

**“The Backyard Birder: Ecological citizenship and motivations behind backyard chicken keeping on the urban edge, a case study of Northfield, MN”**

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Senior Comprehensive Exercise

Advised by Professor Kimberly Smith and Professor George Vrtis

Environmental Studies

Carleton College

March 9<sup>th</sup>, 2016

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A handwritten signature in cursive script, appearing to read "Drew Higgins", written over a horizontal line.

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## **Abstract**

This study investigates the motivations behind backyard chicken keeping in Northfield, Minnesota. We conducted 16 semi-structured interviews and surveys with Northfield Chicken Keepers (NCKs) in order to identify the primary motivations of these NCKs and to determine whether their motivations might be an expression of ecological citizenship, defined as a civic sense of duty to the environment. We used interview and survey results to address the question: What motivates NCKs to keep backyard chickens, and to what extent is their chicken keeping practice an expression of ecological citizenship? From our interviews, we categorized motivations in five themes: self-sufficiency, health, education, hobby and animal ethics. Self-sufficiency was mentioned most often, more than twice as frequently as each of the four other themes. Although NCKs do not view chicken keeping as explicitly “environmental,” we argue that their focus on localism and self-sufficient practices suggests that they are indeed motivated to improve their environment on “ultra-local” (household, backyard) and local (Northfield community) scales. Therefore, aspects of Northfield chicken keeping might in fact embody tenets of ecological citizenship. Though our study is descriptive rather than causal, it contributes to conversations regarding ecological citizenship and the promotion of environmentally-conscious behavior outside of urban environments.

## Introduction

Throughout the past decade, backyard chicken keeping has risen in popularity in the United States (Blecha & Leitner 2013; USDA 2010). For example, the city of St. Paul, Minnesota issued over eleven times as many chicken keeping permits in 2015 than in 2000 (109 permits issued at partial year measurement in 2015; 9 permits issued in 2000) (Blecha & Leitner 2013; Lumaris 2015). The popularity of chicken keeping is often considered part of a larger rise in alternative food systems (AFSs), which are small, local food movements that provide an alternative to conventional, large-scale food production. AFSs range from private projects to community efforts and include community-supported agriculture (CSA), farmers' markets, backyard gardening and livestock keeping.

Environmentalists have faulted the conventional food system in the U.S. for sacrificing public health, worker and animal rights, and the environment in pursuit of cheap food (Maloni and Brown 2006; Seyfang 2006; Naylor et al. 2005). Existing outside of the dominant U.S. food system, AFSs, such as backyard chicken keeping, are thought to create a "space for the expression of different sets of values, objectives, and motivations than is possible within the conventional economy" (Allen et al. 2003). One manifestation of these "different sets of values" is ecological citizenship, a form of environmentalism in which individuals act according to a civic sense of responsibility and duty to the environment. For example, Seyfang (2006) found that ecological citizenship was the main motivator for sustainable consumption at an organic food market in the United Kingdom. Ecological citizenship compelled customers to participate in local food networks; their participation, in return, enhanced their ecological citizenship (Seyfang 2006).

Empirical studies such as these are rare. Ecological citizenship has been addressed in theory and policy-based research (Bell 2005; Dobson 2006; Urry 1999; Van Steenberg 1994) but rarely applied to practices such as participation in AFSs, and has never been applied to chicken keeping (Seyfang 2006). Backyard chicken keepers provide a unique context to study ecological citizenship because they act as both the producers and consumers of their food. They create transparency in production by withdrawing from the mainstream market, independently bearing the cost (time, money, and resources) and reaping the benefits (eggs and meat) of chicken keeping. This level and type of individual commitment, responsibility and mobilization differs from that of participation in other AFSs such as farmer's markets. Because the theory of ecological citizenship requires an individual's sense of responsibility and duty, chicken keeping presents a compelling case for its application.

As we seek to address the environmental crises of the 21st century, the foundations of AFSs such as chicken keeping offer insight into why individuals mobilize around environmental issues like those associated with industrial food production. Conceptualizing the motivations behind these practices allows us to better promote environmentally responsible behavior and to think critically about the ethical bases of a sustainably conscientious society. These conversations are particularly pertinent to an ongoing debate in scholarship about the best approach to creating such a society, with some scholars arguing for policy reform and others, for a shift in citizens' behaviors and attitudes such as the cultivation of ecological citizenship.

Studies of backyard chicken keepers have been conducted in urban settings and have identified motivations such as environmental issues, animal welfare, social networking and educational opportunities, as well as a desire to renounce consumerism (Blecha & Leitner 2013; Pollock et al. 2012). Motivations behind backyard chicken keeping have not been thoroughly

studied outside of urban environments. Our study addresses gaps in the literature both with respect to ecological citizenship and chicken keeping outside of urban environments. We identified Northfield, Minnesota as a case study area of interest because Northfield differs from Minnesota's Twin Cities metropolitan region through its distance from central business districts, its close proximity to agriculture, and larger average lot sizes. Because of these differences, we cannot assume that Northfield chicken keepers (NCKs) have chosen to keep chickens for the same reasons as urban chicken keepers. We therefore sought to answer the question: what motivates NCKs to keep backyard chickens? We then asked: are these motivations an expression of ecological citizenship?

## **Research Context and Literature Review**

### *Alternative food systems*

Following World War II, suburbanization, the rise of the automobile, and the industrialization of agriculture drove food production away from neighborhoods and the American consciousness (Rome 2001, 123; Pothukuchi & Kaufman 1999; Dmitri 2005; Blecha & Leitner 2013). Population growth has necessitated a rise in agricultural production, but fewer U.S. laborers are involved in agricultural work; 41% of the U.S. workforce was employed in the agriculture sector in 1900, but by 2000 that figure dropped to 1.9% (Dmitri 2005). Today, the mechanization of labor, specialization of production, fertilizer and pesticide use, and concentrated animal feeding operations (CAFOs) allow U.S. farms to produce at large scales, operating according to an economic model that minimizes land, time, and feed inputs, while maximizing outputs (Dmitri 2005; Naylor et al. 2005).

The environmental effects associated with the rise of industrial agriculture include decreased soil quality, nutrient leaching, erosion, biodiversity loss, fossil fuel consumption, and intensive water use (Horrigan et al. 2002; Woodhouse 2010; Fedoroff et al. 2010). Furthermore, food producers have in many cases prioritized economic gain and efficiency over working conditions and animal rights. Chicken feeding operations provide the majority of chicken products worldwide: three-quarters of the world's poultry and two-thirds of the world's eggs (Naylor et al. 2005).

Academic literature deems sustainable agricultural as necessary to meet the global demand for food and resources while simultaneously lessening environmental harm (Fedoroff et al. 2010; Horrigan et al. 2002). In the last two decades, an extensive body of literature has developed around AFSs, which are viewed as sustainable alternatives to conventional food production. Research has focused on localized models of AFSs that engage public concerns about social justice and environmental sustainability (Feenstra 1997; Allen et al. 2003; Jarosz 2008).

In a survey of AFSs in California, Allen et al. (2003) suggest that AFSs are, by nature, an alternative to conventional food systems and aim to forge a more sustainable, economic and socially-just approach to how we feed ourselves (Allen et al. 2003). Localizing food "provides an opportunity for relationships between producers and consumers... allowing people to express their sense of responsibility to the natural world and themselves within it" (Allen et al. 2003). By connecting individuals to food production, AFSs may change how individuals perceive sustainable food production, build relationships between people and the land, and create more environmentally conscious citizens regardless of the productive output of the systems themselves (Kloppenborg et al. 2000; Seyfang 2006; Cox et al 2008). A study by Lovell (2010) suggests that

for those that are motivated to participate in AFSs, “the ecological functions and environmental benefits... often outweigh the production functions.” Interview-based studies of backyard chicken keepers have identified benefits beyond the economic value of chicken eggs and meat, with interviewees citing increased nutrition, food security, educational opportunities, and social opportunities as benefits of raising backyard chickens in cities (Blecha & Leitner 2013). AFSs therefore emphasize a “commitment to the social, economic, and environmental dimensions of sustainable food production” (Jarosz 2008).

### *Backyard chicken keeping*

Urban chicken keeping has risen in popularity, as reflected in an increase in the number of chicken keeping permits obtained in the past decade; in Minnesota, the number of chicken keeping permits issued by the city of St. Paul increased from 9 permits in 2000 to 110 permits in 2012 (Blecha & Leitner 2013). In Los Angeles County, California, a 2010 survey by the United States Department of Agriculture found that 1.2% of households kept chickens, and of those who did not, 4.6% intended to keep chickens in the next five years (USDA 2010).

One framework useful for understanding backyard chicken keeping is social practice theory, which suggests that individual practices emerge from the priorities, beliefs, and ideas shared by a group (Reckwitz 2002; Shove and Pantzar 2005; Ropke 2009). Social practice theory focuses on the widespread ideas that influence an individual’s daily actions. In this theory, individuals are seen as “carriers” of the social practice (Reckwitz, 2002). It can be used to understand many of the campaigns attempting to persuade consumers to be more ecologically conscious and to change their practices related to energy, food, and the environment (Ropke 2009). While social practice theory has not been applied directly to backyard chicken keeping, it helps make sense of backyard chicken keeping by describing it as a manifestation of the values present in the Northfield community as a whole.

Studies of backyard chicken keepers suggests that transparency in food production and consumption allow members of AFSs to fulfill personal priorities of animal rights, nutritious and high-quality food, agricultural sustainability and neighborhood sociability (Blecha & Leitner 2013; McClintock et al. 2014). Empirical studies of backyard gardens have identified aesthetics, entertainment, education, sustainability, and food production as motivations for household food production (Kortright & Wakefield 2010). Another social practice, urban gardening, has been researched more extensively than backyard chicken keeping. We recognize that backyard gardening and chicken keeping are similar in that both are methods of household food production. The latter, however, requires unique demands on time, energy, money and space in order to humanely care for animals and their waste. Backyard chicken keepers may also slaughter chickens as a source of meat, as an alternative to conventional meat production. This, however, complicates relations with neighbors who are concerned about health, noise, odor, and animal waste, particularly in urban settings where home lots are more compact (Blecha & Davis 2014; Pollock et al. 2012).

Through a web based survey designed to characterize urban livestock and management of 134 urban livestock owners in 48 US cities, McClintock et al. (2014) found a range of motivations for keeping urban livestock (chickens, rabbits, and goats), including food security and quality, health and sustainability benefits, and educational community-building benefits. The survey found that 62% of chicken owners keep their livestock on lots under 5000 square feet, and 24% had lots under 10,800 square feet. Blecha and Leitner (2013) conducted interviews with



eight urban chicken keeping households in Portland, OR and Seattle, WA to assess how they conceptualized industrial food production and urban life. The chicken keepers in this study were motivated by environmental problems associated with industrial agriculture and believed chickens addressed some of these issues (Blecha & Leitner 2013). Blecha & Leitner (2013) argue that these individuals--through the practice of chicken keeping--enact how they think “cities and urban life, agri-food systems, and human-animal relations ought to be” (Blecha & Leitner 2013).

Research on backyard chickens, however remains limited. The motivations behind this recent rise in popularity beyond the urban realm are not comprehensively understood. Studies have examined the functions and benefits of urban chickens (Bartling 2012; Blecha & Leitner 2013; McClintock et al. 2014; Blecha & Davis 2014), legal regulations of backyard livestock (LaBadie 2008; Salkin 2011; Orbach & Sjoberg 2012; Schindler 2012), and public health concerns (Pollock et al. 2012). Broader population censuses of urban, suburban, and rural chicken-keepers have only been recorded through national online surveys (Elkhoraihi et al. 2014). We believe that investigation is warranted regarding the degree to which backyard chicken keeping in non-urban contexts embodies the environmental motivations of AFSs.

### *The semi-rural suburb*

Northfield has a population of 24,600 and is located in southeastern Minnesota, approximately 40 miles from the central business district of Minneapolis, and adjacent to agricultural and rural landscapes (2010 U.S. Census). We have consequently classified it as a “semi-rural suburb,” a town wedged between urban and rural environments, independent in the sense that Northfield has distinct central business district and farming communities, but connected to the Twin Cities by a 40 mile commute.

Backyard chicken keeping literature focuses quite narrowly and intentionally on urban residents because of their geographic and cognitive distance from agriculture. When studying urban chicken keepers, Blecha and Leitner specifically excluded responses from “semi-rural suburbs,” choosing instead to focus on cities (Blecha & Leitner 2013). Studies of rural AFSs focus on programs like farmers markets and CSAs that link urban residents to rural producers through commerce (Jarosz 2008). Individual choices to raise backyard livestock outside of the urban environment have yet to be addressed in-depth.

Compared to urban environments, food systems are necessarily more visible in semi-rural environments because of their close proximity to farms. Food issues are often considered agricultural and rural problems, while they are largely invisible in cities where revolutions in farming mechanization, transportation and refrigeration meant “food was always ‘there,’ unproblematic, even if no longer local” (Pothukuchi & Kaufman 1998). The identity of semi-rural suburbs as “deeply hybrid, a mixture of the city with the countryside,” holds implications for citizens’ relationships with food production and AFSs (Sellers, 289).

The rise and development of urban edge-lands reveals a tenuous balance between the destruction of nature and the desire to live in nature. Suburbs have been associated with sprawl, the loss of agricultural land, and the decline of wilderness, despite their origins as part of a “suburban quest for nature” and appreciation of open land and rural life (Sellers 33, 292; Rome 139). Prosperity also created an increasingly “suburbanized, mass consumption-oriented society,” and this legacy of consumption and environmental impact continues today (Cohen 2004; Hoornweg et al. 2011). Thus, because of their complex history and relationship with

nature, environmentalism, and food networks, residents of semi-rural suburbs like Northfield may differ from urbanites in their perspectives on food systems and sustainability. Consequently, their motivations for alternative food practices like chicken keeping may differ, too. We therefore believe the case study of Northfield necessitates in-depth investigation in order to add to the literature surrounding backyard chicken keeping. Backyard chicken keeping, as we will discuss in the next section, has also not been discussed in the context of ecological citizenship.

### *Ecological citizenship*

By taking on an active role in alternative food production, we hypothesized that NCKs acted as ecological citizens, expressing their environmental ideals and sense of duty to their natural surroundings through backyard chicken keeping.

Approaches to mitigating environmental problems typically focus on either the role of government in upholding citizens' rights, or the duties of citizens to behave in ways that are environmentally responsible. Early environmentalism and environmental politics focused heavily on the former, with the government securing citizens rights to a healthy and habitable environment through policies such as the Clean Air Act (1963) and the Clean Water Act (1972). More recently, the environmental movement has recognized the importance of everyday consumer behavior, and considered how to effectively alter human behaviors by assessing the relationship between environmentally-conscious values and practices (Stern 2000).

In his paper *Ecological Citizenship* (2004), Andrew Dobson identifies these different approaches as "environmentalism" and "ecological citizenship." By Dobson's definition, environmentalism is a liberal philosophy that emphasizes the rights of individuals to live in a habitable environment provided and maintained by government institutions. We recognize that this is a specific definition and not representative of the common parlance or understanding of environmentalism, but we find Dobson's definition of environmentalism to be useful because of its specificity and because of the contrast it draws with ecological citizenship. Alternatively, he defines ecological citizenship as an individual's self-motivated responsibility to minimize environmental degradation on the basis of citizenship. It emphasizes a reshaping of the human-nature relationships through changes in individuals' lifestyles and attitudes, not policy changes (Dobson 2003).

This divide is easily summarized as a "duty" versus a "rights" approach, with "duties, rather than rights...the core principles of the ecological citizens" (Jagers et al. 2014). Dobson (2007) argues that while policies can shift individual environmental impacts with fiscal incentives or disincentives in the short term, behaviors will return to the status quo once policies are removed. He suggests that the best method of promoting sustainable behavior is through changes in individual beliefs and morals, primarily through ecological citizenship (Jagers et al. 2014; Dobson 2007; Dobson 2003).

Jagers (2014) clarifies that an ecological citizen is not a "rationally optimizing consumer" but a "socially responsible citizen," whose environmentally conscious behavior is "guided by intrinsic moral motivations" rather than economic or other tangible incentives. Delgado (2015) contended that ecological citizens are often willing to pay extra money to "signal their environmental consciousness and status," and Seyfang (2006) found that ecological citizenship was the driving force in participation in local food networks because consumers wish to participate in sustainable consumption. Ecological citizenship occurs in the private realm but impacts the public sphere on a local and global scale because the environment is a collectively

influenced commons (Jagers et al. 2014). Private actions also have consequences across time; an individual's actions today influences the environment and its future inhabitants (Jagers et al. 2014; Wright 2012).

Other theorists have defined ecological citizenship as a combination of civic duty *and* individual rights (Van Steenberg 1994; Urry 1999). Van Steenberg (1994) refers to ecological citizenship as the extension of civil, political, and social entitlements to the non-human realm, meaning an individual has both a right to clean air and water, but also has a duty to use these resources sparingly. Another concept of ecological citizenship is framed by Urry (1999) in the context of globalization and his notion of "new citizenship." Urry states that dissolved borders eliminate our sense of duty to one particular place or nation, and individuals' sense of duty shifts from a national to global scale as each individual bears equal burden in the face of global environmental risks (Urry 1999). Bell (2005) argues that "environmental citizenship" should be interpreted as "being a citizen of the environment," meaning that the environment, rather than the government, is the provider of basic human needs, and citizens therefore have civic duties to the environment. Bell continues that environmental citizens have procedural and personal rights, as well as duties to obey environmental laws and practice environmentally conscious actions (Bell 2005).

In the context of our research, we define ecological citizenship as an individual citizen's duty--either to the state, other citizens, or the non-human environment--to limit harmful local and global ecological impacts. Though past studies suggested these theories of ecological citizenship to explain motivations for participation in AFSs, this lens has not been used extensively, nor has it been applied in the context of backyard chicken keeping. We explored ideas of ecological citizenship as it pertained to chicken keepers in order to provide new insight into the practice, NCKs, and the theory of ecological citizenship itself. Ecological citizenship offers a descriptive framework to help us understand why individuals create environmentally conscious decisions through everyday practices, such as backyard chicken keeping.

## **Methodology**

We conducted 16 semi-structured interviews and paper surveys. Interviews were conducted between November of 2015 and January of 2016. Chicken keepers were identified using a snowball sampling technique; each of our interviewees shared contact information of friends and neighbors who owned chickens in Northfield. In total we became aware of 25 households that kept chickens in the Northfield area, but we completed the interview process after clear patterns arose, resulting in a total of sixteen interviews.

All interviews were conducted in person with two interviewers and lasted between 30 and 45 minutes. Interviews were semi-structured, containing open ended questions such as: "Broadly, why do you keep chickens?," "Do you think of your chickens as pets?," "What has been most difficult for you in keeping chickens?," "Do you think more people should raise chickens?," and "Are there criteria that are particularly important to you when purchasing food?" (Appendix I). In addition to the semi-structured interview, we distributed a paper survey with questions about NCKs' management practices, motivations, and views regarding their eggs as compared to conventionally-produced or store-bought eggs (Appendix II). In some cases, we also toured NCKs' chicken coops and yards to gain a more holistic understanding of the individual's practice. All interviewees were given anonymity; no names have been used in this paper.

After completing seven interviews, we evaluated the data and began identifying patterns among the responses. We then adjusted the interview questions and paper survey to minimize any potential bias in the ordering and phrasing of our questions, as well as to elicit more information on topics we'd found to be of interest in previous interviews. All interviews were recorded and transcribed. Themes and theme sub-categories explaining motivations were created by identifying patterns in transcriptions using a limited number of transcripts to generate the themes. Once the five themes were established, we manually coded all interview transcripts in conjunction with notes taken during the interviews. A tally was noted each time an interviewee brought up a theme voluntarily. No individual comment was tallied more than once, that is, one comment was not sub-divided among multiple themes. We ensured inter-coder reliability by coding the same interview and comparing our results.

### *Case selection & demographics*

The City of Northfield Land Development Code (2.10.4), contains an land use ordinance which allows backyard chickens with several restrictions. The keeping of six adult chickens is permitted provided that: 1) the principle use of the lot is a dwelling, 2) no roosters are kept, 3) the chickens are provided a coop and are fenced in, and 4) no coop is within 25 feet of a residential structure on an adjacent lot. Many NCKs referenced the code as formal support of chicken-keeping from the Northfield community.

All of the households we interviewed were in the Northfield community, and all homes were single-family houses with yards. Chicken keepers kept an average of 5 to 6 birds, and had been keeping chickens for an average of 9 to 10 years. Approximately one third of chicken keepers butchered their chickens as a source of meat. The majority of interviewees were women, with 15 female and 3 male survey respondents. Respondents' ages ranged from 18 to 72, with an average age of 45. Average household income was approximately \$70,000 but ranged between the second income category (\$20,000-\$49,999) to the highest income category (\$110,000 and above) (see Appendix II for survey categories). The majority of interviewees had completed at least a bachelor's degree; two respondents reported completion of some college, six respondents reported 4-year degrees, eight had master's degrees, and two had doctorates. We did not collect data on racial or ethnic identity.

## **Results**

### *Interview results*

Using transcriptions, we coded NCK interview responses into five themes explaining motivations for chicken-keeping: "Self-Sufficiency," "Health," "Education," "Hobby," and "Animal Ethics." Tallies for each represent unsolicited mentions of the theme by an interviewee. Above all, we found that NCKs were motivated by goals of self-sufficiency, which included sub-themes of localism, cost, personal food production, gardening, creating contained systems, and additional self sufficiency practices. Throughout our 16 interviews, themes of self-sufficiency were mentioned 119 times. The other four themes were mentioned with relatively equal frequency in the following order: "Hobby" (47), "Health" (44), "Animal Ethics" (42), and "Education" (36) (Table 1). We discuss these five prominent themes in further detail below.

Categories	# of Voluntarily Mentions
<b>1. Self-Sufficiency (total)</b>	<b>119</b>
<i>Localism, Community Benefits</i>	34
<i>Cheaper (Or Sense That it is Cheaper)</i>	5
<i>Food Production, Backyard Vegetable Garden</i>	26
<i>Producer and Consumer, Contained System</i>	17
<i>Non-Food Production, Self-Sufficiency Practices</i>	30
<i>Other</i>	7
<b>2. Hobby (total)</b>	<b>47</b>
<i>Enjoy Seeing the Chickens</i>	9
<i>View Chickens as a Pet</i>	11
<i>Food / Taste / Cooking of the Eggs</i>	5
<i>Connection to Outdoors / The Land / Nature</i>	5
<i>Chicken Keeping is Fun</i>	10
<i>Other</i>	7
<b>3. Health (total)</b>	<b>44</b>
<i>Egg Nutrition / Quality</i>	10
<i>Chemical Pesticides / Herbicides / GMO's</i>	10
<i>Prioritize Purchasing Organic</i>	6
<i>Co-Op / CSA</i>	2
<i>Know Contents of Food / Avoid Processed Foods</i>	15
<i>Other</i>	1
<b>4. Animal Ethics (total)</b>	<b>42</b>
<i>Ethical Treatment of Animals</i>	30
<i>Protect Chickens from Predators</i>	9
<i>Treat Chickens as They Treat Other Pets</i>	3
<b>5. Education (total)</b>	<b>36</b>
<i>Teaching Children Morals / Caring for an Animal</i>	11
<i>"Knowing" Where Food Comes From</i>	16
<i>Lessons About Life and Death</i>	2
<i>Work Ethic</i>	1
<i>Other</i>	6

**Table 1. Summary of Five Themes.** Table shows the summation of theme tallies derived from coded spreadsheets for each individual interview. A tally was noted each time an interviewee voluntarily brought up a theme. Sub-category tallies were summed to calculate a total for each of the five themes. The “other” sub-categories in each category represents comments that did not fit into other sub-categories; typically, these were very generic comments within the themes, such as “I like being self-sufficient” or “It’s a hobby.”

### *Self-sufficiency*

NCKs expressed self-sufficiency themed motivations for chicken keeping more than any other motivations. Sub-categories of self-sufficiency included “localism or community,” “producing and consuming food, or creating contained-systems,” “food production and/or gardening,” “other self-sufficiency practices,” and “economics, or sense that chicken-keeping is cheaper than alternatives.” Within “localism and community,” NCKs valued locally sourced food (from their own backyard, Northfield, or surrounding communities), and/or food production that benefitted and supported the Northfield community, frequently citing concerns about food

transport, fossil fuel consumption, and environmental harm. Some NCKs gave brief explanations for their motivations, such as “I like the idea of eating as local as possible to reduce my footprint” or “no one has to drive chicken eggs to me.” Commonly used words were “local,” “participated,” “responsible,” “waste,” “reduce,” and “environmental.”

NCKs felt that by being involved in food production, they were less inclined to waste than if they were purchasing conventionally grown food. For example, one NCK compared chicken keeping to their family’s wood stove:

I think it’s like our heat here in the stove. We know where our heat came from, we’ve participated in it by cutting and splitting, so it’s just part of a general pattern being responsible, and it’s harder to waste something that you’ve participated in making. You appreciate either your labor or the natural resource. So I think it’s a consistent thing to think of heat, and food, and whatever else you consume.

“Localism and community” benefits were closely tied to benefits from “producing and consuming food, or creating contained systems,” in which waste was perceived to be reduced by creating closed systems. These benefits were expressed with words such as “cycle,” “system,” “recycling” and “reuse.” One NCK had a vermicompost system (worm garden) in his basement and commented, “I love that cycle, giving our compost to the worms, giving the worms to the chickens. I love that cycle.” Another NCK with a permaculture yard said,

We are incorporating their waste. I don’t know how bad waste is with chicken CAFOs. The idea is to have a closed loop in permaculture, so everything gets used. There is no waste. It’s not the most efficient--me walking out there and bringing them food and water every day. It’s not as efficient as me doing that with 1,000 chickens, but we’re not using much energy for these guys.

Many chicken keepers kept gardens and compost bins, giving their chickens kitchen scraps and putting their chicken waste on their garden or in their compost; one NCK said she enjoyed “this full system of growing our own healthy composted material.” Another added that “chickens are good for balancing compost bins.”

The basic action of producing food was a motivation in and of itself. Motivations of “food production and/or gardening” were succinctly expressed with phrases such as “I kept them for the eggs” and “the eggs are great.” Importantly, producing food seemed to increase NCKs *sense* of self-sufficiency, with one NCK explicitly commenting, “I like to the extent that I can be involved in being self-sufficient.” Another included chicken keeping in her larger goals of self-sufficiency, stating, “I do have a goal of how much food I’d like to produce myself. I want to be at least 50% self-sufficient, so I do plan on doing quite a bit.”

Some, though not all, of these practices were framed by NCKs with the expressed effort of reducing fossil fuel consumption. For example, one NCK said:

We have done everything we can to convert from fossil fuel use in our home. We have a geothermal heating system in our backyard. You got here after dark, so you couldn’t see our solar panels, but you’ll maybe see them when you walk by. And we also burn wood to supplement the geothermal and all the wood is local so you know, as much as we can do to reduce our own consumption of fossil fuels.

The cost of chicken keeping was not frequently mentioned. Some NCKs complained that food grown in the conventional food system was too cheap and wasteful, but did not directly compare the cost of their food production to conventional. Many inherited their coops and/or chickens, built the coops themselves, or purchased the chickens and/or coops for a relatively low

cost. But one NCK aptly mentioned the “sense” of cheapness in the self-sufficient practice of food production:

The production of food isn't really that complicated. I think that you sort of get the sense you're getting it for free. The chickens go back and forth, find food and you get eggs. Or you put some seeds in the ground and you get vegetables. It's certainly not free. Building the garden took a lot of effort. We made raised beds. The chicken coop took time and money. So it's certainly not free. But the food is being made at a really low cost if you can eliminate all that infrastructure, which is really great. Yeah, there is some feeling of self-sufficiency that I think I really like.

Conversely, another NCK framed the cost of chicken keeping in terms of work invested, realizing the amount of work needed to produce food versus the ease of purchasing it:

You know where it's from. I think in terms of gratitude, and realizing what it takes to get the food that we have--that it doesn't just appear on our shelf or on your cupboard or whatnot. The amount of money. Frankly it was a joke when our family got the first eggs we got. They were \$85 eggs! Because we started them from day old chicks we have the for seven months before they started doing anything for us. Just the awareness of where it came from and how much work it took to get there.

When asked whether chicken keeping addressed environmental problems, NCKs were quick to say that it did not with responses such as, “It is way too small of scale to have any sort of real impact.” But within Northfield, NCKs generally believed chicken keeping was beneficial for the community, and therefore positive environmentally. They often distinguished between “global” environmental problems--large scale issues such as climate change--and “local” environmental problems, i.e. those pertaining to Northfield, like so:

I guess there are two levels, there's Northfield, and then the world. In the world, I'm definitely interested in decreasing fossil fuels and that kind of thing and changing technology over from inefficient systems to efficient systems. At the Northfield level, I think it's more with the ecosystem, saving or making sure the Cannon River isn't polluted or making sure we support biodiversity here. It's kind of a different. Northfield is short term, I'm thinking about the small environment.

Chicken keeping was rarely the only self-sufficient practice among NCKs. Almost all NCKs kept gardens and compost bins. Some heated their homes with wood stoves, the wood for which they frequently felled or chopped themselves; a smaller number also powered their homes with solar panels or had electric vehicles. One NCK had an extensive permaculture garden; another was in the process of converting his front yard to prairie. One couple grew their own Christmas trees in their backyard. Other self-sufficiency practices included, but were not limited to: beekeeping, goat-keeping, canning and freezing food, bread making, construction (including building their own chicken coops), biking instead of driving, and making homemade dog food.

#### *At home hobby*

A number of NCKs viewed chicken keeping as a hobby or leisure activity. NCKs found their birds to be “satisfying,” “entertaining,” and “a lot of fun.” They expressed pleasure in collecting the food benefits of practice saying things like, “it's so fun to go out there and grab the eggs.” Another NCK stated, “It's fun. I think the largest reason why we do the eggs is because it's fun.” Chicken keeping generally requires work outdoors and many people seemed to enjoy some of the outdoor labor and food production. One NCK reported, “I just enjoy the connection

with the outdoors. That's one of my motivations for having chickens. It keeps me connected." Another stated, "You get to be outside and get way more in touch with seasons and like dirt in your fingernails." This connection with the outdoors, or a connection with the place food is produced, intrigued many chicken keepers. One NCK found this to be a positive aspect of keeping chickens:

The motivation there is partly it just makes me happy to go out and be amongst native vegetation as opposed to lawn grass, it provides me a lot of relaxation and you know just sort of emotional benefits as well. I sort of like the experience of collecting the eggs and feeding the chickens and I like having a woody backyard and nature and stuff and spending time outside.

Many found enjoyment in chicken keeping, in the same way one gains enjoyment from keeping pets. Respondents sometimes considered their chickens to be no different than a cat or dog. "If I go out and sit down they will be in my lap. They're just like cats they love to be petted." On some occasions, chicken keepers were devoted to raising the chickens from eggs.

NCKs occasionally named their chickens. If NCKs did choose to butcher their chickens, many found naming to be unnecessary and a difficult aspect of butchering the birds and were less likely to name their chickens. One NCK told us,

When we first got them, they had names. Then we had to butcher them. It's hard to butcher your named pets. So we stopped naming them after that first group. They are pets in that I care about their well being beyond their ability to produce eggs.

However, unlike pets such as cats and dogs, NCKs did seem to believe chickens had more utility because of their ability to produce food. One individual expressed this idea by saying, "I think of them as pets I can eat." Another said, "I think of them as livestock." NCKs expressed a general satisfaction and happiness from the experience of raising animals and collecting the food produced. One respondent reported, "I love this. I can even show you the eggs I have in the fridge. And it's so fun to go out there and grab the eggs... It's fun. That's number one." Some found the practice to have a "cool factor" or to be "trendy." One NCK concluded: "I think that it's more of a hobby than anything else."

### *Health*

Interviewees frequently referred to "knowing where their food comes from" in the context of health. Backyard chicken keeping provided NCKs with a sense of transparency in their food system, and many NCKs contrasted their home-grown food with "processed food." Commonly mentioned words were "local," "organic," "chemicals," and "processed." NCKs generally prioritized their chickens' health because of the connection to their own health:

I think it's like the same principles of how I treat my own body. I don't want to put chemical food in my body so I'm eating chicken eggs. Why would I feed them chemical food that I'm then eating? It's just like closing that loop for me. And also, good food makes for good health. If I eat well, I tend to be healthier, and so I think that's true of chickens and if you feed them well like they're going to be healthier.

Many NCKs were wary of what they called a typical "American diet," citing processed foods as a primary health concern. NCKs therefore prioritized "fresh" and "local," linking themes of health and self-sufficiency, particularly in the case of this NCK:



It's also much better for you - to eat food that, instead of being shipped one thousand miles, it's like eight miles. The best thing would be if we all just went into the garden and just ate directly from the plant. Then you're getting the strength of the plant, the 'chi' it's called. And you can tell the difference, if you are like eating cherry tomatoes, or whatever you are doing in the garden and you just pick that cherry tomato, it's still warm from the sun, and you put that in your mouth and eat it, and it's just like, 'ahhh,' as opposed to if it's been on your counter for a day. You can taste the difference too.

Some NCKs mentioned personal distrust of conventional meat production. One NCK was worried about hormones and her children's health: "I was especially concerned about the hormones with my daughter. I didn't want her to have problems with hormones during her development. Or my son for that matter. It changes the timeline." Another told us her primary concern about the dominant food system was "antibiotic use in animals, in terms of both the problems that cause antibiotic resistance and the rise of 'superbugs.' Also, ingesting all sorts of things that alter our physiology."

In regard to their chickens and eggs, NCKs claimed that their own eggs were more nutritious than conventional eggs, citing the appearance of the yolks as proof: "The yolk is bigger and more yellow. I'm sure they are more nutritious." For other NCKs, health benefits did not come from the eggs per se, but from spending time outside in nature and among animals, as this NCK mentioned:

I think that probably because of being a pet family - we have rabbits and cats and dogs and fish - my kids are almost never sick. I think because they have to go outside and be around dirt and stuff that it makes them a little bit more immune. I guess there are probably health benefits from being forced to deal with the animals.

According to the NCKs we interviewed, health was a multi-faceted goal, encompassing not only nutrition but also the well-being they associated with humanely-treated and well-fed animals; time spent outdoors; and chemical-free, unprocessed, local food.

### *Animal ethics*

NCKs cited animal ethics as a motivation for keeping chickens. They primarily referenced the state of the industrial food system, which we coded into the subcategory "treatment of animals," and caring for the well being, comfort, and needs of their chickens, which we coded into the subcategory "treat like pet." Frequently used words were "feedlots," "commercial," "well being," "humanity" and "humane."

NCKs frequently mentioned the problems of the industrial food system with respect to animal ethics, and the way in which the system motivated their chicken keeping. "Feedlots out in that area are really, really awful. Just you know, vast areas, denuded, feed is brought in that is inappropriate for the animals," said one NCK. She continued to comment that the reason their home kept chickens was "partly just to intercept the food system that favors bigger and better." Another NCK commented similarly, "I think what sealed the deal for me was learning how miserable the lives of commercial raised layers are, so I just wanted layers. I just wanted eggs... They live really miserable lives. And I thought 'ok, you can do something about that part.'"

Some NCKs mentioned chickens in "tiny little cages" or CAFOs, often also noting inappropriate feed used in some conventional systems, such as corn and wheat instead of grass. When asked broadly why he kept chickens, an NCK responded,

The humanity aspect of it. I think that I know that I'm treating them in a way that I think is right and so you know they have room to roam, they eat good things, they're not stuck sitting on top of each other all the time, so I think that's a huge thing.

NCKs also expressed this animal ethic motivations through the care and treatment of their chickens. One NCK wished to treat her chickens "above and beyond what they need." This included extensively researching what temperature chickens should be kept at (of particular concern in the cold Minnesota winters), and how much space each chicken should be given in a coop. As another NCK summarized, "They are pets in that I care about their well being beyond their ability to produce eggs."

### *Education*

Among the five themes that emerged in our interviews, NCKs mentioned education with about the same frequency as health, animal rights, and hobby motivations. However, among NCKs with young, education ranked above all other motivators, self-sufficiency included. This pattern emerged both among the coded interviews and in surveys, where NCKs were explicitly asked to rank their motivations. They often mentioned teaching "responsibility," "where food comes from," and appreciation for life.

NCKs wished to teach their children that that an animal's productive value should not diminish its emotional value or its right to humane treatment. They did so by assigning their children daily maintenance tasks like feeding the chickens, cleaning the coop, and collecting eggs. By making their children responsible for the nourishment and survival of the chickens, some NCKs hoped their children would comprehend their personal responsibility and power over the chickens' lives.

Oftentimes, the lessons that NCKs sought to share with their children were related to their own motivations: to observe and better understand the ethical treatment of animals, expose the costs of food production (economic, physical, and emotional), and enact self-sufficiency practices (which related to cooking skills, work ethic, creativity, or intellectual curiosity). One NCK spoke of her experience teaching and learning alongside her children. "We have three kids, and they were very involved in the raising of the chicks. We read books, and they studied, and we practiced taking care of them." Others discussed their goals of self-sufficiency and a desire to understand the true costs of food production. "I felt like I needed to get a sense of where my food comes from, and I wanted my kids to understand that as well. That's it is not just neatly packaged in a grocery store," commented one NCK.

Finally, many NCKs were motivated to instill an understanding of biology and the life cycle. One NCK shared,

He's seen me butcher deer or chickens or things like that and knows a little bit about why that happens. He's sometimes grossed out by that, and we can talk about why it might be gross. There is also some fun biology. Like here is the gizzard. What does the gizzard do? Or here is what a real heart looks like. And for little kids that's really cool. There can be fun little lessons in there. So he doesn't yet engage in the process of caring for these animals. But I think he is learning something about them.

Chicken keeping provided NCKs and their children with a hands-on opportunity to observe and experience food production. The practice served as a tangible proxy for food production, illuminating the true costs of food and demystifying biology and life cycle processes.

### *Survey results*

In addition to our informal interviews, we included several Likert-scale and rank-choice questions on a paper survey (see Appendix II), which we distributed following the interviews. The results of this survey show how NCKs viewed their eggs compared to other eggs and highlighted their motivations for keeping chickens. All respondents believed that the eggs produced by their backyard chickens were more “environmentally friendly versus conventional (not organic, free range, or cage free) store bought eggs.” Additionally all respondents believed that the eggs produced by their backyard chickens were either more or equally as “environmentally friendly versus ‘non-conventional’ (organic, local, free range, and/or cage-free) eggs.” On average, when asked to rank their motivations for keeping chickens, respondents found “self-sufficiency” to be the most important, followed by (in order), “personal enjoyment/hobby,” “nutrition of eggs,” “education (for yourself and/or children),” and “environmental reasons.” Additionally, when asked to rank different criteria for food purchasing habits, on average, respondents found “local” to be the most important, followed by (in order), “organic,” “cage free,” “free range,” and “natural.” Two respondents opted out of ranking “natural.”

### *Classifications of Northfield*

At the end of each interview, we asked NCKs to define Northfield as either urban, rural, suburban, or something else. NCKs seemed to agree that the city of Northfield is “at the border of rural and suburban.” They felt that Northfield has a distinct community, in contrast to suburbs that define themselves in relation to the twin cities. They commented that the community was influenced by both the presence of adjacent farmland--an “agricultural element”--and the colleges in town.

For example, one NCK mentioned that Northfield has a “grain elevator in town and turkey farms on the edge.” Another felt that Northfield was not a suburb because there is “too much farmland between here and [the Twin Cities].” Northfield has two colleges, Carleton College and St. Olaf College, and many members of the community felt that the presence of the colleges altered the culture and feel of the town. One NCK stated, “I don’t think of it as rural - I think of it - it’s not a small town - it’s a big town. It’s a college town. Without the colleges, Northfield would be very different.” One NCK stated:

But what I love about Northfield...It's just weird, because it's super progressive, yet it's very small, it's a small town. It has a weird sense of diversity...I love the progressiveness, that we can do stuff like keep chickens, that's it's celebrated.

NCKs felt that these characteristics attracted people who were “interesting,” “engaged,” “creative,” and “enlightened.” Many NCKs thought that Northfield was particularly conducive to chicken keeping because of the people, spaces, and values found in Northfield.

### **Discussion**

From our interviews, we documented a range of motivations expressed by NCKs for keeping backyard chickens. The five prominent themes of motivations among our interviewees were self-sufficiency, health, hobby, education, and animal ethics. Additionally, we found that NCKs partook in a number of practices beyond chicken keeping that were aimed toward self-sufficiency and lessening environmental impact. First, we will discuss the significance of

these motivations in relation to past studies on AFSs and chicken keeping. Second, we will discuss in what ways NCKs' beliefs and practices around chicken keeping align with the thinking surrounding the theory of ecological citizenship.

### *NCK motivations*

Similar to participants of past studies of AFSs and urban chicken keeping, NCKs fulfilled personal priorities of self-sufficiency, animal ethics, education, and health (particularly regarding the quality of eggs and food) by keeping chickens (Blecha & Leitner 2013; McClintock et al. 2014). As a source of entertainment and aesthetic pleasure for NCKs ("hobby" theme), chicken keeping also aligns with findings regarding the motivations of backyard gardeners (Kortright & Wakefield 2010).

While other studies identified motives like food security, cost savings, food safety, social justice, and sociability, we did not find these to be comparably prominent among NCKs (Allen et al. 2003; Kortright & Wakefield 2010; Blecha & Leitner 2013; McClintock et al. 2014). Some NCKs did mention economics, stating that chicken keeping *felt* cheaper than buying eggs or that the external environmental costs of conventionally grown eggs were costly. However, cost savings and food security were not primary motivators for any interviewee. Whereas urban chicken keepers felt strongly that their eggs were "safer" than conventional or "store-bought" eggs (Blecha & Leitner 2013), food safety (avian flu, food-borne or other animal disease) was not a pressing concern among NCKs.

Self-sufficiency was the strongest theme explaining motivations of NCKs. This finding aligns with previous empirical studies that cited environmental sustainability as a primary motivator for AFSs such as backyard gardens and livestock keeping (Kortright and Wakefield 2010; McClintock et al. 2014). But for Blecha & Leitner's urban chicken keepers, the practice of chicken keeping was a strong challenge to large-scale agriculture and its associated environmental problems. They described urban chicken keepers as "openly dissatisfied with dominant socio-ecological systems" and as individuals who "took action in their own yards, with their own labor." It was clear that NCKs were environmentally-minded individuals, but this outright environmental activism--wherein individuals explicitly acted based upon, and to make a statement about, their dissatisfaction with the mainstream food system--was not present among NCKs. When asked if they had any personal environmental concerns, all but one of the NCKs had a response. They all held strong opinions regarding the ecological consequences of human impact, listing environmental concerns such as climate change, concentrated and toxic animal waste, fossil fuel consumption and transportation, and habitat conservation. When asked if their eggs were more "environmentally friendly" than conventionally-grown eggs, all NCKs responded that they were. Similarly, all responded that their eggs had the same or less carbon footprint than conventionally-grown eggs.

But despite these responses and although self-sufficiency and localism were the primary motivators expressed by NCKs in interviews, NCKs did not view their practice as explicitly "environmental." We say this based on two lines of evidence: first, because "environmental reasons" ranked last among motivations in survey results, and second, because when asked if chicken-keeping addressed any of their general environmental concerns, most NCKs said no. This, we argue, is because NCKs distinguished between local and global environmental issues. They more strongly associated "environmental" with large-scale global issues, and felt that their efforts were too minimal or small-scale to address those issues. This was particularly evident

when interviewees were asked “what environmental issues are most pressing to you?” and were subsequently asked if chicken keeping addressed any of those issues. Reliably, NCKs listed large-scale global problems like climate change, and then were quick to say that their actions did not address those. But when discussed in the context of Northfield and their own households, NCKs *did* appear to be motivated by a desire to improve their local environments, and would often backtrack on their previous statement that their practice did not address any environmental concerns. In this, they presented a nuanced vision of environmental problems and action stemming from a deep commitment to localism that differed from past portrayals of urban chicken keepers.

Our categorization of self-sufficiency included sub-themes of sociability and community. In reviewing literature on urban AFSs, Guitart et al. (2012) concluded that the most commonly demonstrated benefits were social. In an empirical study of urban chicken keepers, Blecha and Leitner (2013) identified community sociability as a primary motivator. Some NCKs told us that they swapped eggs, shared insights or knowledge with neighbors, or helped one another with butchering their chickens or winterizing their coops. NCKs were also connected to local farmers through community supported agriculture (CSA) shares and personal friendships with organic farmers. However, compared to urban chicken keepers and community-scale AFSs like CSAs or farmers markets, NCKs’ chicken keeping practices appeared to be more self-contained and individualized.

#### *“Ultra-local” ecological citizens*

In the context of our research, we have chosen to adopt a fairly broad and inclusive definition of ecological citizenship as an individual citizen’s duty--either to the state, other citizens, or the non-human environment--to limit harmful local and global ecological impacts. In terms of their focus on their local and household environment, NCKs represented a highly individualized version of this; a type of ecological citizenship that emphasizes reducing one’s ecological footprint through small scale, “ultra-local” practices. Local food systems seek to reconnect producer and consumer; in chicken keeping, the producer and the consumer are one in the same, creating a “ultra-localized” system, where local is not just a nearby farm, but one’s backyard. The “ultra-local” ecological citizen with respect to chicken keeping represents a variety of ecological citizenship in which an individual internalizes the costs and benefits of food production in their own backyard, with consideration of the resounding impacts to their neighbors and community.

Although backyard chickens require outside inputs such as chicken feed and coop construction materials, NCKs strived to create self-sufficient and contained systems of food production in their practice. They were frequently interested in creating at-home systems in which they fed food waste to the chickens, turned chicken manure into compost, and produced backyard vegetables and eggs. One NCK discussed a goal of “living off the grid,” and developing a fully self-sustaining system of food production. Another referred to her backyard as a “yard farm.” AFS, such as CSAs, generally have multiple players, including producers, distributors, sellers, and consumers. While all AFSs attempt to be contained on a local scale, chicken keeping is even more localized because production and consumption take place in an individual’s backyard, hence our classification of an “ultra-local” practice. NCKs mentioned other self-sufficient practices that might also be viewed as “ultra-local,” such as gardening, cutting wood for wood-burning stoves, beekeeping and other livestock keeping.

This “ultra-local” variety of ecological citizenship differs from the environmentally conscious practices and types of ecological citizenship presented in studies that focus on sustainable consumption, because ultra-local practices like chicken keeping differ from merely local in their kind and level of commitment. Seyfang (2006) proposed that ecological citizenship explains the sustainable consumption practices of farmers’ market customers, who expressed a moral commitment to organic food. In contrast to this type of environmentally conscious consumption, backyard chicken keeping is an individualistic practice in which NCKs act as both producer and consumer. They elect to abstain from markets for both conventionally-raised eggs *and* local, responsibly-raised eggs, removing them from a local economy in which - according to previous empirical studies of sustainable consumption - we may otherwise expect them to participate.

The significance of this difference is that by keeping backyard chickens instead of purchasing eggs at a store or market, NCKs controlled every aspect of how their chickens were raised and how their eggs were produced. They frequently mentioned their desire to “know” where their food comes from, and their ultra-local system allowed them to create the highest level of transparency. They would feed their chickens organic feed, avoided chemical inputs, let the chickens roam in the backyard, and built coops designed to maximize the wellbeing of the animals. These decisions generally aligned with their desire to reduce their ecological footprint by reducing household food and animal waste, fossil fuel pollution from food transportation to Northfield, or animal cruelty. In this process, they recognized the true costs of labor and the energetic inputs necessary to produce eggs and meat, rather than purchasing conventionally-raised eggs at prices that may not reflect the environmental, social, and labor costs of production. Ultra-localism therefore granted NCKs a level of transparency in food production that allowed them to exact their personal environmental priorities, or their duty to lessen their personal environmental impact, and thus express their ecological citizenship.

It is important to note that self-sufficiency and localism were the means by which NCKs framed their chicken keeping in an environmental context, and that they expressed a sense of agency on this ultra-local and local scale. As mentioned, they had mixed views about the extent to which the benefits of their behaviors and practices in the private realm transferred into the public realm. They did express concern for their local community, and a belief that the individual actions of community members combined to affect Northfield. For example, one NCK spoke of her sister, to whom she gave a compost bin as a birthday gift -- “she sees some of the things I do and then tries them,” referring to the power of person-to-person influence. Another NCK mentioned paying more money to shop at the local co-op and participate in CSAs, adding, “There are things that I care about within my local community that cause me to do things that I wouldn’t maybe otherwise do.” At the local scale, these NCKs felt personally empowered with respect to environmental issues to influence and maintain aspects of their community that they found important. In this context, the practice of raising chickens granted NCKs an opportunity to mobilize and affect change locally, which they felt they were doing by eliminating the energy and material costs associated with food production and transportation. This sentiment relates back to Urry’s definition of new citizenship, in which globalization has forced individuals to mobilize locally and forge connections to otherwise undefined regions (Urry 1999).

The responsibility of NCKs to educate and instill values through chicken keeping in their children -- and, indirectly, to the future of their community -- also represents a sense of civic duty. Many hoped their children would be mindful of their own actions, minimize their

ecological “footprint,” and think critically about what they hear in regards to environmental issues. By modeling their own civic engagement, NCKs passed along priorities of citizenship and community ties to their children. NCKs’ involvement in their children’s education, and particularly their desire to establish environmental awareness, work ethic, and civic engagement in their children, demonstrates their personal commitment to not only their household and family, but their local community.

Chicken keeping was not an expression of ecological citizenship for NCKs on the *global* scale, however. They were not motivated to keep chickens by a duty to the global environment. They clearly cared about global environmental issues, but they did not expressly keep chickens because of global environmental concerns, nor did they believe their chicken keeping would bear any significance in this realm.

Because self-sufficiency, rather than any of the other four themes, was the most commonly stated motivation among NCKs, we conclude that backyard chicken keeping is in fact an expression of ecological citizenship.

### *Limitations*

Our sample size of sixteen interviews, though reasonable and even robust for this type of research, was nevertheless limited. We suspect our method of snowballing sampling--having one interviewee refer us to other chicken keepers--also favored white, middle class, college-educated individuals. Though we did not collect ethnic or racial data on interviewees, it is worth noting that according to the 2010 U.S. census, Northfield is 89% white.

It is also important to note that our coding results represent general trends rather than statistical measures. While we compared coding methods to ensure intercoder reliability, variance in results is expected. We did not attempt to draw conclusions from the calculated totals, but rather from the outstanding trends they represented.

### *Future research*

Future empirical studies of environmentally conscious practices can help provide more concrete meaning of what it means to be an ecological citizen. In order to establish a comprehensive understanding of why individuals engage in practices like chicken keeping, the theory of ecological citizenship, as discussed in the literature, should be applied to further empirical studies of practices aimed at limiting individual environmental degradation. Work is needed to identify the motivations for other practices, how they may be manifestations of ecological citizenship, and to what degree these practices aim to address local and global issues. How do ecological citizens act in other areas of their lives and what impact may this have for solving environmental issues? Understanding how these private practices translate into the public realm is important for addressing the extent to which these at-home practices can address large scale environmental issues. In the wake of this increased interest in AFSs, particularly backyard livestock keeping, as well as the rising acceptance of ordinances allowing these practices, future studies might address other potential forms of ecological citizenship that require varied levels of investments in money, time, or labor.

We found that many of the NCKs defined Northfield as a “college town,” strongly influenced by the presence of professors and students, proximity to a town center and to farms, and within a reasonable distance from the Twin Cities. While we conducted interviews with a variety of individuals in the Northfield community, this case study is quite unique in the way

interviewees defined the town. Further case studies of other “semi-rural” suburbs should also expand upon this research in order to establish a stronger understanding of the food systems outside of purely urban areas, and locations where both conventional and local, sustainably-grown food is available to residents.

## **Conclusion**

The practice of backyard chicken keeping, as an environmentally conscious and alternative form of food production, has received little attention in regards to ecological citizenship. Our findings suggest that NCKs are driven by a variety of motivations to keep chickens, including self-sufficiency, health, education, hobby, and animal ethics. The most commonly mentioned motivation that NCKs expressed was self-sufficiency, which included strong components of localism and community. While self-sufficiency was not necessarily linked directly to environmentalism, NCKs enacted values of personal responsibility and duty to the environment in their drive for self-sufficiency. In this particular community, chicken keeping served as a widely understood symbol of environmental consciousness, community engagement, and desire for self-sufficiency.

Through our analysis of NCKs’ chicken keeping, we identified a variety of ecological citizen that focuses on “ultra-local” practices. NCKs had a specific response to issues they saw with the current food production system, and chose to keep backyard chickens as a way produce their own food, in addition to other benefits. These benefits were not available in the conventional food economy, and backyard chicken keeping created a context that allowed these expressions of ecological citizenship to manifest. The theory of ecological citizenship, proposed by Dobson and others, was a useful tool in understanding the motivations of NCKs to keep chickens, and we found that chicken keeping was a fruitful practice to study the complex perceptions surrounding ecological citizenship. Nonetheless, this variety of ecological citizen, because it highlights highly individualistic practices, questions how effective ideas of civic obligations and community connections are at addressing global environmental issues.

In his prolific 1949 book, *A Sand County Almanac*, environmentalist and author Aldo Leopold wrote of an “ecological conscience” reflecting “a conviction of individual responsibility for the health of land.” Leopold argued such a conscience was necessary to forge a relationship between people and their environment not based “solely on economic self-interest” (Leopold 1949). In one sense, ecological citizenship is not a new concept, but the 21<sup>st</sup> century reconfiguration of this older one. Though scholars debate the best method of solving our environmental crisis, realistically and necessarily, the right path will include a combination of government, institutional *and* citizen reforms. As Carter (2007) argues, “the transition to a sustainable society requires more than institutional restructuring; it also needs a transformation in the beliefs, attitudes, and behaviour of individuals.” The cultivation of ecological citizenship among individuals may further this goal.





## **Appendix I: Semi-structured interview questions**

How long have you been keeping chickens? How long have you had these chickens?  
Is this the first time you've owned chickens?

Do you have previous agricultural or livestock keeping experience? Explain.

Do you have any close friends or family who farm or produce their own food?

Broadly, why do you keep chickens?

Do you let the chickens roam around in the yard? A fenced area? In a coop?

Do you think of them as pets?

Do your chickens have names?

Do you have children? Do they have responsibilities with the chickens? Are there any lessons that you hope your kids will get from taking care of or being around the chickens?

Will you get chickens again?

Will you butcher your chickens yourself? (Ask if comfortable) Will you eat them? If not, what will you do with them when they are no longer laying?

(if they do butcher them themselves) Do you feel that butchering chickens is an important process?

How do your neighbors feel about your chickens? Have you come across any concerns about avian flu (either your own concerns or concerned neighbors)?

Have you met any neighbors because of your chickens?

Do you buy eggs in addition to what your chickens produce? Do you ever have extra eggs? What do you do with your extra eggs?

Do you keep a garden? Is there a relationship between your garden and your chickens?

Do you have any other food-production practices in which you might consider yourself self-sufficient, both producing and consuming your own goods? Canning or making bread, for instance. Do you have any non-food related practices that might compare?

Where do you buy your groceries? Are you a coop member?

Do you participate in a CSA program? And/or buy produce from local farms?

Are there criteria that are particularly important to you when purchasing food, such as organic food?

(According to what they view as most important - why do you value that?)

Can you estimate what percentage of your household food is local? is organic?

What would you say are good things about raising your own food instead of purchasing it?

Do you think your practice of raising chickens addresses any environmental issues? If so, how?

What do you think of the dominant/mainstream food system in the U.S.?

What environmental issues matter most to you? Do you think you have a “personal environmental ethic” or any beliefs/practices/values that address environmental issues?

What has been most difficult for you in keeping chickens?

Do you think more people should raise chickens? If so, what do you think are the biggest barriers?

How long have you lived in Northfield?

How would you characterize Northfield - as a city, suburb, rural, or anything else?

Does Northfield have any unique characteristics - social or physical - that distinguish it from other places in Minnesota? Do you feel that Northfield community is supportive of your practice?

## Appendix II Paper Survey

Please answer the following questions, as you feel comfortable. All answers will remain anonymous.

What is your age? \_\_\_\_\_ years

What is your gender? \_\_\_\_\_

Please indicate your annual household income:

- Less than \$19,999
- \$20,000 - \$49,999
- \$50,000 - \$69,999
- \$70,000 - \$89,999
- \$90,000 - \$109,999
- More than \$110,000
- Prefer not to respond

What is the highest level of education you have attained?

- Less than high school
- High school or GED
- Some college or no degree
- 2 year degree
- 4 year degree
- Master's degree
- Doctorate
- Prefer not to respond

Which of the following do you see as most important? Please rank, with 1 being most important and 5 as least important.

- organic
- natural
- local
- free range
- cage free

How many chickens do you keep?

How large is your coop? (estimate square footage)

Please estimate the costs of the following:

Cost per chicken =

Cost of your coop =

Cost of feed (per month) =

Where did you get your chickens?

What do you feed your chickens?

How environmentally friendly do you feel your eggs are versus conventional store bought eggs (not organic, free range or cage free)? Circle one.

more                      less                      the same

How does the carbon footprint of your eggs compare to conventional store bought eggs (not organic, free range, or cage free)? Circle one.

more                      less                      the same

How environmentally friendly do you feel your eggs are versus “non-conventional” (organic, local, free range, and/or cage-free) eggs?

more                      less                      the same

Please rank, with 1 being most important and 5 as least important, your motivations for keeping chickens:

- \_\_\_ nutrition of eggs
- \_\_\_ education (for yourself and/or children)
- \_\_\_ environmental reasons
- \_\_\_ self-sufficiency
- \_\_\_ personal enjoyment/hobby

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