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ABSTRACT
Many factors influence yard care in urban and suburban areas, but the explicit difference between front versus back yards is one factor that has not been fully examined. This paper introduces the Landscape Mullet concept. The two key components of this concept are: (1) social norms are an important driver of yard management; and (2) the influence of those norms varies spatially between front (public) to back (private). Thirty-six semi-structured interviews were conducted in six neighborhoods of Baltimore, MD, USA in the summer of 2016. We found that social pressures for yard care practices were not evenly expressed across front/back yards. Moreover, this front/back unevenness holds true in five out of the six neighborhoods we studied, indicating that the front/back, public/private distinction does not appear to be neighborhood-specific. This research extends prior work on the role of social pressures in yard care. Future research should consider this spatial scale of heterogeneity for social and environmental reasons.

Introduction

Given the significant extent of residential land use in the United States, and its growing spatial footprint (Brown et al. 2005), it is important to understand the motivations, capacities, and interests of private residential land management, particularly with attention to sustainability and ecological diversity. Drawing on 36 semi-structured interviews and yard tours in Baltimore City MD, we investigate if the management, care, and stewardship of visible (front yard) and relatively less-visible (back yard) spaces on residential properties are guided by different values. For example, does fitting into a particular neighborhood aesthetic, or establishing a public display in the front yard, influence decisions pertaining to the back yard too? The lack of visibility associated with

more secluded back yards may influence management decisions. Thus, we introduce and define the Landscape Mullet concept as characterizing a difference in yard care priorities between front and back, driven by the reduced sense of social norms associated with back yards. This concept has two key components: (1) social norms in the form of neighborhood expectations are an important driver of yard management; and (2) those norms vary spatially between a residential parcel from front (public) to back (private). This paper explores the potential differences in front and back yard management preferences as a way of understanding and enhancing theories of social norms in an urban natural resources management context.

Prior empirical research has documented varied environmental conditions between front and back yards. For example, back yards tended to have 1.5–2.4 times more vegetated cover than front yards in a study of neighborhoods in Syracuse, NY (Richards et al. 1984). A study of Shorewood, WI, found more tree species in front yards, but a higher number of individual trees in back yards (Dorney et al. 1984). More ornamental plant species and fewer edible species were found in front yards in San Juan, Puerto Rico than in back yards (Vila-Ruiz et al. 2014). Similar findings were reported across 10 suburbs near Hobart, Australia where, "simple native gardens, woodland gardens and exotic shrub gardens are concentrated in front yards. Productive gardens, flower and vegetable gardens, no input exotic gardens, shrubs, and bush trees gardens are concentrated in backyards" (Daniels and Kirkpatrick 2006: 346). Moreover, the proportion of plants classified as "showy" front gardens versus non-showy back yards was lower when housing age was higher. In other words, differences in front and back yard vegetation species were greater in newer developments (Daniels and Kirkpatrick 2006). It is important to note however, that some residents neglected both front and back gardens, and some maintained showy gardens in both front and back yards (Daniels and Kirkpatrick 2006). Socioeconomic characteristics were the best predictors of front yard vegetation in a study of Chicago suburbs, while perceptions of and habitat resources for birds were the strongest predictors of back yard features that were wildlife-friendly (Belaire et al. 2015). The number and types of species of vegetation have been shown to be different in front and back yards, in a variety of different places and climates, using a range of methods. It is plausible that these different environmental conditions are the result of different front and back uses. For example, Harris and others (2012) show how back-yards are used for growing food and recreation, while concerns about neighbors may shape front yard practices.

The abundant literature on private residential land management identifies many influencing factors of yard care behaviors (Roy-Chowdhury et al. 2011), but the explicit examination of social drivers and front versus back yards remains understudied (Cook et al. 2012). One commonly identified influence of yard care choices is social norms. Social norms and rules of all type may influence yard care behaviors differently, at multiple scales. For example, social class differentiation may be important to social identity, which homeowners may signify through yard landscapes (Grove et al. 2006). Homeowners' Associations (HOAs) have frequently been identified as one driver of yard care behaviors, via their specific covenants, codes, and restrictions (CCRs; Turner and Ibes 2011; Fraser et al. 2013; Larson and Brumand 2014). Because HOAs impose legal constraints, "homogeneity in residential landscapes reflects households 'fitting in' with existing neighborhood practices or maintaining a landscape established by developers"

(Harris et al. 2012: 47). It is commonly assumed that by coercing residents into conformity, HOAs may exert a homogenizing effect – lowering biodiversity, for instance. However, a study across neighborhoods in Phoenix showed *greater* biodiversity for native bird and plant communities in neighborhoods belonging to an HOA, when compared to those without an HOA because of the predictable management regimes that introduce regular disturbances (Lerman, Turner, and Bang 2012). This evidence suggests that HOAs' CCRs may act as a vehicle for increasing biodiversity, and thus may counter the notion that HOAs increase homogeneity via rules.

Formal rules such as CCRs may not need enforcement to be effective in reaching the HOAs' goals. In Nashville, TN, the simple existence of the rules appeared to change behavior because of perceptions and/or fear of enforcement, even when enforcement was absent (Fraser, Bazuin, and Hornberger 2015). A study in Baltimore examined households in HOAs, households with Neighborhood Associations (NAs) lacking legally binding rules, and households with neither an HOA or an NA (Fraser et al. 2013). Households within HOAs were found to apply more fertilizer than households that were not members of a HOA; however, households within NAs did not fertilize more than their non-HOA counterparts (Fraser et al. 2013). Of particular relevance to the questions this paper aims to address, CCRs commonly only apply to the visible front yard (Larsen and Harlan 2006); which may help explain the difference between stated preferences and behavior (Larson et al. 2009; Harris et al. 2012, 2013).

A given household's land management preferences may be affected by informal factors such as peer pressure, i.e. the household's desire to "fit in" with their perceived neighborhood expectations (Jenkins 1994; Scotts 1998; Robbins, Polderman, and Birkenholtz 2001; Robbins and Sharp 2003; Nassauer, Wang, and Dayrell 2009; Harris et al. 2012, 2013; Larson and Brumand 2014; Stehouwer, Nassauer, and Lesch 2016, among others). Household consumption of yard care products and services are motivated in part by group identity, and perceptions of social status linked to different lifestyles (Grove et al. 2006). This has been termed the Ecology of Prestige, which is more specifically defined as, "a household's land management decisions are influenced by its desire to uphold the prestige of its community and outwardly express its membership in a given lifestyle group" (Zhou et al. 2009: 746). Whether through formal (e.g. HOA, NAs) or informal means (e.g. neighborhood social norms, the ecology of prestige), the social context of neighborhoods are important for household-scale yard management decisions.

Yard care practices often do not reflect homeowners' preferences but instead his or her perceptions of the neighbors' expectations for what the individual's lawn should *look like* (Larson et al. 2009; Harris et al. 2012, 2013). Germane to the questions posed here is the landscape *look*. Landscapes that visually indicate or communicate human intention and provide the so-called "cues to care" are often perceived as desirable (Nassauer 1988, 1995). But are the indicators of neatness and care only occurring in the visible spheres of neighborhood life? Are residents' rationales for front and back yard care practices different, and if so, how? Do residents prioritize neighborhood norms for front yards, and do perceptions of these norms play a role in these prioritizations? Are back yard practices an extension of personal preferences, and do residents rationalize their care practices in relation to visible and less-visible spaces in their yards?

In one of the few explicitly front yard versus back yard comparisons that examined social pressures, Larsen and Harlan (2006: 14) proposed that, "in the front yard, form

follows fashion while in the backyard, form follows fantasy. In the backyard, many of the stated reasons for preference relate to using this space for recreational purposes." This fashion in front and function in the back parallels one of the descriptions of the "mullet" hairstyle: *business in the front, party in the back*. According to the Oxford English Dictionary, the mullet is a "a hairstyle, worn especially by men, in which the hair is cut short at the front and sides, and left long at the back ("mullet, n.9." 1989)." The mullet is referred to with many slang names, for example hockey hair in North American, the Norco neck warmer, ape drape, and/or The Tennessee Waterfall, among many others. What is common to all regional variations is that the hair is neatly trimmed around the forehead and long, flowing down the neck and back. Drawing on the mullet, we define the "Landscape Mullet concept" as a difference in yard care priorities between front and back driven by the reduced sense of social norms associated with back yards. The two aspects of the Landscape Mullet concept are first that neighborhood social norms and perceptions of expectations are an important driver of landscaping, and second, that those norms vary spatially in residential parcels from more-visible front yards to less-visible and more private back yards. The purpose of this paper is not to determine with certainty which factors support the Landscape Mullet concept, and/or having a Landscape Mullet-like effect, yard type, or management practice. Rather, the goal here is to expose and refine the potential and limits of the concept, and to see if fashion in front/function in back distinction found by Larsen and Harlan (2006) in a desert climate (Phoenix) is also applicable in a mesic environment (Baltimore). What are the limits to its applicability, and what other factors might help to explain variation in yard management within parcels and across neighborhoods? To accomplish this goal, we carried out 36 semi-structured interviews and yard tours in six neighborhoods in Baltimore City, Maryland, USA, in the summer of 2016 with different social and environmental characteristics.

Methods

Study Area

This research was conducted as part of the Baltimore Ecosystem Study (BES, http://www.beslter.org/), an urban component of the U.S. National Science Foundation funded Long Term Ecological Research (LTER, https://lternet.edu/) network. Six neighborhoods within Baltimore were studied. Guilford, a high-income neighborhood with abundant tree canopy, built in the 1920s, with an active HOA, and a Historic District designation served as a point of reference, or anchor, for comparing to the other neighborhoods with different social (income, race/ethnicity), environmental (tree canopy), and governance (HOA/NA, historic designation) conditions. For example, although Cedarcroft and Lake Walker are next to each other, Lake Walker is not in an Historic District and household incomes are more mixed. Interviews (described below) were conducted until saturation was approached, and then five other neighborhoods that were different from Guilford with respect to social and environmental conditions were purposively sampled for comparison (Table 1). A goal of the study was to determine whether social norms as a driver of yard care, and whether front/back differences are unique to a single neighborhood, or more applicable across a range of neighborhood types. Consequently,

Table 1. Description of study neighborhoods.

Neighborhood	Number of interviews	Income[a] (respondents)	Income[b] (census block groups)	Tree canopy	Race/ethnicity[a]	Groups (HOA, NA, CA, historic)[c]
Guilford	10	High	$538,225	High	Predominantly White	HOA, Historic District[d]
Winston-Govans	4	Low	$42,375	Medium	African American	NA, optional
Cedarcroft	7	High	$84,107	High	White	HOA, Historic District
Lake Walker	5	Medium/ mixed	$40,303	High	White	CA
Parkville	7	Unsure	$56,377	Low	Predominantly White	None
Hamilton	3	Unsure	$43,768	Low		NA

[a]From questionnaire, not all respondents completed the income question.
[b]Average Median Household Income of intersecting Census block groups, American Community Survey 2007–2011.
[c]From interviews, HOA: Homeowners' Association; NA: Neighborhood Association; CA: Community Association.
[d]Optional extra private security available.

neighborhoods were chosen that represented a mix of different social, environmental, and governance conditions. When additional interviews no longer provided further concepts or new information, the researchers had attained saturation.

Recruitment

In the summer of 2016, two researchers conducted door-to-door canvasing in Baltimore across the six study neighborhoods, seeking residents who had control over their property. Contact was attempted at every door on each street segment sampled unless there were no solicitation or similar signs. Requests for privacy were respected. If the resident answered the door, the researchers briefly described the Baltimore Ecosystem Study, and explained that they were conducting research on landscaping in that particular neighborhood. Then they asked if they were willing to participate. If they agreed, the semi-structured interview began, or a day and time to return was scheduled. If no one answered the door, a post card was left in an easy to reach place where it would not blow away. The researchers returned up to three times. Canvasing occurred on weekday afternoons, but some interviews occurred on evenings and weekends.

Procedures

The primary data collection method was a semi-structured interview (See Appendix 1 Interview Script), followed by a brief questionnaire (See Appendix 2 Questionnaire). The interviews used a previously established, and tested script (Harris et al. 2012, 2013; Larson et al. 2015), which was designed to investigate residents' motivations, capacities, and interests in various yard care practices. Questions were also asked to learn more about social pressures, neighborhood norms, governance, and attitudes, and perceptions about neighbor's yard care practices. Questions were added to probe for possible front/back yard differences. The interviews included walking tours of the yard and digital pictures were taken and lasted between 15 and 90 minutes. None of the interviewees in the Hamilton neighborhood allowed the researchers to walk around the yard; access was generally provided elsewhere and rarely prohibited. Most interviews were 45–60 minutes long. Interviewees also took a short (two-page) questionnaire with large-type print that partially overlapped with the semi-structured interview. The first page contained

multiple-choice questions to categorize and quantify some of the interview questions. The second page asked some of the same demographic questions as the U.S. Census.

Analysis

After each the interview, the researchers debriefed with each other by considering the residents' main points; discussing themes, deciding if they were new and how they might support or refute previous interviewees' responses, and topics in previously published material; and talking about what was learned with respect to front/back differences, social norms, and the neighborhoods they visited. When residents did not want to be audio recorded, the debriefing sessions between the two researchers were audio recorded. During these debriefing sessions, deductive codes (described next) and emerging themes were discussed and iteratively refined. These sessions also helped to determine if concepts and their relationships were new, and therefore if neighborhood saturation had been reached.

The recorded interviews were transcribed. Transcriptions and the audio recorded debriefing sessions were coded using NVivo 10.2.1 (Victoria, Australia) with a mix of deductive and inductive coding strategies (Saldaña 2013). Given the research questions and goals of the study, the principal deductive code of interest was for ideas about front and back yards and social pressures. Emergent inductive themes included neatness and aesthetics, ease of maintenance and effort, and neighborhood norms and identity. Each of these three overarching themes was composed of other emergent themes, as shown in Appendix 3. As is common with qualitative research, there are more themes to discuss than space allows here. We focused on a select subset of the sub-codes that situate and provide context for the two-part premise of (1) the importance of social norms, and (2) how those social norms influence behaviors at the sub-parcel scale. Some sub-codes are cross-cutting, and all themes are related. For example, the two-part premise of the Landscape Mullets is part neatness and aesthetics, and part neighborhood norms and identity.

Findings

Business in the Front, Party in the Back

Using the parcel database and ArcMap, it was estimated that back yards are much larger ($M = 735$ m^2, min. $= 353$ m^2, max. $= 3136$ m^2) than front yards ($M = 261$ m^2, min. $= 69$ m^2, max. $= 1705$ m^2). Among the respondents who reported their age, one was 18 years old, three were between the ages of 25 and 34, four were between the ages of 35 and 44, three were between the ages of 45 and 54, seven were between the ages of 55 and 64, and seven were 65 and over. Educational attainment was mixed and most households were comprised of married couples (see Table 1 for additional neighborhood and interviewee characteristics).

In summary, over a third of the households provided evidence for caring about neighbor pressure and demonstrated a difference in front/back yard management (36%) and these households were located in five of the six study neighborhoods. While 39% of interviewee responses were inconclusive, the remainder provided evidence for either

social norms that were relevant and important or there were different front versus back land uses, care, and/or management (25%; Table 2). This distribution corroborates research in Hobart Tasmania, Australia (Daniels and Kirkpatrick 2006). Social norms did influence respondents' yard care choices, and the effect of those choices was different in visible front yards than in less-visible back yards, and across a variety of neighborhood contexts (Figure 1). For many residents the front yard was clearly identified as being visible to the neighbors, and important to their decision-making (Table 2). For example, an excerpt from one Winston–Govans interview:

> Interviewer (I): And what features of your yard do you think matter most to your neighbors?
>
> Respondent (R): I think the front, appearance of the front.
>
> I: The front?
>
> R: Because a lot everybody's doors is to the front so when you first open the door

The publically visible nature of the front yard was frequently linked to the resident's landscaping priorities through aesthetics and concerns about neighbor's views (16 versus 6; Table 2). For example, a resident in the Guilford neighborhood provided a similar response to the same question when he said, "we take care of that [front] first because that's this first thing people see. So we take care of that first. So that's really the priority is the front yard." Another woman in Winston-Govans declared, "I want more flowering things in the front. […] Then everybody can see it, not many people see the back." Visibility connects to certain plants, such as flowers, and to sharing that appearance

Table 2. Interviewees ($n = 36$) were categorized as providing evidence for one, the other, or both parts of the Landscape Mullets concept, or inconclusive.

		2. Different front versus back uses, care, and/or management?		
		Yes	No	Inconclusive
1. Consideration of neighbors and	Yes	13	3	
peer pressures relevant?	No	2	4	
	Inconclusive			14

Figure 1. Residents use backyards for diverse purposes including passive recreation and bird watching (A), while others prefer simple, lawn-dominated areas (B). Aesthetics of neatness and order are important to decision-making (C). This homeowner said he measured the distances between the impatiens three times before planting the flowers in the front walkway.

with others. In the same interview, the resident further articulated the public/private divide when describing both her actual gardening practices as well as preferences for different features. When asked if they had different ideas about what they want in front versus the back yard, another two residents in different neighborhoods shared a similar *fashion in the front, function in the back* sentiment. A woman in Cedarcroft with children stated, "Front because people see it it's a front of the house probably focused a little bit more on aesthetic.[…] And backyard a little bit less aesthetic and also a play area in back." While another interviewee in Guilford described her preferences like this:

> Respondent (R): Yeah, definitely. I prefer a more, this is a little wild for me actually [points to front-yard plantings] so I'm still thinking through the design.
>
> Interviewer (I): In the front?
>
> R: Yeah, I like the front to be slightly more formal and the back a little more informal. […] And to have more trees. In the back I'm mostly concerned with creating privacy and sort of restful areas. The front is more presentation or public.

Their responses suggest a keen awareness of the publicly visible nature of front yard spaces, in contrast to more private and utilitarian areas in back yards. Moreover, trees are valued in part for creating privacy. These quotes also suggest a need to create an aesthetic they feel their neighbors will appreciate or at least deem acceptable. Again, the front/back maps onto both public/private, and fashion/function dichotomies. A resident in a home built just 3 months prior in Cedarcroft also expressed concern about fitting into the neighborhood and not wanting to upset the neighbors when he said:

> I want to do as little work possible while not looking like the trash in the neighborhood […] Minimal maintenance in the front as much as possible and then food, productive stuff in the back […] Yeah, front will be to have the neighbors not get mad and the back will be more hopefully for herbs and vegetables.

This respondent assumes that the neighbors and/or the HOA will "get mad" about the so-called "productive stuff" like food, and consequently plans that for the back. So, in this case, while the desired function may be different, food production in contrast to a place for children to play or a private place for rest, the fashion–function divide is still present. Further, the peer pressure to adhere to an aesthetic perceived as valuable is also present and connected to landscaping decisions. Fear over acceptance matters for him. This resident repeated several times that he thought grass was "idiotic" and he did not like ornamental plants or what he termed "the sort of plants for plants' sake." Despite these seemingly strong feelings, he still felt compelled to maintain a large sweeping lawn, which was commonplace in the neighborhood.

What these exemplary quotes demonstrate is how social pressures and neighborhood norms manifest themselves spatially in an unbalanced way across a property parcel. The quotes also show that the Landscape Mullet concept resonates with people across different neighborhoods where social norms vary. For example, pride, joy, and a desire to fit into a neighborhood aesthetic to gain acceptance (the Ecology of Prestige; cf Grove et al. 2006, 2014; Troy et al. 2007; Zhou et al. 2009; Locke et al. 2016) motivate yard care behaviors in the publicly visible front, but not in the less-visible back. Peer pressures do not appear to extend to the back yard. For other residents anxiety or even fear (the Moral Economy; cf. Robbins, Polderman, Birkenholtz 2001; Robbins and Sharp

2003; Robbins 2007) prompts the creation of a monoculture lawn, when other uses, e.g., food production, are preferred. These quotes also show that while conformity with neighborhood norms influences activities in the front yard, preferences for back yard uses vary widely. Some people want safe places, others want play spaces, and others want to grow food. The Landscape Mullet concept is flexible enough to accommodate this variety while maintaining explanatory power, and thus represents a primary theoretical refinement and extension of Moral Economy and Ecology of Prestige theories of residential land use practices by adding a spatial component.

Our interviews provided some evidence of how residents conceptualize a public/private divide in their yards, with peer pressures influencing front yard decisions, but less so for back yard in every neighborhood except for Hamilton. Only three interviews were conducted in Hamilton, which were short and did not include a tour; all three were deemed inconclusive[1]. Not every resident interviewed fit the Landscape Mullet concept (Table 2), but examples of neighborhood social norms shaping decisions, and of split front/back management could be found at homes in each neighborhood.

Three residents in Guilford, Cedarcroft, and Parkville showed little front/back differentiation and identified peer pressures as relevant to their yard care practices. In each of these instances, it was clear that interviewees were avid gardeners who maintained their yards as a hobby, for themselves, and personal preferences were expressed in both the front and back yards. During these interviews, residents not only made reference to wanting to keep up the front yard and "do right by the neighborhood," but they also dedicated considerable effort in their back yards. Hence, these three cases are one type of mixed support for the Landscape Mullet concept (Yes, consideration of neighbors/No, different front versus back management). These mixed cases show the continued importance of consideration of neighbors, despite having no front/back distinction.

There was another type of mixed cases (No, consideration of neighbors/Yes, different front versus back management). In these cases, residents showed little deference to their neighbors. They wanted to please themselves. These mixed cases resided in Cedarcroft and Parkville. These residents used their yards differently in front and back – but this did not appear to be driven by peer pressures, but instead by their own interests in gardening. As a practical matter, site conditions such as steep slopes or abundant shade were different in front and back and these likely affected land management decisions. These mixed cases are therefore distinct from the three mixed cases described above.

Finally, there were four residents (one in Guilford, two in Lake Walker, and one in Parkville) that showed no indication of peer pressures and no indication of differences in front versus. versus back yard care. For these residents, the Landscape Mullets concept did not appear to have salience (No, consideration of neighbors/No, different front versus back management) in Table 2.

Ease of Maintenance and Effort

Another dominant theme related to labor (39% of respondents). One respondent described his ideal yard as "one that never has to be mowed. No mowing, just stays green." This sentiment was commonplace, and as noted above also ties to the theme of aesthetics. For many residents, mowing and other yard care practices are not enjoyable, so priority was given to low maintenance options. These residents are what Harris et al.

(2013) have termed "reluctant maintainers," because they are moved by the moral economy explanation of maintaining their lawns and unwillingly invest resources to conform with neighborhood norms. Among the 10 enthusiastic gardeners and hobbyists, many deliberately grew food. Even growing food fits into the lens of front/back and aesthetics. When describing her back yard, one resident in Cedarcroft said, "The aesthetics are a little bit less of a concern, so I have a dedicated vegetable bed back there."

While some residents do all of their own yard care, there were a variety of maintenance arrangements. First, some residents would hire a company for different basic services such as mowing, general landscaping, tree trimming, and/or pest control and complement those contractors' labor with some form of yard care on their own. For example, some residents would pay for biweekly mowing, but would enjoy vegetable or ornamental gardening as a hobby. Alternatively, some residents would only hire a land care company for big or infrequent jobs such as large tree removal or bi/annual mulching. Second, there were often divisions of labor within the household. While only three interviews were with couples, they were particularly illuminating because the interviews demonstrate that household yard care decisions may only be significant for one household member. For example, one member of the household, irrespective of age or sex, had strong opinions (usually avid gardeners) on what types of practices should or should not be done and the other members simply complied.

Neighborhood Norms and Identity

Fear of judgment, anxiety over yard conditions, and attempting to avoid being ostracized by other neighbors were common themes among interviewed respondents, corroborating similar research (i.e. Robbins, Polderman, and Birkenholtz 2001; Robbins and Sharp 2003, Fraser, Bazuin, and Hornberger 2015). As one resident explained, "They see how you keep your front of your lawn and they […] judge you, actually judge you about your character." Other residents explicitly mentioned not wanting to get reported for code violations by their neighbors if the lawn was too long. When asked about being reported, respondents who raised this issue in all neighborhoods except Winston-Govans said they had never been reported, reported someone else, or known someone who was reported. However, in Winston-Govans, the lower-income neighborhood with an optional neighborhood association, reporting neighbors for violations seemed common, based on the interviews. Even without enforcement, rules compel compliance through the fear of surveillance and enforcement (Fraser, Bazuin, and Hornberger 2015).

Related to the judgment and anxiety themes was an emergent theme about "getting along." To avoid conflict, neighbors in our interviews adopt the behaviors they feel are perceived as desirable, corroborating reference group behavior theory. Others took on "a good fences make good neighbors" mentality, and one respondent said about his long-time neighbor who he did not know, "I prefer to preserve the domestic tranquility." Others boasted how great their neighbors are and that their Community Association was extremely active. Many had close ties with their neighbors and regarded them as close friends. There are clearly different strategies for fitting in, and as shown above, the lawn and yard are part of that attempt to gain acceptance through conflict avoidance, or through friendship formation.

One way to fit in or get a long is to copy each other, including landscaping styles and practices. Sentiments like "I have as much fun looking at her yard as I do looking at mine" were not uncommon. In one Montréal, QC, neighborhood front yard vegetation and architectural similarity was highly spatially autocorrelated, i.e., similarities declined with distance (Zmyslony and Gagnon 1998). A follow-up study showed that lots with similar features such as size, building material, and color shared more vegetation characteristics in common than homes with differing built features, independent of location (Zmyslony and Gagnon 2000). Attributed to mimicry (Zmyslony and Gagnon 1998, 2000), this type of "spatial contagion" has been found in roadside gardens in Michigan (Hunter and Brown 2012), green infrastructure uptake in suburban neighborhoods around Cleveland, OH (Turner, Jarden, and Jefferson 2016), and did not occur at all among households in suburban Australia (Kirkpatrick, Daniels, and Davidson 2009). In Baltimore, residents mentioned observing neighbors' yards in their daily rounds or while walking a dog, taking note of different plantings, and wanting to copy or emulate them. Planting styles and mimicry are related to neatness and aesthetics. One interviewee said, "… they expect for you to keep your yard up like everybody else's." In two neighborhoods (Cedarcroft and Lake Walker), there were annual plant exchanges where residents dug up perennials, divided them, and came together to share or swap. These neighborhood gatherings are community events that build a collective identity in their respective neighborhoods. The plant exchanges also reinforce mimicry and the within-neighborhood similarity among some yards. It is clear that overall neatness and aesthetics, ease of maintenance and effort, and neighborhood norms and identity were dominant themes found among the 36 Baltimore residents we spoke with in the six neighborhoods.

A limitation of this study is that we looked predominantly at single-family detached housing with yards. This approach ensured that residents had control over their properties. Three renters were interviewed, everyone else owned their home. Single-family detached housing are not dominant in Baltimore, nor is it exemplary of the region. However, this arrangement is of course commonplace throughout North America; in 2015, about 62% of all housing units in the United States were single family and detached (U.S. Census Bureau 2011–2015, n.d.). Canvasing occurred on weekday afternoons which may have biased recruitment toward retired and/or unemployed individuals. Ages and educational attainment of respondents varied, and most sampled households were married couples.

Conclusions

Previous research in a variety of cultural and climatic contexts consistently identifies the importance of peer pressures and social norms as a key driver of yard care (Jenkins 1994; Scotts 1998; Robbins, Polderman, and Birkenholtz 2001; Robbins and Sharp 2003; Nassauer, Wang, and Dayrell 2009; Harris et al. 2012, 2013; Larson and Brumand 2014; Stehouwer, Nassauer, and Lesch 2016, among others). But what about back yards, where visibility is reduced if not completely eliminated? Research in suburban Michigan has documented significant differences in the stated preference for neatness in front yards, and privacy and wildlife in backyards (Stehouwer, Nassauer, and Lesch 2016). A fashion in front and function in back dichotomy was previously uncovered in Phoenix, too

(Larsen and Harlan 2006). Therefore, one might expect the desire to fit in would be reduced if not completely eliminated, with different management practices, and therefore altered environmental consequences (i.e. water use, chemical inputs, modification of habitat).

Through 36 semi-structured interviews in five of six Baltimore neighborhoods, we found support for the notion that social pressures are an important driver of yard care practices, and that those pressures are not evenly expressed within residential property parcels. This extends prior work in desert (Larsen and Harlan 2006, Larson et al. 2009), continental (Stehouwer, Nassauer, and Lesch 2016), and cool temperate (Daniels and Kirkpatrick 2006) climates to a mesic climate. Although support was found in five of the six neighborhoods, in one neighborhood (Hamilton) the evidence was inconclusive due to short interviews and lack of access. This front/back, public/private dichotomy therefore does not seem neighborhood specific. While the concept is salient and relevant in different neighborhoods, and across a variety of residents, it was not universal, i.e., there were residents where either social pressures did not seem relevant enough to evoke different behaviors, or care and management were spread throughout the property. In this regard, our findings are complementary to those found in Australia and discussed above (Daniels and Kirkpatrick 2006). The front/back divide should be researched in more depth in the future to better understand social norms and the environmental outcomes of varied yard care practices.

Corroborating previous research, we found that neatness and aesthetics, ease of maintenance and effort, and neighborhood norms and identity are important drivers of residents' yard care behaviors. Nested within and supporting the theme of maintenance and effort are notions about the division of labor within a household, food production, and physical site characteristics. For example, typically one member of the household had greater interest in yard care and the less interested members attempted to avoid conflict. Among residents with the means, some chose to hire landscaping services. More often there was a blend of labor from within the household and these hired companies. Neighbors also described anxiety about letting each other down, and there was some degree of fear about sanctions from HOAs and/or fines from the city. Several residents mentioned copying their neighbors, providing support for ideas about mimicry (Zmyslony and Gagnon 1998, 2000) or "spatial contagion" (Hunter and Brown 2012; Turner, Jarden, and Jefferson 2016).

Abundant prior research asserted the importance of yard care, and the role of social norms (Jenkins 1994; Scotts 1998; Robbins, Polderman, and Birkenholtz 2001; Robbins and Sharp 2003; Nassauer, Wang, and Dayrell 2009; Harris et al. 2012, 2013; Larson and Brumand 2014; Stehouwer, Nassauer, and Lesch 2016, among others). The explicit examination of social drivers and front versus back yards has been understudied (Cook et al. 2012), and prior research indicated the need to focus on less-visible spaces – namely back yards, and differences in their land management (Daniels and Kirkpatrick 2006; Larsen and Harlan 2006; Larson et al. 2009; Harris et al. 2012, 2013; Vila-Ruiz et al. 2014). This paper may help advance theory and makes an empirical contribution to the study of social norms and residential land management by examining the whole residential parcel with respect to public and private motivations. Prior findings about front and back yard care preferences in desert climates (Larsen and Harlan 2006;

Larson et al. 2009) were also documented in Baltimore. Future research should include this spatial scale of heterogeneity for both social and environmental reasons.

Note

1. The researchers first allowed residents to describe their yard care, preferences, and management concerns freely, and to describe their neighbors. Then the researchers explored possible differences between front and back yards, and the neighborhood's social norms. In this later phase, some respondents did describe front/back differences, or the importance of 'fitting in' to their perceptions of neighbors' expectations. But after transcribing and coding, it became clear that these respondents appeared to be telling the researchers what they thought they wanted to hear. We therefore discounted these three anomalous interviews as unlikely to offer reliable evidence for or against the primary question about front/back differences and social norms.

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Appendix 1. Interview script

1. I first want to ask you some general questions about your life and where you live…

1a. **Can you tell me a little bit about yourself?**
- **How long have you lived in this area?**
    - When did you move to this house?
    - Rent or own?
- **Where did you grow up? Where else have you lived?**

1b. **What was your yard like when you moved in?**
- **What changes have been made? Why? Or not?**
    - Did you choose the yard's current layout and design?
- **What motivates the choices you are making?**
- **Did you have different ideas about what you wanted in your front and back yard?**
- **Please briefly describe your ideal yard.**

1c. **What changes, if any, are you planning to make to your yard in the next few years?** (The resident may have answered this question a bit in the above question. If so, follow up by asking about advice and/or where they get their ideas about making these changes – such as magazines, other yards, television, etc.).
- **If you could change your yard, how would you change it?**
- **When you make changes, who do you go to for advice?**
    - What types of help do they provide?
    - Have you helped others with yard changes? If so how?

2. Now let's shift to discussing how you use your yard…

2a. **Do you or members of your household spend time in your yard?**
- **If so, what kinds of things do you do?** (examples: kids playing, outdoor parties, working in the yard, relaxing, etc.)
- **What kinds of things do other household members do?**

2c. **Who takes care of your yard?**
- **Do different people do different jobs in the yard?**
    - Please explain.
    - Has this changed over time? If so, how?

- **Do you hire people to help you with your yard?**
    - **If so, what do they do?**
        - Mowing?
        - Big tree trimming?
        - Bug service?
        - "Big jobs?"
    - In some areas, people may hire help with "events" – such as hurricanes, snow storms, etc. You may want to ask about these types of events, if appropriate to your area

3. Now let's move on to your neighborhood and the larger area beyond…

3a. **How would you describe your <u>neighborhood</u>?**
    - Is there anything special about your neighborhood? How so?
- What are the yards or **styles of landscaping** like?

3b. **What features of your yard do you think matter most to the neighbors?**
- **Do your neighbors have expectations for what you should be doing in your yard? If so, please provide an example.**
    - Do you talk with your neighbors about yard care choices?
    - If so what do you talk about?
- **What features of your neighbors' yards do you like or dislike?**

3c. **What is it about this area that made you want to live here?**
- Use his/her "area" term
    - What makes this neighborhood/area/city/region special?
    - What is important to you about this (neighborhood, city, region)?
    - Are there things that make living here difficult?

3d. **Has this area changed over time?**
- **In what way?**
    - Do some changes stick out in your mind as more significant than others? Which ones would you consider more significant or memorable?

3e. **Are there groups or associations in your neighborhood that influence how you care for your yard?** (how certain kinds of governance shape yard management – generally, homeowner's associations are groups that require fees and membership is required as part of the property ownership. Other local groups may also be important – such as voluntary neighborhood associations, crime watch groups (which may have suggestions about shrub height, etc.), or even groups that relate to "historic" neighborhoods).
- **What kinds of groups exist here?** (such as a homeowner's association, neighborhood association, etc.)
    - Are there Covenants, Codes and Restrictions associated with any of these above associations?
- **Do you pay monthly or annual membership fees to any of these associations?**
    - If so, which ones?

3f. Are there city or other government policies, rules or programs that influence your yard choices and management?
- **For example, are there policies, rules or programs about:**
  o **Water use?**
    ▪ watering restrictions during periods of drought
  o **Plants** you put in your yard?
    ▪ wildlife or butterfly habitat certification programs, etc.
  o **Tree choices?**
    ▪ municipal native tree planting programs
  o **Grass/lawn** in your yard?
    ▪ municipal ordinances about maximum allowable height of grass, fines, etc.
  o **Front yards, generally?**
  o **Back yards, generally?**

Walking the land

With an overview map in hand, walk the land with the homeowner and discuss what he/she has done on the land regarding plants and other changes (installation of a pool or other features).

- o **Understand the homeowner's story about their yard.**
    o How they link/associate different motivations and actions (external and internal).

- o **Botanical questions**
    o Can focus on trees and large shrubs
    o By sections of the yard ask what trees have you planted? Removed? Allowed to grow (if they were there already).

- • When people say they have planted (or have had installed) certain plants or features – ask them where they got the plants/features
    o Local nurseries/garden centers
    o Home Depot, Lowe's or similar stores
    o Tree give-a-way (or similar program)
    o Gifts

- • **Ask people what they enjoy most or least about their yard**
    o What features do you like best? Least?
    o What features do other members of your household like best? Least?

- • **Where do you like those feature most and least?**

Walking in the yard is also a good time to talk about the neighbors. As you stand near the boundary of the yard, ask these questions:

- • **What do you see happening with yard care in your neighborhood?**
    o Has this changed overtime? How? Why or why?
    o What has happened that has helped you with these changes?
        ▪ What are the challenges to implementing these changes?
        ▪ What groups/people have been supportive or this? What groups/people would not? Why?

If front vs. back yard has not already emerged ask the following questions – if it has come up prior refer here

- • **How do you maintain your front yard, and why?**
    o Do you care what other people think about your yard?
        ▪ How it looks?
- • **Do you care what your neighbors will think?**
- • **How would your neighbors respond if you didn't** [whatever was indicated above]?
- • **Do you do anything differently in your backyard?**
        ▪ Why?
        ▪ Do you water more or less frequently in the back?
        _____

Appendix 2. Questionnaire

A. The following questions are about the yards in your neighborhood and the rules that affect land management here.

1) Where do you go for information about taking care of your yard, or if you have a problem? *Please check all that apply.*

- ❑ Neighbors or local neighborhood "expert"
- ❑ Neighborhood association or home-owner association
- ❑ Friends, acquaintances, and/or family members
- ❑ Printed information (brochures, books, journals)
- ❑ Internet/television
- ❑ Government staff (i.e.,city forester, natural resource manager)
- ❑ Privately contracted landscaper/tree service
- ❑ Garden store staff
- ❑ Other: _____
- ❑ Other: _____

2) What changes are happening on nearby lands? *Please check all that apply.*

- ❑ Residential development and/or remodeling, renovations, etc.
- ❑ Commercial development of stores, businesses, etc.
- ❑ Tree planting projects
- ❑ Tree removal projects
- ❑ Adding grass
- ❑ Removing grass
- ❑ Setting aside land for conservation or protection
- ❑ Other:_____

3) Is there a neighborhood or homeowner's association in which this property falls that has formal rules that say what you can or cannot do in your yard?

- ❑ Yes, my neighborhood association has rules about yard maintenance.
- ❑ No, there are no formal rules
- ❑ I don't know
- ❑ Not applicable – there are none of these associations

B. These questions are about your household and a few yard practices…

1. How often does your household normally water your lawn? *Please check one.*

- ❑ Regularly: once or more per week
- ❑ When grass is dry
- ❑ Rarely
- ❑ Never
- ❑ Other (such as seasonally) _____

2. How does your household normally dispose of lawn clippings? *Please check all that apply.*

- ❑ Dispose of clippings off-site
- ❑ Leave clippings on the lawn
- ❑ Compost clippings on my property
- ❑ Other: _____ _____

C. Finally a couple of quick demographic questions.

1. What is your current age?

- ❑ Less than 16
- ❑ 16 to 19
- ❑ 20 to 24
- ❑ 25 to 34
- ❑ 35 to 44
- ❑ 45 to 54
- ❑ 55 to 64
- ❑ 65 or over

2. What is the highest level of education you have completed?

- ❑ Less than High School
- ❑ High School / GED
- ❑ Some College
- ❑ 2-year College Degree
- ❑ 4-year College Degree
- ❑ Masters Degree
- ❑ Doctoral Degree
- ❑ Professional Degree (JD, MD)

3. Is your home:

- ❑ A single family house
- ❑ A two family house
- ❑ An apartment
- ❑ A mobile home

4. Do you:

- ❑ Own
- ❑ Rent
- ❑ Other:_____

5. What is your family structure?

- ❑ In a married-couple family
- ❑ In a family with female householder, no spouse present
- ❑ In a family with male householder, no spouse present
- ❑ In a group of unrelated subfamilies
- ❑ Unrelated individuals

6. Are you (Check all that apply)

- ❑ Married
- ❑ Divorced
- ❑ Widowed
- ❑ Separated
- ❑ Single
- ❑ Step parent

7. How do you identify?

- ❑ White/Caucasian
- ❑ African American
- ❑ Hispanic
- ❑ Asian
- ❑ Native American
- ❑ Pacific Islander
- ❑ Other ____

8. Indicate total household income:

- ❑ Under $25,000
- ❑ $25,000 - $29,999
- ❑ $30,000 - $34,999
- ❑ $35,000 - $39,999
- ❑ $40,000 - $49,999
- ❑ $50,000 - $59,999
- ❑ $60,000 - $84,999
- ❑ Over $85,000

Appendix 3. Emergent coding scheme

1. Neatness and Aesthetics	(overarching theme)
A. Neatness	(code)
B. Landscape Mullets	(code)
i. Support	(sub code)
ii. Refute	(sub code)
iii. Inconclusive	(sub code)
2. Ease of Maintenance and Effort	(overarching theme)
A. Division of labor	(code)
i. Do it yourself versus hiring out	(sub code)
ii. Learning from elders, family, and others	(sub code)
B. Food production	(code)
C. Physical imitations and site characteristics	(code)
D. Environmental agency and control	(code)
3. Neighborhood Norms and Identity	(overarching theme)
A. Getting along, being neighborly	(code)
B. Groups and governance	(code)
C. Identity	(code)
D. Mimicry or 'spatial contagion'	(code)
E. Segregation	(code)