youth Center Georgia Tech experience: re-categorize how Living Building Challenge (LBC) requirements	Hydroponics; Lufa farms alternative to a box from CSA format; Vertical farming / Asia	Access Point in Toronto – community health benefit
McCrack #3	Open minded; entrepreneurial: co-founded Seattle Urban Farm Co; Worked on farms to learn agriculture; do diverse things; EXTROVERT – at least involves people; Self-starters: Co-wrote book on growing vegetables	From Ohio, 38 years old; Denison University – experience of environmental program very influential – off grid center; traveled around;	Philosophy of urban gardening as everyday part of life, "feel good about supporting the community"; advocates for farmers who grow organic	Frustration in that builders and developers have largely not yet bought into the idea of URAs	Bastille – built additional revenue streams; media requests to visit Angeline? – serendipitous relationship between SUFCo and maintenance staff of Angeline. cooperation between Urban Farm Company and the staff at Angeline	YOUNG PEOPLE – training them to know about where food comes from		Health versus wealth, Current narrative is that food must be cheap; we need to turn this back so that quality of life might be better (rather than spend money on electronics). Something has to change on the institutional scale (caring about quality of life). Some are aware on personal and family scale, but must happen at institutional scale.
Ostafi #7	"I wore all hats" to start URA in St. Louis, "orchestrator"; get people engaged and forming committees	Began as interiors architect; became licensed architect; went to Sweden to study sustainability; top 40 under 40 in St. Louis	Community was integrated first and foremost; "our mission is food access"; Strengthen local food system; grow healthy food for people living in food deserts; engage people in food and also contribute food; Del Mar street divide; Everything is about partnerships and building community relationships Green space becoming platform for urban agriculture	Business plan committed for people to learn; nonprofit; grants and donors; collaboration with local restaurants, local colleges like Washington University; strategic partners; diversity events: private parties, weddings; word of mouth advertising and media exposure; people come visit, raise revenue for food donations	Initial community garden in St. Louis got 30 families engaged; expanded to satellite gardens; once we got it going people came wanting to help us; attract a lot of local gardeners and master gardeners; increased social capital	Went from 1 intern to 30; a living laboratory; get people to experience urban farming; Developed workshop culture;	Farm as test lab for growing methods; Community space surrounded by farm (happens to be on the roof). Design at core of success of farm: community space at core of farm	Grow healthy food; give back to community; food security

Figure 2 Pilot Study Content Analysis Matrix

URA Ball-Carrier Composite Traits

1. **Early years: diverse experiences in agriculture and landscape**
 - a. Active traveling and living in faraway places
 - b. Had mentors related to the land and gardening; were engaged in specific projects that caught their imagination
2. **Commitment to community building**
 - a. Have an enduring commitment to educating the public in sustainable gardening
 - b. Committed specifically to health and wellness through some aspect of gardening
3. **Networks**
 - a. Thinks of innovative ways to collaborate with community stakeholders
 - b. Adept at using social media
4. **Comfortable with flexible business plans**
 - a. Supports operation through diverse streams of income
 - b. Thinks outside the traditional funding box
5. **Have a high tolerance for uncertainty**
 - a. Patient through purchasing/leasing, permitting and entitlement processes
 - b. Imperturbable through public process or stakeholder meetings

Figure 3 Categories of URA ball-carrier traits.

Mapping the data onto models of leadership

Our goal in this phase was to map transcript data onto three models of leadership found in literature with the intention of discerning composite trends. The first model comes from popular literature: Gladwell's Connector-Maven-Salesperson model propounded in his book, *The Tipping Point* (Gladwell 2007) and investigated further by Gilkey (2012). The second model is from academic literature, Blake and Mouton's Managerial/Leadership Grid as explained by Northouse (2016) in his book, *Leadership, Theory and Practice*. This model is called the "Style Approach" in leadership analysis. It marks a departure from assessing leadership traits as isolated factors. Instead, leadership is measured along a task orientation scale and a separate people orientation. Northouse (2016) describes the method in this way: "the style approach provides a framework for assessing leadership in a broad way." We felt this model would be appropriate for doing content analyses of our ball-carriers, hoping that it would capture a broad array of factors describing leaders in the emerging URA domain. The third model, also from academic literature, situates the leader more holistically in the communal setting of their operational world. This is the "holonic" model postulated by Küpers (2007). He provided a quadrant graph that maps leader-follower "events" both along a personal/public axis, and an individual/communal axis. We explain all three of these models more deeply in the next section. The next section of this paper focuses on this third phase, referring to the two earlier phases as needed. A discussion section follows this. The conclusion will summarize some of the benefits and limitations of this research, and ideas for on-going research.

FINDINGS AND DISCUSSION

First model: Gladwell-Gilkey

Gladwell (2007) outlined three leadership personality profiles. The *connector* is a key nexus in social networks and is gifted in proliferating information easily. His book was published prior to

the notion of “going viral” but he presciently used the term “epidemic” to describe the power of connectors in spreading information. Gladwell names Paul Revere as an example of a connector. Revere’s “midnight ride” connected many people rapidly and spurred rapid transmission of information by word-of-mouth. His second personality, the *maven*, does not spread information, but is a storehouse of knowledge. Mycroft Holmes, the reclusive genius to whom even Sherlock Holmes turns for advice, is Gladwell’s example of a maven (Gladwell 2007). The third personality is the *salesperson*. This individual has powerful persuasive skills. As Gilkey (2012) described it, “These are the people who can borrow your watch and then sell it back to you.” Gilkey (2012) refined Gladwell’s model, turning it from a “tripod” to more of a sliding scale between any two personalities (for example: salesperson-connector, or connector-maven, and so on).

We took Gilkey’s ideas and further linked them to Gladwell’s tripod using a clock face graph. Figure 4 shows an example of this graph. It is one of five clock face(s) for interviewee #1 (Graff). In this sample, the analyst placed Graff between Connector and Salesperson. But the marker is closer to Connector, so it was scored as “Connector-S” because the marker is further away from Salesperson. If the marker had been closer to Salesperson, it would be scored “C-Salesperson.” If the marker is exactly in between these two personalities, it would be scored as “CS-SC” (or SC-CS). If the marker had been directly at a single personality type—say, Connector—it would simply be scored “C.”

Figure 5 shows our tally of the overall scores of the ten interviewees, each scored by the five evaluators. (The alumna did not participate in these analyses). Note, that under Graff (on the left side of the figure), the scores are Connector-S, Connector-M, Maven-C, Maven-S, Connector-M. Does this seem “all over the place?” Perhaps, although it is noted that “Salesperson” never appears in the first position. The scores for interviewee #2 (Mandel) are clearer: the dominant trait in her analysis was Maven across the board. Her identification as a Maven is not surprising and is supported by the fact that she wrote the first book on rooftop agriculture. Our purpose was to capture the characteristics of all ten individuals at a macro level. These results are shown on the right side of Figure 5.

On the top row of the Gladwell Model Tally (Figure 5), note that Maven occurs 37 total times (regardless of first or second position), Connector occurs 33 times, while Salesperson occurs 26 times. When accounting for the first position only (second row), Maven occurs 23 times to only 11 times for Salesperson. The third row is also of interest, where the count highlights personality profiles that were secondary to the main profile. Here, Maven occurs just once, while connector and salesperson each scored 15.

The Gladwell-Gilkey mapping was the first model we attempted to apply. Without considering what other models can reveal, our sense from this exercise was that URA ball-carriers tend to be

knowledge accumulators (Maven), with deep knowledge of their field. They also have connector and salesperson dimensions, however, these are secondary to Maven characteristics emphasized by the intellectual interest of investing time and effort into URAs. Connector and Salesperson occur more frequently as second-position attributes. Also, in view of Connector as the second most-often scored trait, URA ball-carriers seem well-versed in the social networks that can move their URA project forward, but perhaps they tend not to be expert at overtly influencing people. These provisional findings resonate with features from the sorting in Phase 2. Our URA ball-carriers all had some level of higher education. Many reported early mentors with “years of experience in agriculture and landscape” (Figure 3, #1). Higbee noted that a major influence on

Figure 4 Gladwell-Gilkey Model: Maven, Connector, Salesperson continuum. Example of one (of five) graphs in the content analyses for #1 Graff.

him came from working with author and activist Helena Norberg-Hodge in northern India, advocating for the concept of local food, and helping people there connect more deeply with each other and the land through agriculture. Hess noted that she was profoundly influenced by her work as a journalist in Germany as well as travels in Europe visiting farms and gardens. These experiences led to the career changes that ultimately brought her to manage the highly successful rooftop farm (catalyst for connecting youth to multiple urban agriculture projects) at the Gary Comer Youth Center in Chicago. We suggest that these formative experiences, in conjunction with hands-on experience under mentors, comport with the Maven value being most prominent in the Gladwell-Gilkey model. In addition, an important factor in experiencing early

mentoring for people-centered agriculture predisposes individuals to “commitment to community-building” (Figure 3, #2). Such experience also cultivates social ideals, which seems to override a sense of fiscal conservatism or at a minimum increase one’s tolerance for risk or

business uncertainty (Figure 3, #4, #5). For instance, Mary Ostafi, executive director of the Food Roof in St. Louis, MO draws a distinction between her farm and standard green roofs. Food Roof places a premium on food security, which is linked to education and social justice issues. Ostafi: “I think that’s why our farm is a little bit different, just because of the way that we’ve designed it and really integrated community first and foremost.” Again, we see an obvious commitment to community-building. On the other hand, “comfortable with flexible business plans” might suggest that, while a ball-carrier has philosophical ideals for URA, and is also aware of

Gladwell Model Analysis		Gladwell Model Tally		
#1: Graff	#6: Galleshaw	TOTAL Times without Regard for Position		
a) Connector - S	a) Connector - S	M	C	S
b) Connector - M	b) Maven - S	37	33	26
c) Maven - C	c) MC - CM	TOTAL Times in First Position		
d) Maven - S	d) Connector - S	M	C	S
e) Connector - M	e) Maven - S	23	12	11
#2: Mandel	#7: Ostafi	TOTAL Times in Second Position		
a) Maven - C	a) Connector - S	M	C	S
b) MC - CM	b) SC - CS	1	15	15
c) Maven - C	c) Salesperson - M	100% in One Category		
d) Maven - S	d) Connector - S	M	C	S
e) Maven - C	e) MC - CM	3	0	1
#3: McCrate	#8: Skandalos	MIDDLE (Half/Half) Position		
a) Maven - S	a) Salesperson	MC - CM	CS - SC	SM - MS
b) Salesperson - C	b) Maven - C	5	1	0
c) Salesperson - M	c) Maven	DOMINANT First - SECONDARY		
d) Salesperson - M	d) Salesperson - C	Mavin - C	Connector - S	Salesperson - M
e) Salesperson - C	e) Maven - C	9	6	4
#4: Boucher-Colbert	#9: Philips	Connector - M	Salesperson - C	Maven - S
a) Maven - S	a) Connector - M	6	5	9
b) Maven - S	b) Salesperson - M			
c) MC - CM	c) MC - CM			
d) Maven - C	d) Connector - M			
e) MC - CM	e) Salesperson - C			
#5: Higbee	#10: Hess			
a) Connector - M	a) Connector - M			
b) Connector - S	b) Maven - S			
c) Maven	c) Maven - C			
d) Salesperson - C	d) Maven - C			
e) Maven - S	e) Maven			

Figure 5 Overall scores of the connector-maven-salesperson model.

collaborative potential with people, schools or agencies, they might not clearly see how such efforts can be money-makers, and in fact, may not be as concerned about this aspect of URA. For instance, Boucher-Colbert acknowledged that while the novelty of a food roof brings notoriety to its owner, it should be coupled with other business options and streams of income, because the edible rooftop may not be sustained by sales of its produce alone. In sum, we saw resonances between the mapping results summarized in Figure 5 with the earlier traits we developed (Figures 2 and 3).

Second model: Blake-Mouton from Northouse.

The second model used to map our data drew from the model proposed by Blake and Mouton, as explained by Northouse (2016). As mentioned earlier, this is a “style approach” model that measures two behavioral traits: is the leader relationship-oriented (on a Y-axis)? Or are they task or results-oriented (on an X-axis)? Each dimension is plotted in 9 increments, resulting in a 9x9 grid that Blake and Mouton called the Managerial Grid. If a leader is very focused on production while guiding their staff instrumentally towards results, this individual scores 9,1. This is called an “Authority Compliance” management style. In the opposite case, a people-oriented leader much less focused on results scores 1,9. This is termed a “Country Club” management style. A score of 1,1, termed “Impoverished Management”, describes a withdrawn leader committed to neither people nor results. A score of 9,9 is “Team Management” and indicates a leader who emphasizes both dimensions maximally. The middle condition is 5,5 and is simply called the “Middle-of-the Road” management style. Northouse (2016) reviews the detailed research conducted on this model (of which Blake and Mouton’s is just one case) by teams from the Ohio State University and the University of Michigan. He notes that “a wide range of studies on leadership style validates and gives credibility to the basic tenets of the approach.” He also emphasized that this approach offers “a broad conceptual map,” and hence can be used heuristically in many settings. For these reasons, we adapted this to be our second model for mapping the content analysis of our ball-carrier interviews. See Figure 6.

The same five evaluators independently mapped each interviewee based on the transcripts. Rather than categorize the ball-carrier’s scores based on the management style names developed by Blake and Mouton—Country Club, Impoverished, Middle-of-the-Road, Team Management, Authority Compliance—Figure 6 emphasizes each ball-carrier’s managerial strength as it relates to the areas of emphasis characterized in being “People-focused” and “Results-focused.” The numbers along the continuum represent the average of five scores. The dotted line indicates the composite average score of all ten interviewees, which is 7.0 People and 5.96 Results. First, the higher score for the People dimension may find resonance with the high Connector value in the Gladwell-Gilkey model, which scored 33 total mentions (Figure 5, top right row). More simply, if our ball-carriers are savvy about social connectivity as an asset for their URAs, it is reasonable that they would be people-oriented. For example, Graff scored high in the Gladwell-Gilkey model for social connectivity. She had three Cs in the first position and one C in the second position (Figure 5, #1). In this second model, Graff had one of two highest People scores (8.2).

Reviewing Graff’s transcript revealed she used the word “people” more than twenty-five times in her interview, many of which were in reference to mentors and exemplars of landscape architecture and social justice that fortified and influenced her perspective on designing places for people. She views people as the driving force behind social change and noted that “...the more people start talking about issues of food and using more of our urban areas (*rooftops*) functioning like this, it leads to more precedents, more imaginations, more ideas.”

Figure 6 Using the Blake and Mouton’s Managerial Grid, ball-carriers were evaluated on whether they were People-Oriented or Results-Oriented. This graph’s results demonstrate the majority of the URA leaders interviewed are attuned to the needs of people.

Hess was overwhelmingly a Maven in the Gladwell-Gilkey model: four Ms in first position and one M in second position (Figure 5, #10). Hess had Maven in all five of her Gladwell-Gilkey scores. But in this second model, she had the same high People value as Graff (8.2). The question arises whether ball-carriers who score high in Maven cannot also score high in People in this second model. Our expectation—perhaps influenced by the ultra-reclusive life of Mycroft Holmes as an exemplar of a Maven—was that Mavens would turn out low on the People

dimension. Why is Hess, a Maven, high on People as well? A review of her interview transcript suggested that Hess's particular interest in her Maven-ship (as it were) is focused on empowering youth at the Gary Comer Youth Center in Chicago. Hess disparages that "... so many young people now all over, just don't spend much time outdoors ... the first step was just getting young people to even consider being outdoors; that outdoors could be safe. And then once you got them out there of course, you need to keep them busy and give them something to be engaged in". Availing the capacities of a Maven and incorporating her passion for young people, Hess enables these young adults to earn money through selling produce, and to develop business acumen via partnerships with restaurants and markets through learning valuable life skills through their engagement with others in these safe outdoor spaces.

This leads to our second observation: there seems to be a "spectrum of idealism" in the distribution of where the ball-carriers score on our Blake and Mouton continuum. The ball-carriers who express their commitment to URA in more traditional business settings tend to be relatively equal in both People and Results dimensions (#3 McCrate, #4 Boucher-Colbert, #8 Skandalos). The "lowest" score for People on the Blake Mouton scale is #6 Galleshaw, Recover Green Roofs' media and marketing specialist. She is directly responsible for the company's photography, digital assets, story-telling platforms as well as managing presentations and speaking engagements while occasionally helping to install, plant or maintain large green roof projects as the need arises. In this light, the high scorers on People (#10Hess and #1Graff) are not involved directly in URA as a business. The Gary Comer Youth Center (Hess) was built by endowed funds from the Comer legacy and much of the funding for expansion has come from social service programs. Graff, an educator and not herself involved in the *business* of an URA, also scores high in People.

Third, the Results dimension for our ball-carriers was not *that* much lower (5.96) than the People dimension (7.0). We had expected it to be lower still, given that we detected a lack of proclivity towards the sales value. We speculate that this higher results value might be, again, the idealism required for the URA endeavor. What might occur is that Mavens and Connectors envision productivity more emphatically than steadily producing at a self-supporting business level. Fourth, the location of the composite means (7, 5.96) is both "left" and "right" of a Middle-of-the-Road management style score (5,5), weighted more in the direction of People. In many of these operations, the ball-carrier may be the only full-time worker. "People" in these types of settings might be interns, volunteers, or any variety of non-full-time employee. "People" can also be the many different collaborative community connections these ball-carriers have. In short, the high people value (7) might be affected by the very nature of the URAs endeavor as a high-social-networking reality, the main driver for the higher People score. While the majority of URA ball-carriers we interviewed were not burdened with many full-time employees, we speculate that if these ball-carriers, already high on the "Maven" value, did need to manage many full-time personnel, the people value might go even higher. This idea is consistent with

what our observation about the lower People scores for #2, #4, and #6, all sole proprietors or employees who manage little to no full-time personnel compared to the few full-time personnel with whom the other ball-carriers interact. This peculiarity led us to use the third model.

Third model: Küpers

The third model used in the evaluation of URA ball-carriers is the Holonic leadership structures model posited by Küpers (2007). The two other models emphasized characteristics or behaviors unique to the leader alone. But as stated above, URA settings tend not to be traditional business settings. Many of them operate with volunteers or students, in episodic rather than on-going employment arrangements. The Küpers model offers a way to see these ball-carriers as participants in “events” or “occasions.” Küpers describes these events as holistic leader-follower episodes in context of the organic life of an organization:

Based on an integral orientation, further processual and relational dimensions are discussed by which mutually interwoven leadership/followership can be understood as an emerging event, embedded within an ongoing, interrelated nexus. (Küpers 2007,194)

We thought this approach to be a unique way to assess ball-carriers in these non-traditional URA operations. Küpers’ model depicts the roles of leadership and followership in one event by delineating a quadrant diagram (Figure 7). Our adaptation of this diagram is shown in Figure 9. The X-axis has INTERIOR on the left terminus and EXTERIOR on the right terminus. These words denote internal subjective orientations of the individual (interior) on the left and his or her relational attributes with others (exterior) on the right. The Y-axis has INDIVIDUALITY at the top and COMMUNALITY at the bottom. These words denote the individual (top) in context of an event, and how this individual interacts collectively in community (bottom) in that event. This results in four distinct quadrants identified as the following domains, beginning with the top left quadrant and going clockwise:

- the *Consciousness* quadrant (combining INTERIOR with INDIVIDUALITY)
- the *Behavioral* quadrant (combining EXTERIOR with INDIVIDUALITY)
- the *System* quadrant (combining EXTERIOR with COMMUNALITY)
- the *Culture* quadrant (combining COMMUNALITY with INTERIOR)

Positioned at the center of the diagram of many of Küpers’s holonic diagrams is the integral leader-follower entity, signifying an ideal balance of all four quadrant traits

Figure 7 Original Küpers model depicting exemplary features and approaches for each quadrant of integral leadership and followership. Used with permission from GLE Publications and the Regent University School of Business & Leadership.

Unlike Northouse, who provides case studies illustrating simple applications of the Blake-Mouton model, Küpers offers no concrete case study examples. His “methodological implications” towards the end of his article, along with the conclusion itself, contains more general statements such as these:

... successful and effective leaders and followers and their interrelated practices of the 21st century will be those who and which understand, foster, help create, and enact a more integral way of leading and following; integrating and processing practical wisdom ... (213)

and:

... understanding leadership and followership as an integral capacity of all members at various levels of an organization means that corresponding leadership practice and development are more complex and difficult to design and implement ... (212)

But, this said, the holistic (holonic) approach Küpers described clearly resonates with the cases of URA ball-carriers whom we interviewed. As a matter of fact, our ball-carriers might just be the kind of hands-on cases Küpers’ theory needs in order to clarify the technical points. For example, Mary Ostafi described her role in the founding of Urban Harvest STL’s Food Roof as that of an orchestrator, leading and sometimes following in every aspect of the operation—be it

construction management, event planning, media coordinator, serving as executive director or building community awareness and managing the farm. April Philips responded to the question, “Do you see yourself as the ideas person, or are you more of an orchestrator guiding all the players?” as follows:

I see myself as both actually because . . . I just think this is an amazing opportunity. (It started as) school gardens . . . and the need (for) healthy nutritious food, and integrating that into learning about science. So there I was, just helping to be a facilitator and a guide . . . and then continuing to try to connect the right people together for it . . . because I don't consider myself a farmer or a scientist . . . so for me I see myself as a systems thinker so I (can connect) people with ideas. (So in this respect) I'm a change agent.

We felt statements like these have a “Küpers feel” to them and encouraged us to devise a hands-on way for our evaluators to map our interviewees holonically, per Küpers. For each of his quadrants, Küpers provides a set of key terms that pertain to what that quadrant aims to measure. For example, here are the key terms for the *Consciousness* quadrant (top left): “personal traits, intention, values, emotions, cognitions, volitions, self-concepts, motivation, and commitment.” From the key terms in each quadrant provided by Küpers, the lead investigator, Sánchez framed questions for each term (Figure 8).

Furthermore, we divided Küpers' quadrants into segments, each "slice" pertaining to a given question. We then overlaid a scalar field onto all of the quadrants (Figure 9). From this platform, our evaluators again reviewed the transcripts through the lens of the questions in Figure 8, diagramming the interviewee within this holonic continuum to determine where the ball-carrier fell in relationship to the whole, but never considering or classifying them as a leader or follower. Rather, they analyzed the "fit" of each ball-carrier in relationship to each question listed and under each quadrant of the diagram. For each segment, the ball-carrier can be scored on a scale of 1 to 5, with 1 being a poor fit and 5 being a very strong fit. The set of twenty questions was applied to each ball-carrier by each of the five evaluators. The "question average"

Consciousness Quadrant

1. Through this interview did the ball-carrier share insight into aspects of their individual or internal (Sensations, images, sounds, feelings, intuitions) due to their involvement of this URA? What is their primary motivation for their involvement with URA?
2. Do these ball-carriers show a readiness and self-management for motivation and commitment to self, to a goal or to an organization (such as a Community Supported Agriculture (CSA), non-profit, restaurant/hotel, etc.)
3. Is this URA focused on helping organizational members (URA workers, volunteers, leaders) see what their leadership and followership style might be so that they get more insight into themselves and their impact on others?
4. Did the discussion with this URA and/or ball-carrier primarily focus on the psychological, cognitive, emotional, and volitional dimensions of an individual leader or follower?
5. Did this interview center or focus on the leader's character and inner traits?

Behavioral Quadrant

1. Is there evidence of external traits, knowledge, and concrete skills in URA practice that result in embodied action, accountability, and performance levels connected with being a ball-carrier?
2. Are there empirical observations, measurements, and analysis involved with the operation of URA or the role of being a ball-carrier?
3. Did you observe through these interviews any instances of coaching, planning, decision-making, or skills that developed individual effectiveness?
4. Did this ball-carrier describe or discuss specific management and realization of specific tasks, and actions in order to achieve the larger goals of the URA?
5. Did the leaders and followers of this URA manage staff, performance-related resources (bartering or harvest rewards), and time efficiently in order to ensure these tasks and costs were on target?

Culture Quadrant

1. Do the ball-carriers or this URA have a shared history of success or failures?
2. Are there any shared stories this ball-carrier has in association with this URA?
3. Were there instances or examples of group dynamics involved with the creation or operation of this URA?
4. Does this URA carry a specific meaning with it's presence or operation in this community?
5. Does this URA incorporate people for the purpose of getting them involved in the community?

System Quadrant

1. Is the URA structured to include a director, seasonal staff, volunteers, interns or other types of formal roles?
2. Does the URA employ specific technology, design or equipment or use tools specially designed for rooftop farming?
3. Was there intentional or thoughtful design involved with the creation or operation of this URA?
4. Was there an instance of ball-carriers weathering financial storms or challenging conditions in making this URA successful?
5. Was there multiple streams of income involved in the success or survival of this URA or did the URA operate on a single type of income stream?

Figure 8 Questions used in evaluating interviewees through the lens of the holonic leadership followership model.

line depicted in Figure 9 represents the mean response from the evaluators of all ten interviewees to that question. The mean score of the questions was then averaged to denote a quadrant score represented by a heavy dashed line. When all the data were graphed in Figure 9, we believed we were looking at a picture of what Küpers' theory can "look like" in response to a given set of

inputs. It is important to remember that the overall graph is simply a “snapshot” of how one event, conceived of as a single interaction or transaction made by a ball-carrier *in situ* of the holistic situation, might look. Of course, the graph shown is the *composite* of five evaluations of ten ball-carriers. For purposes of space, we cannot show all 50 of the individual graphs. However, we do show how each ball-carrier scored individually in **Figure 10**.

Figure 9 Integral Leader-Followership diagram adapted from Küpers’ holonic model. Composite model of five evaluations of the ten ball-carriers showing the average of the evaluator’s scores for the questions (see Figure 8) and the quadrant average, determined by averaging all the questions for that quadrant.

It is not surprising that the *composite* graph shows a fairly centered distribution; averages tend to be that way. But the centered distribution may also indicate that our ball-carriers are jacks-of-all-trades. They may have years of training (Mavens) but the way they *operationalize* their commitment to URA is in a willingness to wear many hats. So, on Küpers’ terms, being a URA ball-carrier means you are willing to do the things that leaders do, *even if you also have to be the follower that implements those things*.

Also, as noted, we do see slightly more variation at the individual level (Figure 10). One thing to note about the Küpers model is that the upper two quadrants emphasize the leader/follower as a person, while the lower two quadrants emphasize the collective leader/follower as he or she is in community. The left two quadrants emphasize “interior” aspects of the leader/follower in the holonic event (“meanings, stories” see Figure 7); while the right two quadrants emphasize

“exterior” aspects (technology, streams of income, etc). As individuals, some ball-carriers had strengths in one “hemisphere.” For example, #2 Mandel’s and #3 McCrate’s higher scores were in the lower hemisphere, meaning their strengths were in culture and systems (Figure 10). It is noteworthy that these are two of three interviewees who have authored books on URA or urban agriculture (the other is #9 Philips, who is also high on culture). Their strength in the lower hemisphere testifies to their comprehensive knowledge of the URA domain, but also to their empathy for the domain due to their hands-on involvement. Again, all three individuals, exhibit strong awareness of business considerations. For example, Mandel separates the “social justice-oriented folks” versus those who emphasize on-line orders. For his part, McCrate has installed several URAs in the Seattle area, and his emphasis on the business aspect of URA ventures is consistent in his interview. For example, “. . . the projects that I see being successful . . . are because an investor or a stakeholder or a property owner has already sold themselves on the concept and they just need someone to help implement it.” Additionally, we have already noted that those ball-carriers more directly engaged with business aspects of URA tended to be close to the Middle-of-the-Road region of the second model (Blake-Mouton). #3 McCrate was in this group. #2 Mandel, although we did not mention her earlier as in connection with this group, has Blake-Mouton scores that are in this cluster (see again Figure 6, Blake-Mouton)

Key		#1 Graff		#2 Mandel		#3 McCrate		#4 Bouchet-Colbert		#5 Higbee	
Consciousness Quadrant	Behavioral Quadrant	2.12	2.80	1.98	2.06	1.96	2.28	2.20	2.24	2.88	2.20
Culture Quadrant	System Quadrant	2.58	2.04	2.46	3.08	2.46	2.96	1.82	2.66	3.06	2.26
Note: 2 quadrants with the strongest fit are emphasized in bold font .		#6 Galleshaw		#7 Ostafi		#8 Skandalos		#9 Philips		#10 Hess	
		2.38	2.60	2.50	2.70	2.48	1.98	1.96	2.40	2.54	2.04
		1.98	1.94	3.14	2.86	2.44	2.32	2.90	2.26	3.72	2.42

Figure 10 Holonic leadership model quadrant scores.

In contrast, #6 Galleshaw scored highest in the upper hemisphere, suggesting strengths in consciousness and behavior. In her case, the lower hemisphere numbers (for culture and system) were quite low in comparison. She is the media and marketing specialist at Recover Green Roofs, and as we noted earlier is very active in promoting the company while also being occasionally available (due to her multi-faceted background) to help install or maintain large projects. #6 Galleshaw is an example of an individual that scored high for *individual* dimensions of consciousness (internal) and *behavior* (external).. The italics are ours for emphasis:

My background is in environment studies with a concentration in experiential education. I do the media and marketing for Recover as well as occasional field crew stuff . . . It's a small company and I wear a lot of hats . . . When I got back from school and adventuring and stuff . . . my town was redeveloping and they had all these green building ideas and . . . So, I decided to go back to school and learn more specifically

what resources were available today for green building and smaller scale energy systems and those types of things . . . I had this whole conversation with a friend . . . And she pulled this brochure out of her pocket for this school in Vermont called Yestermorrow Design/Build School. I signed up for a certificate program in sustainable building and design through them. That's where I studied green roof design/build and started learning more about all kinds of green building techniques...

In the first model (Gladwell-Gilkey), #6 Galleshaw's score was also very diverse, indicating an inquisitive and creative personality; See Figure 5, #6. She scored primarily in Connector and Maven, while she had four Salespersons in the second position. This is a visionary individual and is why she scored high in the upper hemisphere in this third model. It is possible that her role at Recover, which is not that of an owner, frees her to express those visionary aspects found in the interior (northern) hemisphere of the diagram as opposed to the systems and cultural aspects required of someone in the position of operating a business.

There are some cases where one quadrant scored demonstrably higher than the other three. In this regard, three of the ten interviewees scored significantly higher than the others, with #10 Hess's culture quadrant being the highest. As the questions for this quadrant indicate (Figure 8), the focus is on shared history, shared stories, group dynamics, presence in community and mobilizing people in community. We've already noted Hess's commitment to the Gary Comer Youth Center in Chicago, which is necessarily a high people-relations endeavor. It is easy to see how shared stories and mobilizing people in community are central to Hess's role. #7 Ostafi recalled in the Food Roof's early days—as they were transitioning from a community garden to an urban farm—that in order to succeed they needed to collaborate with community organizations that distributed food rather than grow and distribute themselves. This effective form of leadership-followership allowed them to focus on growing healthy food and being an educational resource to the community. Ostafi's placement in the culture quadrant is unmistakable; she capitalized on the Food Roof's shared history with community gardening and the group's dynamics required in establishing a rooftop farm, ultimately leading to their current major presence in their community.

Whether the role influences the leader-follower, or the personality frames the quadrant, is yet to be seen. #5 Higbee is a landscape architect who co-designed the UpGarden (the U.S's largest rooftop community garden, at the time it was constructed) and is the executive director of Pomegranate Center, a community-minded organization whose mission is to strengthen communities through collaborative placemaking. In his case we found a statistical correlation between a higher People score (Blake Mouton) and a high Culture score (Küpers). The communal aspect of these ball-carrier's roles (collaborative place maker, systems thinker, landscape architect, community garden manager) is realized in their potential and likelihood to incorporate integrally the full spectrum and capacities of both leaders and followers apparent in this diagram's southern hemisphere.

Another result has to do with the occurrences of scores in two different hemispheres, resulting in a cross-quadrant effect. This is the case with #1 Graff, #7 Ostafi, and #9 Philips. Küpers (2007) contended that all four quadrants are organically related. When we see cross-quadrant scores in two different hemispheres, we might be seeing support for what Küpers calls an integral, interrelational perspective of how these quadrants relate in leader-follower events. In fact, a strong cross-quadrant score might indicate a deeper integration between these complex relationships delineated by the different hemispheres. This outlook is implied in Küpers' following statement:

Instead of seeing only the roles of individual leaders or followers as enduring and pervasive sets of traits and behaviors, such perspective links the leadership and followership processes to specific activities in the work involved in making organization and change happen. Furthermore, from an integral, interrelational perspective; leadership and followership effectiveness and personal, social, and organizational well-being depend on the active integration of the complex interrelationships (a dynamic balance between personal and interpersonal relationships as well as the accomplishment of objective tasks and performance goals) (Küpers 2007, 210)

Küpers' integrated framework can foster further research along leadership-followership lines. Although complex, his four quadrants might be helpful in arriving at deeper understandings of the causes, developments, and effects of leadership and followership in URA operations.

CONCLUSIONS

With Urban Rooftop Agriculture gaining momentum in this country, we felt a study of the profiles of people leading this movement would be informative to the living architecture and urban agriculture fields. Leadership profiles are found in a variety of disciplinary domains through primary questions: Who are these innovators? What motivates them in "carrying the ball" forward for the URA movement?

Initial findings focused on the traits namely: 1) early exposure to and engagement with a diverse range of experiences in agriculture and landscape, often with a mentor's impact; 2) a high commitment to building community, with social justice issues expressed in terms of access to healthy food; 3) insight and innovation in creating social networks; 4) comfort with flexible business arrangements; 5) tolerance for periods of uncertainty, usually guided by a vision for the worthwhileness of the URA endeavor.

The Gladwell-Gilkey model highlighted the Maven trait in our ball-carriers, that is, a propensity to be a storehouse of knowledge. But it also seems that our ball-carriers are adept at negotiating between their Maven trait with the Connector trait in the Gladwell-Gilkey model. This is

consistent with earlier findings. For instance, of those five composite traits, three pertain to some aspect of community or social collective. We suggest that the knowledge reflected in the Maven trait for these ball-carriers is not so much abstract theoretical knowledge as it is a kind of ideal-practical knowledge; ideal because our ball-carriers are high in vision, and practical because their particular kind of vision drives them to make social connections.

We see the social connection element in the second model we used, from Blake and Mouton. While the people dimension was the predominant trait from the evaluations using this model, the production dimension was not far behind. We suggest that this indicates the URA ball-carrier; even though not dominant in business instinct, they are savvy individuals when it comes to the operation, maintenance and fiduciary success of an URA. They are innovative and, , are comfortable with flexible business plans and also are able to withstand periods of business uncertainty.

Addressing this balance between developing a community operation and ensuring its health through fiduciary responsibility might be something that Küpers' holonic model can discern. In this integrated approach, leadership and followership characteristics are further diversified among the kinds of measures Küpers' model employs. Due to the statistical modulation of averaging, the composite scores in the holonic model tended to understate the differences between ball-carriers, homogenizing their qualities. However, this uniformity in our estimation emphasizes the vital balance these ball-carriers exhibit in meeting the challenges of operating the typical URA project. Upon deeper inspection, the holonic results did provide distinctive information, as explained in the Discussion.

This study did involve some limitations. It was a heuristic exercise meant to inform further inquiry, investigating ten individuals related to URAs. We have noted that this is not a statistically rigorous sample; but given the limited examples of URAs available, we feel this was a robust sample of this particular population at a point in time. In the future, as more cases of URAs emerge, a wider cross-section of ball-carriers could provide greater depth in profiles. As URAs become increasingly mainstream in our urban centers, and serve to meet a multitude of community needs, further research and evaluation will extend and substantiate the findings in this paper.

Finally, our selection of the three extant leadership models was itself heuristic in nature. Data from these models could be further enriched by asking our ball-carriers to take personality profile tests, using sources such as The Big Five Inventory (John et al. 2011) or the HEXACO Personality Inventory which measures six major dimensions of personality (Lee and Ashton 2018). While recent studies have indicated a certain level of fallibility in personality-type tests (Menand 2018), this data could add an additional layer of findings in the interpretive results.

URAs in this country are continuing to develop, but with a few exceptions are still in a nascent stage commercially, and primarily consist of private residential scale, hotel or restaurant boutique farms, educational research-based or community type projects. Data and results from this study will be relevant to those seeking to invest or start a URA in their community and to compliment those already operating and maintaining a URA project. This work will also serve as a springboard for further inquiry into other models of URA practice such as vertical farms, living wall and tower farming, and aquaculture and hydroponic farming.

ACKNOWLEDGMENTS

The authors would like to thank Samia Saleh, Krisandrah Crall, Alexandra Croney, Melina Kotsia, Austin Parker, and Kelly Valentin, for their work in analyzing the ball-carrier transcripts.

LITERATURE CITED

- Booth, R. 2014. "Facebook Reveals News Feed Experiment To Control Emotions." *The Guardian*. <https://www.theguardian.com/technology/2014/jun/29/facebook-users-emotions-news-feeds>. [Accessed November 22, 2017].
- "About Brooklyn Grange." 2017. *Brooklyn Grange Farm*. <https://www.brooklyngrangefarm.com/about-brooklyn-grange-1/>. [Accessed March 16, 2017].
- Gilkey, C. 2012. "Maven, Connector, Or Salesperson: What's Your Archetype? | Productive Flourishing." *Productive Flourishing*. <https://www.productiveflourishing.com/maven-connector-or-salesperson-whats-your-archetype/>. [Accessed November 22, 2017].
- Gladwell, M. 2007. *The Tipping Point*. New York, NY: Hachette Audio.
- Green Roof Design and Installation Resource Manual. (2013). Toronto, Ontario, CA: Green Roofs for Healthy Cities, p.45.
- Gunderson, D. and G. Gloeckner. (2011). "Superintendent Competencies and Attributes Required for Success: A National Study Comparing Construction Professionals' Opinions." *International Journal of Construction Education and Research*, 7 (4), pp. 294-311.
- Hsieh, H., and S. E. Shannon. 2005. "Three Approaches To Qualitative Content Analysis." *Qualitative Health Research* 15 (9): 1277-1288. doi:10.1177/1049732305276687.
- John, O., P. R. W. Robinson, and L. A. Pervin. 2011. *Handbook Of Personality*. New York: Guilford.
- King, J. 2016. "Berkeley Sprouts Creative Housing, Topped By A Working Farm." *Sfchronicle.Com*. <http://www.sfchronicle.com/bayarea/article/Berkeley-sprouts->

- [creative-housing-topped-by-a-10816953.php#photo-12087601](#). [Accessed November 17, 2017].
- Krippendorff, K. 2004. *Content Analysis: An Introduction To Its Methodology*. Thousand Oaks, Calif: Sage.
- Küpers, W. 2007. "Perspectives On Integrating Leadership And Followership." *International Journal Of Leadership Studies* 2 (3): 194-221.
- Lee, K., and M. Ashton. 2018. "The HEXACO Personality Inventory - Revised." *Hexaco.Org*. <http://hexaco.org/>. [Accessed October 10, 2018].
- Lima, N. 2018. *Who Teaches Environmental Systems In NAAB Accredited Architecture Programs?: A Profile Developed From Surveys Of Faculty In 130 Architecture Programs In The U.S.* Master's Thesis in Architecture, Washington State University.
- Louv, R. 2017. "Last Child In The Woods - Overview - Richard Louv." *Richardlouv.Com*. <http://richardlouv.com/books/last-child/>. [Accessed October 10, 2018].
- Mandel, L. 2013. *Eat Up: The Inside Scoop On Rooftop Agriculture*. Gabriola Island: New Society Publishers.
- McCrane, C., B. Halm, and H. Dahl. 2012. *Food Grown Right, In Your Backyard*. Skipstone Books.
- McCrane, C., and B. Halm. 2015. *High-Yield Vegetable Gardening*. Storey Books, LLC.
- Menand, L. 2018. "What Personality Tests Really Deliver." *The New Yorker*. <https://www.newyorker.com/magazine/2018/09/10/what-personality-tests-really-deliver>. [Accessed October 10, 2018].
- Mitchell, R. E. 1967. "The Use Of Content Analysis For Explanatory Studies." *Public Opinion Quarterly* 31 (2): 230. doi:10.1086/267515.
- Peck, Steven, and Jordan Richie. 2009. "Green Roofs And The Urban Heat Island Effect". *Buildings.Com*. <https://www.buildings.com/article-details/articleid/8620/title/green-roofs-and-the-urban-heat-island-effect>.
- Philips, A. 2013. *Designing Urban Agriculture: A Complete Guide To The Planning, Design, Construction, Maintenance Of Edible Landscapes*. 1st ed. Hoboken, N.J: Wiley.
- Putnam, R. D., L. Feldstein, and D. J. Cohen. 2014. *Better Together*. New York: Simon & Schuster.
- Northouse, P. G. 2016. *Leadership: Theory And Practice*. 7th ed. Los Angeles, Calif. [u.a.]: SAGE.
- Rameezdeen, R., and N. Gunarathna. 2012. "Organisational Culture In Construction: An Employee Perspective." *Australasian Journal Of Construction Economics And Building* 3 (1): 19. doi:10.5130/ajceb.v3i1.2908.

- Reese, N. M. 2014. *An Assessment Of The Potential For Urban Rooftop Agriculture In West Oakland, California..* Master's Thesis in Environmental Management, University of San Francisco.
- Rosengren, K. E. 1981. *Advances In Content Analysis / Karl Erik Rosengren, Editor.* Beverly Hills, CA: Sage Publications.
- Sánchez, M., and D. Wang. 2017. "Carrying The Ball: Profiles Of Courage In Urban Rooftop Agriculture." In *CitiesAlive*. Seattle, WA: Green Roofs for Healthy Cities.
- Shaffer, M. J. 2010. *Choosing A Career In Landscape Architecture: Dimensions Of Fit.* Master's Thesis in Landscape Architecture, Washington State University.
- Stemler, S. 2001. "An Overview Of Content Analysis. Practical Assessment, Research & Evaluation." *Practical Assessment, Research And Evaluation (PARE) Online*. <http://PAREonline.net/getvn.asp?v=7&n=17>. [Accessed November 22, 2017]
- United States General Services Administration. 2011. "The Benefits And Challenges Of Green Roofs On Public And Commercial Buildings". United States General Services Administration.
- Wang, D., D. Vaux, and M. Xu. 2014. "Better Bowling: A Doing-With Approach For Design Studio Instruction And Public Scholarship." *Journal Of Interior Design* 39 (1): 33-45. doi:10.1111/joid.12023.
- Whittinghill, L.J. and Rowe, D.B., 2012. The role of green roof technology in urban agriculture. *Renewable Agriculture and Food Systems*, 27(4), pp.314-322.

APPENDIX 1

Questions used in interviews:

1. Was there the specific social or physical needs you were trying to meet with this URA project?
2. How would you picture yourself and/or your role in the making of the URA? (i.e. Were you the “idea” person with creativity, the “worker” getting it done, the “orchestrator” guiding all of the players, the “inspired” person who saw a greater need?).
3. What types of funding are needed in developing your URA and how did you go about finding or conscripting it?
4. Is there a need for specialized marketing or awareness for the success of URA and how did you go about in promoting it?
5. Was there a period of time in which this URA project seemed stalled but there was actually much happening behind the scenes?
6. Do you have any stories or accounts of your experience with URA that will contribute to future community acceptance of URA, or were there any stories or histories that were used in the successful completion of this URA?
7. Did you utilize or implement any innovative methods in order to move your vision forward, or did you put into practice any imaginative solutions that brought parties together or inspired teamwork?
8. Was there any unforeseeable or unplanned occurrence(s) that ended up having a positive effect on the development of this URA?
9. Please tell us more about yourself:
 - a. Where did you grow up and where do you currently live?
 - b. If you attended school, where did you go and what did you study?
 - c. What jobs have you held and what is your role in your current job?
 - d. What is your age and gender?
 - e. What individuals have been influential in your life?