

CULTIVATING THE CITY: EXPLORING THE PRODUCTION OF PLACE AND PEOPLE THROUGH
URBAN AGRICULTURE.
THREE STUDIES FROM M'BOUR, SENEGAL

By

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ABSTRACT

CULTIVATING THE CITY: EXPLORING THE PRODUCTION OF PLACE AND PEOPLE THROUGH URBAN AGRICULTURE THREE STUDIES FROM M'BOUR SENEGAL

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This dissertation is comprised of three qualitative studies that look at a number of urban processes in M'Bour, Senegal through three separate theoretical lenses. Urban agriculture (UA) serves as the entry point to, and framework for, the inquiry. The diverse approaches are held together with a common conceptual framework of *place*. In an era dominated by a mode of development that aims to 'flatten the world,' in which 'success' is contingent on the erasure of diverse ways of living and enrollment in a universal, 'globalized' process, narratives of place push back and argue for alternative courses of action that profoundly engage with culture, environment and identity from place-based, though not place-bound, perspectives.

Each study in this dissertation represents a different methodological approach to accessing place. Analytical approaches were chosen based on their potential to ground the analysis in place by engaging with the materiality of lived experience, the interactions between social and ecological systems, and for their ability to see and consider variables across space and time. This dissertation presents three ways to explore place: Through (1) emplaced performances of gender, (2) Theodore Schatzki's practice theory, and (3) vulnerability, adaptive capacity, and resilience of socio-ecological systems.

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TABLE OF CONTENTS

LIST OF TABLES	ix
CHAPTER 1	
INTRODUCTION TO A DISSERTATION: A PLACE BASED APPROACH TO THE CITY.....	1
Chapter 1 Introduction to a Dissertation: A Place Based Approach to the City	2
1.1 Introduction.....	2
1.1.1 Urban Agriculture as an Entry Point to the City.....	3
1.2 Methodology and Methods.....	6
1.2.1 Methods	6
1.2.2 Methodological Approaches	8
1.2.2.1 A Gendered Practice of Urban Cultivation: Performing Power and Well-being in M'Bour, Senegal.....	8
1.2.2.2 Practice Theory and Informal Urban Livelihoods in M'Bour, Senegal: A Case Study of Urban Cultivation	9
1.2.2.3 Producing Food Resiliencies: The Role of Urban Agriculture	10
BIBLIOGRAPHY	12
CHAPTER 2	
A GENDERED PRACTICE OF URBAN CULTIVATION: PERFORMING POWER AND WELL-BEING IN M'BOUR, SENEGAL.....	15
ABSTRACT.....	16
Chapter 2 A Gendered Practice of Urban Cultivation: Performing Power and Well-being in M'Bour Senegal.....	17
2.1 Introduction.....	17
2.2 Gender and the Environment	20
2.3 Operationalizing Gender-as-Emplaced Performance	24
2.4 Micro-gardening in M'Bour: Empowered Gendered Enactments of the City and Well-being.....	27
2.4.1 Gendered Enactments of Household Well-being.....	30
2.4.1.1 Performing Gender as Good Food.....	32
2.4.1.2 Performing Gender as <i>Teranga</i>.....	33
2.4.1.3 Performing Gender as Economizing	34
2.4.2 Gendered Enactments of City Well-being.....	37
2.5 Conclusion.....	42
BIBLIOGRAPHY.....	45
CHAPTER 3	
PRACTICE THEORY AND INFORMAL URBAN LIVELIHOODS IN M'BOUR, SENEGAL: A CASE STUDY OF URBAN CULTIVATION	51
ABSTRACT.....	52

Chapter 3	Practice Theory and Informal Urban Livelihoods in M'Bour, Senegal: A Case Study of Urban Cultivation.....	53
3.1	Introduction.....	53
3.2	A Framework for Re-thinking Informal Urban Livelihoods.....	56
3.2.1	Prevailing Conceptualizations of Informality and the Politics of Planning	57
3.2.2	Re-Thinking Economic Processes with Schatzki's Practice Ontology	62
3.3	The Case of Urban Cultivation	64
3.4	Site Background and Methods	66
3.5	Understanding Urban Cultivation at the Intersection of Place and Practice: Material-Practice Assemblages of Urban Cultivation	69
3.5.1	The Composition of Social Sites	69
3.5.1.1	Cultivation Assemblages: Land Tenure and the Construction of Wells and Walls.....	70
3.5.1.2	Protecting Investment through Practices of Informality	72
3.5.2	Physical-Chemical Composition of Materials.....	74
3.5.2.1	Composition of Soils	75
3.5.2.2	Composition of Plants	77
3.5.2.3	Composition of Urban Gardens	79
3.5.3	Biological and Physical Flows	81
3.6	Conclusion.....	85
	BIBLIOGRAPHY.....	88

CHAPTER 4

	PRODUCING FOOD RESILIENCIES: THE ROLE OF URBAN AGRICULTURE	95
	ABSTRACT.....	96
Chapter 4	Producing Food Resiliencies: The Role of Urban Agriculture	97
4.1	Introduction.....	97
4.2	Conceptual Framework	100
4.2.1	New Approaches to Urban Agriculture.....	100
4.2.2	Vulnerability, Adaptive Capacity, and Resilience in Emergent Food Systems	102
4.2.2.1	Urban Food Provisioning Systems and Vulnerability.....	105
4.2.2.2	UA as Adaptive Capacity	105
4.2.2.3	UA and Food Resiliency	107
4.3	Methods.....	108
4.4	Vulnerability, Adaptive Capacity, and Resilience in M'Bour's Food Provisioning Environment.....	110
4.4.1	Site Background and Brief Food Provisioning Profile.....	111
4.4.2	Practices of Ecological and Socioeconomic Diversity	113
4.4.2.1	Diversified Income and Ecosystem Services	113
4.4.2.2	Diversified and Decentralized Food Access	116
4.4.2.3	Nutrient and Resource (Re)Cycling in the City Agroecosystem.....	118
4.4.3	Food as a Means of Building Adaptive Capacity in Social Systems.....	121
4.4.4	Vulnerability and the Limits to UA's Adaptive Capacity.....	123

4.5 Conclusion.....	128
BIBLIOGRAPHY.....	130
 CHAPTER 5	
CONCLUSION.....	138
Chapter 5 Conclusion	139
5.1 Summary of Conclusions	139
5.2 Policy and Research Needs.....	141
5.2.1 Informality.....	143
5.2.2 Informal (Vernacular) Support Systems	144
5.2.3 UA and the Urban Food System	146
BIBLIOGRAPHY.....	148

LIST OF TABLES

Table 1-1: Characteristics Associated with the Formal/Informal Dichotomy.....	58
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CHAPTER ONE

INTRODUCTION TO A DISSERTATION: A PLACE-BASED APPROACH TO THE CITY

Chapter 1 Introduction to a Dissertation: A Place Based Approach to the City

1.1 Introduction

I think we learn to be worldly from grappling with, rather than generalizing from, the ordinary (Haraway, 2008, p. 3).

The papers that comprise this dissertation look at urban processes in M'Bour, Senegal through three separate theoretical lenses and use urban agriculture (UA) as their entry point. The diverse approaches are held together with the concept of 'place' as explored in the edited volume, *Senses of Place* (Feld & Basso, 1996). Edward S. Casey's (1996) essay, "How to Get from Space to Place in a Fairly Short Stretch of Time," in particular, argues the necessity of 'getting back into place' as a means of valorizing the diversity of lived experience. In an era dominated by a mode of development that aims to 'flatten the world' (cf Friedman, 2006), in which 'success' is contingent on the erasure of diverse ways of living and enrollment in a universal, 'globalized' process, narratives of place push back and argue for alternative courses of action that "take into account place-based (although not place-bound) models of culture, identity, nature, and economy" (Escobar, 2008, p. 30).

A place-based approach holds that places are outcomes of bodies engaged in practice. People create place as they go, and as they do, places "gather experiences and histories, even languages and thoughts" (Casey, 1996, p. 24). In an iterative process, places, which are physical representations of those experiences, histories and thoughts, shape what we become. We are

always living as emplaced beings, our identities both shaping our environments, and being shaped by our environments.

In today's world, places are not isolated and discrete (though, perhaps they never were). Places are connected through social, political, financial and cultural networks occurring at multiple scales over time and space. Massey (1994) refers to place as a product of such connections -- that place is constituted by social relationships "stretched out" over time and space. As such, places are "open and porous," their identities never fixed, and always "multiple and contested." "The particularity of any place is," Massey says, "constructed not by placing boundaries around it and defining its identity through counter-position to the other which lies beyond, but precisely (in part) through the specificity of the mix of links and interconnections to that 'beyond'" (p. 5). Place, then, "is both locational and relational," and can be defined as the "grounded site of local-global articulation and interaction" (Biersack, 2006, p. 16). Each place happens in its own way as a result of how networks combine and articulate at particular geographic locations. In cities throughout sub-Saharan Africa, urban agriculture, as a local-global articulation, shapes urban environments, and, in doing so, shapes the lives of city residents. The next section discusses the improbable choice of UA as the primary lens through which to view the city.

1.1.1. Urban Agriculture as an Entry Point to the City

As both a 'locational and relational' process that has emerged over time, and which both constitutes and is constituted by the city, UA in M'Bour, Senegal represents the site, or the

place, of inquiry. The choice of UA for exploring city processes and the lives of urban citizens is a fairly novel, and perhaps even radical, approach for several reasons.

First, though it may be pervasive and common, and is often tolerated by municipal officials, UA is generally not considered the preferred use of city space. Agriculture is generally considered a rural activity, and therefore out-of-place in an urban environment. Its recent proliferation in African cities is sometimes referred to as evidence of a 'ruralization' of the urban environment (Bigsten & Kayizzi-Mugerwa, 1992), and is explained as a coping strategy in response to structural adjustment policies that have impoverished urban populations (Page, 2002). In other words, its presence is viewed as an urban pathology. As a misplaced, anti-urban livelihood, it therefore seems doubtful that it could provide any insight about what it means to *be urban*.

In general, urban studies theories are built using "US or European cities to stand in as universal models" (Myers, 2011, p. 1). In contemporary thinking about cities, the measure of true 'urbanity' originates with the fantasy of Western modernity, a parochial conceptualization of what it means to be inventive and progressive (Robinson, 2006). Jennifer Robinson (2006) observes how such a fantasy "has come to support a hierarchical analysis of cities in which some get to be creative, and others deficient, still tainted by the non-modern, placed on the side of the primitive" (p. 14). African cities, held up against this fantasy, do not generally fare well. Instead, what tends to emerge is a "relentless catalogue of the utterly devastating conditions that characterize the daily lives of the majority living in African cities" (Pieterse, 2008, p. 2). In contrast, this study begins with the assumption that urban agriculture, as an

actually existing practice in an actually existing city, is a production (and producer) of the place where it is found. As such, urban agriculture emerges as a distinctly *urban* process that serves urban needs in urban ways. Highlighting the essential 'urbanity' of urban agriculture serves to "dislocate...urban modernity from the West" by drawing attention to it as a site of creativity and innovation (Robinson, 2006, p. 13).

Secondly, though urban agriculture is a fairly well-researched subject, studies have tended to focus on its material output and its remedial effects on urban material deprivation (Battersby, 2012; Webb, 2011). In addition, UA is generally studied in isolation from other urban processes, which tends to foster an assumption that UA is an ahistorical and apolitical activity (Hovorka, 2006; Page, 2002; Rakodi, 1985). Such studies primarily construe UA as a "space into which development projects can be inserted in the future" (Page, 2002, p. 41). Webb (1998) goes so far to say that the fascination with urban agriculture is primarily "case of the development discourse creating a niche for itself..." (p. 201). Such approaches to UA have inevitably led to overly simplistic prescriptions of UA as a path out of poverty (Webb, 2011), but as Hovorka (2006) notes, "outright promotion of UA...is not necessarily simple nor desirable..." (p. 52). In fact, in the context of 'bootstraps' neoliberal development thinking, the promotion of UA, as a tool of self-reliance, may relieve municipal officials of their responsibilities to serve urban populations (Hovorka, 2006; Rakodi, 1985; Sanyal, 1987).

In order to complicate analyses of UA and to interrogate how it intersects with social and political processes that may, for example, reproduce poverty, it is necessary to explore the urban context and the relationships that produce UA. Studied as a basic social process UA can

help gain a more complete picture of the whole setting (Charmaz, 2006). Understanding UA through conceptualizations of place enable analyses that:

- (1) Pay attention to global-local, locational-relational processes that produce environments, i.e. articulations of place,
- (2) Take note of the contingent, contested, and multiple relationships that people negotiate and navigate in their efforts to 'survive the city,' and,
- (3) Provide a narrative that dislocates modernity from Western conceptualizations of urbanity, and relocates it with the "highly improvising and generative actions" of urban citizens (Pieterse, 2008, p. 3).

Though 'place-based thinking' provides the overarching conceptual orientation for this dissertation, more precise methodological frameworks help to "make the problem smaller, or better, to make it more specific. To deal with the materialities of specific practices. To discover difference" (Law, 2008, p. 15). Three analytical frameworks are used, which are discussed in the following section.

1.2 Methodology and Methods

1.2.1. Methods

Data was collected using primarily qualitative methods while studying multiple forms of small-scale dry season urban cultivation from August 2010 to May 2011. The forms of agriculture include market gardening, micro-gardening, fruit tree production, and ornamental plant production. Micro-gardening is a nationwide government administered program that operates through the local agriculture office. It is a sort of simplified hydroponics, which takes

place on tables, and in a substrate, rather than soil. The primary data collection tools were interviews in the local language, participant observation, focus groups and attendance at monthly micro-gardening meetings, which typically hosted around 20 micro-gardeners (DeWalt & DeWalt, 2002). Research participants were recruited using network sampling and selected from multiple neighborhoods in M'Bour (Glesne 2006). In an effort to mirror M'Bour's diverse urban population, the selected participants diverged widely in terms of years spent in the city, spatial location, income levels, education levels, age, sex, and housing situations. Participants were Muslim and Catholic and represented a number of ethnicities, including Diola, Sereer, Pulaar, and Wolof.

Two semi-structured interviews with each cultivator, recorded several months apart, focused on livelihood strategies and practices, outputs of gardens, individual life histories, economic challenges, urban governance, and hopes for the future (Seidman, 2012). Interviews were conducted with eight men and ten women at 14 different cultivation sites, and eight officials (seven men, one woman) representing five government bureaus.² Interview protocols were developed following multiple visits to, and participant observation at, research participants' homes (Creswell & Clark, 2007; DeWalt & DeWalt, 2002). Site visits to cultivators typically lasted one to two hours each and each site was visited, on average, five times over the nine-month study period. Ongoing memo writing and informal conversations with a core group

² Bureaus represented included the mayor's office, the prefect's office, the urban planning office, the office of decentralization and local development, and the rural development office, which manages the microgardening program

of neighborhood friends helped develop research themes and insights, and provided a sort of locally grounded peer-review process (Glesne, 2006). Systematic member-checks with interviewees were used to ensure reliability of interpretations, which was an especially important analytical aspect of the research in light of the deep cultural dimensions of the data (Glesne, 2006; Lincoln & Guba, 1985). The interviews were conducted and recorded in Wolof and French, transcribed by the author upon arrival back in the United States, and coded and organized with the help of NVivo software.

1.2.2. Methodological Approaches

As an ontologically multiple phenomena that intersects with processes at multiple scales across time and space, accessing place is an infinitely variable endeavor. But, whatever methodology is used, it must compel the researcher to "occupy the low land of place" (Casey, 1996, p. 21). Each paper in this dissertation represents a different methodological approach to accessing place. Approaches were chosen based on their potential to ground the analysis in place by engaging with the materiality of lived experience, as well as for their ability to see and consider variables across space and time. This dissertation presents three ways to explore place: Through (1) emplaced performances of gender, (2) Theodore Schatzki's practice theory, and (3) vulnerability, adaptive capacity, and resilience of socio-ecological systems.

1.2.2.1. A Gendered Practice of Urban Cultivation: Performing Power and Well-being in M'Bour, Senegal

This research explores the mutual constitution of gender and place by bringing together performance methodology with place-based thinking. Gender is a well-established frame for

understanding sex-based roles and relationships, but is often reified in ways that conceive of it as an overarching constraint that limits the ways in which women and men can operate. In contrast, emplacing gender can help to see the ways in which gender *conditions* behavior, but also enables liberation and well-being. This paper proposes the theoretical framework of *emplaced* performance, which enables a conceptualization of gender as a contingent enactment of self, performed through practices that are contextual and relational, and which both constitutes and is constituted by the place in which it is performed.

1.2.2.2. Practice Theory and Informal Urban Livelihoods in M'Bour, Senegal: A Case Study of Urban Cultivation

This research uses Theodore Schatzki's practice theory to explore the mutual constitution of urban agriculture and the city. Schatzki's practice theory is unique in its conceptualization of the material as social. It pays attention to how peoples' lives 'hang together' through the practice of livelihood and the material configurations associated with those practices, and applies this approach to the study of urban cultivation. Such an approach offers one way to understand urban agriculture as a distinctly urban process that serves urban needs in urban ways. It pays particular attention to the ways in which the environment shapes practice, and how those practices come to constitute the social and physical environments that result in the particular town of M'Bour, Senegal.

1.2.2.3. Producing Food Resiliencies: The Role of Urban Agriculture

The concepts of vulnerability, adaptive capacity, and resilience are powerful methodological frameworks for understanding how social-ecological systems cope with change. In this research, those frames are applied to understanding urban agriculture as an adaptive practice in one decentralized, emergent agri-food system. The findings explore several dimensions of the adaptive capacity of UA, including ecological and socioeconomic diversity, nutrient cycling, and the links to the adaptive capacity of social systems. In addition the research explores how adaptive practice is a contingent and located process, an idea which has not been well fleshed out in the resiliency literature.

Oscar Wilde said that, "Every portrait that is painted with feeling is a portrait of the artist, not of the sitter." Like a piece of art, a dissertation is a creation. But researchers, unlike artists, bear a responsibility to get outside themselves and to challenge their particular conceptions of reality by opening themselves up to somebody else's lived experience, and allowing that experience to change fundamental assumptions about the way the world works. They must be consciously and deliberately welcoming of the co-creative dimension of research, which comes through the research 'subjects.' It is one thing to recognize this necessity, but it is quite another thing to 'institutionalize' it in the process of data collection and analysis. As a triangulated exploration of place, this dissertation is ultimately the author's situated and contingent view of life in M'Bour, Senegal. However, it is hoped that what has emerged, perhaps even to a large degree, is a trustworthy, respectful, and compelling

representation of people who not only work to improve their own lives, but do it in a way that improves the places in which they live.

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CHAPTER TWO

A GENDERED PRACTICE OF URBAN CULTIVATION: PERFORMING POWER AND WELL-BEING IN M'BOUR, SENEGAL

ABSTRACT

This article outlines how a theoretical approach that explores gender as 'emplaced performance' can improve the analytical value of gender by drawing attention to (1) the ways in which gender, as a socially and spatially contingent performance, is enrolled in the relationships that create the city, and (2) how the city, as a constantly evolving and dynamic field of interaction for economic, social and political processes, (re)configures gender. Drawing on qualitative research carried out in M'Bour, Senegal, and through a case study of a form of urban cultivation called micro-gardening, this analysis explores gender as a socially and spatially contingent performance that produces, and is produced by, the city. The analysis brings together performativity studies with scholarship on place to fashion the analytical approach, and specifically draws attention to emplaced performances of well-being and power. Such an approach, because it draws attention to the contingent dimensions of gender, as well as the effects of gender on material worlds, has an improved analytical potential to inform locally relevant development interventions that recognize and consider the multiple ways in which men and women experience and create the city.

Chapter 2 A Gendered Practice of Urban Cultivation: Performing Power and Well-being in M'Bour, Senegal

2.1 Introduction

Deliberately and otherwise, people are forever presenting each other with culturally mediated images of where and how they dwell. In large ways and small, they are forever performing acts that reproduce and express their own sense of place – and also, inextricably, their own understandings of who and what they are (Basso, 1996, p. 57)

Every day in cities around the world, men and women are engaged in practices to improve individual and household well-being. The practices that men and women employ are embedded within, and generate, the city, which is better conceptualized as a "dynamic field of interacting economic, social, cultural, and political processes" (Hansen & Vaa, 2004, p. 8). Working within this dynamic field of interaction, people perceive different opportunities and constraints, which are contingent on social and spatial location. In other words, the city is different places to different people, and, as such, people employ varied practices to negotiate it and improve well-being. Likewise, the produced form and function of the city is an outcome of these varied and contingent practices.³

³ The idea that environments and people are produced is a well-accepted insight in political ecology (Cronon, 1996; Escobar, 1996; Robbins, 2004; Smith, 2008).

To explore this mutual and iterative production of people and place, this article proposes a new analytical approach and applies it to a case study of urban cultivation in M'Bour, Senegal.⁴ Referred to as 'emplaced performance,' this analytical approach draws attention to the link between identity and environment by considering how gender is enrolled in the process of creating the city, and how the city (re)configures gender. By considering the ways in which gender is productive, contingent, relational, and dynamic it becomes clear that gender is a highly variable *process* through which sex-based differences articulate in specific circumstances.

If, as Geraldine Pratt (2004) asserts, "gender norms are materialised by the body" (p. 17), the ways in which gender is relevant to the daily lives of people must be understood as it embodied and carried out, or *performed*, in relationships shaped by social and spatial contingencies. This article examines embodied and contingent enactments of gender via the practice of micro-gardening in a particular place. Micro-gardening is a national government program that operates through local agriculture offices and can be described as simplified hydroponics: plants are grown in lightweight substrates or nutrient-enriched water on tables that can be set up on rooftops, terraces, or within walled compounds, which, in densely built environments with limited 'soil space,' represents a viable option for growing herbs and

⁴ This research draws from a larger qualitative study on multiple forms of dry-season urban cultivation, conducted from August 2010 to May 2011. The findings in this article are based primarily on in-depth interviews and participant observation with four micro-gardeners (three women and one man), a focus group of seven women, and attendance at monthly micro-gardening meetings, which typically hosted around 20 micro-gardeners. Formal interviews were also conducted with eight government officials and seven development professionals, which helped to provide an understanding of the urban context within which micro-gardening occurs.

vegetables close to home. Originally targeted, and presently described, as an intervention most appropriate for the city's most marginalized women, micro-gardening has been embraced by a group of relatively well-off local women for reasons that diverge from the ostensible ones promoted by development agencies. The value, appeal, and effect of micro-gardening in this particular environment with this particular group of women is better understood by drawing attention to the motivations and goals of the women who practice it. In doing so, it becomes clearer how gender must be understood as it articulates in contingent interactions with people and place. In addition, the article examines how 'doing gender' produces the city, thus producing gendered socio-ecological urban environments.

Employing a theoretical framework of 'emplaced performance' and qualitative research methods, this article asks the following questions: First, how does social and spatial location affect the ways in which women value and enact micro-gardening? Secondly, how is gender enacted in micro-gardening? And, third, how does gender produce the social and ecological landscape, or socio-ecology, of the city? To explore these questions, the article first discusses how a metaphor of emplaced performance enables a richer understanding of gender than what is currently commonplace. The themes of power and well-being, which help 'operationalize' an analysis of gender-as-emplaced performance, are then introduced. Findings are then presented, followed by a final section that discusses the theoretical and practical implications of the research.

2.2 Gender and the Environment

An understanding of gender as ‘emplaced performance’ draws attention to the ways in which gender is both *produced* and *productive* in specific culturally, environmentally, and historically-mediated circumstances, and how it can be deployed as a force for creating meaning and constituting place. The idea that gender is both produced and productive is nothing new and several authors have demonstrated how thinking of it as a process that occurs in and through the terrain enables more meaningful and locally-grounded understandings of gender than is commonplace (Bondi, 1998; Gururani, 2002; Nightingale, 2006).⁵ The concept of emplaced performance builds on that research by providing an analytical framework that helps to conceptualize this process.

There are two basic theoretical components to emplaced performance, each drawing from rich bodies of theory. ‘Performance’ draws from performativity studies (Butler, 1993; Diamond, 1996; Law, 2004, 2008; Nash, 2000) and refers to the idea that the things people do, i.e. our practices, are presentations of self, and through those practices, we (re)produce our identities. The metaphor of performance has been used extensively in gender studies, very

⁵ In much of the literature that explores gender-environment relationships, gender is perceived as being ‘built’ into power-laden social systems and constructions (Saunders, 2002). While such studies can provide insight about how institutions and policies are used to concentrate and wield power, such a perspective can enable the reification of gender and obscure the role of agency. Furthermore, a number of authors have critiqued prevailing conceptualizations of gender as being overly Westernized in their orientation, and overly focused on antagonistic and unequal relationships between men and women (Amadiume, 1987; Cornwall & Brock, 2005; Mohanty, 1988; Sudarkasa, 2005). Such a critique suggests that ways of understanding gender ‘in place’ and as it articulates in particular and contingent relationships are required.

often drawing from Judith Butler's scholarship (Butler, 1993, 1997, 1999), which has been critical to "denaturalising social categories" and drawing attention to the ways in which "dominant forms of social reproduction" are situated and political, rather than universal and natural (Gregson & Rose, 2000, p. 438). But, while Butler focuses on the disciplinary and regulatory aspects of gender, and how performance conveys 'constative' gender identity, she is less concerned with its role in producing material realities or how places are enrolled in the production of gender. That is, for Butler, the analytical value of performance relates to the discursive aspects of gender as it articulates in and through the body given particular power-knowledge assemblages, thus producing a fiction of normative gender differences.

A number of scholars have criticized Butler for neglecting the role of space, which, they say, 'actively prevents geographic analysis' of gender identity and precludes theorizing the role of particular places in constituting gender (Pratt, 2004, p. 19). Such neglect has the ancillary effect of obscuring the role of agency and rendering geographies "offshore from the subject," and thus irrelevant to "who attends and what is" (Thrift & Dewsbury, 2000, p. 414). In her preoccupation with 'ungrounding' gender from biology and dispensing with sex-based essentialisms, Butler has also ungrounded 'processes of subject constitutions' from the material worlds 'through which power and knowledge work,' and in which those subject constitutions are *materialized* (Pratt, 2004, p. 22).⁶ The effect of such 'ungrounding' is that gender comes to

⁶ Pratt (2004) writes "(Butler's) preoccupation with time also has the effect of ungrounding processes of subject constitutions from the networks of objects and spatial relations – from the full materiality – through which power and knowledge work" (p. 22). I suggest that, in addition, materiality is itself an *articulation of power and knowledge*. This becomes an important

be understood primarily as a constraining and hegemonic force that limits action, rather than enables it, which, in turn, truncates the possibility of discovering how everyday gendered meanings operate through 'doing' to produce gendered material realities.

Pratt (2004) suggests that Butler's version of gender performativity does not preclude a geographical imagination. Indeed, as Pratt notes, spatializing Butler's version of performativity can provide the response to the question that Butler asks: "What are the conditions under which agency becomes possible?" (p. 20). Pratt suggests that one way of exploring these conditions is to consider (1) "that discourses emerge as situated practices in particular places," and (2) and that places are 'materialized discursive formations' (pp. 20, 21). Thus, the conceptual framework presented here may be read as having similar motivations to those laid out in Pratt's *Working Feminism*, in which discourses can be understood to be "materialized in the world...in ways that matter in the world."

Like *Working Feminism*, this article was conceived as an emancipatory project that is concerned with drawing attention to the "socio-spatial circuits through which cultural and personal narratives are circulated, legitimated, and given meaning" (Pratt, 2004, p. 20). In addition, it is also interested in the ways in which places articulate those cultural and personal narratives. Put differently, how do a particular group of women 'do gender' to achieve what is important to them, and what difference does it make to their material reality and to the socio-

distinction when considering the constitution of environments and how gendered meanings articulate and are articulated.

material production of the city? How does meaning become 'sedimented,' and how might we perceive that meaning?

The concept of 'emplacement' draws attention to 'sedimented meaning' and, thus, the mutual constitution of people and place (Basso, 1996; Casey, 1996).⁷ 'Place' is defined as a relational and locational concept, in which specific "articulations are as crucial to defining the particularities of any place as are its 'native' features" (Biersack, 2006, p. 16). A place-based approach holds that places are "the grounded site of local-global interaction," brought into being by bodies engaged in relational practices (Biersack, 2006, p. 16). Those bodies, of course, are motivated by perception and identity, which circumscribe particular ways of 'doing reality.' People create place as they go, and as they do, places "gather experiences and histories, even languages and thoughts" (Casey, 1996, p. 24). In an iterative process, places shape what we become (Escobar, 2008; Holland, Lachicotte-Jr., Skinner, & Cain, 2001; Nightingale, 2006). We are always living as emplaced beings; that is, we "are ineluctably place-bound...we are placelings, and our very perceptual apparatus, our sensing body, reflects the kind of places we inhabit" (Casey, 1996, p. 19). Through the metaphor of gender-as-emplaced performance, gender identity is conceptualized as a contingent enactment of self, performed through practices that are contextual and relational, which both constitutes and is constituted by the place in which it occurs (Diamond, 1996; Escobar, 2008). Such a view compels seeing the city

⁷ A number of political ecologists have used the 'place' concept in their research. See especially Biersack, 2006 and Escobar, 2001, 2008.

not as a single and comprehensive reality, but as ontologically multiple.⁸ Put another way, the city is different things to different people; people, given their particular subjectivities, perceive and enact the city differently. In turn, the city differentially acts upon people to (re)constitute and (re)configure identity. Places participate in the performance; who we are is contingent on where we are, and where we are is created by who we are (Casey, 1996).

2.3 Operationalizing Gender-as-Emplaced Performance

In order to explore the practical implications of gender-as-emplaced performance, this analysis focuses on gendered enactments of power in relation to the production of the city and well-being. Such an approach helps to give some specificity to the analysis by qualifying the performance; that is, it helps to set the parameters of the analysis and to focus on specific kinds of enactments. Focusing on emplaced gendered performances of power in different contexts helps to understand how gender works in and through the city, how it produces the city, and how gender is performed differently given the contingencies of social and spatial location.

Following Foucault, the analysis conceives of power as a productive force that is constitutive of reality and people's identities:

We must cease once and for all to describe the effects of power in negative terms: it 'excludes', it 'represses', it 'censors', it 'abstracts', it 'masks', it 'conceals'. In fact power produces; it produces reality; it produces domains of

⁸ Interestingly, this insight that reality is 'grounded' and ontologically multiple brings us closer to a view of performance as articulated by John Law and Annemarie Mol (Law, 2004, 2008; Mol, 2002; Mol & Law, 2002).

objects and rituals of truth. The individual and the knowledge that may be gained of him belong to this production (Foucault, 1995, p. 194).

In such an analysis, the object of inquiry shifts from *where* power resides to *how* power is exercised, via particular tactics, within networks of relationships. For Foucault, power is not a privilege or *possession of* the powerful, but, rather, the *effect of* particular 'force relations' in a society (McHoul & Grace, 1993). Relationships of power are intrinsic to the social body and are the 'immediate effect of...divisions, inequalities and disequilibriums' (From Foucault 1979, *The History of Sexuality, Volume One: An Introduction*, as quoted in McHoul & Grace 1993, p. 85). One's position in the relationship of power is reflective of how one experiences the particular form of inequality, as are the strategies that one pursues in negotiating that relationship. 'Both domination *and* resistance to [power] involve the invention of 'tactics' and the co-ordination of these various different tactics into coherent strategies' (McHoul & Grace, 1993, p. 84). When gender is viewed as a contingent enactment of self, or, in Foucauldian terms, 'a technology of self' (Foucault, 1988),⁹ it becomes possible to link the particularity of the enactment (or tactic) to one's position in the relationship of power. Rather than framing gender as a sort of constructed cage that uniformly constrains people, the analysis instead focuses on revealing how particular relationships of power (re)produce the subject, and how identity is actively mobilized, reconfigured, and enacted through these productions by the subject and in

⁹ Foucault's technologies of self captures the process whereby individuals 'effect by their own means, or with the help of others, a certain number of operations on their own bodies and souls, thoughts, conduct, and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection, or immortality' (Martin, Gutman & Hutton, 1988, p. 18).

association with others (McHoul & Grace, 1993). So, while 'the powerful' may adopt tactics that use systems and cultural institutions to concentrate and wield power, 'the powerless' are not without power and engage in various forms of tactical activism and resistance in order to stake a claim on alternative visions of the future (Biersack & Greenberg, 2006; Hvalkof, 2006; Scott, 1985).

Subjective well-being is defined as "people's positive evaluation of their lives, including pleasant emotions, fulfillment, and life satisfaction" and is one component of overall quality of life (Diener & Biswas-Diener, 2005, p. 125). Depending upon social and spatial location, which affects how one experiences the city, gendered practices of well-being vary. In those varied practices, different socio-ecological dimensions of the city are produced. Gender-as-emplaced performance provides the analytical space to reach beyond the obscuring preoccupation with inequality to include the ways in which gender informs how people 'care about things' and how it is productively mobilized as an enactment of self, both individually and in association with other people, to shape the socio-material realities that are the city (Holland et al., 2001).

In Wolof, the national language of Senegal, *nattangué* is the word for well-being. At the root of the word *nattangué* is *natt*, which means, 'a verdant garden or cultivated field.' Both households and gardens can be *natt*, which connotes prosperity and health circumscribed by both qualitative and quantitative dimensions, some of which can be construed as gendered. In other words, 'doing gender,' as an articulated practice of normative societal expectations and sex-based difference, is implicated in achieving *nattangué* (Akerlof & Kranton, 2000). Clearly, men and women may obtain a sense of satisfaction from 'doing their gendered responsibilities,'

even while such doing can reproduce the conditions that perpetuate their oppression. Thus, individual feelings of satisfaction or 'well-being' cannot necessarily be conflated with overall societal well-being. To tease out the distinctions about what constitutes a re-production of oppression versus more emancipatory gender performances of well-being, it helps to ground the constitution of the subject in "the full materiality through which power and knowledge work" (Pratt, 2004, p. 22). The next section highlights such performances by analyzing how women in M'Bour use micro-gardening to enact gendered well-being at both the household and city levels, and how those gendered performances constitute socio-material realities.

2.4 Micro-gardening in M'Bour: Empowered Gendered Enactments of the City and Well-being

M'Bour is a rapidly changing, comparatively prosperous, coastal town of about 200,000 located approximately 80 kilometers south of the capital city, Dakar. In contrast to most forms of urban cultivation, micro-gardening is formally supported by the Government of Senegal (GOS) and operates through local agricultural offices.¹⁰ It was introduced to Senegal in 1999 through a collaborative development project with the Food and Agriculture Organization of the United Nations, and promoted as an intervention that enhances food security and income generation, two issues which are perceived to disproportionately affect women. The primary target population is women, "because they are more likely to use vegetables for family

¹⁰ As is often the case with urban cultivation, many urban officials consider it to be a temporary and/or 'backwards' use of city space.

consumption."¹¹ As stated on an informational pamphlet retrieved from the micro-gardening headquarters in Dakar, the objectives of the micro-gardening program are to:

- Fight against poverty and improve food security of the population
- To widely diffuse micro-gardens throughout Senegal
- Improve consumption of vegetables among the target population

The Government of Senegal (GOS) continues to expand the micro-gardening program, and, as of May 2011, there were micro-gardening programs in 20 out of 45 departments in Senegal.

Micro-gardening was extended to M'Bour in 2006. The local agriculture office, which is located in a central, developed part of M'Bour, provides training and material resources, as well as follow-up support. Between 2006 and 2011, the project trained 73 women from around the city, and since then, 46 people have remained active, while a smaller number of about 20 have formed a micro-gardening group. This group meets once a month, usually at the local agriculture office, and has appointed a president, vice-president, and treasurer. During their meetings they discuss how to expand and improve micro-gardening in M'Bour and exchange technical advice on growing plants. Micro-gardeners grow a diversity of vegetables and other plants, including eggplant, lettuce, mint, daikon radish, hot pepper, sweet pepper, cucumbers, and tomatoes.

¹¹ From an informational pamphlet.

Though the GOS continues to expand the project, some development workers question its ability to 'reduce poverty' and 'improve food security.' In interviews with Peace Corps Volunteers and staff, for example, several said that micro-gardening is incapable of producing enough food or income to be worthwhile, that tables rot, and that it is unsustainable since it relies on the government providing most, if not all, of the inputs. Furthermore, they say, peanut shells are not available locally; they have to be trucked in from Tambacounda, located several hundred kilometers away. When asked to explain what they think the appeal of micro-gardening is, if not the material output, they speculated that it has become 'trendy.' Similarly, staff members at the non-governmental organization, *Enda Tiers Monde*,¹² were doubtful of the potential of micro-gardening and said that it could not reduce poverty. One Senegalese staff member noted that many poor people who live in the city do not own the houses they live in and cannot use the space indiscriminately, and that micro-gardening is costly to do. Indeed, she suggested, micro-gardening is much better suited to, "women who have means, who are working already, or who have taken their retirement....micro-gardening constitutes a supplementary activity." Thus, for some people working in development, micro-gardening doesn't meet the criteria for a good development intervention because it does not produce enough material output to 'reduce' or 'combat' poverty through improved food security or income generation. Instead, they say, micro-gardening is an activity that is more representative of a hobby, implying that the value is superfluous, and its development effect, negligible.

¹² The name of the organization, translated into English is, 'Enda Third World'

A focus on material output risks underestimating or overlooking micro-gardening's contributions towards achievement of longer-term social objectives and/or personal empowerment. Furthermore, such a view implicitly pigeonholes urban cultivation as a short-term, emergency economic activity that is relevant only to poor people. But Alice Hovorka (2006a, 2006b) demonstrates how urban cultivation is used not only by poor women to satisfy material needs, but also by financially secure women to enable longer-term strategic objectives, such as social and economic equity. Even among poor women, research shows that the value that they themselves attribute to urban cultivation is not limited to material output (Gallaher, Kerr, Njenga, Karanja, & WinklerPrins, 2013; Slater, 2001). Similarly, women in the M'Bour micro-gardening group are clearly enthusiastic about micro-gardening for reasons that have to do with both short- and long-term outcomes, circumscribed by values and meaning that are relevant to them. By focusing on the ways in which women enact micro-gardening and their self-stated reasons for practicing it, those values, which reflect particular notions of well-being and relationships of power come into view. Those outcomes are discussed in the following sections by demonstrating how micro-gardening helps women to achieve well-being and empowerment at multiple sites and scales through emplaced performances of gender.

2.4.1. Gendered Enactments of Household Well-being

Long considered an inherently constraining and subordinating social sphere by Western feminists (Saunders, 2002),¹³ 'domesticity' and the household can serve as primary spaces for

¹³ From its inception, the concept of gender was grounded in a view of the social world as neatly divided between public and private, in which 'public' was considered influential and the

performing culturally prescribed gendered responsibilities *and* as crucibles of social change and civic action. In Senegal, households serve as primary spaces for enacting and experiencing *nattangué* for both men and women, but women clearly lay claim to this space and use it as one way to materialize their identities as women. Ndeye F. explains that "if you are a good woman, you will run the house well," while Therese says that though the house is owned by her husband, it is up to her to create a beautiful domestic environment. She explains, "...if you came here today and saw that it was dirty, you would say, 'Obviously, there is no woman in this house.' When people pass by, they'll say, 'There's Therese's house.' It's my husband's house, but since I've got the responsibility of creating the hearth, they'll say it's mine." Thus, women link the overall quality and efficiency of the household with one's value as a woman, and claim ownership of the household space, the quality of which helps ground them in their communities.

Running the household well means, in part, that family and guests are well-fed, that *teranga*, or hospitality, is practiced, and that money is wisely spent. An initial 'draw' of micro-gardening is that the growing of vegetables within the household space provides a way for

source of prosperity, while 'private' was considered undesirable and unpaid (Saunders, 2002). A central goal of the feminist movement in the United States was women's liberation from the private, domestic sphere, which was equated with subordination, and entry into the public sphere; because 'domesticity' was seen to be inherently subordinating and confining, this also became a goal for those concerned about women's issues in international development. As a recent example, consider this statement in USAID/Senegal's Gender Assessment (2010): 'Cultural beliefs typically support the dominance of men in social life, and women are first and foremost expected to be good wives and mothers' (p. 11). I argue that this perspective overlooks the civic role of households throughout sub-Saharan Africa.

women to demonstrate 'doing' (or *reproducing*) a gendered ethic of care and well-being, and fulfilling those three gendered responsibilities.

2.4.1.1. Performing Gender as Good Food

One major appeal of micro-gardening is that it enables women, who have a primary responsibility for feeding their families, to better control the quality of food they serve. Women in the group noted that micro-garden vegetables are grown without chemicals, which is viewed as being better for health and the overall quality of vegetables. A general theme to emerge from interviews, the focus group, and monthly meetings was that women do not trust the vegetables in the market, which are widely believed to be contaminated with pesticides that cause illness and grown with fertilizers that reduce storability. Ndeye Maty's first response when asked to describe micro-gardening was that, "it is a kind of farming that does not have chemicals...you know that what you are eating does not have chemicals on it, so it is good for your health." Ndeye F. said that the food that one buys "in the road" is "not sure," and that when she grows her own food, "you know what it is." For Therese, her primary interest was to provide healthy vegetables for her husband, who was diagnosed with diabetes and therefore eats vegetables rather than a typical Senegalese lunch of rice and fish. In the focus group discussion, a participant said that many people who farm "are in a hurry to have money," which causes them to use fertilizers, which "are not good for people." Another perceived benefit of micro-gardening is that the vegetables do not deteriorate as quickly as those farmed with chemicals: "What we farm in micro-gardening is not the same as what is in the market. For example, if I have a cucumber, and I buy one from the market and I do a comparison – I could

put them down side-by-side – and the next day, the one from the market will start to deteriorate, but the one I grew – nothing happens."

The taste and sensory appeal of vegetables and herbs was also tied to production methods. For example, women in the focus group said that daikon radish grown with chemicals lets off a bad odor when cut. Without exception, women asserted that mint grown with micro-gardening methods is more fragrant, and, therefore, of better quality.

Attention to the quality of food and feeding has been demonstrated in other contexts to enable a woman to demonstrate her 'womanliness' (DeVault, 1994), and the same appears to be true in relation to micro-gardening in M'Bour. In addition, in doing 'womanliness' women are also affecting the kinds of food that are available to other members of their households and people in the community.

2.4.1.2. Performing Gender as *Teranga*

Teranga is a concept that is commonly translated simply as 'hospitality,' which is useful for the Senegalese tourism industry, but does not really convey its deeper significance in relation to the 'gift economy' (Piot, 1999; WinklerPrins & deSouza, 2005). Practices of *teranga* help to maintain bonds of reciprocity and create social cohesion. Though both men and women speak of the ways in which they used food to create these bonds, women are generally recognized to have primary responsibility for practicing *teranga*, a process which occurs in and through the household space. As Therese explains, "The responsibility of men is to bring the money...the responsibility of women is to improve on that and to create the hearth...the quality

of the house. What can I do to make sure the food is good? What can I do to make sure that people are full?" Producing food within the household space and being able to share it with guests is regarded as one way to practice *teranga*. Having mint available, for example, enabled women to provide particularly delicious tea to guests, and Ndeye Maty explains that giving eggplant, hot pepper, or mint to a guest "is good for their hearts," i.e. it creates feelings of *bonhomie*.

Through micro-gardens and *teranga*, women 'leverage' gender and extend the influence of the household space to build and maintain social relationships, and thus affect the quality of city life. In addition to being a valued dimension of *nattangué*, strong social bonds, referred to with concepts such as 'social capital,' are widely recognized to be instrumental and critical to socio-economic development.

2.4.1.3. Performing Gender as Economizing

Part of the critique aimed at micro-gardening is that it does not 'reduce poverty' or generate enough income to be a worthwhile development intervention. However, a number of women in the micro-gardening group insist that it is important to household economics. Very obviously, the output of micro-gardening is limited. Tables generally measure only one square meter, while re-purposed containers such as tires and washtubs are also small. But a focus on output without considering processes of economizing ignores how tight the margins of survival are in resource-scarce environments. As Diane Elson (1995) suggests, it may also be reflective of a bias in development that values income generation over expenditure substitution. No such distinction was made among research participants, which is consistent with findings in different

parts of Africa that demonstrate how the value of household activities is measured not only by their ability to bring in household income, but also to prevent household expenditures (Gallaher et al., 2013; Slater, 2001).

Women are very often responsible for managing the household economy (*kom-kom*) and are meticulous about how much they spend. A common strategy to negotiate resource scarcity and to ensure food and income security is to strategically diversify productive activities within the household space, and all women involved in the study had multiple sources of income. By improving the productive potential of the household space via micro-gardening, women are enacting a practice of smart household economics within the context of a culture that is still very much oriented around subsistence agriculture, in which resource scarcity is the rule, rather than the exception. Amsatou, for example, suggested that every house should have a garden because "it is part of the economy" and "it reduces your spending."

Among micro-gardeners, mint is especially valued because it grows quickly, is in high demand, and can be grown throughout the year, which gives micro-gardeners an advantage over soil farmers who can only grow it in the dry season. Mint, therefore, provides a readily available, if small, source of income that adds to the household *kom-kom* in meaningful ways. For example, Ndeye Maty explained that she had a container into which she deposited all her income from her mint sales. One day, when her daughter needed 1000CFA (about 2USD), she looked in the container and found that she had saved 2700CFA. She gave 1000CFA to her daughter, and then used the rest to 'cure her needs.'

Micro-gardeners addressed the criticism that micro-gardening does not reduce poverty in several different ways. Ndeye Maty rejected it outright by articulating the multiple ways in which micro-gardening is helpful to household economies: "...in the morning, my neighbor can come here and not have to go to the market to buy lettuce, and so she can keep her pass in her pocket (250CFA). So, you've combated poverty. Let's say you bought some mint and the kids destroy it...you can come buy some here for 50cfa and your tea won't be disrupted...You can sell an eggplant, and the next day someone comes and buys 200CFA of mint ...then I go and buy coal with that (because I won't borrow). If I have 500CFA, I can buy two loaves of bread and sugar for kinkeliba¹⁴ tea."

Other micro-gardeners, including Joe, the only man in the group, and Therese questioned the notion that any one intervention could 'eliminate poverty' outright, and partly ascribed value to micro-gardening because of its role as a catalyst for future economic opportunities. Therese noted that the particular value for her was that it brought her together with other women to discuss how to expand their activities to include chicken production. Such a process of discussing and learning, she explained, is indicative of 'self-development' so that they "don't have to go to anyone anymore to ask for anything." Similarly, Joe said, "Okay, fine...micro-gardening can't remove poverty; it can't bring you a lot. But it *can* bring something for you to eat. These women, before they were doing micro-gardening, each one was at their house. They didn't know each other, but micro-gardening brought them together so they know each other...they can keep going with it until they get more money, and then see what else they

¹⁴ *Combretum micranthum*

can do that will bring them more money, or help them, or they can do chicken, or sell, or this or that. All of that will combat poverty. Micro-gardening opens the eyes and minds of people. They figure out what else they can do; if they just sat at their houses, none of that would have happened."

Thus, very clearly, micro-gardening is a gendered enactment of well-being in ways that are both familiar, i.e. it re-produces gender roles and responsibilities, as well as innovative and emancipatory, i.e. it enables women to do something new, and opens up new possibilities for improving material realities. By giving them a means to do gender well via the production of healthy quality food for their families, as well as another source of income, micro-gardening represents a gendered enactment of *nattangué*. In turn, this enactment of well-being produces a particular material reality within the household, e.g. the tables and plants in the household space are sedimentations of gender. Furthermore, women enroll this particular enactment of gendered well-being in other enactments of well-being, all of which operate in, as well as constitute, the 'socio-spatial circuits' that are M'Bour, Senegal.

2.4.2. Gendered Enactments of City Well-being

In Senegal, women commonly organize collectively to work as agents of change to improve their lives and the lives of their families. The particular gendered relationships of power in Senegalese society *produce* this form of organization, or gendered 'tactic,' which helps

women achieve their objectives.¹⁵ Within the context of M'Bour, there are several social and political realities that cause women to organize collectively. First, Senegalese society is generally recognized as patriarchal, and collective action is a common strategy that enables women to successfully achieve their goals. Secondly, many people perceive that social change relies primarily on citizen action independent of, rather than engagement with, institutions of governance. In general, urban citizens are doubtful of the capacity of M'Bour's municipal government to represent their interests or to provide an enabling social or physical city environment. Such a sentiment is understandable; over the course of the ten-month research period, there were two cooking fuel shortages and subsequent price increases, increases in the price of staple ingredients and petrol, and daily power and water outages. Though many of those situations were beyond the control of M'Bour's government, they nonetheless reinforce the general idea that government institutions do little to enable well-being of citizens. Many residents in M'Bour could not identify a single helpful action taken by the city government, and lamented the state of city infrastructure, such as the general state of disrepair of roads and lack of water and electricity delivery systems in the more recently occupied parts of M'Bour. Thus, on a daily basis, people are reminded not only of the impotence of government, but of its role in creating a more difficult urban social and physical environment.

¹⁵ Per Foucault (1982, pp. 788-89), "power is not simply a relationship between partners, individual or collective; it is a way in which certain actions modify others...it is a total structure of actions brought to bear upon possible actions; it incites, it induces, it seduces, it makes easier or more difficult..."

Third, the economic environment has become so difficult, that an increasing number of urban women are working to earn money.¹⁶ Though most people understand the Koran to say that women should not work, a common refrain is that the *jamanoo yi* (the times) are so difficult, that it is no longer practical for only men to earn money. Both men and women say, '*Amatul goor, amatul jigeen*' (there are no longer men, there are no longer women) when referring to the traditional gender roles in relation to earning an income. This is not to say there has been a total elimination of gender specific livelihood practices, but it does highlight how both men and women recognize that changing socioeconomic circumstances require changing gender practices, which, in turn, results in modified gendered realities.

Within this socio-spatial context, women who participate in the micro-gardening group viewed micro-gardening as a political tactic of social and economic development that remedies the government's inability or unwillingness to mitigate difficult urban conditions. Micro-gardening was viewed as a way to *yingatu*, which means, literally, 'to shake one's body,' but in the context of development, means 'to work to improve one's condition.' They referred to their micro-gardening colleagues as *nattangos*, or 'collaborator' (note the root word, '*natt*') which is a word that captures the idea that they are working together towards a common goal.

Rachel Slater (2001) and Alice Hovorka (2006a, 2006b) discuss how urban cultivation is used by women as a strategic (or tactical) practice to improve their relative positions of power

¹⁶ In general, those living in urban areas rely more on a cash-economy than those living in rural areas; this particularity of urban areas enables the acceptance of women working outside the home.

and influence in urban environments. Similarly, micro-gardening has emerged as a political tool, which women use to explore new ways of enacting well-being and to extend their vision of well-being into other neighborhoods and throughout the city. Women in the micro-gardening group are from many different neighborhoods in the city. Normally, because women stay close to home to care for the household, their connections do not extend much beyond their immediate environs. But, through micro-gardening, women are creating connections with other women whom they would normally never meet. One woman said that she appreciates that she can now visit another part of town, know someone there, and can pay them a visit. Still another said, "If we see each other every once in awhile, it makes the relationship smoother. Even if I see someone and I don't know their name, but I know them from micro-gardening, I can say 'hello' and we can stop and talk." Knowing people in different parts of the city serves an instrumental value, as well. If one woman in one part of town has business in another, unfamiliar part of town, she can call her micro-gardening colleague on her cell phone, and ask exactly where to go and what to look for. Thus, by belonging to the micro-gardening group, women are extending their social networks, thus affecting the social networks that comprise M'Bour, which translates into strengthening their positions within the city. It is, in a word, *empowering*.

It is important to note, however, that belonging to a group is a contingent enactment of gender. Not all women belong to groups and the ability to effect change in this way is not available to all women. When micro-gardening was introduced to M'Bour, the mayor's office asked several neighborhood chiefs to each pick five women to participate in the training

program. Such a method of choosing participants suggests that micro-gardening training required some relationship with the neighborhood leader and, as such, reflected a privileged position. Additionally, it appears that some women are spatially or socially disadvantaged when it comes to joining influential groups. For example, when asked if she belonged to any groups, Marie, who lives on the outskirts of M'Bour said she did not because there were none in that area to which she could belong. Khady said that she did not belong to a group because she did not know what they did and has not had any schooling so would not be able to participate. In contrast, women in the micro-gardening group have past experience in other groups, are involved with other community improvement projects, were attuned to various development interventions in their communities, and were strategic about accessing development resources. Most women in the micro-gardening group are from more established parts of the city with better infrastructure, have been in the city for more than ten years, have extended social networks, live in secure housing arrangements, and live in houses with running water and electricity. In general, the profile of the women in the micro-gardening group accords with the description given by the staff member at *Enda Tiers Monde*, and is at odds with the intended target as articulated by the micro-gardening country project coordinator, who said that poor families are prioritized. An understanding of how women gain access to resources demonstrates the ways in which women experience the city in different ways; some women are able to access mechanisms for exercising power by leveraging existing relationships of power through what Foucault (1982) calls, 'systems of differentiation.' In the case of micro-gardening, access to the power that is perceived to articulate in micro-gardening is predicated on existing

relationships of power that confer privilege; the women who go through training are selected through a system of differentiation that is tied to social and spatial location.

2.5 Conclusion

An understanding of gender as 'emplaced performance' compels an analysis that pulls gender out of the 'fictions of normative gender roles and responsibilities' and grounds it in material realities, thus refocusing attention on constitution of the subject in a *particular* place. In turn, it reminds us that doing is situated, and thus produces situated material realities:

...a given place takes on the qualities of its occupants, reflecting these qualities in its own constitution and description and expressing them in its occurrence as an event: places not only are, they happen. (Casey, 1996, p. 27)

The urban environment, especially one as dynamic and connected to the world beyond as is M'Bour, provides a whole new set of circumstances, and allows for new ways to cite 'a prior and authoritative set of practices' (Butler, 1997, p. 51). Micro-gardening is, in part, successful because it accords with the 'rules of the game' (Bourdieu, 1990).¹⁷ Women in the micro-gardening group are certainly unconsciously citing 'the rules of gender' when imagining their futures, as evidenced by how they have come to embrace micro-gardening, which, after all, is resonant with their identities as homemakers. But, at the same time, while they are citing

¹⁷ That is, micro-gardening *obeys* certain regularities: "The social game is regulated, it is the locus of certain regularities" (Bourdieu, 1990, p. 64).

those conventions of authority, they are also, through collective organization, leveraging them towards new possibilities and increased autonomy.

A focus on the performance in place provides an ethnographic account in which 'community' emerges in differentiated terms, and in which place is constituted by "multiple and contradictory constituencies and alliances" (Watts & Peet, 2004, p. 25). A focus on performances of power, and attention to how particular groups of people negotiate power in particular places given particular contingencies, provides insight into the dynamics that perpetuate inequality. For example, the mobilization and planning by women in the micro-gardening group suggests that accessing resources from development organizations requires some skill, strategy, and political savvy; that is, accessing resources requires active agency. Many of the women involved already had some prior experience with development projects and were adept at accessing resources. Skill, strategy, and political savvy are characteristics of people who may be better socially located; in this case, those that are better socially located, are also better spatially located. In M'Bour, access to development resources tends to cohere to geographic locale; resources are typically found in parts of the city that have better infrastructure, and which are closer to the center of town.

Conceptually and methodologically, understanding that gender has concrete effects vis-à-vis the sedimentation of identity on the urban landscape offers one way to pay attention and to generate more respectful accounts that try to better approximate and account for local motivations and practices. Understanding gender to be implicated as a process of self-authoring and enactment, rather than a relatively static assignment in a system of patriarchal

power, opens up the possibility for seeing the pain and the pleasure of gender (Bondi & Christie, 2000; Gururani, 2002). Linking the process of gender, as something that people do through relational practices, to the creation of urban socio-ecological realities also offers a way to show how 'place' is never fixed and static, but always the product of relationships, which are dynamic, active, contested and multiple (Gururani, 2002; Haraway, 2001). Thinking of gender as a process forces an analysis that expects to find complexity. It helps to perceive and acknowledge that affinity, power, and subjugation do not adhere to sex, but rather articulate in interaction. Gender-as-emplaced performance represents an attempt to respond to John Law's call for ways of seeing that "refuse to be overawed by seemingly large systems, and the seeming ontological unity of the world enacted by large systems. It is, instead, to make the problem smaller, or better, to make it more specific. To deal with the materialities of specific practices. To discover difference. And then to intervene in ways that might make a difference to those differences" (Law, 2008, p. 637). Places and environments are gendered not only because men and women see them differently, derive different benefits from them, and encounter different obstacles in them, but also because gender becomes inscribed on the landscape, and in socio-ecological realities, in very real ways.

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CHAPTER THREE

PRACTICE THEORY AND INFORMAL URBAN LIVELIHOODS IN M'BOUR, SENEGAL: A CASE STUDY OF URBAN CULTIVATION

ABSTRACT

Throughout African cities, citizens commonly make their livelihoods in what is referred to as the 'informal' economy. It has been argued that the concept of informality is problematic and obscures more than it clarifies. This article offers a way to re-conceptualize urban livelihoods through the use of Theodore Schatzki's practice ontology, which roots livelihood firmly in place by connecting everyday economic practices to the material world. Using this framework and qualitative data drawn from research in M'Bour, Senegal, the analysis attends to the ways in which practices of urban cultivation intersect with the material dimensions of the urban space, and how these practices constitute and are constituted by the city and civic environment. Such a conceptual orientation provides insight about how people negotiate complex urban processes and how those processes are informed by local social and environmental realities.

Chapter 3 Practice Theory and Informal Urban Livelihoods in M'Bour, Senegal: A Case Study of Urban Cultivation

3.1 Introduction

In situations of limited infrastructural development, poor housing and insecure livelihoods, the street and other 'ephemeral' public spaces become crucial settings for inventing ways of being sociable, ways of securing opportunities to earn money and ways of gaining recognition. The inventiveness and modernity of city life everywhere is not only in bricks and mortar, but also in personal styles, performances, and cultural practices (Robinson, 2006, p. 85).

Urban residents in sub-Saharan Africa make the city as they go. Through unregulated and extra-legal practices in all areas of urban life, including income-generation, transportation, housing and infrastructure development, cities emerge as informal, popular productions. These practices and the urban livelihoods that are created around them offer important entry points for understanding how urban citizens participate in and experience this ongoing process of urban social and environmental change. In turn, research that draws attention to the complexities associated with making a livelihood has an important contribution to make to urban planning, development, and governance. Much more than simply the means for economically sustaining a household, urban livelihoods are diverse practices that constitute and are constituted by cultural, socioeconomic, and physical environments. That is, they are fundamental in a broad and multidimensional sense to how people 'make a life.' As such, they are constitutive of what Habermas calls the lifeworld, or the "informal and unmarketized

domain of social life," that serves as a repository for shared meanings and understandings, and is a critical locus for social action and change (Finlayson, 2005, p. 51).

Held up against 'the fantasy of (Western) urban modernity' African cities do not fare well (Robinson, 2006, p. 13). Urbanization in Africa is typically regarded as a haphazard, unthinking, spontaneous, and problematic phenomenon, and the relative size of the informal economy an indicator of 'backwardness' (Potts, 2008). Such conceptual orientations influence the production of knowledge and power relationships, and, thus, profoundly impact urban development policy, planning, and practice. The result is that the inventiveness and resourcefulness of urban citizens in navigating difficult conditions, and their efforts to create a better life, are ignored in favor of a conceptual orientation that locates both the definition and solution of problems with bureaucrats, technocrats, and economists.

Polanyi observes that the ultimate purpose of economic activity is not to safeguard an interest in the possession of material goods, but, rather to safeguard 'social standing, social claims and social assets' (Polanyi, 2001, p. 48). What, then, are we to make of studies that consistently neglect the underlying values and motivations of livelihood and the social relationships which define and enable them? If, as the sociologist Robert Park asserts, the city is "man's most consistent and on the whole, his most successful attempt to remake the world he lives in more after his heart's desire," should research not do better at excavating how the 'heart's desire' comes to express itself through the African social and physical cityscape? Those are the questions that provide the inspiration for this research.

The basic premise of this paper is that beyond what is perceived as chaos to the external observer, there is an organizing logic in the practice of urban livelihoods, which derives from embedded social conventions, knowledge, and practices in combination with the produced conditions of the city. To better understand this logic, and the ways in which it informs livelihood practice, this paper uses a conceptual approach based on Theodore Schatzki's practice theory and informed by scholarship in informal economies. It pays attention to how people's lives 'hang together' through the practice of livelihood and the material configurations associated with those practices, and applies this approach to a case study of urban cultivation in M'Bour, Senegal (Theodore R. Schatzki, 2010). The conceptual approach attends to the ways in which the practice of urban cultivation is shaped and 'spatialized' by urban processes, which are understood through a study of relationships between people and place via urban material configurations. It further explores how people use livelihood to satisfy multiple social and individual objectives. By drawing attention to the economic, social and spatial contingencies of livelihood practice, it becomes clearer how livelihoods are *relational*, *rational*, *normative*, and *emplaced*, that are at once responses to difficult urban conditions and projections of values onto the urban space. The contingencies associated with livelihood provide insight about (1) How social and environmental forces shape the practice of urban cultivation; (2) The practices urban cultivators employ in responding to those forces; and, (3) How livelihood practices shape the civic and city environment. Such a perspective on livelihood offers one way to consider the shared meanings and understandings of the urban lifeworld in relation to urban development and governance.

The following section discusses how prevailing perceptions of economic life in African cities are inherently hostile to equitable and just urban development. It then goes onto propose a more phenomenological approach to conceptualizing the everyday livelihood practices of urban citizens, and suggests that such an approach could be used to inform a new paradigm of planning that privileges "the values of inclusivity, multiplicity, and sustainability" (Odendaal, 2011). A detailed findings section is then presented, which demonstrates the multi-dimensionality of livelihood and the ways in which people exercise agency in contingent interactions with the urban landscape and other urban residents. The paper concludes with a short discussion of the theoretical and practical implications of the research.

3.2 A Framework for Re-thinking Informal Urban Livelihoods

The disadvantage of exclusive attention to a group of abstractions, however well-founded, is that, by nature of the case, you have abstracted the remainder of things. In so far as the excluded things are important in your experience, your modes of thought are not fitted to deal with them. You cannot think without abstractions; accordingly, it is of utmost importance to be vigilant in critically revising your *modes* of abstraction (Whitehead, 1926, p. 73).

Prevailing perceptions of cities and the lives of urban residents matter to urban development policy and practice. If the urban economic activity of poor people is primarily understood to be chaotic, desperate, and spontaneous, as it often is, there is little inclination on the part of development authorities to refer to these processes and practices as a resource for urban development policies. In fact, as a number of authors observe, these practices are

often perceived by city authorities to be 'out-of-place' in an urban environment and to adversely affect the image of the city that town leaders would like to project, i.e. planned, clean, tidy, and modern (Potts, 2008).¹ Such perspectives underlie and enable the authoritarian actions of city governments in both the global North and South, in which mostly poor people are persecuted in their daily efforts to make a life.²

3.2.1. Prevailing Conceptualizations of Informality and the Politics of Planning

Urban life in Africa is often brought into sharp relief through "a relentless catalogue of the utterly devastating conditions that characterize the daily lives" of people living in cities (Pieterse, 2008, p. 2). Within this discourse, and vis-à-vis a portrayal of the African cities as "all that can go wrong with urbanism," (Myers, 2011, p. 4) the organizing conceptual dichotomy of

¹ Use of the word 'modern' here refers to Western parochial notions of modernity. Jennifer Robinson (2006) discusses how 'modernity' has been appropriated by the West, so that a western account of what constitutes modernity also serves as a universal account. Robinson argues that it is better to understand all cities as 'ordinary' and complex, and to avoid assigning prominence to some cities because they conform to a Western ideal.

² For example, the catalyst of the so-called Arab Spring is generally recognized as the self-immolation of Mohamed Bouazizi. Bouazizi was a street vendor in Sidi Bouzid, Tunisia who was repeatedly harassed by government authorities, ostensibly because he lacked the proper permissions to sell produce out of a wheelbarrow. When authorities confiscated his produce and when the governor refused to hear his complaint, Bouazizi, in a final act of desperation, set himself alight in front of the governor's office. Likewise, a report by the Centre on Housing Rights and Evictions documents how mega-events, such as the Olympics, cause city governments in the global North to forcibly evict people from their homes, demolish public housing, and criminalize homelessness. In Atlanta, for example, the report found that 'Approximately 30,000 poor residents were displaced from their homes in Atlanta by gentrification, the demolition of public housing, rental speculation, and urban renewal projects associated with the Olympics. Approximately 2,000 public housing units were demolished and nearly 6,000 residents displaced. African-Americans were disproportionately affected by displacements, housing unaffordability, and harassment and arrests of the homeless.' (http://tenant.net/alerts/mega-events/Olympics_Media_Release.pdf). The complete report is accessible at <http://homeless.samhsa.gov/Resource/View.aspx?id=35839>

formality/informality is used to make sense of the urban economy. Though the most basic definitions of formality and informality refer simply to whether or not an economic activity is regulated or unregulated, the concept has come to serve as shorthand for a number of other characteristics, which has implications for how particular economic activities are perceived by authorities. Table 3-1 provides a summary of qualities commonly associated with each side of the dichotomy.

Table 3-1: Characteristics Associated with the Formal/Informal Dichotomy

Formal Economy	Informal Economy
Modern	Traditional
Growth-oriented, dynamic, and innovative	Small-scale, family run, low levels of
technology	technology
Progressive	Static
Capital Intensive	Pre-capitalist
Enables accumulation of capital	Survivalist and subsistence

A number of authors have discussed the dichotomy's analytical shortcomings, as well as discredited the notion of a dual economy, and those arguments are not extensively repeated here.³ However, there are two main problems that are important to highlight for this paper because they provide the impetus for the proposed alternative conceptual approach to understanding how urban economic life is organized. First, though informality is

³ For other critiques, refer to Owusu, 2007; Potts, 2008; and Roy, 2005. .

overwhelmingly associated with economic activities of poor people, research shows that informal livelihoods are practiced by people from all income levels who may simultaneously engage in both regulated and un-regulated work, depending on available opportunities (Hansen & Vaa, 2004; Lourenço-Lindell, 2004; Owusu, 2007). Further, unregulated economic activities are not necessarily 'traditional' or 'family-run,' and people who participate in these activities do not do so just for 'survival,' but to accumulate capital (Owusu, 2001). As Francis Owusu notes, working in multiple livelihoods has just become "the way of doing things" in African cities (Owusu, 2007, p. 453), while Ananya Roy points out "informality is not synonymous with poverty" (Roy, 2009). Such empirical realities suggest that the dichotomy does more to obscure than clarify the workings of urban economies, and argue for approaches that presume ways of 'getting by' in African cities are complex processes comprised of informal and formal practices.

The second issue is more fundamental and raises serious questions about a conceptual approach that organizes economic life into two oversimplified categories that confer legitimacy on some livelihoods, but not on others. The implications for equality, social justice and the ability to pursue livelihood become evident when one acknowledges how the dichotomy works as part of a 'regime of representation' within a particular discursive context, which, in turn, affects how urban space is managed (Escobar, 1995).

When Keith Hart initially made the distinction between formality and informality, and characterized it as the difference between wage-earning and self-employment, his intent was to caution against the "unthinking transfer of western categories to the economic and social structures of African cities" and to demonstrate how people adapt their livelihood strategies

when the state's macroeconomic policies fails them (Hart, 1973, p. 68). The significance of the distinction shifted as the concepts became colonized by the development apparatus and were folded into the prevailing 'developmentalist' macroeconomic policy framework,⁴ thus enabling informality to emerge as an 'object of state regulation' (Roy, 2005). To his obvious chagrin, Hart subsequently noted that the "'informal economy' became a way of turning what is defiantly external to bureaucracy into something internal to it, incorporating the autonomous life of the people into the abstracted universe of their rulers" (Hart, 1994, 2006).

A morphological reading of 'informality' indicates economic activity 'without form' and suggests that informal livelihoods can be distinguished from formal livelihoods according to appearance or type. Within a policy and planning context that regards parochial Western notions of modernity and capitalist economies as 'formal,' and thus, developed, what seems to concern planners and policymakers is not so much whether an economic activity is regulated, but whether or not it conforms to parochial notions of (modern) form.⁵ Small-scale, 'improvisational' livelihoods that comprise the street economy, for example, appear chaotic, and are subject to authoritarian 'crackdowns' by urban authorities. In these cases, the ostensible concerns associated with informality, such as loss of budget revenue or the

⁴ 'Developmentalism' refers to the 'institutional promotion of development as a way of improving life in poor countries.' (Robinson, 2006)

⁵ For example, Ananya Roy (2009) demonstrates how urban governments and large businesses engage in informal practices and Karen Hansen (2004) emphasizes how the removal of vendors from public spaces is linked to economic liberalization efforts and the introduction of free market practices.

undermining of the rule of law, may serve as pretense for what is really an elitist (and formal) assertion of control over city space.

The analytical tools used to understand economic processes must enable consideration of complexity, as well as assume and encourage analyses that discern how these processes differ from place to place, and how they differentially affect people in those places. Roy (2005), for example, has proposed understanding informality as a *mode* of development, which, she asserts, confers an organizing logic to practices of informality that can help to see how different economies and spaces are connected to one another. Owusu (2007) proposes that a Multiple Modes of Livelihood (MML) approach can help to 'indigenize planning' vis-à-vis a recognition that the conditions in African cities require individuals to diversify economic activities. The next section offers a complementary approach, but argues for an additional emphasis on 'place' as an important theoretical touchstone. A place-based approach entails understanding places as "constructed historical processes...in which the extralocal is as constitutive as the local" (Biersack, 2006, p. 16) and thus provides the impetus to focus on the ways in which factors at multiple scales combine to produce distinct and specific places that require different ways of pursuing livelihoods (Biersack & Greenberg, 2006; Casey, 1996; Escobar, 2008). Such an approach compels an analysis that valorizes local level complexity, perspectives, and experience, and thus serves an agenda intended to decolonize 'the right to the city.'⁶

⁶ 'The Right to the City' refers to a concept introduced by Henri Lefebvre, which Mark Purcell says 'stresses the need to restructure the power relations that underlie the production of urban space, fundamentally shifting control away from capital and the state and toward urban inhabitants.' (Purcell, 2002)

3.2.2. Re-Thinking Economic Processes with Schatzki's Practice Ontology

Economic practice is a critical area of inquiry for understanding what people value and how they construct their lives. Much more than simply the means to acquire the material necessities of life, economic practice is widely recognized to be an expression of sociality.⁷ Practice theory provides a conceptual orientation for understanding livelihood practice as an articulation of sociality, or the ways in which peoples' lives 'hang together' (Theodore R. Schatzki, 1997, 2010; Theodore R. Schatzki, Knorr-Cetina, & Savigny, 2000). As Schatzki (2000) asserts, "practice accounts are joined in the belief that such phenomena as knowledge, meaning, human activity, science, power, language, social institutions, and historical transformation occur within and are aspects or components of the *field of practices*" (p.11). By practice theorists' own admission, "the specific character of what counts as a practice differs significantly" (Thevenot, 2000, p. 64). In this paper, a study of practice is used to understand the meaning behind livelihood, and the ways in which people deliberately and subconsciously enact that meaning as they navigate the urban environment and negotiate processes of urban change.

As an engagement with practice, this research is necessarily 'place-bound.' Indeed, the research demonstrates how the city plays a critical and active social role in the ways people

⁷ A number of authors have discussed the social basis of economic practices. In effect, they all acknowledge a common insight: economies are emergent social phenomena. Pierre Bourdieu explores this through the *habitus*, Ivan Illich refers to a *vernacular economy*, Polanyi observes that 'man's economy...is submerged in his social relationships,' and Gibson-Graham refers to 'economies of difference.'

make their lives, as well as how, in making their lives, people make the city.⁸ The idea that the environment plays an active part in the constitution of livelihood is not without precedent in cultural geography studies, though such research often concerns rural environments (Batterbury, 2001; Bebbington & Batterbury, 2001; King, 2011; McSweeney, 2004). As Probyn (2003) observes, 'the place and space we inhabit produce us. It follows, too, that how we inhabit those spaces is an interactive affair' (p. 294).

To explore the role of the city as it is significant to livelihood, the analysis spatializes livelihood practice by drawing from Theodore Schatzki's social ontology. Schatzki's approach roots practices of sociality firmly in place by connecting practice to the material dimensions of place. According to Schatzki, social life "transpires as part of nexuses of practices and material arrangements" (Schatzki, 2010, p. 129). Practices are construed as organized 'manifolds of human activity,' circumscribed by the particularities of locations and relationships, while the physicality of the environment is considered fundamental to how lives transpire. In Schatzki's ontology, *the material is social* and human social worlds are made in, through, and from material worlds.⁹ In other words, material things must be understood not as static, 'dead' objects, but as dynamic matter comprised of embedded social contingencies. In this research,

⁸ Place is conceived of as an active process, brought into being by people engaged in practice. It is proposed as an alternative way of thinking about development and as a way to privilege local meaning and experience over the global (Biersack & Greenberg, 2006; Escobar, 2001, 2008; Feld & Basso, 1996). .

⁹ Schatzki distinguishes his ontology from actor-network theory due to its focus on practice (Schatzki, 2010).

such a perspective compels close attention to city form and material configurations and the ways in which those configurations are implicated in the social practice of livelihood.

Schatzki proposes three ways to consider how materiality is implicated in the 'hanging together of human lives': (1) physical entities in combination with practices compose social sites; (2) the physical-chemical composition of materials affects practice-material arrangements and affects social life; and, (3) 'biological and physical flows pass through practice arrangement nexuses' (Theodore R. Schatzki, 2010). Additionally, he proposes four types of relationships among practices-material arrangements that shape social life in various ways: causality, prefiguration, constitution, and intelligibility. *Causality* refers to the ways in which materiality *leads to* certain practices; *prefiguration* refers to the ways in which the material environment *sets the parameters* for possible 'paths of action;' *constitution* refers to the idea that certain material arrangements are *necessary, or strongly linked, to* certain practices; and, *intelligibility* refers to the idea that the arrangements *make sense to* (indeed, that they are given sense by) the people who carry out the associated practices.

3.3 The Case of Urban Cultivation

The analysis examines urban cultivation, a practice which is commonly viewed by urban authorities to be a temporary, opportunistic, backwards use of city space, but which is widespread, and persists even in densely populated cities. As a use of urban space that is increasingly appearing on developmentalist agendas and which is attracting more interest from African urban planners, it is important to understand how citizens use agriculture to improve urban well-being and negotiate the urban environment. A better understanding can enable

land-management policies that include urban cultivation, but is also necessary to encourage more equitable access to urban space. Deliberate efforts must be made to avoid using urban agriculture initiatives in ways that promote and maintain unequal power relationships vis-à-vis development projects and access to city space.¹⁰

In M'Bour, many people engage in the practice of primary production, i.e. cultivating plants and raising animals. As a common and widespread practice in African cities, its role in shaping urban environments and civic relationships is significant. The research findings address the following concerns: (1) how social and environmental forces shape the practice of urban cultivation; (2) the practices urban cultivators employ in responding to those forces; and, (3) how livelihood practices shape the civic and city environment. Though the focus is on the cultivation of plants, small livestock figure into the analysis because they are an intrinsic and significant part of the urban primary production practice-arrangement nexus.

¹⁰ For example, in M'Bour, despite the view from some city officials that farming was incompatible with urbanity, land was allotted to a French organization who subsequently installed greenhouses (post-research period). The description of the project, which can be found here (in French: <http://fr.allafrica.com/stories/201105270600.html>, accessed April 3, 2013) is replete with developmentalist discourse: e.g. participatory approach, jobs, helping orphans and vulnerable children. Another description is here (<http://petitecote.net/mbour-%C2%AB-agricol-66-%C2%BB-veut-sagrandir-pour-assurer-une-autosuffisance-alimentaire-et-lutter-contre-le>, accessed April 3, 2013) and contains phrases such as 'fighting youth unemployment,' 'conservation of biodiversity,' 'regulating the climate,' and, 'food security.' In this case, cultivating an urban space seems to be acceptable, which is perhaps due to its modernistic technological aspects (embodied by the materiality of greenhouses, etc) and the 'partnership' with a French development organization. Ananya Roy (2011) explores such relationships through the concept of 'worlding' which demonstrates "how the production of the urban takes place in the crucible of modernizing projects of development" (p. 6).

3.4 Site Background and Methods

M'Bour, Senegal is a rapidly growing, ethnically diverse, coastal town with a population of around 200,000 located about 80 kilometers south of the capital city, Dakar. As a comparatively dynamic and economically-promising town, M'Bour draws new residents from all over Senegal and beyond, as well as expatriates and retirees from Europe. According to one official estimate, 60% of residents were born elsewhere. Though small business, fishing, and tourism are generally regarded by town officials as the most economically important livelihoods, many of M'Bour's citizens make their lives, either partially or wholly, with unregulated economic activities.

A salient characteristic of M'Bour, commonly remarked upon by the town's inhabitants, is its quick growth. On the west side, M'Bour's growth is limited by the Atlantic Ocean. On the north, south and east sides, it is limited by the territorial boundary it shares with the *communauté rurale* of Malicounda.¹¹ M'Bour has subdivided all the land within its territory, and any additional land must be acquired through negotiations with the government of Malicounda.¹² As a result, land is in increasingly short supply and is appreciating rapidly.¹³

¹¹ Senegal is divided into departments, which are further divided into arrondissements, which are divided into communes (urban)/communautés rurales (rural). Each commune/communautés rurales is governed by an elected set of representatives and maintains sovereignty over its land.

¹² This territorial boundary is not clearly defined, and disputes are common.

¹³ For example, one research participant bought land ten years ago directly from the farmer, prior to government subdivision, which was imminent. He paid 30,000 cfa (about 60USD) for the land itself, and 25,000cfa (50USD) to register it with the municipal government. Land in that part of town, which at this point could still be considered peri-urban is now being sold for

Sufficient quantities and diverse kinds of food are easily accessed if one has the means to purchase them. Residents commonly remark upon cost of living increases and how expensive food and other material necessities have become in the last decade. Daily power and water outages, petrol shortages, severely depleted fish stocks, and increases in the price of flour and cooking gas are common occurrences with causative factors at multiple scales.¹⁴ Despite these difficulties, many recognize M'Bour to be a city of opportunity and abundance.

The following empirical findings are drawn from qualitative data¹⁵ collected while studying multiple forms of small-scale dry season urban cultivation from August 2010 to May 2011. The forms of cultivation include micro-gardening, ornamental plant production, fruit

around 1.5 million cfa. Another cultivator reported that the plot right across from his house, located in a busier, more central part of town, had recently sold for 8,000,000 cfa (16,000USD).

¹⁴ As it relates to 'empty oceans,' foreign fishing fleets outcompete Senegal's fishermen, <http://www.guardian.co.uk/global-development/2012/apr/02/senegal-fishing-community-act-foreign-fleets> (accessed February 2, 2013). Extended power outages were a common occurrence in Senegal during the research period. Government blamed the outages on aging distribution infrastructure, but their ability to keep the power turned on during important soccer matches belies that explanation. Costs of oil on the global market were at least a contributing factor: <http://www.reuters.com/article/2010/07/16/ozatp-senegal-energy-protests-idAFJOE66F0DQ20100716> (accessed February 2, 2013). Cooking gas shortages happened twice during the research period, and many people were left without gas for a number of days until a shipment was received from Dakar. The price of gas increased at least 22% over the course of the research period.

¹⁵ Interviews, participant observation, photographs of research sites, and document analysis. Reviewed documents include, 'Historical Overview and Purpose of Master Plan,' (no date), 'Town of M'Bour' (2008), 'Extract of a Planning Report from the Director of Sanitation,' (2008), 'Extract of an impact study on the environment for the town of M'Bour' (2008), and 'A table synopsis of the needs expressed by the neighborhood counsels of the town of M'Bour' (no date).

tree production, and vegetable production.¹⁶ Two semi-structured interviews with each cultivator, recorded several months apart, focused on livelihood strategies and practices, outputs of gardens, individual life histories, economic challenges, urban governance, and hopes for the future.¹⁷ Interviews were conducted with eight men and ten women at 14 different cultivation sites, and eight officials (seven men, one woman) representing five government bureaus.¹⁸ Interview protocols were developed following multiple visits to, and participant observation at, research participants' homes (Creswell & Clark, 2007; Lincoln & Guba, 1985). Site visits to cultivators typically lasted one to two hours each and each site was visited, on average, five times over the nine-month study period. Ongoing memo writing and informal conversations with a core group of neighborhood friends helped develop research themes and insights, and provided a sort of locally grounded peer-review process (Glesne, 2006). Systematic member-checks with interviewees were used to ensure reliability of interpretations,

¹⁶ Micro-gardening is a national government program that was initially started as a collaborative development project with the Food and Agriculture Organization of the United Nations (FAO) in 1999. The program currently operates through local agriculture offices and can be described as simplified hydroponics: plants are grown in lightweight substrates on tables that can be set up on rooftops, terraces, or within walled compounds, which, in densely built environments with limited 'soil space,' represents a viable option for growing herbs and vegetables close to home.

¹⁷ Following Seidman (2006), the purpose of interview sequencing enables interviewees to "reconstruct and reflect upon their experience within the context of their lives" (p. 21). It also enables interviewers to formulate questions based on realities as they are relevant to interviewees, rather than solely in terms of an external research agenda. Lastly, interview sequencing has the ancillary effect of building trust and familiarity between interviewee and interviewer, thereby better ensuring the 'trustworthiness of data.'

¹⁸ Bureaus represented include the mayor's office, the prefect's office, the urban planning office, the office of decentralization and local development, and the rural development office, which manages the micro-gardening program.

which was an especially important analytical aspect of the research in light of the deep cultural dimensions of the data (Glesne, 2006; Lincoln & Guba, 1985). The interviews were conducted and recorded in Wolof and French, transcribed by the author upon arrival back in the United States, and coded and organized with the help of NVivo software.

3.5 Understanding Urban Cultivation at the Intersection of Place and Practice: Material-Practice Assemblages of Urban Cultivation

In order to perceive the materiality of social life, findings are organized according to Schatzki's conceptual framework: (1) physical entities and practices compose social sites, (2) physical-chemical composition of materials affects social life, and (3) biological and physical flows pass through assemblages.

3.5.1. The Composition of Social Sites

This research explores the social site of urban cultivation, the practice-material assemblages that constitute how the city is used to produce and exchange food. This section demonstrates (1) how the material arrangements that enable urban cultivation have formed, and (2) how informal arrangements that enable a mutually beneficial relationship are preferred over formal land-tenure practices.

3.5.1.1. Cultivation Assemblages: Land Tenure and the Construction of Wells and Walls

The basic physical requirements for a dry season garden in the city are that it has a water source and physical protection.¹⁹ Walled vacant lots with wells are common material configurations in M'Bour. That so many of these vacant lots exist, which create the conditions that prefigure urban cultivation, is the direct result of city's formal land tenure management practices in combination with a common informal practice to safeguard one's claim to urban space.²⁰

Land is generally considered to be the property of the state, and urban land tenure is managed through a method called 'mise en valeur des zones du terroir.'²¹ The state allocates land based on a contingent agreement in which the recipient swears to make productive use of the land within two years.²² Once someone holds a lease, and invests in the land, they can sell it to someone else.²³

¹⁹ Physical protection is mainly required to shield cultivated spots from roaming livestock, but it also helps to thwart would-be thieves.

²⁰ Vacant lots with wells and walls might not prefigure urban cultivation in all places, but in M'Bour, which is populated by people who regard primary production as a useful and productive livelihood, open space is commonly regarded for its agricultural potential.

²¹ Literally translated, 'the enhancement (or development) of local areas.'

²² Though I did not see a lease, I was told that written on the paperwork is the stipulation that the leaseholder must make productive use of the land; otherwise, the government has the legal authority to take back the land and lease it to someone else.

²³ Land tenure and management does not seem to be a settled process in M'Bour. My understanding is that the state owns the land and that it allocates land to people by *loaning* it

Land represents a considerable investment, even for relatively wealthy Senegalese, and many people are unable to come up with the capital to both buy the land and build a house. In an effort to protect their investment, and to comply with the productive use stipulation, many people build a well and wall. Their intent is to later return when they have saved enough capital to build a house.²⁴

People in M'Bour commonly recount tales of land disputes and trickery that they have witnessed, experienced or heard. Stories of land 'theft' abound, in which someone who is not the leaseholder builds a structure on a piece of land that has not been productively used. In at least some of those cases, the 'squatter' apparently emerged victorious when challenged by the leaseholder in front of authorities due to the productive use stipulation. Similarly, there are many stories of two or three different people holding papers to the same piece of land. For example, one urban cultivator told a story in which two people were sold the same piece of land. Each came to know of the other, and because a claim to land is legitimized by demonstrating productive use, each immediately hired a crew to build bricks. Those two crews

to them via a contingent agreement. One would expect that land would revert to the state in cases where a person does not make 'productive use,' and apparently this does happen. However, people were also freely selling land to others, which I was told required an authorization from the urban planning department and from the tax department (*impôt et domaine*). I was also told that many Senegalese are not familiar with the formal process of transferring land, which provided the conditions for fraud to take place.

²⁴ This also explains why there are so many partially built houses and piles of bricks throughout Africa. Instead of 'eating their money,' or having it in a form that opens them up to requests for (permanent) loans, which they are obliged to respond to, people instead put their money into an actual physical and durable object. Thus, partially built houses represent a rational economic practice, and physically symbolize how one balances social obligations and social/personal goals.

worked side-by-side until someone from Town Hall arrived on the scene and ordered them to stop. The situation remained unresolved during the research period.

3.5.1.2. Protecting Investment through Practices of Informality.

Many people who hold a lease to a parcel of land live and work elsewhere, and are unaware of what happens on their land from day to day. Though claims to land should, in theory, be secured by the lease and by the existence of the well and wall, there remains a common fear among leaseholders that, in their absence, someone will 'sell' the land to an unwitting third party, or claim the land and build a house. Rather than rely on the formal lease to safeguard their investment, leaseholders create informal relationships with neighbors who keep them apprised of any suspicious activity. In some of these arrangements, the neighbor will ask permission to cultivate the vacant lot. In other cases, urban cultivators seek out leaseholders to ask permission to cultivate the parcel of land. In either case, what emerges is a reciprocal relationship in which each party benefits. In these circumstances, in which the formal institution has proven insufficient to safeguard an individual's claim, people pursue an informal strategy that is rational in the local context.

By focusing on how the material dimensions of land occupation intersect with land tenure practices, it is possible to perceive the ways in which people negotiate the state's assertion of control over urban space to create places that improve well-being as they themselves define it. The walls and wells that compose the social site of urban cultivation must also be understood as an articulated response, or a material form of resistance, to the imposed

‘mechanism of coercion’ represented by the productive use stipulation.²⁵ Implicit in that stipulation is a particular view of how land should be managed, and an assertion by the state that it reserves the right to take back land and redistribute it.²⁶ Building a well and wall, in combination with stationing a local guardian at the site seems to be an effective and strategic ‘mechanism of resistance,’ even when high-value land is in question. For example, the largest site in the study was composed of nine subdivided parcels in a prime area of M’Bour, just south of a busy intersection leading to many luxury beach hotels. One woman, an absentee leaseholder who lives in Dakar, holds the leases to all nine parcels. She obtained the leases when land was inexpensive, and since then, has successfully resisted a number of attempts by both the state and private individuals to claim (or in the case of the state, reclaim) the land. She initially hired a guardian to live on the premises in 2003, at which time he started cultivating the site. When the guardian observed that a ‘For Sale’ sign had been erected in front of the site, he called the owner in Dakar. She traveled to M’Bour to confront the planning department, which had erected the sign, and was told she not allowed to hold leases to so much land. In response, she raised the wall, and built more bricks, which are stored on the land, and which are used, incidentally, to protect growing fruit trees planted by the guardian/urban cultivator. At the time of the research period, the guardian was actively cultivating the site and had plans to invest his own money to bring in electricity to run a water pump, and, thus, expand his production capability.

²⁵ Following Foucault, consideration of power relationships must be included in social accounts. The phrase ‘mechanism of coercion’ is drawn from Foucault’s theorizing of power and how it is exercised by the state (Foucault, 1982).

²⁶ Use of urban land for cultivation is not considered ‘productive use’ by the state.

3.5.2. Physical-Chemical Composition of Materials.

In many African cities, daily reminders of resource scarcity provide the impetus to create urban environments that enhance self-sufficiency. Daily power and water outages, propane and petrol shortages, price increases, and depleted fish stocks are realities that people must contend with, but which they cannot control. In that context of scarcity and insecurity, the city evolves as a series of material –practice assemblages that mitigates that insecurity. Throughout M'Bour, there are material objects that are embedded with meanings that have to do with self-sufficiency and independence. Many people raise small livestock, just as many have papaya or mango trees growing in their compounds. Public wells are maintained throughout the city and are used frequently. In the materiality of a well, a chicken or a mango is security, which provides the basis for social life.

Beyond the concerns of basic sustenance, the social dimensions of food and agriculture are well-discussed and recognized, and there are infinite ways in which the physical or chemical composition of plants and animals could be demonstrated in relation to social life: taste, scent, medicinal value, religious symbolism, etc. In this section, three are discussed. First, the chemical composition of soils affects practice material-arrangements and causes cultivators to require soil amendments that they acquire by forming social relationships. Second, the chemical composition of specific plants carries a specifically urban social significance and conveys social meaning. Third, the physical composition of gardens as it occurs *in an urban environment* reflects a particular norm, which, in turn, has instrumental value for urban cultivators.

3.5.2.1. Composition of Soils.

Soils in M'Bour are mainly composed of sand and, thus, have little nutrient or water-holding capacity.²⁷ To make them viable as a growing medium, cultivators use considerable amounts of organic material, which serves as a nutrient source and helps to mitigate water loss. Warm ambient temperatures and daily watering provide optimal conditions for microbial activity. Thus, degradation of organic material is rapid, and cultivators must amend soil regularly.

The effect that soils have on social life through the practice of urban cultivation is *causative* (Theodore R. Schatzki, 2010). The composition of soils, and the causal relationships between soils and, for example, heat, microbial action, and humidity, lead cultivators to perform the practice of urban cultivation in some similar ways. For example, every urban cultivator found sources of manure to amend soils on a regular basis.²⁸ Cultivators choose manures according to availability, stage of plant growth/type of plant, and personal preference. In order to access manures, cultivators may form relationships with people who raise livestock. In some cases they pay for manure, and in other cases they do not. For example, several cultivators had relationships with friends who raise chickens and are able to acquire that

²⁷ Classified as Luvic Arenosols on the World's Soils Map (<http://www.fao.org/geonetwork/srv/en/metadata.show?id=14116>). Arenosols are classified as having greater than 70% sand and less than 15% clay.

²⁸ All cultivators in the study who cultivated vacant lots used manures. One also used fish remainders from fish processing. Those doing micro-gardening used a micro/macro nutrient solution provided by the micro-gardening program.

manure, which is often mixed with wood shavings (used as a bedding material), for free.²⁹ That manure is stockpiled and exchanged occurs because the practice is *intelligible* to both parties (Theodore R. Schatzki, 2010). In other words, manure has a mutually-recognized value to both those who produce livestock and those who cultivate gardens, and this mutual recognition leads to a practice of manure exchange, which is an inherent part of the material-practice arrangement of urban cultivation in M'Bour.³⁰

Schatzki (1996) notes, "Practice theorists champion practices as the central constitutive phenomenon in social life because they view them as the site where understanding is ordered and intelligibility articulated" p. 110. In other words, it is through practice that places are created, or *constituted*. Intelligibility, as a socially contingent phenomenon, has spatial, environmental, and cultural dimensions; what makes places place-specific are the ways in which intelligibility evolves and articulates via materiality. Farmers everywhere, as people who engage in the practice of re-organizing and channeling forms of energy into primary production, generally understand that nutrient management practices are important to plant growth. But, the relationships, significance, and practice-arrangement nexuses associated with implementing these practices vary over time and space, and with place-specificity. The same is true of any practice and the associated material arrangement. It is intelligibility of the practice,

²⁹ Chicken manure has a comparatively high nitrogen content, which can burn plants if applied directly. When mixed with water and wood shavings, which are obtained from local woodworkers, it composts relatively quickly. Farmers generally handled chicken manure with care because it is so 'hot,' but preferred it in some cases when plants needed a quick boost.

³⁰ Manure does not always get stockpiled and formally exchanged. Those who raise chickens also might just throw it out and farmers may retrieve it from where it was dumped.

or the ways in which meaning is conferred upon these practice-material arrangements, that "organize entities into the integrated nexuses that are what reality is and can be for us" (Schatzki, 1996, p. 115). Though raising animals in the city or exchanging manure might seem 'out-of-place' or 'backward' to those who attach specific normative meaning to 'urban,' or who attach specific spatial parameters to 'raising animals,' it is commonsensical to the people who engage in these practices, and who carry them out in ways specific to the particularities of M'Bour's practice-material arrangements.

3.5.2.2. Composition of Plants.

Likewise, food, its meaning, and the ways in which it figures into the practice-material arrangements of a place, is environmentally, spatially and culturally contingent. Specific dishes are commonly associated with specific celebrations, while certain foods are embedded with social significance. Lettuce is identified as a 'city food,' and is disparaged by people in rural areas as 'food for sheep.' Lettuce is a common feature of urban gardens in M'Bour; some cultivators grow only lettuce, while other cultivators grow it in association with other plants. Lettuce, of which there are several varieties, is easier to grow in the cool, dry season. It is often served in combination with fried or boiled potatoes, fresh tomatoes, onions, fried or grilled fish or grilled meat, a mustard-vinaigrette dressing, and French bread.³¹ As part of a dish that is unlikely to be served in rural areas, lettuce helps to *constitute* meals that have a specific cultural significance, or intelligibility, *in the city*. For example, it is in high demand around

³¹ Lettuce is in higher demand when there is plenty of fish in the markets. If fish are scarce, as happens often these days, people do not buy as much lettuce.

several holidays, including Christmas Eve and New Year's Eve, because it helps to signify the special occasion.³² Farmers plan their planting schedule in order to respond to the increased demand, and are able to charge a higher amount than usual.

Mint, which is used in the widespread practice of tea brewing, is another plant that is commonly grown by urban cultivators. Several varieties are grown, and cultivators tend to remark on and favor those varieties that are especially fragrant. The quality and strength of the fragrance of mint, which is an important selling point, is attributed to both the variety and growing practices.³³ Mint is almost requisite for the daily (or twice-daily) and highly valued social ritual of brewing tea, in which friends and neighbors gather in public or private spaces for several hours to discuss politics, sports, and any number of other subjects.³⁴ The material arrangement of the tea ritual (i.e. tea, mint, brewing pot, charcoal, stove, sugar, and tea cups) and the practice of the tea ritual (i.e. brewing, pouring, and drinking) are *co-constitutive* in that material entities help constitute the practice "by being pervasively involved...at particular times and places" (Schatzki, 2010, p. 140). Likewise the ways in which the tea ritual is carried out is in a *co-constitutive* relationship with a particular way of gathering socially. The arrangement of the tea brewing and drinking materials serves as a focal point, and thus 'holds' a group of

³² These holidays are widely celebrated by both Muslims and Christians, especially in cities.

³³ For example, the women doing micro-gardening said that the best quality mint was produced using the micro-gardening methods. Another cultivator who grew three kinds of mint said that the taste of mint is severely compromised with the use of chemical fertilizers.

³⁴ It is, perhaps, worth noting here that the tea ritual also takes place in places of business, but that workers do not necessarily take time out to go sit and chat with their co-workers. Thus, the level of sociality is contingent on where and when the practice is being carried out.

people together for a time. The role of urban cultivators in this ritual is to provide a constant source of mint, and as often as they sell it around town, they also give it away to friends and neighbors, which has the effect of increasing and maintaining community cohesion.³⁵ Without such a ritual, would such daily gathering occur? Indeed, the tea culture is so pervasive in daily life and among Senegalese of all ages and ethnicities, it might be reasonable to suggest that this practice alone has enormous value in thwarting the social isolation and anonymity that are sometimes assumed to be a natural outcome of urbanization. Though tea-drinking is not specifically an urban activity, it takes on an urban significance when practiced among people who may be new to each other. Furthermore, cities, more so than rural environments, are sites of innovation and novelty. A novel mint variety, or the innovative hydroponic micro-gardening method, was regarded with enthusiasm and added to the social *cachet* of the mint.

3.5.2.3. Composition of Urban Gardens.

The particular physical-chemical composition of cultivated spaces produces a number of social interactions that are particular to urban cultivated spaces.³⁶ First, a healthy garden visible from the road often leads to conversations between the cultivator and passers-by. One

³⁵ Giving away a portion of one's production was requisite and performed by every cultivator in the study. Many cultivators, because they bring in little income, used the gardens to satisfy cultural responsibilities. All Senegalese are expected to give away a portion of their income, a practice performed by both Christians and Muslims.

³⁶ For the most part, this finding concerns spaces that were used to grow food. This is not to say that the responses would not occur in spaces that were producing ornamentals, but I only witnessed it in spaces that were producing food.

woman, a recent arrival from Casamance³⁷ who cultivated a large garden of eggplant, peppers, onions, tomatoes, bananas and okra knew relatively few people in her neighborhood. In the space of 90 minutes working in her garden, she was greeted by many passers-by, and engaged in two extended conversations with people who initially stopped to remark on the garden. Furthermore, this woman became familiar with people in at least two other households in the neighborhood based on their gardening activities.³⁸ Secondly, a common practice for some entrepreneurial market women is to seek out and buy directly from urban cultivators. These women go from cultivated space to cultivated space, carrying an empty washtub that they use to carry away produce, and negotiate a wholesale price with cultivators. Though cultivators could earn more by selling their own produce directly to consumers, they often prefer to sell it to these *bana-bana*, who are more familiar with the going market prices, as well as market practices and processes.³⁹ Thus, it is the specific qualities of gardens, inherent to gardens, which provoke interaction. This is an important point of Schatzki's ontology that distinguishes it from other ontologies that perceive 'the social' to be fundamentally separated from 'the material.' Accounts which he refers to as 'interactionist' for example, have attempted to correct social theory's neglect of materiality by proposing some material objects as 'hybrids' of the material and social worlds, but they nonetheless uphold the boundary between the two.

³⁷ The southern region of Senegal, located between Gambia and Guinea-Bissau, also the site of a decades-long civil war.

³⁸ In one instance, she bought a fruit tree, and in the other instance, she asked for pest management advice.

³⁹ Getting a spot at the market is quite difficult, and is contingent on negotiating access with a group of senior women. There are ways of circumventing this process, but it requires the willingness to potentially engage in confrontations and/or to sell lower than the going rate.

Schatzki, on the other hand, 'declines to talk of interactions, exchanges, or a dialectical relationship between society and nature' and asserts that a material entity can be at once both social and material (Schatzki, 2010, p. 134). People's lives hang together in particular ways *because of* the particular social qualities of the garden.⁴⁰

Lastly, cultivators often sold produce to neighbors, who were grateful for the convenience and quality of neighborhood gardens. A common theme to emerge was that many women disliked the expense and time required to travel to the one single market in the center of town. Furthermore, many women, both cultivators and consumers, noted that they did not trust what they bought in the market, or thought it was of lesser quality than what they could buy from neighborhood cultivators or grow themselves. Schatzki notes that "the bearing of materiality on human activity and social life lies not just in the constitutive and causal relations that hold between individual actors and particular objects, but also in how material entities are connected with temporally and spatially extended manifolds of organized human actions" (Schatzki, 2010, p. 135). In M'Bour, the existence of one single market is a burden for many women, which turns out to be advantageous for urban cultivators.

3.5.3. Biological and Physical Flows

This section discusses the ways in which matter-energy and various organisms flow through the material-practice arrangements of urban cultivation and affect social life. Pests such as termites, ants, birds, and whitefly 'pass through' the material-practice arrangements and cause urban cultivators to institute certain practices or to suffer various losses. Very often,

⁴⁰ For a deeper discussion, refer to Schatzki 2010, particularly pages 127-128 and 133-135.

these flows are mediated by practice, while at other times, they pass through and affect the material-practice arrangement, but are not managed. For example, one cultivator who had a particular problem with birds stealing his salad starts, welcomed cats into the garden, which did a good job of keeping birds away. Other cultivators re-purposed old, hole-ridden mosquito nets to protect plant nurseries from bird attacks, thus conferring new significance to an item that had otherwise lost its value. Another cultivator had problems with ants stealing the seeds he planted, but considered it unavoidable and not worth much of his labor expenditure.

The decisions about what flows to manage and what flows to ignore is affected by a number of variables, including knowledge of biological processes and interactions and prioritization of tasks given time constraints and other responsibilities. Ensuring the flow of water, for example, is the single most critical task, yet is also the most arduous and time-consuming. Most cultivators pulled water from wells, poured it into a basin, and then hand-watered with watering cans. Because of the poor water-holding capacity of soils, cultivators watered at least once a day, and often twice a day. Some cultivators referred to the practice of urban cultivation as 'rosaay,' which is the Wolof adaptation of the French word, 'arroser,' or, 'to water.' That the whole practice of urban cultivation is referred to as 'watering' suggests that the vast majority of a cultivator's time and energy is spent watering.

Because a critical dimension of the material-practice arrangement of urban cultivation in M'Bour is constituted by a practice that requires a considerable amount of strength, urban cultivation is primarily identified as men's work. There was only one woman in the study who identified as the primary manager of her garden plot, and she had access to a pump and was

able to water quickly.⁴¹ Another woman who had cultivated a plot of land in the past and in association with other women was reluctant to cultivate that same plot on her own because of the watering requirements. Many cultivators expressed the desire for a water pump, which would draw water from wells, and reduce the time and effort associated with hand watering. In turn, cultivators would be able to increase production and devote time to other tasks in the garden. Presumably, addition of water pumps to the material-practice arrangement of urban cultivation in M'Bour would enable the participation of more women. However, this observation is offered with caution. It is hard to predict what might result from easier access to watering technology. Would women still be unlikely to do it because men would have preferential access to vacant lots? Would they be able to do it given their other responsibilities? The main point here is that, when asked why it was mostly men who were cultivating vacant lots, many people said that watering was extremely difficult and that men, because they were naturally stronger, were more suited to doing it.

The task of managing water flow sometimes affected interpersonal relationships. Several of the research participants were married to each other. In all but one of these cases, men were identified as the primary manager of the garden and performed most of the watering tasks. However, women helped to water from time-to-time. In some cases, men noted their appreciation when their wives voluntarily take this task on. One man said that his wife could not usually help with the work of watering, but that she sometimes does it when he is out working on his occasional day-job of building bricks. He noted that she has asthma and that she

⁴¹ Micro-gardening, however, was performed mostly by women.

should not be doing the work because it is difficult for her, but that when she does it, he regards it as an act of compassion towards him. Another man said that the work of caring for the garden brings him and his wife together, and that when she cares for it in his absence, it makes him happy. Most research participants noted the cultural imperative of husbands and wives working together in harmony, and working out disagreements through discussion, in order to set an example for the children. The garden represented a physical space where ‘working together’ took place on a daily basis.

An observation of how practice mediates biological and physical flows in conjunction with an understanding of the underlying ideas behind certain practices points towards potential areas for agricultural extension education and the application of agroecological methods.⁴² Urban cultivators had little to no access to extension services and most information and knowledge exchange was limited to a small geographic area and among a small group of farmers. There were a number of instances in which a better understanding of how to manage flows would have resulted in increased yield. For example, one cultivator had to uproot and destroy a whole plot of *bissap* (*Hibiscus sabdariffa*) because it was afflicted with a variety of fungal leaf rust, which often occurs as a result of over-wet conditions. By simply avoiding wetting the leaves when watering, he might have prevented such a loss and the extra labor it entailed. Another cultivator noticed how the addition of compost reduces the incidence of termite damage, but had no outlet to pass this information along to other farmers.

⁴² Agroecology is not precisely defined, but, generally, refers to locally appropriate agriculture methods that enhance smallholder agriculture in socially and environmentally responsible ways.

3.6 Conclusion

...unless the complex, dynamic, highly improvising and generative actions of the urban poor are acknowledged and explored, it is foolish to come to conclusions about what is going on in a city, or what may or may not work, either from an insurrectionary perspective or from a 'policy-fix' approach (Pieterse, 2008, p. 3).

Keith Hart notes, "Human societies will continue to struggle for economic forms that can reliably underpin their material existence in the modern world" (Hart, 1990, p. 156), while Jennifer Robinson observes, 'Western modernity...is only one moment in the astonishingly diverse circulations and productions of new things and new ways of being that are assembled in distinctive ways to produce different kinds of places and ways of understanding them.' In African cities, economic activities are improvisational, decentralized, flexible, and responsive to the highly dynamic environment of the city. This paper has sought to demonstrate the ways in which seemingly 'backwards' livelihoods are composed from fields of practice in combination with the material dimensions of the urban environment. They are enacted in relation to social and spatial position, dynamic urban processes, and normative and material concerns. The widespread practice of urban cultivation serves as an entry point into the 'vernacular economy' to discover how people through their interactions with each other and the city, are working to sustain themselves and create meaningful lives. Through livelihood, people are negotiating city and civic environments to deliberately make lives that include pleasure, innovation, and good relationships and social standing. Such an understanding of city life implicitly argues for an approach to urban planning and development that do not dismiss livelihoods because they are not indicative of modern form, and which understands them in relation to their 'locatedness.'

As Jennifer Robinson notes, "For urban studies to contribute to development strategies for ordinary cities, it will need to offer analyses that have a purchase on the diversity of economic activities, political interests and the range of needs of citizens"(Robinson, 2006, p. 116).

Recent efforts to retool planning education and practice in Africa note the importance of engaging with informality differently (Odendaal, 2012). A critical aspect of this engagement must address the power relationships and biases embedded in the discourse of informality, and better acknowledge how that discourse might serve to legitimate the unjust exercises of control over urban space. Furthermore, the underlying implications of informality, i.e. that these are economic activities without form, must be vigorously contested. The ontological claim to the city that is enabled by this discourse rests, in part, on the assumption that some economic activities threaten civic order because of their chaotic nature. This assumption must be challenged through research that seeks to find the organizing logic behind seemingly chaotic and spontaneous economic practices.

Schatzki (2010) asserts, "Explanations of social phenomena should be sought in the specifics of pertinent practice-arrangement nexuses and the events that happen to them. All happenings and changes in social life result or arise from the events, processes, and actions occurring in and to these nexuses" (p. 146). When practice is treated as the primary way to understand 'how things make sense' (Theodore R Schatzki, 1996) and, thus, is regarded as the main point of entry into understanding livelihood as it is locally meaningful, urban cultivation can be understood differently. Alice Hovorka (2006, 2008), for example, has demonstrated that rearing livestock and growing plants in the city is both a normalized and normative practice in

African cities, and is performed in various ways by both the well-off and poor. Urban cultivation exists as a constitutive part of the city because it makes sense to the people who practice and benefit from it: productive resources are locally available; primary production is common, valued, widespread and accessible; it provides a meaningful urban space; and, little capital is required to do it, while the benefits can be substantial.⁴³ Such an understanding of why people do the things they do, and a deliberate valuation of those things, offers alternative direction for urban research, planning and development based on *local* imaginaries of well-being and meaning. The approach suggested here deliberately grounds livelihood in place by focusing on how the city's *materiality* is assembled through *practice* (and vice versa), and privileges the daily experiences and perspectives of urban citizens. However, and importantly, for such an approach to gain legitimacy, urban planners and decision-makers must reject parochial Western notions of modernity and urbanity, which have severely constrained the possibility and potential of alternative urban imaginaries. Much easier said than done, without valorizing the notion that development proceeds differently in different places, and is, at its core, a *located* process constituted by *located* practices, the prevailing approach to management of urban space will remain one that alternates between neglect and oppression, and which facilitates growing inequality and injustice.⁴⁴

⁴³ One cultivator said that urban cultivation is 'benefice kesaay,' or, 'just benefits.'

⁴⁴ Nancy Odendaal, a planning professor at the University of Cape Town South Africa, notes that planner and planning practices play only a small part in what are essentially 'political processes underpinned by many actors.' This means that the extent to which planning can play a role in creating more just cities is limited in relation to the competing claims to urban space. At the same time, however, she notes that planners can make themselves more relevant by

coming up with creative solutions. Furthermore, she says that without such a paradigm shift, there will be "A widening gap between practice and theory, and a further reduction in the relevance of the planning profession; inaction and neglect, occasionally interrupted by bouts of inappropriate intervention; and a sad ignorance of the creativity and resilience of individuals and small groups that seek more inclusive cities" (Odendaal, 2011).

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CHAPTER FOUR

PRODUCING FOOD RESILIENCIES: THE ROLE OF URBAN AGRICULTURE

ABSTRACT

The concepts of vulnerability, adaptive capacity, and resilience are powerful frameworks for understanding how social-ecological systems cope with change. In this research, those frames are applied to understanding urban agriculture as an adaptive practice in a decentralized, emergent agri-food system in M'Bour, Senegal. The findings explore several dimensions of the adaptive capacity of UA, including ecological and socioeconomic diversity, nutrient cycling, and the links to the adaptive capacity of social systems. In addition the research explores how adaptive practice is a contingent and located process, an idea which has not been well-fleshed out in the resiliency literature.

Chapter 4 Producing Food Resiliencies: The Role of Urban Agriculture

4.1 Introduction

But we are human beings thinking in moral terms, and we give the name of disorder to any order in which we cannot recognize the visible essences to which we are accustomed. Chaos is a name for any order that produces confusion in our minds (Santayana, 1995, p. 33) .

Throughout many cities of the Global South, food provisioning is an idiosyncratic, improvisational, place-based process that is carried out through the highly decentralized production and exchange practices of urban citizens. Urban agriculture (UA) is a common component of these systems,¹ practiced in various ways at various scales depending on the goals, opportunities and constraints of urban cultivators.² Studies of UA most often focus on practices and material output, and do not generally consider the complex socio-ecological food systems in which they are embedded. An isolated understanding of UA misses the *adaptive* dimensions of such emergent food practices and processes. That is, a focus on the productive

¹ This paper uses the term 'food provisioning systems' to refer to the economic processes, organizations and institutions that are involved in food production, exchange, and distribution in a particular place. The term 'provisioning' is used to draw attention to the ways in which different people experience and navigate this system in their efforts to feed the people in their households and communities. Following Gunderson 2003, such a system is the result of the particular linkages between ecological and social components. Gunderson defines social systems as the structures that "enable power and resources distributions, patterns of authority in addition to norms, rules, routines and procedures" (p. 34).

² In this paper, UA is used as the generic term to refer to all urban cultivation, including market gardening and micro-gardening.

dimensions of UA remains ignorant of its causative factors, which may be "multiple, diverse, and dispersed"(Jasanoff et al., 1997, p. 2066). This has resulted in a body of literature that focuses primarily on UA's material value at a moment in time, rather than the ways it is situated as part of a dynamic food provisioning system. Consequently, much of the literature tends to take an advocative position on the value of UA (Karanja & Njenga, 2011; Luc J.A. Mougeot, 2006; Veenhuizen, 2006) or adversarial one (Jonathan S. Crush & Frayne, 2011; Webb, 1998, 2000, 2011), based primarily on UA's material contributions to households, i.e. its contributions to households are significant vs. its contributions are negligible.

New ways of framing UA can help to capture its dynamic and contingent aspects in relation to a system of complex food provisioning practices, and as it occurs within socio-ecological systems.³ In this paper, the concepts of 'food resiliencies' and 'food vulnerabilities' are used to understand UA as an adaptive practice within an emergent urban food system in M'Bour, Senegal. The concept of 'food vulnerabilities' helps to draw attention to how the "interactions among food production, food access and political and economic asymmetries" create social, political and spatial environments that make access to food particularly difficult for some people (Agyeman & Simons 2012, p. 86). The idea of 'food resiliencies' (Agyeman & Simons, 2012) captures the adaptive capacity of the food provisioning system to accommodate change or shocks, a critical dimension of sustainable food production and access (Folke,

³ This idea that UA occurs within a system has its conceptual roots in the work of Berkes, Colding and Folke, 2002. That work understands socio-ecological systems as embedded processes within larger systems. Systems, in turn, are nested within larger ecological, economic, and social systems, and "phenomena at each level of the scale tend to have their own emergent properties, and different levels may be coupled through feedback relationships" (Berkes, Colding, and Folke 2002, p. 6).

Colding, & Berkes, 2003). These concepts can help to open UA analyses to understanding how urban food practices in African cities are *emergent, situated, and adaptive*. In doing so, food and food practices might be understood as forums for understanding the ways in which different people experience processes of accessing food, as well as for building capacity to adapt to uncertainty in the context of a world undergoing rapid ecological and social change. Given projections of increasing food insecurity in growing cities (J. Crush, Frayne, & Pendleton, 2012), understanding the processes and contingencies of food provisioning, and how spatially and socially diverse populations can be supported in their efforts to access nutritious food, is critical for creating and applying responsive solutions. In addition to the challenges posed by rapid urbanization, urban food provisioning faces the specter of climate change, increasing energy prices, and volatility of global food markets, as evidenced by the 2008 food crisis. These complexities forewarn of even more challenging food provisioning environments in the coming years and call for approaches that are responsive to local conditions, consider uncertainty, and which leverage and enable broad and varied responses.

This paper looks at the vulnerabilities and resiliencies of a locally produced food system in M'Bour, Senegal; the situated and contingent dimensions of food vulnerabilities and resiliencies; and the adaptive practices that people use to ensure access to food in dynamic urban environments. The paper explores the two broad research questions: (1) How are city processes and city space implicated in creating food vulnerabilities or food resiliencies? (2) What adaptive practices do people employ to mitigate these vulnerabilities? The next section discusses the concepts of food vulnerability and resiliency and their value as conceptual lenses for understanding urban food production, exchange and consumption in sub-Saharan Africa.

After a brief methods section, the findings are presented. The paper concludes with a short discussion of implications for further critically required research.

4.2 Conceptual Framework

4.2.1. New Approaches to Urban Agriculture

Recent research identifies the critical need for understanding and addressing urban food issues for several reasons. First, urban food insecurity is increasing, despite the fact that many cities are well-provisioned (J. Crush et al., 2012; Frayne et al., 2010). This basic fact suggests the need to focus more on issues of *access*, and to identify and address the reasons underlying individuals' and households' inability to acquire food (Battersby, 2011). Secondly, food insecurity is primarily understood as a rural problem, and the conceptual tools used to understand why people are unable to access food are inappropriate for the urban context. As Battersby (2012) observes, understanding the particularities of *urban* food access issues will enable a broader, and more relevant, set of policy responses.

Over the last twenty years, much of the research on urban agriculture advocates it is as a viable and practical way to treat urban food insecurity and to improve urban social, economic, and ecological environments (Egziabher et al., 1994; FAO, 2008; Luc J. A. Mougeot, 2005; Luc J.A. Mougeot, 2006; Redwood, 2009; Veenhuizen, 2006). However, more recently, a number of researchers have questioned this advocative position, charging that it is overly celebratory of UA and overstates its contributions and potential for mitigating food security (Battersby-Lennard & Haysom, 2012; J. Crush, Hovorka, & Tevera, 2011; Jonathan S. Crush & Frayne, 2011; Frayne et al., 2010). They contend that it is reflective of a 'productionist' orientation to food

security and enables the "widespread notion that urban agriculture will resolve the crisis of urban food insecurity in the 21st century" (Crush, Frayne, & Pendleton 2012, p. 273), when, in fact, the relative contribution of UA is very often limited in relation to overall food needs (Jonathan S. Crush & Frayne, 2011; Jonathan Scott Crush, Hovorka, & Tevera, 2010; Webb, 2011). Rather, because most people in cities must buy the bulk of their food, these researchers emphasize poverty as the primary cause of food insecurity (Jonathan S. Crush & Frayne, 2011; Frayne et al., 2010).

A common feature of UA studies is that they assess the value of UA at a moment in time, treat UA as an isolated activity, and are primarily concerned with the material contributions to the household. In other words, the relationship between household food security and urban agriculture is treated with *linear* logic, and the value of UA is measured primarily by the extent to which it contributes to household food security. But, approaches that attempt to understand UA in isolation from other city food provisioning processes produce a misapprehension of the value and purpose of UA, as well as ignore the social and ecological environment into which food systems are embedded.

Rather, this paper argues that UA is better understood as an *adaptive practice* that persists because it enhances the resilience of emergent urban food systems, and helps people to "absorb shocks and perturbations and adapt to change" (Berkes, Colding, & Folke 2002, p. 14). It serves to *buffer* the food provisioning system in the face of uncertainty and to protect

against failures in, or shock to, other components of the system.⁴ The concepts of resilience and vulnerability, with their analytical orientation towards complexity and the intersection of social and ecological processes at multiple scales, help to better understand *what* risks and deprivations people are responding to, and *how* their responses address those risks and deprivations. Adaptive practice links the concepts of vulnerability and resilience in that it draws attention to the practices and strategies people create to address vulnerability and create resilience (Engle, 2011). An understanding of how people cope and how they are vulnerable can be brought to bear on efforts to formulate targeted city food security strategies that build upon existing food practices.

4.2.2. Vulnerability, Adaptive Capacity, and Resilience in Emergent Urban Food Systems

Adgar (2000) characterizes the conceptual relationship between vulnerability and resiliency as loosely antonymic. Vulnerability refers to the degree to which a system or individual is susceptible to harm or unable to cope with change or perturbations in the socio-ecological system, while resilience captures the ability of people and socio-ecological systems to tolerate those perturbations, and to adapt to change without losing fundamental functions of the system (W Neil Adger & Brown, 2009; Barthel & Isendahl, 2013; Preston & Stafford-

⁴ In chemistry, 'buffering capacity' refers to the ability of a solution to resist changes in pH upon the addition of acids or bases. 'Buffer' is a word that is commonly used in the resilience literature.

Smith, 2009).⁵ In other words, resilience is "the capacity to lead a continued existence by incorporating change" (Folke, Colding, & Berkes 2002, p. 353). The capacity to incorporate change to maintain function of the system, i.e., to build resilience, is referred to as 'adaptive capacity.' Adaptive capacity is scale-dependent, contingent and reliant on access to material and social resources. At a societal level, adaptive capacity is dependent on collective ability, action, and consensus (Brooks & Adger, 2005).

Understood with the concepts of vulnerability, adaptive capacity and resilience, the food provisioning practices and relationships in urban environments exhibit numerous properties of a resilient socio-ecological system.⁶ These urban food systems have typically emerged in relation to highly variable and chronically uncertain food environments, with very minimal centralized municipal management or support. In environments of uncertainty, in which city residents are primarily responsible for creating their own systems of support, it is unsurprising that people would evolve multiple pathways to ensure food access and would maintain a diversity of food practices from which to draw, even if those food practices produce little in the way of the overall food share (Lourenço-Lindell, 1995). Food is available from a mix

⁵ Adgar and Brown (2009) identify three separate elements of vulnerability (p. 110): *exposure* to environmental or socio-political stress; *sensitivity* to that stress; and, *adaptive capacity*, or the ability of the system to evolve in order to accommodate perturbations.

⁶ Folke, Colding & Berkes (2002) identify four broad factors that interact to produce resilient socio-ecological systems (p. 354-355): (1) Learning to live with change and uncertainty, (2) Nurturing diversity for re-organization and renewal, (3) Combining different types of knowledge for learning, and (4) Creating opportunity for self-organization toward social-ecological sustainability. In addition, Cabell and Oelofse (2012) have developed an indicator framework for assessing agroecosystem resilience. Given the widespread productive use of urban space vis-à-vis livestock production and urban farming, cities in Africa can reasonably be conceived of as agroecosystems.

of diverse sources including markets, roadside stands, home gardens, and livestock production, as well as through informal cultural practices.⁷ Movement and distribution of food is widely decentralized, socially self-organized, emergent, locally interdependent, and serves as a source of income for large numbers of people. Such qualities understood through the conceptual frameworks of resiliency and vulnerability suggest that they are highly adaptive and flexible systems, with multiple 'moving parts' that perform redundant functions,⁸ and thus are capable of dealing with surprises and perturbations.

The following sections provide the basis for a discussion of empirical data, collected over a nine-month period in the coastal town of M'Bour, Senegal. Three main points help understand how people experience and shape the urban food provisioning environment. First, focusing on UA as an adaptive practice enables an understanding of how people experience and address food vulnerabilities (Brooks & Adger, 2005; Engle, 2011; Preston & Stafford-Smith, 2009). Secondly, an understanding of how people are differentially vulnerable enables an understanding of how adaptive capacity is differentially accessible (Engle, 2011; Preston & Stafford-Smith, 2009). And third, a specific understanding of how this particular adaptive management practice affects resilience can inform more deliberative UA interventions and

⁷ Informal cultural practices have been referred to in a number of ways, including the gift economy, economies of affection, and moral economies (Hyden, 2006; Lourenço-Lindell, 1995, 2001; Mauss, 1950; Scott, 1985; WinklerPrins & deSouza, 2005)

⁸ The quality of redundancy enhances resiliency, or the ability to deal with change or perturbations, because it helps to ensure that if one pathway fails, another, which performs the same function, does not. Redundancy generally runs counter to the Western ideal of efficiency, a quality which often *reduces* the overall resiliency of a system.

support that are relevant to local socio-ecological systems and to the circumstances of people operating within those systems(Engle, 2011; Folke et al., 2003).

4.2.2.1. Urban Food Provisioning Systems and Vulnerability

While urban food provisioning systems are creative and resilient in a number of ways, there is a high degree of vulnerability to food insecurity in urban environments. In contrast to 'poverty,' which blurs the distinctions of *how* poverty occurs, the concept of vulnerability offers the opportunity for a more disaggregated analysis that includes attention to the contingent and located ways in which risk is differentially experienced (Turner et al., 2003). Given that food insecurity is increasing in cities, there is a need to engage more with specifically *urban* processes. The concept of vulnerability helps to disaggregate these processes, and thus compels more specific and grounded explanations, by recognizing that people experience urban social and spatial processes differently, which, in turn, affects their ability to cope, i.e. their adaptive capacity. In cities, in addition to income and the fragility of livelihood, spatial location, crime, and social networks have important effects on the ways in which one is able to provision the household (Battersby, 2012).

4.2.2.2. UA as Adaptive Capacity

It is commonly suggested in both academic literature and by municipal officials that UA represents a 'backwards' or 'rural use of urban space.' Conceptualized as a method of building resilience, however, UA can be perceived, not through a constructed rural/urban dichotomy, but as an adaptive management practice that deals with uncertainty by diversifying food

sources and increasing the numbers of food access points around the city (Lourenço-Lindell, 1995).

In addition, a better theorization of *how* and to *what extent* people are vulnerable enables a view of how adaptive capacity is contingent and located. Understood as an adaptive management practice, UA is one component of a broader strategy that people use to improve the adaptive capacity of the household food provisioning system. But, as an adaptive practice that intersects with different kinds and levels of vulnerability, it works differently for different people and people derive different benefits from doing it. That is, the extent to which, and how, UA provides resilience varies with the ways in which people experience food vulnerabilities. This is because peoples' adaptive capacity, as an effect of their vulnerability, varies according to their level of exposure and sensitivity to the factors that cause vulnerability (W. Neil Adger, 2006; Preston & Stafford-Smith, 2009; Turner et al., 2003).⁹ For example, people may experience similar levels of poverty, but some may be more sensitive to food vulnerabilities because they have recently immigrated to a city and lack social networks. While they may have access to a plot of land to farm, a lack of social networks limits their ability to draw on material resources, as well as the socio-ecological memory, or "framework of accumulated experience," associated with urban farming in that particular place (Folke et al., 2003). In turn, the inability to leverage those social and material resources limits the adaptive capacity of UA. Likewise, the limited adaptive capacity minimizes the extent to which those new immigrants can improve resilience of the household food provisioning system, and thus

⁹ Discussions of *exposure* and *sensitivity* as flexible and manageable qualities can be found in (W. Neil Adger, 2006; Preston & Stafford-Smith, 2009; Turner et al., 2003)

has a negligible, or perhaps no, effect on household food resiliency. Such an understanding that the value of UA can be *leveraged* through the factors associated with adaptive capacity requires that research into urban farming consider not only the material benefits of urban farming, but also the social and ecological contexts in which it is practiced.

4.2.2.3. UA and Food Resiliency

'Food resiliency' refers to the ways that food provisioning systems can cope with perturbations and continue to operate without losing fundamental functions. Urban food systems in African cities exhibit several of the qualities that characterize resilient socio-ecological systems. Through a study of UA, it is possible to understand several of these qualities. For example, attention to (1) the ways the system operates to enable 'reorganization and renewal' in a context of 'change and uncertainty,' and (2) how it creates, enables and leverages self-organization helps to understand practices in terms of resilience and can be used to interrogate the widely held view that these systems are chaotic and inefficient. Such practices function through, and are articulations of, social relationships and socio-cultural practices; constantly integrate new knowledge and innovation as well as draw on a socio-ecological memory; and, draw heavily on urban 'natural' resources. Highlighting those aspects of urban food systems and food practices can be used and applied to policy objectives that seek to improve urban food security.

Increased attention to household food provisioning strategies can provide lessons for improving food resiliencies at a wider scale. This means that it is necessary to draw attention to the underlying principals of resilience behind seemingly chaotic or inconsequential food

provisioning strategies. UA is one component of complicated food environments and offers an entry point for seeing and valorizing the food provisioning strategies and informal institutions that are implicated in producing food resiliencies in a context of uncertainty and vulnerability. The findings section draws attention to some of the qualities of agri-food practices and relationships that help to buffer food provisioning processes against shocks. Specifically, findings are presented in relation ecological and socioeconomic diversity, nutrient recycling, and links to building capacity in social systems. In addition, findings explore the ways in which the adaptive capacity is contingent and situated in urban environments.

4.3 Methods

The following empirical findings are drawn from qualitative data¹⁰ collected while studying multiple forms of small-scale dry season urban cultivation from August 2010 to May 2011. The forms of cultivation include micro-gardening, ornamental plant production, fruit tree production, and vegetable production.¹¹ Research participants were recruited using network sampling and selected from multiple neighborhoods in M'Bour (Glesne 2006). In an effort to mirror M'Bour's diverse urban population, the selected participants diverged widely in terms of

¹⁰ Interviews, participant observation, photographs of research sites, and document analysis. Reviewed documents include, 'Historical Overview and Purpose of Master Plan,' (no date), 'Town of M'Bour' (2008), 'Extract of a Planning Report from the Director of Sanitation,' (2008), 'Extract of an impact study on the environment for the town of M'Bour' (2008), and 'A table synopsis of the needs expressed by the neighborhood counsels of the town of M'Bour' (no date).

¹¹ Micro-gardening is a kind of modified hydroponics which uses locally available materials. It is a government-supported program, run through the local agriculture office and operating throughout Senegal.

years spent in the city, spatial location, income levels, education levels, age, sex, and housing situations. Participants were Muslim and Catholic and represented a number of ethnicities, including Diola, Sereer, Pulaar, and Wolof.

Two semi-structured interviews with each cultivator, recorded several months apart, focused on livelihood strategies and practices, outputs of gardens, individual life histories, economic challenges, urban governance, and hopes for the future (Seidman, 2012). Interviews were conducted with eight men and ten women at 14 different cultivation sites, and eight officials (seven men, one woman) representing five government bureaus.¹² Interview protocols were developed following multiple visits to, and participant observation at, research participants' homes (Creswell & Clark, 2007; DeWalt & DeWalt, 2002). Site visits to cultivators typically lasted one to two hours each and each site was visited, on average, five times over the nine-month study period. One focus group was held with a group of women in similar socio-economic circumstances (middle-class) to primarily discuss the ways in which they value micro-gardening, but also addressed a broad range of social welfare and governance issues. Ongoing memo writing and informal conversations with a core group of neighborhood friends helped develop research themes and insights, and provided a sort of locally grounded peer-review process (Glesne, 2006). In addition, the author participated in the food system and urban life over this period, which helped to understand the many ways in which people navigate the sometimes difficult food provisioning conditions, many of which are common to cities

¹² Bureaus represented included the mayor's office, the prefect's office, the urban planning office, the office of decentralization and local development, and the rural development office, which manages the micro-gardening program

throughout sub-Saharan Africa. Systematic member-checks with interviewees were used to ensure reliability of interpretations, which was an especially important analytical aspect of the research in light of the deep cultural dimensions of the data (Glesne, 2006; Lincoln & Guba, 1985). The interviews were conducted and recorded in Wolof and French, transcribed by the author upon arrival back in the United States, and coded and organized with the help of NVivo software.

4.4 Vulnerability, Adaptive Capacity and Resilience in M'Bour's Food Provisioning

Environment

"When analyzing resilience...it makes sense to address the local level and build linkages to other scales...Resilience thinking helps the researcher to look beyond the static analysis of social systems and ecological systems, and to ask instead questions regarding the adaptive capacity of societies and their institutions" (Berkes, Colding, & Folke 2003, p. 115).

The findings are organized into five sections that explore how the practices associated with UA build adaptive capacity to deal with change and uncertainty in the food provisioning system in M'Bour. Following a brief characterization of the socio-ecological context in which UA takes place, the next three sections address how resilience is built through socioeconomic and ecological diversity, nutrient recycling, and social institutions. The fourth and final section discusses the contingent and particular ways that urban cultivators experience vulnerability in their efforts to food provision their households.

4.4.1. Site Background and Brief Food Provisioning Profile

M'Bour, Senegal is a rapidly growing, ethnically diverse, increasingly sprawling coastal town with a population of around 200,000 located about 80 kilometers south of the capital city, Dakar. As a comparatively dynamic and economically-promising town, M'Bour draws new residents from all over Senegal and beyond, as well as expatriates and retirees from Europe. According to one official estimate, 60% of residents were born elsewhere. Though small business, fishing, and tourism are generally regarded by town officials as the most economically important livelihoods, many of M'Bour's citizens make their lives, either partially or wholly, with unregulated, or 'informal,' economic activities. Much of the housing development in M'Bour is also informal.

Life in M'Bour is characterized by chronic uncertainty, marked by both small and large perturbations. Daily power and water outages, petrol and cooking gas shortages, severely depleted fish stocks, and increases in the price of flour and other basic necessities are common occurrences with causative factors at multiple scales. Electricity outages have varying impacts on city residents depending upon how much they directly rely on it. People cope in various ways. Some, if their livelihoods depend on it, buy generators. More often, people learn to get by without electricity or work only when it is turned on. In general, people agree that whether or not one's livelihood relies directly on electricity, such an uncertain power situation has adverse effects on the ability to make a living. To cope with water outages, people store water

in barrels and wells are common within households. In addition, public wells are maintained in many neighborhoods.¹³

Food, however, is readily, albeit differentially, available. In contrast to the capital-intensive and centralized food distribution and exchange systems in the Global North, food provisioning in M'Bour is highly decentralized, with large portions of the population engaged in the food trade and/or food production (Lourenço-Lindell, 1995). Most households do not have refrigerators, nor large amounts of cash on hand, so that small and frequent purchases of ingredients are the norm. Though the market is the primary source of food, food is also available throughout M'Bour from small to medium-sized markets or kiosks, roadside stands, home gardens, and livestock production. Women, especially, are highly involved with decentralizing the system, and often make the trip to the central market, buy a number of food ingredients that are in high-demand, and bring them back to their neighborhoods to sell at increased prices. The neighbors who purchase these ingredients do not have to pay to travel to and from the market, so this arrangement benefits both parties. In addition, neighborhood kiosks and food-selling individuals often extend credit, which allows people to cope with uncertain and uneven income streams. Other women sell fruits, vegetables and milk through door-to-door sales, while men were observed selling eggs, fish and goat cheese. Urban livestock production is more common than gardening or farming, and observed animals included chickens, rabbits, turkeys, goats, pigs, sheep, and cattle. Many households contain fruit trees, such as papaya or mango, and people maintain and wild-harvest from a number of

¹³ Many parts of M'Bour are not well-served by municipal infrastructure, and much of it, especially areas on the outskirts lack serviced roads, electricity or piped water.

other varieties of trees, both in and around the household, for their useful products, e.g.

Moringa oleifera.¹⁴

4.4.2. Practices of Ecological and Socioeconomic Diversity

Diversity helps to buffer the system by spreading risk and addressing critical points of instability. Two ways to perceive how UA is implicated in diversifying the system are discussed: diversifying income and ecosystem services; and, diversifying food access.

4.4.2.1. Diversified Income and Ecosystem Services

None of the primary farmers in the study relied wholly on UA for their livelihood, and UA did not often rank as the most important livelihood, in terms of income,¹⁵ in the household. Though UA has been associated with desperation, performed by only the poorest urban residents, this research found that UA is viewed as a pragmatic secondary, or even tertiary, way to earn an income. Lamine, who had an intermittent and informal position as a brick builder,¹⁶ sums up the general attitude that many farmers have: "You won't leave your [informal day work] because that's the work that is more important to you. And then you think, 'Ah, I'm not working today...let me just go ahead and plant a garden. If I am working, I go to work. If I don't have work, I'll just do some farming here.' That's what's most common here." Moustapha

¹⁴ Its leaves are used to make a leaf sauce that is served over millet couscous.

¹⁵ This distinction is made because several farmers talked about how it was important in a non-income related way. Ndeye Maty, for example, said nothing was more important to her than her micro-garden, but among her many income-generating activities, it was not the economic activity that brought in the most money.

¹⁶ Many men worked on construction jobs, but they rarely worked more than a few days a week, and would often earn only a couple of thousand CFA (four to five USD) per day.

noted that "Farming doesn't interfere with my other work; you can do everything you need to do between 4 and 6 pm." As a guardian, Samba works 12 hours a day, and makes less than 50,000CFA (100USD) per month, which is not enough to support his family. Farming supplements his income significantly, and he was pondering leaving his work to devote more time to it, saying he could earn at least twice what he was earning as a guardian. Because it is self-directed and relies on minimal or often readily available inputs, farming 'fits' with the circumstances of people who need to earn an extra income to make ends meet, or who would like to improve their household resilience through the accumulation of capital. Such an approach to livelihood reduces the risk associated with the uncertain economic environments in African cities, which are due largely to macroeconomic changes, particularly those associated with structural adjustment in the 1980's and 90's (Hansen & Vaa, 2004; Owusu, 2007).¹⁷

None of the farmers in the study grew just one crop, and several of them diversified by planting both annuals and perennials. Growing both annual and perennials enabled more opportunities to earn an income. Farmers who grew mint, a perennial crop, were able to harvest from these plots several times a week and earn at least several hundred CFA each time they harvested. Annual crops were harvested less often, but brought in larger amounts of cash. All farmers who were farming on vacant lots (N=7), except for one, were cultivating mango, papaya or banana trees, despite not having secure or long-term access to that land. All farmers at the other cultivation sites (N=7) were also growing these and other fruit trees, including grapefruit and lime. Polycultures are generally recognized to improve resilience not only for

¹⁷ Francis Owusu (2007) refers to this as Multiple Modes of Livelihood (MML), which he says is just the 'way of doing things,' in African economies.

the diverse products they provide to farmers, but because the diversity works as a buffer against perturbations that might affect some elements of the system and because they take advantage of diverse ecosystem niches, thus efficiently using space (Altieri, 1989; Colding, Elmqvist, & Olsson, 2003; Gliessman, 2007). In addition, as 'patches' of ecological diversity within the urban landscape, gardens serve to increase spatial heterogeneity, which "provides the seeds of renewal" in case of disturbance and provide a way to 'capture nutrients' through the use of manure and biomass production (Cabell & Oelofse, 2012). The diversity of the urban agroecosystem was served by both a 'socio-ecological memory' and by innovations from outside the system. A number of farmers sourced favored seed varieties from their home villages, which are widely dispersed around Senegal, while others bought imported European varieties from local seed shops. Farmers are keenly attuned to what varieties work best in what season, so that over the course of a year, the agroecosystem, via the practices and preferences of farmers, was constantly making small adjustments to deal with change.

Lastly, as it interacts with urban socio-ecology and the well-being of urban residents, gardens are appreciated oases, and a number of farmers remarked on the emotional and sensory effect that gardens have on them. Aba, for example, noted that when she walks around a garden she feels calm and that she enjoys being in the garden after it has been watered because it is cooler than the ambient temperature. Mohammad said that looking at plants "clears your eyes up," while Andre said that when he plants something and sees it sprout, it pleases him. Andre also observed, "If you go somewhere without plants, you can't relax. If you go somewhere with plants, you can relax and your heart becomes cool." These responses suggest that gardens provide people with a respite from the heat and bustle of the

city, which are under-recognized necessities within an economic development agenda that prioritizes economic growth.

4.4.2.2. Diversified and Decentralized Food Access

Urban areas are changing rapidly. New people are constantly arriving in M'Bour, to settle permanently or temporarily/seasonally. Along with these new arrivals come new 'points of instability' in the food provisioning systems, i.e. gaps in servicing food needs. One of the advantages of a self-organized and emergent food system, carried out by large segments of the urban populations, is that it can move nimbly and flexibly to fill these critical points of instability (Berkes et al., 2003b). In this process, the food provisioning system is constantly renewed, or replenished, with new ideas, new relationships, new networks of exchange and increased food exchange points. Urban farmers play a role in this process because their production activities generally occur in neighborhoods where increased food access points are required. In addition, the informal nature of production and exchange is partly characterized by flexible pricing.

In M'Bour there is one central market that services the entire town, which is spread out over about 22 square kilometers.¹⁸ Because most people must make small and frequent purchases, due to both lack of access to refrigeration and generally small incomes, daily trips to the market are the norm. Every morning, residents from all over M'Bour make their way to the market. Many walk or take horse-drawn carts, or some other form of public transport. Many

¹⁸ The area was measured using an online measurement tool at <http://www.daftlogic.com/projects-google-maps-area-calculator-tool.htm> on October 19th, 2013.

people note the expense of traveling to the market each day, and for those living on the outskirts of town it represents a significant time expenditure, as well. Many people, especially women, said that the existence of just one market was unsatisfactory, inconvenient, and onerous. In the rainy season, it can even become dangerous, as carts become stuck in the mud, and people have to disembark so that horses can pull the carts free.

Gardens in the study were generally located several kilometers away from market and were valued by neighbors as alternatives to buying and selling at the central market. On several occasions, as interviews were being conducted with farmers, neighbors arrived to purchase fresh produce. For example, during one interview with Mohammad, a woman restaurateur stopped by. Mohammad explains that she often buys bissap (*Hibiscus sabdariffa*) and okra from him. On another occasion, two neighborhood women arrived to buy lettuce. When asked why she buys it from Mohammad, one of the women explained that it is fresh and of good quality, and that she knows what she is getting, unlike in the market. Mohammad explained that this happens often, and that people will often buy tomatoes and peppers at the same time. Samba noted how it benefits his neighbors when he sells food to them "because if I sell a head of lettuce for 100CFA, at the market it costs 150." Lamine described how his wife could cut mint and sell it around the neighborhood and make as much as 3000CFA(6USD) in a short amount of time.

Urban farmers develop multiple relationships in order to distribute food. Such practices enable flexibility on the part of both producer and agent of distribution. In addition to the individual sales noted above, farmers develop working relationships with *bana-bana*, market

women who walk around neighborhoods and buy produce in bulk to re-sell in the market or elsewhere in the city. Of the seven farmers cultivating on vacant lots, six of them sold to *bana-bana*, while the seventh sold what he produced in a small shop in close proximity to his field. In addition, three of the farmers lived in an area of M'Bour that was at the crossroads to Saly Portudal, a thriving tourist town that had a large expatriate population. In those cases, farmers had the advantage of being able to sell some of their produce at even more outlets *and* at an increased price. Thus, in this case, because of the spatial location, the flexibility of the informal and emergent food provisioning system enabled farmers to gain a bit of extra income from those who could afford it. Such a system, in which there are many connections among a high number of individuals, and in which people are free to make connections with as many people as they can reflects the principle of 'appropriate connectedness,' which, in practice, means "collaborating with multiple suppliers and multiple outlets, including consumers, rather than just one" (Cabell and Oelofse 2012, p. 6). Such a high degree of connectedness enables flexibility and responsiveness to change, which helps to ensure that the food systems can shift to fill in 'critical points of instability' that come with urban growth and change (Gunderson & Holling, 2002).

4.4.2.3. Nutrient and Resource (Re)Cycling in the City Agroecosystem

In many African cities, urban primary production is common, so much so that thinking of the city as an integrated farm, with multiple farmers, helps to understand how productive resources are cycled, and how people draw on these resources in the production and exchange of food. A farm is integrated when the outputs of one productive activity are used as the inputs

for another, and when crop and livestock production is carried out via complementary practices (Agbonlahor, Aromolaran, & Aiboni, 2003). A major quality of resilient systems is that the "system functions as much as possible within the means of the bioregionally available natural resource base and ecosystem services" (Cabell and Oelofse 2012, p. 4). Though the concept and practice of integration usually refers to the farm level, applying it to a landscape level helps to see the ways in which production practices across the city are integrated and resilient. In addition, better understanding how productive resources are recycled demonstrates how urban farming is an *urban* practice circumscribed by, and intersecting with, urban processes.

In M'Bour, farmers depend heavily on the natural resources of a city agroecosystem. Soils in M'Bour are mainly composed of sand and, thus, have little nutrient or water-holding capacity. Classified as Arenosols on the World Soils Map, these soils have greater than 70% sand and less than 15% clay. To make them viable as a growing medium, cultivators must amend them with considerable amounts of organic material, which serves as a nutrient source and helps to mitigate water loss. Warm ambient temperatures and daily watering that encourage rapid decomposition of organic material requires farmers to amend soil regularly.

Goats, cattle, sheep, pigs and turkeys wander unattended throughout neighborhoods, which allows them to graze, browse, or scrounge for food. This practice is not always appreciated by other urban residents, but it does represent one way to partially deal with urban waste and to turn it into useable resources such as meat, milk and manure. Manure is readily available and is the most common soil amendment. A diverse range of manures is available, and farmers choose based on preference and/or particular need. Horse and chicken

manure are most widely available. In some cases, it is necessary to pay for the manures and in other cases it is possible to get it for free. This seemed to be a function of the relationships one had with people who had the manure available, quality of the manure, as well as spatial location in the city. Lamine, for example, never paid for horse manure, which he said was because he lived in an area of the city where it was not in high demand. For those farmers closer to the hotels, who used manure to fertilize hotel lawns, it was necessary to pay around 2000CFA (around 4USD) for a load of manure.

Often, chicken manure mixed with wood shavings, which are used as bedding in urban chicken production, is available. These shavings are acquired by farmers from city furniture makers or wood workers. Chicken manure is widely recognized to provide a quick boost of nitrogen, but all farmers noted that it should be used with caution since it can 'burn' the plants. Mixed with wood shavings, the chicken manure loses some of its heat due to decomposition, which makes it safer to use. Samba noted that the best fertilizer is a mix of wood-shavings and chicken manure that comes from coops that had not been cleaned in a long time.¹⁹ The several dumps around the city were also mined for compost by some farmers, though this practice was used more often by hotels and on a larger scale. Two farmers in the study also used fish waste to enrich the soil, which is a plentiful but under-used resource in M'Bour.

Lastly, a number of farmers repurposed items thrown away as junk. Andre, one of the few formally employed farmers who raised ornamental plants in his spare time, re-used plastic

¹⁹ It was noted, however, that many chicken producers avoided this practice since it could make the chickens sick.

water bottles, thrown away by tourists and expatriates, as planting containers. He shared these with neighbors, including Fatou N, who used them as planting containers for fruit trees, which she sold in the market. Mohammad and Ndeye used old mosquito netting to protect their tender plant starts from birds, while Ndeye Maty and Ndeye both used old washtubs and tires as planters.

4.4.3. Food as a Means of Building Adaptive Capacity in Social Systems

Food practices are embedded within social institutions, broadly conceived here to include "habitualized behavior and rules and norms that govern society" (Adger 2000, p. 348). In M'Bour, there is a significant social component to food practices, which not only works to mitigate food vulnerabilities, but also serves to build social relationships, in general, and thus strengthens the collective capacity of people to cope with stress and change (W. Neil Adger, 2000; Lourenço-Lindell, 2001). Through their cultivation practices, farmers were improving their relationships with others in the community by giving away a portion of their production to others in the community, which served not only to improve their ability to make *claims* on other households in times of need, but also improved overall community cohesiveness. This quality of communities is recognized as an important prerequisite and determinant of social development and resilient societies (Buchmann, 2009; Cabell & Oelofse, 2012).

In general, respondents agreed that major determinants of well-being, referred to as *nattangué*, are interpersonal relationships, both within the household and with households in the community (Lourenço-Lindell, 2001). Much of the literature explains the importance of these relationships in instrumental terms (Galaskiewicz, 1979; Swift, 2006), but as Lourenço-

Lindell (2001) cautions, emphasizing 'utility-maximization' masks the sentimental and interpersonal value of these relationships, which can be extremely important in creating a pleasant and resilient place to live. Lamine explained it this way: "Relationships between neighbors are more important than relationships with your family. I'm here today. My family isn't here...they are out in the village. If something were to befall us here at the house, like my father died, before anyone back in the village knew, everyone here on this corner would know. Also, everything that should be done will be done before my family gets here." Moustapha, who said, "There is no one on this corner who can say I haven't given them something," gives away a portion of his harvest before he sells anything. When asked if the garden was necessary for his livelihood, Mohammed said that he could survive without it, but that "there are always people depending on you. There are always people who have needs. If it is just you, you can get what you want very quickly....but you have to be able to give." In rural areas, these bonds result in large part from kinship ties and long-standing inter-family relationships. In urban areas, especially among recent migrants, these ties must be created anew and the outputs of gardens help to create those ties.

The giving away a portion of the harvest fulfills a religious mandate, called *asaka* by Muslims,²⁰ but practiced by Catholics, as well. For those farmers who did not have a large income, the ability to give away a portion of harvests enabled them to fulfill this important cultural duty. In addition to this socio-spiritual aspect of UA, there was also an eco-spiritual dimension for some farmers, which linked the cultivation of social relationships with the

²⁰ In Arabic, the word is 'zakat,' and refers to the third of the five pillars of Islam.

cultivation and care of the soil. Mohammed explains: "If someone comes to visit me, I like to give them mint or salad. This is 'doing good'...I worked this soil until I was tired, put my money into and then I gave it to you. That is a good thing. God will repay me. You put your sweat into it, and then you give it away... But God will pay me, because I am giving life to things of the world. I am making these things live. It is good. You are rehabilitating the soil. And, you know, when you see this, you are happy."

Thus, food plays an important civic role and helps to create bonds with neighbors. In cities where rapid development and in-migration takes place, these sorts of food exchange practices can create and reinforce interdependence, which, in turn promotes collaboration, an important buffer against perturbations (Cabell & Oelofse, 2012).

4.4.4. Vulnerability and the Limits to UA's Adaptive Capacity

A common theme to emerge was that differentiated access, influenced by city spatial, cultural, and socioeconomic processes, determined how people were able to use UA to improve resilience. In other words, city processes influenced individual or household vulnerability. Understanding these processes can help to strategize about how to address the differential aspects of adaptive capacity.

In general, farmers had limited access to material and knowledge resources, which was due to multiple reasons, including (1) the inability to connect with other farmers because of their distance from each other, and (2) the lack of extension services. Farmers in the study were spread out over an area of roughly 22 square kilometers. Though urban farming is relatively common, the number of farmers in a given area, in close proximity to each other, is

limited. As a result, the pool of expertise they can tap is limited, as well. On a number of occasions, farmers encountered problems, but lacked a means of researching the problem to find a solution. Moustapha, for example, did not know the cause of the yellowing and stunting of his bitter tomato, and thought it might be due to over-watering. In Babacar's field, a large plot of bissap was afflicted with yellow spots, which rendered the leaves un-sellable. He thought it might be due to an insect. When a leaf sample was later shown to a horticulturalist, it was found to be rust, which is prevented by avoiding wetting the leaves when watering. Souleyman, the poorest and most vulnerable farmer in the research group had the space to farm, but was new to farming and lacked basic farming skills. Due to his level of poverty, he had very little room for error and would have benefitted immensely from expertise of other farmers or trained professionals. But, because farmers were relatively isolated from other farmers and from the expertise at the horticultural department, they often had to rely on their own knowledge, which, though extensive, was inadequate on occasion. Farmers clearly had shared management challenges that could have been resolved by a more robust exchange across the city. For example, termites and white fly are a problem mentioned by almost every farmer. Moustapha observed that applying compost to his field (a mix of manure and fish waste) instead of uncomposted manure reduced termite damage. He also observed that watering at night reduced white fly damage. Andre, who advised Fatou N on a regular basis, was very knowledgeable about fruit tree propagation. In addition, farmers often had extra seedlings, plant cuttings and divisions that might have been exchanged with other farmers, but instead went unused. Beyond the scientific expertise that it offers, extension services might help to resolve these issues and contribute to resilience by serving as a conduit for new and

diverse innovation, an important dimension of resilience (Folke et al., 2003) and as a sort of 'hub' for farmers to exchange information and material resources, thus improving 'human capital' (Buchmann, 2009; Cabell & Oelofse, 2012).

A number of structural issues also affected the ways in which farmers were able to profit from farming. Fatou N explained that her ability to 'survive the city' was hindered, in part, by regulations issued by the mayor's office. Fatou lives on the outskirts of the city, where vacant land is still relatively plentiful. When she first arrived in M'Bour in 1998, she was able to grow millet, but in 2005 or 2006, municipal officials arrived to tell her to stop: "I used to farm a lot of millet out here, but they've prohibited it because they say that it increases how hot it is and increases the number of mosquitoes. The mayor's office... prohibited it. Everyone out here used to farm, but no more. When we first came, there was no one here and I could farm all of this. They say you can only farm corn, beans or bissap. Not millet. They say the millet is just for people living in the rural areas." Mosquito prevention is a major public health concern, which is reflected in M'Bour's *Regles D'Hygiene Publique* (Public Health Rules). That document states that the cultivation of plants that harbor mosquitoes is prohibited. Putting aside the distinction made by municipal officials between millet and other rainfed field crops, there is evidence that UA increases the incidence of malaria, but primarily in relation to irrigation and resistance to insecticides, neither of which is a factor in low-input, rainfed agriculture, millet or otherwise (Afrane et al., 2004; Antonio-Nkondjio et al., 2011; Dongus et al., 2009). A more tolerant approach would consider the risk associated with difficult socio-economic conditions in relation to the risk of malaria, as well as work with farmers to minimize mosquito breeding habitats (De Silva & Marshall, 2012).

Food vulnerabilities are created by factors in global markets. For example, the depletion of fish stocks by foreign-owned fishing fleets is widely recognized as a problem by Senegalese and in the popular press.²¹ In relation to UA, farmers who chose to devote a large portion of their small spaces to onions were particularly disadvantaged during the year that the research was conducted. In recent years, farmers have been encouraged to grow onions by the Senegalese government. In an effort to ensure that local producers receive a good price, import restrictions are typically placed on Dutch onion imports from April to August. In 2011, however, the foreign onions kept arriving well into April, which meant that Senegalese farmers could not get a good price for their onions. Early in the season, Lamine had hoped to be able to stockpile his onions and sell them during the rainy season, from July to September, when the price can climb as high as 15,000CFA/sack. The year prior, he harvested 28 sacks and sold them for 10,000CFA each, which allowed him to buy 30 baby chickens, which he raised and then sold to earn an even greater profit. In 2011, however, the foreign onions kept arriving, which led some people to say that the Senegalese government never imposed the restriction, but which may have been caused by onion importers stockpiling onions, and then releasing them onto the market during the closed period (Agritrade, 2011). Because there was a lack of day work, Lamine had to sell three bags of onions in late March to buy rice and oil, and was able to get 9000CFA/bag. On April 13th, he sold four more bags, and was only able to get 7000CFA/bag.

²¹ For example, this article, originally published in Le Monde, discusses the sale of fishing rights to foreign trawlers: <http://www.worldcrunch.com/world-affairs/the-risks-of-senegal-s-david-and-goliath-battle-over-fishing-rights-/c1s3452/#.UmUoatJwrTo>. This article discusses the steps that could be taken to remedy the situation: <http://www.theguardian.com/global-development/poverty-matters/2012/apr/02/steps-prevent-collapse-west-africa-fishing>. (Accessed October 21, 2013)

By April 20th, the price was reportedly down to 3000CFA/bag, and there were so many onions on the market that they were rotting in their sacks.²² It might be argued that Lamine's choice to primarily (though not exclusively) focus on one crop increased his vulnerability, but his choice to do so was based on an understanding with the Senegalese government. Lamine noted that those farmers growing onions on large parcels of land would remain relatively unaffected due to the effect of scale. This point gets at one inherent vulnerability of this extremely small-scale farming, in that the choice of what to grow can be a very high-stakes decision, whereas for larger farmers it is less risky.

Space was also a factor in creating vulnerabilities. The majority of economic activity associated with food is centrally located, but many of the farmers live in the less densely settled areas of the city. Farmers who lived in areas that permitted easier access to tourists and expatriates were advantaged in at least two ways. First, there were more *bana-bana* with whom they could choose to do business, which means farmers had more negotiating power. Secondly, they had more access to tourists and expatriates, who were able to pay more for produce. In addition, farmers who were either new to farming, like Souleyman, or new to the

²² A follow up editorial comment from Agritrade, accessed October 21, 2013, says, "Despite the introduction by the Senegalese authorities of an onion import ban for the period from 1 April to 31 August, imports of Dutch onions have fallen only marginally. This suggests that there may be substance to local reports of traders stockpiling onions prior to the introduction of seasonal restrictions, and has led to calls for the Senegalese government to introduce a complete ban on onion imports for 3 years."
<http://agritrade.cta.int/Agriculture/Commodities/Horticulture/Dutch-onion-exports-to-West-Africa-show-continued-growth>

city, like Fatou G, have not yet established the relationships or knowledge needed to optimize income.

Thus, vulnerability is associated with living within particular socio-ecological contexts, and is dependent on the capacity of a group or individual "to respond to external stresses that may come from environmental variability or from change imposed by economic or social forces outside of the local domain" (Adger and Brown 2009, p. 109). Vulnerability is situated and contingent, and the factors can vary considerably from household to household. Understanding how farmers are vulnerable, however, gives a starting point for thinking about how to improve the adaptive capacity of urban farming.

4.5 Conclusion

Food is a primary resource need for people. Without a constant, well-distributed supply, society suffers. In much of the Global South, the responsibility to produce and distribute that resource lies with a decentralized network of people, held together by formal and informal relationships. It is a wholly different system of exchange than that which is commonplace in the Global North, and its development is guided not by economic growth and profit maximization, though it is a source of livelihood for many, but by the needs of people to provision their households. As an emergent, self-organized system that has as its primary concern to get food to people on a consistent basis, it is constantly *reorganizing* around critical points of instability that hinder that access (Berkes, Colding, & Folke, 2003a). In urban environments, those reorganizations are shaped by specifically urban processes with social, spatial, political, and economic dimensions.

Wilkinson (2012) notes, "perhaps the most significant contribution of social-ecological resilience for planning is its role as a different and useful frame for both problem-setting and problem-solving" (p. 149). Though a primary focus of many doing research on urban agriculture has been on the share of food or income that UA produces, which, incidentally, varies widely, the role of UA might be better understood as a *buffer* against food vulnerability.²³ Improved research on urban agriculture would consider UA *in relation to* the food system as a whole, and avoid studying it as an isolated phenomenon. Though food systems are often defined as a set of activities from production to consumption, Ericksen (2008) argues that a broader conceptualization of food systems that includes (1) the socio-ecological context, and (2) the outcomes of that set of activities in relation to the impact on human welfare and the environment, is critical to developing policy and management practices that meet food security needs in a challenging and rapidly changing socio-ecological environment. Applying the concepts of resilience and vulnerability to such a conceptualization of food systems can help to enable the kind of holistic and comprehensive understanding that is required.²⁴

²³ A discussion of buffering capacity in managed socio-ecological systems can be found in Gunderson (2003).

²⁴ In their paper, "The urban foodscape: world cities and the new food equation," Morgan and Sonnino (2010) capture the challenges and complexity of responding to rapidly changing food provisioning environments. They identify five "disquieting trends" that are profoundly shaping the opportunities and constraints associated with food: food price surge, food insecurity, national security, climate change, and land conflicts.

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CHAPTER FIVE

CONCLUSION

Chapter 5 Conclusion

Politics of place is a discourse of desire and possibility that builds on subaltern practices of difference for the construction of alternative socionatural worlds; it is an apt imaginary for thinking about the “problem-space” defined by imperial globality and global coloniality. (Escobar, 2008, p. 67)

This section sums up the major points to emerge from this study, discusses policy implications and suggests direction for future research.

5.1 Summary of Conclusions

A primary goal in the dissertation proposal for this research was "to understand how the meaning ascribed to urban cultivation differs between urban cultivators and development professionals, and to draw conclusions about how this is relevant to urban development and citizen well-being." The conceptual frameworks used to carry out the analysis are underpinned by an epistemology of place that enabled the ability to perceive these differences. In addition, an understanding of urban agriculture as emplaced necessarily caused an analytical process that situates UA processes and practices in relation to other urban processes and practices. Rather unexpectedly, a study of UA through epistemologies of place led to an understanding of wider social processes in which UA is embedded, and resulted in using urban agriculture an entry point, rather than the main subject, to understand the mutual production of people and place, and paid particular attention to 'meaning-making' in and through one urban livelihood. Small-scale urban agriculture, as a livelihood that is deeply embedded in social and ecological

processes that comprise the city, provides an excellent reference point to explore and understand how people and place are mutually constituted.

The study showed how place and people are not bounded by geography, and, indeed are co-created by dynamic processes occurring at multiple scales across time and space. Gender, for example, is a place-based performance of sex-based differences. But, gender identity, as a global-local, relational-locational production, is “not sealed off from the outside beyond” (Moore, 1998, p. 347). Micro-gardening, introduced as a development project that originated elsewhere, brings with it embedded significance. In M'Bour, it has articulated, in part, as an emplaced and innovative means of doing gender. Though designated for poor and marginalized urban populations, in M'Bour, comparatively well-off women, with good social connections, are able to access a means of performing gender that they perceive to be empowering and satisfying.

M'Bour, though perceived by many residents as a place of opportunity, is also characterized by great uncertainty and inequality. Frequent power outages and scarcity of fish are just two of the dynamics that influence how M'Bour articulates. Electricity and water outages and lack of fish are locally experienced, but globally produced, and are the result of uneven power relationships that are historical in nature, and politically produced. Such uncertainty is common to cities across the Global South, and affects how people provision themselves. In an emergent, popularly produced food system, urban agriculture serves to buffer against such uncertainty. Though it exists differently and is practiced to varying degrees in different places, the requisite knowledge and skill are guarded and ameliorated as part of the

socio-ecological memory that comprises a diverse and decentralized food provisioning system, which, in turn, improves the system's adaptive capacity.

Overall, the studies argue that place remains important to people and has profound effects on our ability to create well-being. For most of us, places are more than "just nodes in a global capitalist system" (Escobar 2008, p. 67); rather, it is in and through places that our identities are produced, our relationships formed, our livelihoods practiced, our households provisioned, and our communities built. In addition, as a conceptual frame, place-based thinking draws attention to the multi-scalar, multi-dimensional, and historical *production* of place and people, and compels analyses that look outwards, across space and time, to explain local articulations of, for example, poverty, vulnerability, inequality, and scarcity.

5.2 Policy and Research Needs

Modernity's ability to provide solutions to modern problems has reached a limit, making discussion of a transition to beyond modernity feasible, perhaps for the first time. (Escobar, 2008, p. 303)

Cities in sub-Saharan Africa are gaining increasing attention on development agendas. Very often, discussions about 'what to do' start by recounting the numerous apparent pathologies that seemingly characterize African cities everywhere. Poor infrastructure, unregulated growth, poverty, lack of employment, poor housing, and lack of sanitation are some of the primary issues that are identified. Policy agendas generally suggest a host of interventions to 'modernize' the city, described by Mohamadou Abdoul (2005) as "an epistemology of normative action," that would remedy the problems by adding what the city

lacks.¹ What is so striking about these documents, especially in light of the research in this dissertation, is how little they acknowledge that the city is a *creation* and how much they ignore the resourcefulness and inventiveness of urban citizens in navigating uncertain environments (G. Myers, 2011; Owusu, 2007; Pieterse, 2008; Robinson, 2006; Simone & Abouhane, 2005). If there is any validity at all to the idea that "places gather experiences and histories, even language and thoughts," then approaches that see only gaps to be filled can only be understood as, at best, shallow and incomplete, and, at worst, neo-colonial, hegemonic prescriptions that negate and obscure the lived experience of urban residents (Casey, 1996, p. 24).

There is no doubt that African cities are often difficult environments to negotiate, but a crisis narrative, in which both problem and solution are framed by an 'epistemology of normative action' that ignores (1) the historical and political production of crisis, and (2) what citizens are doing to negotiate crisis and improve well-being is representative of a "colonialist move" (Mohanty, 1988). That is, such representations are "more a sign of power over the Third World than a truth about it" (Escobar, 1995, p. 9). That such representations underlie the majority of mainstream policy indicates that "assertion (is effectively substituted) for critical investigation and analysis" (G. A. Myers & Murray, 2006)

The studies in this dissertation offer a few lessons to the growing body of policy-oriented urban research. First and foremost, these studies argue for policy approaches that are grounded in place and which engage with the specificities of particular cities. Furthermore,

¹ See, for example The World Bank's publication "Systems of Cities: Harnessing urbanization for growth and poverty alleviation"(The World Bank, 2009).

rather than pursuing neo-liberal development goals, which focus on 'integrating cities into the global community' a development politics of place argues for (1) locally-generated problem statements and solutions, and (2) attention to the extra-place factors that cause vulnerability. Several 'starting points' for place-based analyses are identified: informality, informal (vernacular) support systems, and urban food systems planning.

5.2.1. Informality

A better understanding and disaggregation of 'informality' needs to inform the urban planning and development agendas. Too often, this concept is used to refer to the activities of poor people, but a number of researchers have demonstrated that 'informality' has become 'the way of doing things' in African cities, for both rich and poor (Hansen & Vaa, 2004; Owusu, 2007). Using the term to primarily describe poor peoples' activities is inaccurate and serves to obscure the unjust ways in which access to and development of the urban space occurs. By conflating informality with only the improvisational economic activities of the poor as indicated by a certain appearance, or a certain mode of practice, the more 'modern' appearing economic activities are free from similar scrutiny even though, they too, are unregulated. As cities grow, and the contestation over urban space intensifies, this issue will become more critical. Ananya Roy (2005) proposes that informality is better considered as a mode of development that characterizes the vast majority of economic activity, while Francis Owusu (2007) suggests a wholesale jettisoning of the concept. In either case, a main priority is to recognize that the claims to the city cannot be settled by using a dichotomous concept of informality, and should not be settled by how a particular livelihood is reflective of a 'modernist' aesthetic.

In place of a focus on what is informal and what is not, analyses should recognize and valorize place-based economies by understanding local forms of economic organization and rationale. For example, in M'Bour, as in many African cities, households serve as primary spaces for conducting economic activities, which has the effect of creating spatially decentralized economic systems. Such realities are not acknowledged by conventional planning and zoning regulations, but as Owusu (2007) notes, they should be "because the multiple functions of the house in African cities and the proliferation of home-based enterprises do not appear to be stop-gap measures" (p. 459). It is worth noting here that, through the conceptual lens of resilience, such economic organization and practices, which decentralize and diversify economic systems are reflective of practices that build adaptive capacity.

5.2.2. Informal (Vernacular) Support Systems

In this case 'informal' refers to the un-marketized domain of social life. This reality is perhaps better captured with the Ivan Illich's 'vernacular values.' Illich suggested that a word was needed to "designate the activities of people when they are not motivated by thoughts of exchange, a word that denotes autonomous, non-market related actions through which people satisfy everyday needs - the actions that by their very nature escape bureaucratic control, satisfying needs to which, in the very process, they give specific shape"(Illich, 1980). Such values underlie many of the relationships and practices that are critical to surviving the city, and they have profound effects on what claims people can make to the access of resources, yet they are rarely acknowledged in any meaningful way in development policy. Though these sorts of relationships have been well-accounted for through studies of 'moral economies' and

'gift practices,' they remain associated with a 'pre-capitalist,' and thus, pre-modern societies.²

When urban imaginaries are constrained by parochial ideologies of 'modernity,' such relationships are viewed as unimportant and destined to disappear once the city moves along the trajectory towards modernity (Lourenço-Lindell, 2001). In contrast, a conceptual framework that privileges place helps to free perception and analyses from such constraints, and understands that well-being is a dynamic, moving target that is constantly being negotiated through relationships that are sometimes collaborative, and sometimes contradictory, and always emplaced. Future research and policy should better understand these relationships by relating them to urban social, spatial,³ environmental, and political processes, which can then be used to better inform how these relationships help people cope, as well as how they may make some people vulnerable.

In a related vein, the necessity of collective action does not inform development policy, which is unsurprising, since development generally functions as an 'anti-politics machine' (Ferguson, 1994) that minimizes the importance of political and historical processes. But, organizations such as Slum Dwellers International are demonstrating that shaping and improving urban space takes deliberative and organized action by marginalized populations who define both problems and solutions, and develop a platform from which to address and

² The concept of social capital is an unsatisfactory substitute, not least because it is concerned with social relationships only insofar as they signal the potential for 'market-led' development. Ben Fine thoroughly and entertainingly demolishes the concept of social capital, e.g. (Fine, 2010)

³ There is a critical need for understanding the spatial dimensions of urban vulnerability.

influence policy. In addition, within sub-Saharan Africa⁴ there is currently a strong effort to shape urban planning to be more appropriate to the African context and to move beyond the Master Plan, a relic of a colonial past and a reflection of planning for another time and place. This effort, conducted under the auspices of the Association of African Planning Schools, acknowledges the importance of spatial planning and a citizen-driven process to deal with the challenges facing African cities.

5.2.3. UA and the Urban Food System

UA is again appearing on development agendas as a way to combat urban food insecurity. A number of researchers caution against a strong focus on UA based on the idea that it provides very little in the way of food for the city (Crush, Frayne, & Pendleton, 2012). However, a position that evaluates the potential of UA based only on its productive output misapprehends the primary value of UA, which is that it diversifies the entire food provisioning system, thus improving the system's overall adaptive capacity. The misapprehension of UA reflects a wider misapprehension of how people diversify their livelihood activities to reduce risk. Owusu (2007) points out that diversification of livelihood is practiced across the economic spectrum in African cities, and that "individuals and households...(respond) differently to...macroeconomic processes based on the nature of their employment, skills, access to resources, socioeconomic backgrounds, and places of residence" (p. 453). As it relates to UA specifically, such an understanding of economic processes and practices in African cities requires understanding UA in association with other urban processes and food provisioning

⁴ Primarily Anglophone countries

practices. Emergent, popularly produced food systems very likely have much to offer in relation to coping with uncertainty. Such systems, because their evolution has been driven by the food-provisioning needs of the people who comprise and enact the system, evolve to strengthen 'critical points of instability.'

To be sure, however, considerations of how UA 'fits' with the circumstances in particular cities, or in relation to the needs of particular people, needs to be a situated analysis. As with any technical practice, context matters; what is good and emancipatory in one context can reproduce inequality in another. Though Hovorka's article, "Urban Agriculture: Addressing Practical and Strategic Gender Needs"(Hovorka, 2006) primarily discusses the ways in which women may be affected by urban agriculture interventions, her point that UA needs to be accompanied by an emancipatory agenda is relevant to marginalized and vulnerable populations, in general. If it is used in place of, or as a substitute for, meaningful political action, it may continue to reproduce relationships of inequality and perpetuate the relationships that produce urban vulnerabilities.

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