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Getting Back to the Garden: Reflections on gendered behaviours in home gardening

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ABSTRACT

There is growing interest amongst scholars in people's gardening behaviours related to food production. This development coincides with society's increased interest in consuming and producing food in sustainable ways. Local food movements, which include urban agriculture and home gardening, have increased in popularity in several countries, especially during the last decade. Academics from a variety of disciplines have been starting to ask questions: Why are people gardening? How is gardening associated with one's identity? What motivates people to adopt environmental gardening practices? Some researchers suggest that gardening research could benefit from gender analysis. This paper examines some of the literature in this growing field of inquiry and finds current gardening research often lacks critical gender analysis, thus failing to problematize gardening behaviours and attitudes. It maintains that this development is curious in light of compelling evidence that shows differences in the gardening behaviours of men and women. It proposes that along with Bhatti's and Church's theory of gardening spaces as mirrors for changing gender relations, Allen's and Sachs's feminist theoretical approach to explore the sociocultural domain of women's relationship to food could be used to conduct gendered gardening research related to food. This discussion concludes that gender analysis is critical to exploring gardening as a research topic and that understanding women's role in gardening for food production

will be especially critical in future research as climate change impacts necessitate different food production and consumption behaviours.

Introduction

Societal interest in gardening and urban agriculture appears to be increasing (see Figure 1). Media reports emerge daily about new initiatives in cities around the world that encourage home and community gardening as well as urban farms and green rooftops. Food gardening especially gained attention in the U.S. media following First Lady Michelle Obama's iconic planting of an organic vegetable garden at the Whitehouse in 2009, the first of its kind since First Lady Eleanor Roosevelt planted a Victory Garden on the front lawn of the Whitehouse in 1943 as part of her effort to encourage Americans to support the war effort by growing their own food (Burros, 2009). Americans' interest in home gardening was already keen by 2009 after the economic downturn of 2007 and 2008 had impacted the U.S., leaving many people without jobs and with reduced income. This rise in public interest is further supported in statistics. According to garden market research conducted by the National Gardening Association, gardening for food production in the U.S. is increasing. It showed in 2009, 43 million American households, or 37 per cent of the households, planned to grow vegetables, fruit, berries and herbs, up 19 per cent from 31 million American households in 2008 (National Gardening Association, 2009, pp. 6-7). The research demographics also showed that most U.S. food gardeners are women (54 per cent) who are 45 years of age and older, married with no children at home, educated at a post-secondary institution (43 per cent), and living in households that earn an annual income of \$50,000 U.S. and over (38 per cent) (p. 8).

Figure 1: Google search trends in the U.S. for vegetable gardening

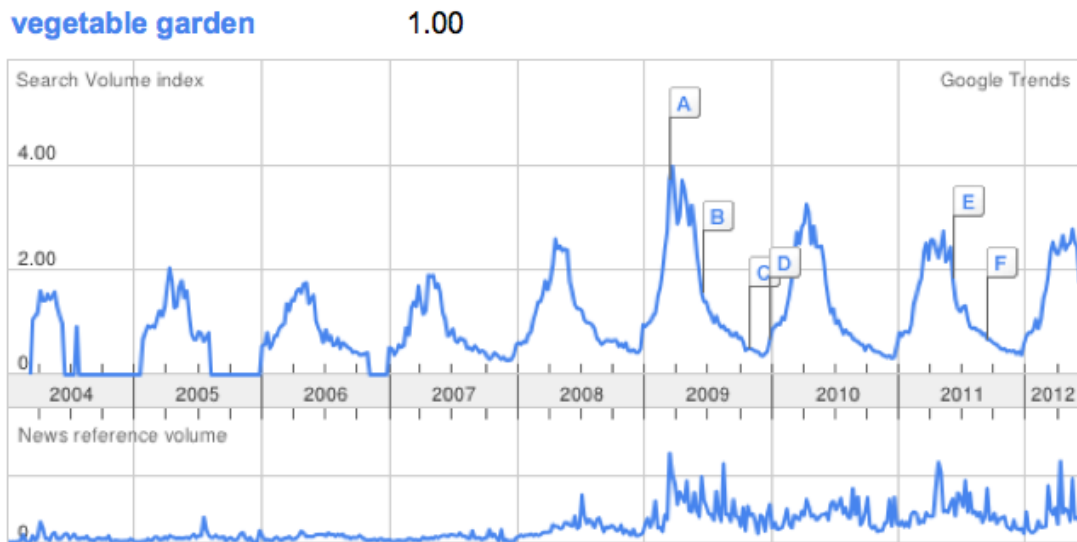


Figure 1: U.S. public and media interest in vegetable gardening in Google search traffic data. This graph was compiled on June 18, 2012 using the Google Trends tool, which shows trends in web searches since 2004 with 1.0 representing the average for “vegetable garden” relative to the number of all other Google searches. The trends shown here are confirmed in the National Gardening Association’s statistics on increased public interest in gardening. Spikes in public and media interest in vegetable gardening notably occur in 2009, the year First Lady Michele Obama planted an organic garden at the Whitehouse.

Societal interest in gardening for food purposes is a reflection of many developments in economic, social, scientific, environmental, spiritual, political, and cultural spheres related to the eating, growing, harvesting, and buying and selling of food in the 21st century—everything from food safety, food quality, food nutrition, food security, climate change, genetically modified food, to sustainable agricultural and gardening practices to name a few. The field of scholarly research has taken due notice of people’s growing interest in the subject; a body of academic research on people’s gardening behaviours and attitudes has emerged in response, particularly over the last 20 to 30 years. Searches for the term “garden*” in the EBSCOhost Discovery Service database were conducted on June 11, 2012. A search limited to the time period between 1980 and 2012 yielded 27, 702 results. Using the same search term and changing the date range between 1948 and 1980 yielded 1,778 results. The research is wide and varied, crossing several disciplines such as environmental studies, geography, landscape architecture, nursing, health sciences, food studies, economics, sociology, feminist studies, psychology, history, literature, cultural studies, and rural studies. Some researchers, for example, such as Clayton (2007) have examined the impact of people’s gardening activities and motivations to garden on their attitudes towards the

environment while others have created and tested gardening identity scales in an attempt to understand how people's gardening behaviour impacts their identity with nature and their environmental gardening practices (Kiesling & Manning, 2010). Some researchers have even begun to focus on home gardening in particular, although more research is required (Bhatti & Church, 2000, p. 184; Kortright & Wakefield, 2011, p. 40). In one study, Kortright and Wakefield (2011) conducted an exploratory study on the impact of home gardening on food security in communities. In another study, McIntyre and Rondeau (2011) investigated the home gardening behaviour of Canadian farm women within the context of researching the rise in popularity of locally-based food movements. Yet, other researchers have focused on the socioeconomic and cultural aspects of gardening. Within this area, some researchers have focused on the role of gender in gardening and have found significant differences in men's and women's gardening behaviours and attitudes; for example, women more so than men tend to use less chemicals when gardening (Reyes-García et al., 2010, p. 241). Several of these scholars have argued that gardening research could benefit from the lens of gender analysis given these differences (Bhatti & Church, 2000; Buckingham, 2005; Hondageu-Sotelo, 2010; Reyes-García et al., 2010); however, gender analysis is often lacking in gardening research, thereby creating a knowledge gap about understanding differences in people's gardening behaviours and attitudes.

This paper is divided into three sections. The first section reviews some of the evidence in gendered gardening research and examines differences in the ways men and women garden; the second section reviews some recent literature in the field of gardening research that neglects gender analysis, seeking trends in that research; and in the third section, this paper develops the argument that gender analysis is critical in future gardening research. This section provides a potential theoretical framework for this research by examining Bhatti and Church's (2000) concept of the garden as a gauge for changing gender relations and by considering Allen and Sachs' feminist concept of the socio-cultural domain as a manifestation of women's complex and contradictory relationship to food.

Gendered Gardening Research

Recent gardening statistics (National Gardening Association, 2009) showing women's current predominance in food gardening activity are not peculiar to the U.S. Evidence from academic research shows that while both women and men have been involved in home gardening, women in Nicaragua, Thailand and Tanzania have managed and cared for home gardens more than men have (Aguilar-Støen, Moe & Camargo-Ricalde, 2009, p. 56; Reyes-García et al., 2010, p. 240). These studies form part of a

growing body of scholarly work that employs gender analysis in gardening research; however, it is in the minority. A search for scholarly articles on gender and gardening illustrates the limited extent of this analysis within the larger field of gardening research. Searches in the EBSCOhost Discovery Service database were conducted on June 11, 2012. Using the term “garden*” in the title and the term “women” in all text between 1980 and 2012 and limiting the search to scholarly articles, 2,724 results were found, some of which were not directly relevant. The studies contained in the database results list cover a variety of disciplines and topics such as gardening and its impact on health, female gardeners in history, gender and class in gardening literature and fiction, and women and community gardening. In comparison, a search using the term “garden*” in the title in the same time period yielded 27, 702 results, some of which were not directly relevant to the topic. While database searches may not be fully reliable in capturing all gendered gardening research given the limitations of databases, the searches provide at least a glimpse into some of the different types of gardening research related to gender. Library database searches are limited because they rely on classification systems developed by librarians who have biases in organizing information.

A review of recent scholarship on gender and gardening shows that a theme of differences in men’s and women’s gardening behaviours marks the research. This research often includes the feminist concept of gendered divisions of labour in the private or domestic sphere (ie. unpaid work in the home) to explain these differences. One such study, Reyes-García et al.’s (2010) “Gendered Homegardens: a Study in Three Mountain Areas of the Iberian Peninsula,” addressed the gardening management activities of Spanish men and women by developing a unique research method combining both ethnographic and quantitative data. The researchers classified gardens as men’s, women’s or shared, and separated and noted gardening tasks based on gender (pp. 238-239). Reyes-García et al. developed their unique approach after examining previous research that showed the difficulty of “disentangling” gendered differences in home gardening practices “because men and women generally share gardening activities and because the role of women in gardening is often less visible than the role of the men, as women often assume the tasks most closely linked to the domestic realm (Howard, 2003)” (p. 237). Thus, the researchers aimed to acknowledge the complexity of gendered gardening practices in their study and accordingly adapted their research methods to capture that complexity. As a result, the study provided detailed percentage breakdowns of men’s versus women’s gardening activities, which is a strength of the study, making it stand out in the field of gardening research. In 2008, the researchers interviewed 90 elders, including both men and women, in three different areas of the Iberian Peninsula to conduct ethnographic interviews; the percentage of men and

women interviewed was not provided. The researchers also examined 254 home gardens in 58 villages (pp. 238-239) and conducted a survey with the voluntary participation of the person who primarily tended the garden (p. 239). While the gender composition of the sample is not directly specified in the study, evidence from the researchers' data analysis of men's gardens, women's gardens and shared gardens shows that the sample of 254 households comprised anywhere between 54% and 64% men and anywhere from 26% and 36% women (Reyes-García et al., 2010, see chart p. 243). The researchers' findings revealed gendered differences, for example, in organic gardening practices and use of water: Spanish women tended to engage in organic gardening practices (98.5%), such as use of cow manure for fertilizer, and to rely on rain (24.2%) and sprinklers and drip systems (22.7%) more so than Spanish men (92%, 11.7%, and 8.8% respectively) (Reyes-García et al., 2010, p. 241). These findings on organic gardening practices replicated evidence in Bhatti and Church's (2000) foundational research on gardening and gender, in which they showed British women were more likely than men to be interested in organic gardening as far back as 1999 (p. 189). Reyes-García et al. found, furthermore, that women's gardens contained more biodiversity than did men's per 100 m² of cultivated land (p. 242) and that in terms of size and location, men's gardens tended to be "larger, more distant, and generally more south-facing" than women's gardens and gardens shared between men and women (p. 240). The researchers concluded that while gardening was a shared activity between men and women, men had "a predominant role in all activities except in the processing of foods. The role of men is especially predominant in preparing land" (Reyes-García et al., 2010, p. 240). Thus, gendered divisions of labour became evident in the gardening activities of Spanish men and women in the study's sample. Reyes-García et al. concluded that more research is needed to further investigate divisions of labour in terms of the physical spaces used and species and varieties grown by men and women (p. 244).

Buckingham's study (2005) on allotment gardening in Britain furthermore found some similar results about women's gardening practices. Buckingham stated evidence shows that since the 1960s, more women have been practicing allotment gardening, a system of gardening traditionally dominated by men since the 17th century whereby parcels of land are paid for and maintained by individuals to garden for harvesting food (pp. 173-174). While allotment gardens are not home gardens per se, they are a type of personal gardening practice for the purpose of food production and therefore are relevant to this discussion. For her research, Buckingham relied on a number of allotment use surveys conducted by the National Society of Allotment and Leisure Gardeners' in three boroughs in West London, which contain data on age, sex and ethnicity; designed a questionnaire to survey a total of 12 out of 34 allotment society

representatives; conducted in-depth interviews with seven female allotment holders; and assessed a number of articles on changes in allotments published between 1999 and 2002 in home/garden and fashion magazines (p. 172). The gender composition of the surveys used in Buckingham's study was not directly addressed, thus creating a limitation in the research: presenting gender composition is critical for thorough gender analysis. The study does present, however, the gender composition in two out of the three boroughs in the allotment use surveys. It states that in one borough, 34% of respondents were women, thus making men 66% of the respondents, and that in the other, 41% were women, thus making men 56% of the respondents (Buckingham, 2005, p. 174). Buckingham found that women plot holders were more motivated than men to garden in order to grow food free of chemicals, and women were more likely than men to use sustainable gardening practices that eschewed the use of chemicals (p. 172, 175). Therefore, her research, like the research of Reyes-García et al., confirmed findings on organic gardening practices in Bhatti and Church's (2000) research on gardening and gender in Britain, the importance of which will later be discussed. Citing statistics that show women make up most of Britain's organic farmers despite being underrepresented in British farming, Buckingham tentatively concluded that "it is women, regardless of social class/education, who are creating an impetus toward more environmentally sustainable methods of local food growing" (p. 177). Her study, furthermore, provided some context for gendered gardening practices by shedding light on historical developments. Buckingham reviewed the history of gardening in Britain, which shows that men, not women, have traditionally been linked to food gardening since the 17th century with the exception of the Second World War, a time during which women as well as men were encouraged to grow a garden in the "Dig for Victory" campaign (p. 173). Buckingham posed questions to guide future research on gardening, asking, "What is it, then, about turn-of-the-millennium urban Britain which appears to be stimulating a significant shift towards women as urban subsistence food growers?" (p. 174). She concluded her study, stating that the increase in female allotment holders in Britain has larger implications for gardening in the 21st century: "The paper suggests that this shift in gender balance is likely to influence what is grown and how it is grown and that this is likely to have implications both within and beyond the allotment, both for urban food growing and the environment more generally" (Buckingham, 2005, p. 177). In conclusion, Buckingham stated that public officials interested in increasing sustainable food practices through the localization of food production "would be well advised to consider gender as a factor in achieving these" (p. 178).

Of worthy note in the field of gendered gardening research is also McIntyre's and Rondeau's (2011) research on Canadian farm women's attitudes towards local food

movements, which include calls for people not only to buy local foods but also to grow vegetable gardens. While being more focused on other issues related to local food provisioning, this research nevertheless provided insight into farm women's constraints to take up gardening as a result of gendered divisions of labour within the household. McIntyre and Rondeau conducted face-to-face semi-structured interviews with 22 farm women from Alberta, Ontario, and Nova Scotia. They also used empirical data gathered from their previous recent research on Canadian farm women's food provisioning activities and consulted scholarship on local food movements (pp. 117-118). The farm women's demographics were similar to the demographics on women in the National Gardening Association's survey (2009): the women's average age was 41.7 years, the majority of the women had some post-secondary education, and all participants were married (McIntyre & Rondeau, 2001, p. 118). McIntyre and Rondeau found that despite having a proclivity to grow food, Canadian farm women did not necessarily have the time or adequate help to grow a garden and to attend to its ensuing time-consuming tasks of preserving the harvest and cooking from scratch (McIntyre & Rondeau, 2011, p. 121). More specifically, domestic duties got in the way. Thus McIntyre's and Rondeau's research succeeded in further problematizing gendered gardening practices in that it highlighted the need for more research in order to compare and contrast rural and urban women's gardening experiences as they relate to gendered domestic divisions of labour (p. 117).

Thus, the evidence examined in this section leads one to conclude that gender analysis yields contributions to gardening research by distinguishing differences in the ways women and men garden.

Non-Gendered Gardening Research

As previously mentioned, there is a considerable amount of research on the topic of gardening given its interdisciplinary nature. For the purpose of this paper, a small number of scholarly articles were sampled. Using the EBSCOhost Discovery Service database, articles from a variety of journals were selected; they included the *Journal of Environmental Psychology*, *Ecology and Society*, *Agriculture and Human Values*, and the *American Journal of Community Psychology*. The topics and approaches varied. Worthy of note is Clayton's study (2007) on the impact of people's gardening activities and motivations to garden on their attitudes towards the environment and Kiesling's and Manning's (2007) research on the impact of gardening behaviour on people's identity with nature and their environmental gardening practices. While both studies arrived at interesting results, they both did not acknowledge gender as a variable to analyze in their

findings on gardening behaviours and attitudes despite the overwhelming presence of women in the research samples.

Clayton's study (2007) "Domesticated Nature: Motivations for Gardening and Perceptions of Environmental Impact" relied on a convenience sample of 126 American participants who were both food and non-food gardeners. The sample comprised 100 women, 22 men and 4 people who did not specify gender (p. 217). Clayton conducted a survey to determine gardeners' motivation for gardening, their use of the yard, their perceptions of the landscape around their home as a part of nature, and their motivations for gardening practices (p. 217). She concluded that despite gardeners' appreciation of nature as a key motivator to garden, that appreciation was not significantly correlated to gardeners' attitudes towards use of sustainable gardening practices to protect nature such as reduced dependence on chemicals and maintenance of a healthy ecosystem (pp. 219, 222). "Protecting nature through sustainable practices did not seem very salient to respondents. The yard was not clearly seen as part of the ecosystem," she wrote (p. 222). In Clayton's analysis of the weakness of her study, she acknowledged that the convenience sample was selective and did not represent the population (p. 223). The sample was indeed skewed in favour of women (79%) over men (17%); it by no means came close to reflecting the National Gardening Association's (2009) demographics of people who participated in food gardening, which showed 54 % women compared to 46% men (p. 8). Clayton's study does not appear to question why more women than men were included in the sample and what the overrepresentation of women, or conversely, the underrepresentation of men, might have to say about gender in relation to gardening. This is arguably another limitation. The study did not suggest that its findings may be more applicable to female gardeners in the general population than to male gardeners; for this reason, it appears to have committed fallacy of the wrong level by implying that results based largely on a sample of women can be applied to the population of gardeners as a whole. In this way, Clayton's study made gender an invisible variable; it also neglected to problematize its findings by questioning differences in motivations between women and men, no matter how few men were included in the sample. Based on this paper's previously examined findings in gendered gardening research, evidence suggests that gender is linked to gardeners' attitudes towards sustainable gardening practices (Bhatti & Church, 2000; Buckingham, 2005; Reyes-García et al., 2010); however, Clayton's reference list avoided including any of this research. Had Clayton framed her research problem with gender analysis in mind, she may have used a more rigorous sampling technique that was more representative of the gardening population and may have tested for gender differences. Instead, her research avoided gender altogether, thereby leaving unanswered critical

questions in the findings. Clayton's study thus ended up presenting gardeners as non-gendered subjects when women dominated the sample.

Similarly, while Kiesling's and Manning's (2007) study on the impact of environmental gardening identity on sustainable gardening practices yielded interesting results related to the relationship between nature and identity, it ignored answering critical questions related to gardening and gender. The researchers used an environmental identity scale developed by Clayton to measure gardeners' identification with nature, and they also developed and tested their own environmental gardening identity scale for its ability to predict people's ecological gardening practices. Kiesling and Manning used a randomized sample of 464 self-identified gardeners from urban and suburban property owners in the United States and asked the participants to complete a questionnaire (p. 318). The sample comprised 64.6% women and 35.2 % men and reflected several demographic trends in the National Gardening Association's survey (2009), although the sample did not reflect the association's gender distribution for levels of interest in gardening: 54% women compared to 46% men. While the researchers admitted that their results revealed some flaws in their environmental gardening identity scale, they concluded that their results did show that there is a "strong positive relationship between environmental identity and engagement in ecological gardening practices. There is a significant connection between individuals' decisions about gardening practices and the extent to which they include a connection to nature in their sense of self" (p. 324). Kiesling and Manning, however, did not mention a significant limitation of their study: it was overrepresented by women. Like Clayton's study, Kiesling's and Manning's study did not investigate gender as a variable in gardening identity, and it furthermore drew conclusions about gardeners in general based on a sample biased in favour of women. Opportunities for distinguishing and problematizing men's and women's gardening behaviours and attitudes were once again missed. None of Kiesling's and Manning's findings were differentiated by gender, leaving one to conclude that there were presumably not any differences in opinions and behaviours between men and women in the sample. Thus, their study implied that gardening subjects are non-gendered. Gender analysis would have benefitted this research in light of the evidence presented in some studies on gendered gardening, which has revealed that more women than men have ecological attitudes and behaviours towards gardening (Buckingham, 2005; Reyes-García et al., 2010).

Kortright's and Wakefield's (2011) study "Edible Backyards: a Qualitative Study of Household Food Growing and its Contributions to Food Security" merits some discussion for both its dissimilarities and similarities with the research thus far examined. Kortright and Wakefield used qualitative research methods for exploratory analysis of

the impact of gardening on food security in two Toronto neighbourhoods. They conducted in-depth interviews with 23 gardeners to find out what growing food means to them (p. 41). However, unlike the samples that were overrepresented by women in the other studies, Kortright's and Wakefield's sample included more men (61 per cent) than women (39 per cent). Furthermore, Kortright and Wakefield inaccurately referred to their sample as being "fairly evenly divided in terms of gender" (p. 43). They neglected to question the overrepresentation of men in their sample, which is an oversight and limitation in their research. Critical to this paper, it is important to emphasize that like the research of Clayton (2007) and Kiesling and Manning (2007), Kortright's and Wakefield's study buried issues related to gender, thus making the participants appear as if they are non-gendered subjects when men dominated the sample. Their research presented, for example, generalized comments about gardeners, such as gardeners "devoted a fairly large area of garden to food," ranking tomatoes the most common type of food grown (p. 44); gardeners shared a common concern about the safety of purchased food; and gardeners liked controlling chemicals that go into growing their food (p. 48). Some of these findings ignore Reyes-García et al.'s (2010) call for more research comparing men's and women's uses of gardening space and preferences for growing variety and species.

Moreover, Kortright and Wakefield (2011) developed a frame for understanding gardeners' profiles by identifying five basic types of gardeners: 1) cooking, 2) teaching, 3) environmental, 4) hobby, and 5) aesthetic gardeners (p. 50). Under each profile, the researchers provided block quotes from their interviews; all the quotes were from men in this section of the paper, yet the researchers drew conclusions about gardeners in general. For example, under environmental gardener profile, Kortright and Wakefield presented the following findings: "All of the environmental type gardeners identified also used water barrels and composters in an effort to increase the sustainability of their gardens" (p. 45). It is unclear, however, how many men compared to women made up this profile; the same is true for the other four profiles. This type of information would have been helpful in light of other research showing that women have engaged in more sustainable gardening practices than men (Buckingham, 2005; Reyes-García et al., 2010). Kortright's and Wakefield's research presented general statements about gardeners and missed opportunities to distinguish men's and women's perceptions of gardening. The study's sampling technique was furthermore questionable, thereby casting a shadow of some doubt on the study's results.

Out of fairness, it is important to emphasize that there is some gardening research that peripherally addresses the issue of gender, such as van Heezik's, Dickinson's, and Freeman's (2012) study. It analyzed the role of communication in encouraging New

Zealanders to include more biodiversity in their private gardening practices. While this study is not directly related to food gardening, it is still relevant to the discussion because of its similar research methodology used to study gardening. The scholars examined people's values and attitudes about the environment using mixed-method research, which entailed usage of an environmental attitude scale called the New Ecological Paradigm. Their sample included 55 householders with gardens and comprised 39 women and 16 men, most of whom had post-secondary education and most of whom were 45 years of age and older (van Heezik, Dickinson & Freeman, 2012, *Householders*, para. 1; *Characteristics of Householders and Their Gardens*, para.1), thus reflecting some of the demographics in the National Gardening Association survey (2009). Van Heezik et al. directly acknowledged the overrepresentation of women in the sample, postulating that it resulted from the householders' self-selection for the study. The scholars concluded, "It is possible that older, well-educated women that have long experience with gardening may be more receptive to altering their gardening practices; however, the most frequent reason cited for joining the study was to support university research" (*Evaluation of Knowledge, Values, Attitudes and Evidence of Change*, para. 4). Unlike some other researchers, van Heezik et al. also directly addressed the variable of gender in their study, showing evidence that gender did not have an influence on gardeners' attitudes towards the environment (*Knowledge of, and Values and Attitudes Toward, Biodiversity*, para. 3). They concluded that communicating with gardeners had a positive correlation with environmental gardening practices. Their findings revealed almost two-thirds of participants reported a difference in how they perceived their gardens, 40% in how they understood their gardens as being an ecosystem, and 26% in how they actually gardened (*Evidence for Changes in Knowledge, Values, Attitude, and Behavior*, para. 2).

Theorizing Women and Food Gardening

This discussion has shown that there is adequate evidence to support the need for more gender analysis in gardening research, including research that focuses on domestic food gardening. Reyes-García et al. (2010) approached the lack of gender analysis in academic research and reached a conclusion that provides critical context for the issues addressed in this paper:

Because gardening rarely seems to be an exclusive women's endeavor and because scientific research (including ethnobotany, see Howard 2006b) often suffers from gender bias, it is not surprising that researchers have often overlooked the role of women in gardening. Researchers have noted that neglecting women's role in gardening often affects the selection of informants, which further shapes which

activities and knowledge are analyzed (Greenberg 2003; Howard 2003). (Reyes-García et al., 2010, p. 243)

Hondageu-Sotelo (2010) added to this chorus of criticism in her article “Cultivating Questions for a Sociology of Gardens.” She assessed the lack of American academic interest in gardening in the field of sociology, arguing that gardening can be framed in issues that typify the discipline of sociology: “But I also think gardens reflect prevailing social relations of power, culture, race, class, and gender, and there are significant social and environmental consequences connected to the way we garden” (p. 499). Hondageu-Sotelo argued researchers should examine how gendered divisions of labour in the household impact women’s gardening activities given that many women who are mothers of young children are driving growth in backyard gardening (p. 500). Indeed, McIntyre’s and Rondeau’s observations that Canadian farm women have faced constraints to garden because of their domestic duties supports Hondageu-Sotelo’s point.

Hondageu-Sotelo’s observations highlight themes that have emerged in the research of Bhatti and Church (2000) on gardening and gender; Bhatti and Church figure prominently in her citations. Other researchers who explore the social and cultural aspects of gardening also cite Bhatti’s and Church’s ideas on gender relations in garden spaces (Buckingham, 2005; Longhurst, 2006; Shillington, 2008). For this reason, Bhatti’s and Church’s ideas merit some discussion for providing a theoretical framework for future gendered gardening research. In 2000, British scholars Bhatti and Church studied contemporary gardens as leisure sites and as spaces that mirror wider social relations such as gender relations. They examined primary data on British men and women’s gardening behaviours and attitudes and interviewed 77 people reached through a survey they conducted at garden centres. The interviews revealed many interesting differences between men and women, including the ways in which they sought control over gardens (Bhatti & Church, 2000, pp. 192-193). Bhatti and Church quoted one woman who said: “My husband is more interested in the garden these days, and more willing to do the work, which is a good thing because I can do much less...now the garden isn’t mine but ours in a way it hasn’t been before and it doesn’t have the air of compromise that so often accompanies the interior decoration of the house” (p. 193). This excerpt sheds light on Bhatti’s and Church’s observation that gardening practices are interlinked with gendered divisions of labour in the home: that is, women’s gardening activities are related to women’s time and activities related to home-making (p. 193). Bhatti and Church concluded that gardens reveal complex relationships between men and women and must not be seen “simply as sites where men and women adopt different roles, but as places shaped by the continual restructuring of gender relations” (p. 192). They

maintained that gender relations are both reinforced and re-negotiated in gardens; they suggested that differences in men's and women's gardening behaviours and attitudes serve as an indicator of negotiated divisions of labour within the home (Bhatti & Church, 2000, pp. 192-193). Thus, Bhatti and Church are credited for linking gardening to the feminist theory of gendered divisions of labour in the private sphere of the home. This link has been noted and referenced by other scholars. In her work on the increase in female allotment holders in Britain, Buckingham (2005) wrote, giving credence to Bhatti's and Church's ideas:

Bhatti and Church's 2000 analysis of domestic gardening suggests that changing gender roles in the garden are encouraging a re-negotiation of domestic divisions of labour. Certainly interviews with individual women allotment holders to date suggest that this is a possibility, with respondents arguing that, in their experience, there is greater gender equality in their domestic division of labour, or that their allotment activities have resulted in their male partners undertaking more domestic tasks." (Buckingham, 2005, p. 177)

Future research on gendered gardening with a focus on domestic food gardens would also benefit from building on Bhatti's and Church's work by exploring the link between gardening and gendered divisions of domestic labour given the interconnectedness of the two variables and the complex relationship between them. Future research could also potentially benefit from feminist theoretical contributions made in the scholarly field of women and food, contributions that also rely on the concept of gendered divisions of labour. Allen and Sachs (2007) are well-recognized American feminist theoreticians in the study of women's complex and contradictory relationship to food in terms of production and consumption. While examining gender relations in the food system in the United States, Allen and Sachs identified three analytical concepts to interpret women's experiences: the material domain, the socio-cultural domain, and the embodied domain. Pertinent to this discussion is Allen's and Sachs's notion of the socio-cultural domain, which explores women's unpaid food-related work in the home. It is beyond the scope of this paper to address in any depth Allen's and Sachs's notion of women's complex and contradictory relationship to food in the socio-cultural domain. However, an example they considered is that while women predominantly do the cooking in households, more men than women are chefs (pp. 9-10). The researchers stated that in most societies, women are mainly responsible for the time-consuming labour required of food provisioning: "regardless of culture, class or ethnicity, the majority of women cook and serve food for their families—a cultural universal of care and sustenance" (p. 9). They contended that despite women's entry into the workforce, the mental, physical and caring labor for food preparation falls twice as

much on women than on men (p. 10). Little, Ilbery and Watts (2009) further supported Allen's and Sachs's observations in their study on gender and the consumption of local food by suggesting that gendered domestic labour divisions have resulted in most women being responsible for all activities related to supporting local food initiatives, and those activities invariably require more of women's time in the preparation, cooking, and preservation of food (p. 203; pp. 202-204). Allen and Sachs (2007) furthermore stated that feminists have disagreed whether women's food-related work in the home empowers women or reinforces their subordinate gender roles (p. 3), thus highlighting another aspect of women's complex and contradictory relationship to food within the socio-cultural domain. This paper proposes that it may be possible to conceive of women's current food-related gardening activities as being related to women's food provisioning activities as discussed in Allen's and Sachs's socio-cultural concept. It may be worthwhile for researchers to examine women's current role in gardening for food production as an extension of their domestic duties. Indeed, some researchers have already found this to be true (McIntyre & Rondeau, 2011; Reyes-García et al., 2010, p. 240). For this reason, Allen's and Sachs's socio-cultural concept of women's gendered relationship to food could provide a rich theoretical framework for gardening research.

Conclusion

Over the last few years, research on the gendered nature of domestic gardens has demonstrated that differences do exist in women's and men's gardening behaviours and attitudes; some studies have even developed methodological approaches to study these gender differences, which can be difficult to ascertain (Reyes-García et al., 2010). Some of the findings in the field of gendered gardening research appear to be specific to certain countries that have more traditional gendered divisions of labour in the home such as Spain (Reyes-García et al., 2010), while other findings appear to be more universal. There is emerging evidence that suggests women are leading the way in terms of both organic food gardening practices and sustainable gardening practices (Bhatti, 2000; Buckingham, 2005; Reyes-García et al., 2010). One could interpret First Lady Michele Obama's planting of an organic garden on the Whitehouse's front lawn as an example of such female leadership.

Researchers interested in gender have called attention to the need for more gender analysis in all areas related to gardening; however, that call appears to have gone unheard. One can find gardening research that neglects gender as a variable worthy of examination. Some themes have begun to surface in this body of research. Studies in this category have tended to contain samples biased in favour of female participants, yet these studies have drawn conclusions about gardeners in general. As a result,

“gardeners” in these studies appeared to be non-gendered subjects when women dominated the sample. It appears that some researchers avoided asking the obvious question, the answer to which may have resulted in framing a different research problem: Why have there been more women than men in the research samples on gardening? Why are more women seemingly interested in gardening than men? Some researchers also appear to have overlooked asking how men and women may differ in their gardening behaviours and attitudes, thereby missing opportunities to identify research methods to answer such questions.

This paper’s investigation of some of the literature in the field supports the need for more gendered gardening research. There is arguably the need for more research to confirm and explain existing research findings on the differences in women’s and men’s gardening behaviours and attitudes. More research is also required to address the existing many unanswered questions related to the ways in which women and men garden. This paper has furthermore maintained that all gardening research would benefit from more rigorous sampling in order to obtain samples that represent the population of gardeners; gender distribution in the samples should be clearly identified in the research. Perhaps, some of the research would benefit from use of a control group to help distinguish gendered differences in gardening perceptions and behaviours. Importantly, more rigorous research methods that identify and examine gendered categories of variables would improve all future gardening research. Findings must be presented showing demarcation between males and females. The research of Reyes-García et al. (2010) provides an excellent benchmark in the rigor required of future research. Some of the research conducted could be reframed to purposefully seek exploration of gender differences through more representative samples and rigorous gender analysis.

Within the growing field of gendered gardening inquiry, some theoretical concepts have emerged that could assist this future research and help frame research questions. Scholars Bhatti and Church (2000) have problematized garden sites as fascinating spaces within which the evolving relations between women and men are unfolding, serving as a gauge for women’s and men’s changing roles in the domestic division of labour. This paper contends that feminist theoretical frameworks on the scholarship of women and food could also be applied to studies on gendered food gardening. Allen’s and Sachs’s (2007) socio-cultural concept of women’s gendered relationship to food-related activities within the private sphere of the home could be of some assistance.

Increased scholarly research on gardening would be timely. Public interest in gardening, especially in food gardening, is not waning; it is increasing. In response to global concerns about environmental sustainability, climate change impacts and

population growth, government officials, non-profit organizations and grassroots food activists across the world have been developing and continue to develop local food initiatives, including the promotion of more vegetable gardening. Several scientists and experts from various backgrounds agree the industrial food system as it exists will have to change, and that will necessitate changes in the way people consume and produce food. Some even predict that home gardening will play an increasing role of importance (Bomford, 2010, p. 127; Deppe, 2010, pp. 2-4; Rubin, 2009, p. 221; Okvat & Zautra, 2011, p. 375). In the face of evidence that women gardeners appear to be leading the growth in interest in food gardening, examining women's role in impending societal change concerning food production and consumption will be critical. Equally critical, however, will be studying and understanding men's role in this change. In light of this context, it indeed would be an oversight to neglect gender analysis in much needed gardening research.

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