

Boundary Plants, the Social Production of Space, and Vegetative Agency in Agrarian Societies

Michael Sheridan

■ **ABSTRACT:** Boundary plants lie at the intersections of landscape ecology, social structure, and cultural meaning-making. They typically relate resource rights to social groups and cultural identities, and make these connections meaningful and legitimate. Landscape boundaries such as hedges and fence lines are often repositories for social identities and cultural meanings, and tools for the negotiations and struggles that comprise them. This article surveys botanical boundaries in classic ethnography, outlines social science approaches to boundary objects, and describes new theoretical work on space, place, and agency. It also introduces the concepts of monomarcation and polymarcation to delineate the contrast between technologically simple and socially complex forms of marking land. Three case studies, concerning the social lives of *Dracaena* in sub-Saharan Africa and *Cordyline* in the Caribbean, illustrate how boundary plants have a particular sort of vegetative agency to turn space into place in culture-specific ways.

■ **KEYWORDS:** agency, boundary objects, ethnobotany, land tenure, space and place

Boundaries have become hot topics in recent social science. Studies of nationalism, globalization, and migration require attention to spatially bounded social phenomena. Gender, race, and class studies focus on bounded categories and the work it takes to cross symbolic and social domains. In environmental studies, topics such as ecosystem conservation, organic agriculture, and spiritual ecology do not make much sense without boundaries of land administration, agricultural practice, and cosmological meaning. Like students researching semi-permeable membranes, social scientists scrutinize boundaries to identify how and why some objects, people, practices, and ideas remain bounded while others transform different ecosystems, social groups, and systems of meaning. Yet despite the centrality of boundaries in current social science, there has been little scholarly attention to a particular sort that spans all of these domains. “Boundary plants” are ecological features imbued with social functions and cultural meanings, but they often appear only in the ethnographic background. It is high time to bring living fences, hedges, and boundary plants in from the academic periphery.

This ethnobotanical attention to edges is important because land is fundamental to sustainable livelihoods, and a key policy issue is whether the world’s poor need formal property systems (de Soto 2000) or strengthened indigenous systems (Home and Lim 2004; Platteau 1996). The documentation of what boundary plants mean and how they relate to other aspects of landscape and society can give smallholder farmers a resource for negotiating land rights with state institutions. Boundary plants are also important analytically as features of socio-ecological sys-



tems, because they exist at the interfaces of landscape ecology, social structure, and cultural meaning-making. They are particularly open to analyses that relate social power to ecological dynamics (Widgren 2012). Boundary plants are vegetative manifestations of social institutions that assign resources to social groups and clothe them with culturally-defined legitimacy. In northern Tanzania, for example, *Dracaena fragrans* (L.) Ker Gawl shrubs manifest social institutions by defining the edges of family plots and signaling ancestral authority. This institution for keeping land orderly also applies to social order. A single leaf of *Dracaena*, when presented to one's opponent in a dispute, makes peace mandatory. Is this significance primarily a matter of economic infrastructure, social structure, or ideological superstructure? For Tanzanians, it is all three at once and does not reduce to a single cause (Sheridan 2008).

Boundary plants demonstrate the interdependence of materialist and symbolic approaches in social analysis, and are, like trees, "good to think with" (Bloch 1998). I begin by discussing boundary issues in classical anthropology, with particular attention to botanical examples. After introducing some new terminology for the anthropological study of boundaries, I review major approaches to boundary plants in the social sciences, as well as recent literature on space, place, and agency. Finally, I offer three short case studies from recent fieldwork showing how and why these perspectives illuminate the significance of boundary plants.

Boundaries in Classical Anthropology

Territory and Tenure

Boundary definition, maintenance, and transformation have long been anthropological staples. Three key distinctions emerge from the historical sequence of boundary matters in anthropology: as structures of rules and meanings, as elements within systems of ecological knowledge, and as sites of struggle and contestation. In the work of nineteenth century evolutionists, the institutionalization of boundaries signified a transformation from communal ownership to private property regimes (Marx 1915: 100; Morgan 1878: 217). In part because of the need to organize local government and spur cash crop production in its colonial empire, British administrators and anthropologists documented diverse tenurial systems with a bewildering array of methods for demarcating land with trees, flowers, stones, and pots (Garson and Read 1892: 150, 224). Their construction of "customary law" often revealed more about European notions of land, property, and boundaries than those of the colonized people (Chanock 1991). Many ethnographers, however, followed Bronislaw Malinowski's dictum that land tenure scholars should contextualize the relationships of people and soil in terms of meaning and mythology as well as economics and law (2013: 766; Shipton 1994). It was in this spirit that Jomo Kenyatta showed how the Gikuyu people used the pink *itoka* lily (*Crinum kirkii* Baker) and the stomach contents of a sacrificial sheep to mark boundaries (1965: 40). The anthropology of land tenure established two enduring principles for the analysis of landholding: that it is better to consider tenure as a socially distributed "bundle of rights" than a communal/individual dichotomy (Bohannon 1963), and as "estates of administration" instead of personal rights to land (Gluckman 1965). What these meant in practice is that an African woman might be able to harvest the fruit from a tree, but only her husband could cut the tree for timber, and that neither could sell the land upon which it stood because this was the inalienable property of a kin group. Overall these classic land tenure ethnographies took a normative and jural approach, leading anthropologists to document meaningfully institutionalized rules, their contexts, and their functions.

Land tenure studies became increasingly important in the 1960s and 1970s as international agencies and governments pursued ways to lift former colonies to the production and con-

sumption levels of high-income countries. Would markets or demography drive the evolution of agricultural systems from horticultural gardening to intensive agriculture, and how should states plan for these changes? Ester Boserup's influential *The Conditions of Agricultural Growth* (1965) persuaded development planners that population pressure leads to both technological innovation and the emergence of private property and land markets (Robertson 1984). The boundary plants that defined some of these changing property systems were elements of "indigenous knowledge systems" (Brokensha et al. 1980). They had, for example, pragmatic ecological functions as erosion control mechanisms and social values as medicinal herbs, in addition to their economic usage. Meanwhile, research on environmental degradation spurred a new focus on common property regimes (McCay and Acheson 1987). Reacting to Garrett Hardin's oversimplification of collective resource management as the "tragedy of the commons" (1968), these scholars showed that social groups often develop institutions for sustainable management. The most important of the design principles for successful common property systems is "clearly defined boundaries" for both ecosystems and society (Ostrom 1990: 90). More recently, this literature emphasizes how the boundaries of the commons are expressions of knowledge, interest, and social organization by differently positioned social actors (Leach et al. 1999). Attention to the forms of boundaries, whether they consist of metal pegs, lines of shrubs, or clay pots buried at the edges of fields, has generally been obscured by their social and ecological functions.

In recent anthropology and agricultural history, land tenure has been recast as a social process rather than a static arrangement of rules and objects. The perennial struggle to figure out what land belongs to which people led land tenure scholars to focus on negotiation and accumulation (Berry 1993; Peters 2009). From this perspective, planting a boundary is one move in a grand game of making claims, defending access, and asserting control in a particular social context and historical moment. The lesson of this processual approach to land tenure is that boundaries are miniature arenas where people struggle for access to and control of resources and social status. The unit of processual analysis is a sequence of events, not simply a piece of land, a group of people, or a set of rules (Moore 1986). From this point of view, property is not simply a social relationship, but rather "a vast field of cultural as well as social relations ... symbolic as well as the material contexts within which things are recognized and personal as well as collective identities are made" (Hann 1998: 5). Boundary plants are prime examples of these sorts of social relations at the crux of materialism and symbolism, and the intersection of ecology and identity.

Social Groups and Identities

Anthropological units of analysis were once bounded social collectivities such as tribe, village, and lineage. The primordial naturalness of these units came into question as scholars applied Marxist and constructionist approaches to these groupings (Guyer 1981; Mamdani 1996). The most influential work on boundary issues was Fredrik Barth's *Ethnic Groups and Boundaries* (1969), which argued that ethnic differences result from accumulated transactions among individuals. The behavior that constitutes ethnic identity is therefore most apparent at group boundaries, where those differences most shape interaction. This explains, for example, why St. Patrick's Day parades were for many years more popular on the margins of the Irish diaspora than in Dublin (Cronin and Adair 2002). Barth repositioned identities and boundaries as consequences of behavior, rather than preexisting conditions shaping behavior.

Recent work on social and ethnic boundaries has generally followed Barth's approach, while also asking when and how identity and boundary construction occur, and what sorts of constructs result. How is it that some constructions become taken-for-granted social facts that gen-

erate social action and political conflict (for example, so-called ethnic conflicts in the Balkans) while others remain more or less quiescent (for example, Switzerland's lack of ethnic political parties despite its ethnolinguistic differences)? Why are some boundaries hard, closed, and sharply defined while others are soft, open, and fuzzy? In short, when and why do boundaries really matter? The answer is that identities are not ideas that people carry around in their heads; they are instead social relationships between people. This "relational" approach (Lewellen 2002: 108) stresses that socioeconomic inequalities can become so naturalized in the minutiae of daily life that constructed categories such as Palestinian or Tutsi seem primordial (Comaroff 1996). The pace of identity construction accelerates when social groups are stressed by economic change, and as the structural bases of group boundaries become unstable, the symbolic boundaries become more rigid (Cohen 1985). By defining boundaries as relationships, this approach emphasizes historical processes rather than stable entities in static structures. In this new work, the focus is less about identities and boundaries per se, but more about what kinds of boundary-making relationships are possible and the sorts of social action within them (Wimmer 2013). Instead of rigid boundaries and clear identities, this processual approach examines boundaries as flexible borderlands where ambivalence, contradiction, and hybridity complicate both identities and the political economy that contains them (Anzaldúa 1987).

Science is also a social process constituted by boundary relations. This approach developed in the history of science literature as a way to examine how scientists develop standardized forms to communicate across disciplines and divisions of labor. Boundary objects (such as Linnaean species designations and lab reports) are "plastic enough to adapt to local needs ... yet robust enough to maintain a common identity across sites," so they can translate meanings and practices between different social worlds precisely because they inhabit them all (Star and Griesemer 1989: 393; Star 2010). In this article I argue that these characteristics of plasticity and robustness explain, to a degree, how particular plant species become agro-ecological boundary objects.

Relationalist approaches to the construction of ethnic, social, and institutional boundaries offer important tools for the study of boundary plants. From this perspective, the markers of land tenure are strategies for group definition and interaction at particular historical moments. Landscape boundaries such as hedges and fence lines are repositories for social identities and cultural meanings, and are sites for the negotiations and struggles that comprise them.

Symbolic Boundaries

The topic of symbolic domains, and how social action crosses them, has been basic to ethnographic investigation since Durkheim argued that religion tends to create a category of people, things, practices, and ideas "set apart and forbidden" (1915: 47). In her classic work on symbolic boundaries, Mary Douglas extended these ideas by asserting that the boundaries of the human body are analogous to the boundaries of the social group. This explains why concerns over bodily excreta like blood, semen, excrement, and urine shaped the social organization of both ancient Israelites and contemporary Hindus (1966: 125). Anxieties about the polluting substances that cross the boundaries of the body reflect anxieties about the purity (and ultimately the existence) of the body politic, and find expression in ritual prohibitions. Taboos are therefore not irrational ethnographic curiosities; they are attempts to maintain social order by keeping symbolic categories bounded. Boundary plants often involve both bodily protection and social order.

In Victor Turner's work on ritual process, we see these symbolic boundaries in action, and a tree as a boundary object. Turner built an analytical language for symbols by focusing on behav-

ior rather than thought, and perhaps his most famous methodological demonstration concerns a boundary plant in southern Africa. In *The Forest of Symbols*, Turner (1967) examines the multiple meanings of the *mudyi* tree (*Diplorhynchus condylocarpon* [Müll.Arg.] Pichon) for the Ndembu people of northwestern Zambia. Pubescent Ndembu girls spend a hot day wrapped in a blanket at the base of a *mudyi* tree. This tree has milky latex sap, and therefore the Ndembu associate it with breast milk and the ties between mothers and daughters. The Ndembu reckon descent matrilineally and reside patrilocally, so mothers and daughters often live far apart. In Ndembu thought, the *mudyi* tree stands for social unity and the entirety of “tribal custom” (1967: 22), yet in ritual practice the same symbol also separates mothers and daughters, the girl’s mother from other women, and women from men. By showing the symbol in action, providing Ndembu explanations, and exploring his own interpretations, Turner established a basic method for symbolic analysis. The *mudyi* tree is a dominant symbol that condenses a diverse set of significances into abstract ideological and pragmatic sensory meanings, which then become part of the “social dramas” of Ndembu life. It is not a boundary plant in terms of tenure and landscape formation; rather, it is a boundary object that translates between Ndembu cultural categories. Its symbolism is plastic enough to represent both women’s kin relations and men’s sociopolitical networks, and robust enough make these meanings cohere. The value of Turner’s examination of the *mudyi* tree is that he contextualizes a boundary plant in social action without reducing its significance to normative rules. This example also demonstrates that although the concept of boundary objects comes from the study of modernist social institutions like science, it can illuminate the workings of non-industrial socio-ecological systems as well.

Symbolic anthropology has generated a theoretical toolkit for understanding boundaries in action. The problem is that the notion of boundary may not mean the same thing universally. As Barth notes, “‘boundary’ has consistently been *our* concept, made to serve our own analytical purposes” (2000: 34). In English, a boundary is simultaneously a marker of territory, a separator of social groups, and a divider of mental categories. This is just as much a cultural model as the Ndembu *mudyi* tree, but it has come to be a particularly hegemonic concept because of its place at the foundations of capitalism and the nation-state system. Barth cautions against the assumption that everyone everywhere thinks of territory-group-category limits in the same way, and this opens up the empirical question of whether different cultural groups perceive boundaries differently. An English boundary limits and separates, but what if another people’s boundary creates and unifies? Would that still be a boundary, or would such a translation into English completely distort its significance? Does the way that borderlands foster hybridized, unified identities transform the meaning of divisive political boundaries (Flynn 1996; Newman 2003)? The study of boundary plants can respond to Barth’s challenge by testing, and perhaps transforming, the boundary concept.

There are some commonalities among these diverse approaches to boundaries in classical anthropology. All show a movement from treating boundaries as objective and static facts toward a concern for process and construction. Land tenure had been about sets of rules, but increasingly it is about contests among unequal actors (Juul and Lund 2002). Ethnicity and identity had been about normative relations within groups, but it turned into studies of interactions and relations of power among groups (Comaroff and Comaroff 2009). Symbols had been units of meaning, but instead they became processes of negotiation with cosmological, social, and ecological aspects (Cleaver 2000; Turner 1977). The core lesson for the study of boundary plants is that these objects are always embedded in economic, sociopolitical, and ideological processes, and that their status as separators and/or unifiers places them precisely at the crux of these dynamics.

Boundary Plants in the Social Sciences

Monomarcation and Polymarcation

Boundary plants usually appear quite literally in the background in academic literature. For example, in Kojo Amanor's account of land degradation in Ghana, we learn that farmers use *Dracaena arborea* (Willd.) Link to make live fences, but not what symbolic implications these plants might have (1994: 118). Wallace Zane's ethnography of an eastern Caribbean religion mentions that church members use *Dracaena* sp. (*sic*—the species is actually *Cordyline fruticosa* (L.) A. Chev.) to mark graves, but the plant's role in land tenure matters is unexplored (1999: 48). In her detailed examination of a community-based conservation program in Papua New Guinea, Paige West describes the violent consequences of someone cutting the *Cordyline* plants around the conservation office—but the issue at hand is the fight, not the land use (2006: 22). The ethnobotanical literature is even more limited in social contextualization. H. M. Burkhill reports that *Dracaena arborea* is used “in and around villages” throughout West Africa for repelling evil spirits (1985: 509). On the Micronesian island of Pohnpei, builders bury *C. fruticosa* leaves under a new house to protect it from home-wrecking sorcerers (Balick 2009: 283). Of course these authors were understandably more concerned with (respectively) farming systems, religious practice, political ecology, economic botany, and ethnomedicine—however I argue here that boundary plants would, if layered into researchers' analyses, deepen their understanding of the economic, sociopolitical, and ideological processes that make up socio-ecological systems. What follows is an outline of these dynamics, or what we might call “boundary plants' greatest hits.”

Some new terminology is needed to evaluate the ecological, economic, sociopolitical, and ideological aspects of boundary plants. Some of these roles seem rather simple, like the privet hedges (*Ligustrum ovalifolium* Hassk.) that line driveways throughout suburban America, while others such as *Dracaena* and *Cordyline* carry complex cultural loads. I propose two neologisms to discuss this contrast. “Monomarcation” refers to the usage of a boundary plant in a single social domain, such as confining livestock or preventing witchcraft. This designation reflects how the plant appears in the scholarly literature, and should be seen as more of a starting point for further empirical investigation than a classification. For example, in the Ecuadorean Amazon, many Runa people plant the hallucinogenic *Brugmansia suaveolens* (Humb. & Bonpl. ex Willd.) Bercht. & J. Presl around their houses to prevent spiritual attack (Swanson 2009: 41), but the issue of how this species condenses meaning (in Turner's sense) in the spirit world remains an open question. Furthermore, even monomarcation can involve complex social dynamics. When Tanzanian men plant eucalyptus on the boundaries of their plots in the North Pare Mountains, this economic monomarcation is not just because they want fast-growing wood for fuel, it is because they need to keep their land under a cover crop in order to protect their sons' inheritance from government-led redistribution programs (Gillson et al. 2003: 376). Accordingly, although monomarcating plants such as *Euphorbia* spp., *Croton* spp., *Grevillea robusta* A. Cunn. ex R. Br., *Casuarina* spp., sisal (*Agave sisalana* Perrine), Christ's thorn (*Ziziphus spinachristi* (L.) Desf.), *Newbouldia laevis* (P. Beauv.) Seem., and prickly pear (*Opuntia* spp.) line yards, farm plots, and roads from Mexico to Sudan (Thompson et al. 2010; Zuria et al. 2006), their social, political, and ideological entailments require further research. “Polymarcation,” on the other hand, involves boundary plants in multiple social domains, such as when the same species appears on both property boundaries and graves (at the symbolic boundary of life and death). A polymarcating boundary plant may be a monomarcating one that has benefitted from additional research to contextualize it more fully. Polymarcation is a particularly fertile area for

social science analysis, because it typically illustrates the intersections of material, social, and symbolic dynamics.

One polymarcating boundary plant occupies a central position in environmental anthropology, but more as a prop in an ongoing social drama than an actor in its own right. Roy Rappaport's ethnography of ecological regulation among the Tsembaga Maring people of Papua New Guinea hinges upon the rituals that surround the *rumbim* plant (*Cordyline fruticosa*). Taking a village as his unit, Rappaport delineates the trophic flows of caloric energy (particularly taro and pork) throughout the system (1984: 121ff). When the population of pigs gets too large, the small conflicts that result from marauding pigs entering another village's gardens escalate to a serious "ax fight," and men uproot the *rumbim* planted at the last peace settlement a decade before. After leaving their souls at their men's house, guarded by more *rumbim*, the warriors and their allies go to battle. At the end of the conflict, both sides replant *rumbim* on their boundary and peace returns. If, however, the enemy had failed to mark its boundary, the Tsembaga invade and plant *rumbim* to make a new boundary. Rappaport interprets uprooting and replanting *rumbim* as a ritual "transducer" that allows the socio-ecological system to adjust to shifting populations of pigs and people, redistribute people over the land, determine the frequency and intensity of violence, and create exchange relationships between the Tsembaga and their allies (1984: 3).

If the Tsembaga landscape were a written language, *rumbim* would be its punctuation. It is rooted—literally—at the intersections of agricultural economics, acephalous politics, ritual practice, and ideologies of ancestral spirits and gender relations. Rappaport focuses on its first three aspects, but the *rumbim* is clearly a multivocal boundary object demarcating multiple domains. It stands for men's membership in territorial groups (Rappaport 1984: 171), represents the intersections of life and death (Strathern and Stewart 2001: 281), and signifies men's reproductive success (Lipuma 1988: 67). Is this example of a polymarcating boundary plant mostly about land tenure, social group identity, or symbolic order? For Rappaport (and presumably the Tsembaga), *rumbim* is all of these at once because it stitches together the fabric of cosmology, social life, and landscape.

Another classic of boundary plant ethnography is Sally Falk Moore's *Social Facts and Fabrications* (1986), about law and society on Mount Kilimanjaro. Moore focuses on dispute settlement processes among Chagga farmers in order to show the course of legal change. One of her case studies concerns a boundary plant. The *Dracaena fragrans* (L.) Ker Gawl plant is ubiquitous in the Chagga social landscape. Stalks of dark green sword-like leaves grow on graves and the boundaries of yards and farm plots, and it features in witchcraft detection and peacemaking rituals. In one 1968 land dispute, a farmer named Richard ripped up the fruit tree seedlings that his kinsman Elifatio had planted within a *Dracaena* boundary (Moore 1986: 285ff). The boundary was on Elifatio's side of the path dividing their plots, so he considered replacing part of the hedge with fruit trees well within his rights as a landowner. Richard countered that because the path itself was government property, no one could plant a crop there, and that the boundary plants of the ancestors should remain undisturbed. Elifatio demanded reimbursement for the seedlings, but lost the case because he lacked the social network and legal finesse of his more educated kinsman. Moore's example demonstrates that contradictory norms coexist within the same cultural context and that norms do not determine behavior. Instead social life is the messy working-out of interests, obligations, opportunities, and strategies using old and new cultural materials. In this case, the tenorial aspect of a polymarcating boundary plant shows contradictory meanings, because it confers control to individuals but also represents timeless ancestral authority.

A benchmark of agrarian change is the increasing formalization of property rights institutions, and boundary plants often express this shift. Glenn Stone (1994) argues that as farmers invest more labor in their land, they also invest in boundary maintenance in order to protect the

improved soil from encroachment, and that these perimetrics leave traces of past agricultural intensification. Many of these are lines of rocks, stone walls, and postholes, but living fences also delineate landscape history. Perhaps the most famous example of monomarcating boundary plants expressing agrarian change is the British Enclosure Movement. Before 1750, much of the British landscape was a patchwork of field, forest, and meadow separated by curvilinear hedges. Between 1750 and 1850, around 200,000 miles of new hedges were planted, more than the previous 500 years' hedge plantings (Rackham 1986: 190). The new single-species hedges (usually hawthorn, *Crataegus monogyna* Jacq.) ran in straight professionally surveyed lines. The old ecologically diverse hedges, managed via a socially distributed "bundle of rights," had been important as livestock barriers, territorial markers, sources of medicinal and food herbs, and refuges for wildlife. The new ecologically simple hedges lined large rectangular fields, allowed individual rather than collective decision-making, and demonstrated the new private property regime (Pollard et al. 1977). Capital accumulation via the private enclosure of common-property systems required a legal foundation, and between 1750 and 1830 more than 4,000 Parliamentary Acts permitted the enclosure of about 6.8 million acres, or 21 percent of England's total area (Beckett 1990: 36, Dowdeswell 1987). Production of grain and meat increased dramatically in response to demand created by the French Revolution and the Napoleonic wars (Neeson 1993; Ross 1998), while the newly landless rural poor became the industrial labor force or immigrants to the New World. Along with the coal smoke of industrializing London, boundary plants were material manifestations of the construction of the modern capitalist system.

The medieval open-field system of meadows, pastures, and farms with overlapping uses by various social categories did not, however, make a smooth transition to an intensive agricultural system based on private property. The dispossessed and displaced smallholder farmers and squatters formed the Diggers and True Levellers Movements in the seventeenth century. These agrarian populists acquired these names from their political actions of uprooting the monomarcating hedges and filling in the ditches that defined the new mode of production (Kennedy 2008). The hedged landscape that resulted from this struggle over land, livelihood, and modernity came to be seen as quintessentially British, its newness notwithstanding (Barker 2012). With the increasing mechanization of agriculture in the twentieth century, hedges again became the crux of class struggles over the character of rural England. Bulldozers and government subsidies allowed farmers to remove hedges that blocked tractors and combine harvesters, so between 1946 and 1970 about 4,500 miles of hedge were destroyed annually in England and Wales (Barnes and Williamson 2006: 22), with another 10,000 miles lost by 1993 (Oreszczyn and Lane 2000: 102). The discipline of field margin ecology developed in response to this process, in order to evaluate the role of hedges in the ecological connectivity of European rural landscapes (Barr and Petit 2001; Marshall and Moonen 2002), while legislators created laws to conserve these icons of the British landscape (most notably the 1997 Hedgerow Regulations, which brought hedges within the purview of local planning commissions).¹ These monomarcating hawthorn hedges have gradually become polymarcating. As the value of hedges for controlling livestock and marking territory declined, their value for biodiversity conservation and "sense of place" increased, particularly among the non-farming public and policy-makers. These hedges now define what the British landscape "should" look like and thereby mark the boundaries of urban/rural and anthropogenic/wild in a symbolic sense.

Most of these examples treat boundary plants as structural landscape elements with biophysical, economic, social, political, and ideological functions, which then indicate larger processes. These plants, by definition, "do things" in horticultural, postcolonial peasant agricultural, and industrial production systems. This makes them particularly apposite for analysis from the perspective of political ecology, which in its 1980s formulation typically applied structuralist

political economy to case studies of land degradation and resource management (Blaikie and Brookfield 1987). As features that actually root social meanings in a landscape, boundary plants are also appropriate topics for a “post-structuralist political ecology” (Escobar 1996), which addresses both struggles over resources and the “symbolic contestations that constitute those struggles” (Moore 1993: 381; Biersack 2006; Paulson and Gezon 2005). Boundaries often involve non-territorial symbolic contests (Walker and Peters 2002), so the issue at hand is how territorial dynamics relate to other sorts of meaning-making. Addressing this while still obeying Malinowski’s injunction to “grasp the native’s point of view” (1922: 25) requires attention to culture-specific concepts of space, place, and power to avoid flattening the very ideas and practices we seek to document and interpret. Recent anthropological and sociological work explores the spatial aspects of social and cultural phenomena, while a newfound interdisciplinary interest in the social lives of other species is extending concepts like agency and cognition to plants. Together the “spatial turn” and the “plant turn” offer new concepts for unraveling the ways that biophysical ecology, socioeconomic difference, and cultural meaning-making get tangled up in boundary plants.

Foregrounding the Background: The Spatial Turn

In the 1990s a new approach to space and place emerged in the social sciences in the wake of post-Cold War geopolitical destabilization. The congruencies of peoples and places, long taken for granted, were reevaluated as processes and social relations. For example, the recognition that ethnic groups were not coterminous with ethnic territories led to wide-ranging literature on the de-territorialization of ethnicity (Gupta and Ferguson 1997), building on Barth’s insight that identities are dynamic relationships rather than static social units. As particularly important sites for these relationships, boundaries and borders were redefined as social processes rather than territorial edges, often via processual terms such as “boundary-work” and “boundary crossing” (Lamont and Molnar 2003: 168). This approach to the social production of space cross-fertilized with the so-called spatial turn in social science, which relies on spatial metaphors such as “social field” and “positionality” (Reed-Danahay 2015; Silber 1995; Warf and Arias 2009).

Two themes dominate this broad and heterogeneous literature. The first concerns how space becomes place. Landscape had long been a static backdrop in ethnography, behind the social action. Eric Hirsch redefined landscape as a social and cultural process by distinguishing between the “foreground” of actual mundane social life and the “background” of potential social existence. The actual is the way things are, the potential is the way that things could and should be. Landscape is a process by which people work to “realize in the foreground what can only be a potentiality and for the most part in the background” (Hirsch 1995: 22–23). Agricultural fertility rituals and ecosystem conservation are examples of management practices that try to turn the potential into the actual. Boundary plants are prime locations of “foregrounding” because they involve property relations, group identities, and domains of meaning. With these concepts, we can consider how Turner’s Ndembu friends experience coming across a *mudyi* tree in a southern African forest as a moment when their potentials meet their actualities in a boundary object.

But what forms does place-making take? The literature suggests that people follow two overlapping avenues—narrative performances and strategic struggles. The narrative approach takes a phenomenological view of how storytelling, music, poetry, and ritual practice comprise a “local theory of dwelling” that explains how a people inhabit a landscape, and how it inhabits them (Feld and Basso 1996). As these narrative performances infuse topography with meaning, abstract and objective space becomes pragmatic and subjective place. Thus when Australian Aborigines speak about totemic ancestors’ journeys in “the Dreaming,” they re-create a cultural landscape, rehearse social identities, and assert land rights (Myers 1991). Strategic struggles

among social actors with differential access to resources and power create “contested spaces.” Examples include protest marches and inheritance disputes, but the concept can be extended to slave plantations, factory shop floors, and even US gated communities (Low 1999: 109ff). In her account of a 1966 contested space in Swaziland, Hilda Kuper develops Turner’s ideas to argue that these spaces operate as condensed symbols within political dramas, summarizing the relationship of colonial states and colonized people (2003). From these perspectives, Rappaport’s description of *Cordyline* as a transducer in a homeostatic socio-ecological system could be re-interpreted as condensed symbol in the ongoing drama of a decentralized political system pulsing with reciprocity and alliance-building, and the Tsembaga stories and rituals around the plant as landscape-forming narratives. Every time that the Tsembaga uproot, plant, or just talk about the *rumbim*, these strategies and narratives re-create place as background potentials intersect with foreground actualities.

The second theme extends this constructionist approach by asking who constructs place, and to what end. Whose agency counts, and to what degree are spatial relations by-products of structural inequality? Two French philosophers set the agenda for this synthesis of space, power, and control. Michel Foucault explored how modern architecture, particularly in forms such as prisons, hospitals, and asylums, produces “docile bodies” that internalize discipline imposed (often, literally) from above (1975: 198). With his metaphor of the Panopticon, a hyper-efficient prison with cells organized around a central watchtower, Foucault argues that modernity is about self-regulation because actors know that they are being watched. Knowledge therefore coexists with power, as everyone going through airport security knows. The most prominent applications of Foucault’s ideas about space have been in the domains of critical urban geography and sociology (Baudrillard 1994; Harvey 2009; Soja 1996), largely on the hidden mechanisms of hegemonic economic and cultural control in modern nation-states. These Foucauldian concepts are applicable to the study of boundary plants in agrarian societies precisely because these plants embody control mechanisms and create disciplined landscapes through a sort of “vegetative gaze.”

The second strand of French thinking about the social production of space comes from Henri Lefebvre (1991). He argues, following Marx, that just as money is abstracted labor, spaces and places (both material and conceptual) are abstracted social relations (Merrifield 2013: 106) that represent the hegemonic interests of the dominant class. For Lefebvre, three interactive elements produce space: representations of space by specialized planners (such as monuments and housing developments), spaces of representation in which everyday life actually occurs (such as bedrooms and graveyards), and spatial practices that provide conventionalized ways of recognizing and organizing space (such as following routes and obeying boundaries). This approach to dominant ideologies, ordinary life, and social practice is similar to Pierre Bourdieu’s sociology, but Lefebvre insists that each mode of economic production has its own mode of spatial production, and that “the shift from one mode to another must entail the production of a new space” (Lefebvre 1991: 46). This is an excellent description of the Enclosure Movement discussed above, through which industrial capitalism remade the British landscape to suit its own needs. In this example, rectilinear hawthorn hedges represented technocratic and legal space, which became the utterly ordinary agricultural spaces of representation for the production of wool, meat, and oats. The spatial practice of maintaining those hedges became increasingly difficult, however, with the advent of monster farm machines. The current English nostalgia for the hedged landscape demonstrates Lefebvre’s contention that socially produced space masks the contradictions of its production (Low and Lawrence-Zúñiga 2003: 30)—so that much of England’s non-farming population prizes hedges for their aesthetic and conservation values, not their history of class struggle.

Lefebvre's primary influence has been on scholars of class-based industrial societies with centralized bureaucratic and corporate institutions. Making his ideas applicable to non-Western rural smallholder farmers involves different axes of social differentiation, particularly relationships of gender, kinship, and status ranking. Among Rappaport's Tsembaga, for example, women never touch the *rumbim* plant (1984: 149). In a strikingly similar way, Moore's Chagga *Dracaena* users are consistently men. These boundary plants represent men's spaces within societies with a gendered division of labor, so that warfare and land management produce gendered places. Given that every social group on the planet is now part of the globalized capitalist world-system, however, we cannot analyze boundary plants' roles in the social production of space solely in the contexts of isolated localities and the ethnographic present (Wolf 1982). Boundary plants were also imbricated in precolonial migrations and colonial empire-building. In Gillian Hart's analysis of South Africa after Apartheid, she argues that socially produced spaces should be seen "not simply as the effects of global flows but rather as constitutive of them" (2002: 294). In Africa and the Caribbean, the fact that boundary plants constituted past "global flows" continues to shape how people turn space into place in these regions. But what characteristics make these particular plants so important for place-making?

Agency and Action: The Plant Turn

To what degree are non-human species social actors, strategic agents, and intelligent thinking and doing beings? How do social science concepts such as agency and personhood change when applied to plants? These thorny issues have united a loose coalition of philosophers, anthropologists, and popular science writers to articulate the vegetative point of view (Myers 2015; Pollan 2001). This "plant turn" is part of a larger project in "multispecies ethnography," which moves beyond human subjectivity to examine other living selves (Kirksey and Helmreich 2010). Plants have a sort of "non-conscious intentionality" and are not passive Others that simply accept sun, chainsaws, and taxonomic designations, and this "epistemophytology" (Marder 2013:106) helps to avoid anthropocentrism. Plants' reproductive strategies show that they "want" to live, and this scholarship explores what that "wanting" might mean.

What unifies the diverse topics of the plant turn is how meaning emerges in plant-people relations. Eduardo Kohn, for example, describes how an Amazonian rainforest "thinks" as a "multispecies assemblage" (2013: 83) that communicates to both people and itself through dynamics of growth and decay. Rather than focusing on the Runa people and their forest as a socio-ecological system, Kohn reveals it to be a semiotic-ecological system, with trophic flows of meaning in addition to nutrients and energy. In a similar vein, Caitlin Berrigan (2014) explores what dandelions (*Taraxacum* sp.) mean, in terms of reciprocity and "microbiopolitics," when she filters her own blood through these plants' life cycle and drinks a tea made from their leaves. John Hartigan (2015) argues that Spanish botanical gardens constitute "multispecies publics" that played a major role in the construction of the modern notion of public space. All of these authors treat plants as having some degree of agency and subjectivity, as their "livelihoods shape and are shaped by political, economic, and cultural forces" (Kirksey and Helmreich 2010: 545). This work is useful for the study of boundary plants because it demands attention to vegetative agency, and how this capacity gets culturally elaborated into institutions and symbols. But does the focus on plants' agency and subjectivity twist these terms into shapes a social scientist can no longer recognize?

The agency of objects is a central concern in Actor Network Theory (ANT), a diffuse network of "material semiotics" scholarship (Law 2009: 142). This sort of empirical post-structuralism developed from Bruno Latour's work on the history of science (2005), and insists that entities only exist as nodes in networks of relationships. There are no objects, only relationships, and

entities such as plants and people only have characteristics resulting from relationships with other entities (Gershon 2010: 163). Latour coined the term “actant” to describe anything with the agency to affect other nodes of its network, which helped explain how Louis Pasteur isolated the agency of anthrax microbes using petri dishes (1988). In ANT, part of what makes particular actants influential and powerful is their material physicality; a dandelion is different from a sequoia. Furthermore, some actants are “privileged” by moving around their networks. Pasteur interacted with French government officials in a way that microbes, sheep, and farmers could not. Boundary plants are actants whose botanical properties bring particular sorts of agency to bear on social institutions. Furthermore, certain material “affordances” such as thorns, toxicity, and growth habit give some plants more aptitude (and, from an ANT perspective, agency) than others to become “entangled” in sticky webs of ecological interdependence and cultural commitment (Hodder 2012).

The social and cultural implications of plants’ botanical characteristics is a classic anthropological theme, as represented by Turner’s analysis of the *mudyi* tree’s milky sap in southern Africa (1967) and Sidney Mintz’s demonstration that the sweetness of *Saccharum officinarum* L. relates to the organization of power in the modern world economy (1985). ANT offers new terms for distinguishing how some plants have more agency and privilege than others. Rice, for example, is a crop that allows farmers to manipulate its genome to suit diverse ecological niches. Kiwi fruit and rooibos tea are far less plastic crops and much more ecologically limited, so they are not nearly as agentive and privileged as rice (Dwiartama and Rosin 2014; Ives 2014). This attention to agency in the plant turn and ANT is particularly useful for the study of boundary plants because they often have botanical affordances that lead to culture-specific ascriptions of agency. In the case studies below, the botanical characteristics of vegetative propagation and drought resistance appear to have been the material foundations of cultural elaboration.

Boundary Plants, Place-Making, and Agency: Three Case Studies

Dracaena in Central-West Africa

I first noticed the significance of *Dracaena* while writing about African sacred groves (Sheridan and Nyamweru 2008). I knew from my fieldwork in North Pare, Tanzania, that the plant was important as a sign of patrilineal land rights, the benevolence of ancestors, and the “coolness” of peace and fertility, but I was stunned to find parallel constellations of polymarcating meaning around the same genus in other parts of Africa (Sheridan 2008). I hypothesized that, throughout Africa’s Iron Age, *Dracaena* spp. was an icon of social and symbolic order on the moving frontier of the Bantu demographic and agricultural expansion in both East and West Africa.² The current uses and significances of *Dracaena* are like footprints of this ancient journey. By mapping the social life of *Dracaena* in Africa, I found two clusters of ethnobotanical complexity in northeastern Tanzania and western Cameroon. In 2014–2015 I began fieldwork on boundary plants in these areas.

Oku is a mountain kingdom north of Bamenda, in the Anglophone part of Cameroon’s Grassfields culture area. Although the remote area’s agricultural economy is based on maize, potatoes, kola nuts, and honey, Cameroonians recognize it as a center for traditional medicine and masquerades (Argenti 2007; Koloss 2000). *Dracaena fragrans* (L.) Ker Gawl. appears throughout Oku (and much of the Grassfields) on property boundaries and during ritual performances. Known as *nkeng*, the plant grows in the witchcraft-preventing *efam* shrine in the middle of most extended family compounds, marks the four corners of footbridges, and lines field perimeters. Mothers wash their babies with a protective concoction of its green leaves and

water, and masked *juju* spirits carry sprigs of *Dracaena* to “keep them peaceful.” The powerful Agha *juju*, who cleanses the land after a member of the royal family dies, wears so many green *Dracaena* leaves that its mask is hidden. Ritual experts in Oku explained that *Dracaena* protects boundaries because its stalks take root easily from cuttings, its leaves stay green and fresh for a long time, and it survives both drought and flood. It contains more freshness, vitality, and life-force than any other plant. Accordingly, it is the ideal tool for directing and manipulating this life-force to bless, to protect, and to create peace and well-being. As the king (*Fon*) of Oku explained, *Dracaena* “keeps the peace in, and forces the bad out.” Because the construction and maintenance of prosperity (in matters of land tenure, politics, and ritual practice) is ultimately an exclusively masculine function of the *Fon*, his palace hierarchy, and patrilineage elders, *Dracaena* is an indispensable tool for a system of governance based on gender and kinship.

In this case, *Dracaena* is a polymarcating boundary plant entangled in a particular cultural construction of personhood and agency. The term *keyoi kejungha*, which I translate as “life-force” from the Oku language, literally means “good breath” and refers to the robust, positive, fertile, vital health, and vigor of all living things (Koloss 2010: 445ff). In ANT terms, *Dracaena* is a privileged actant because it contains and directs this power, and accordingly it lies at the intersections of most, if not all, of the relationships that make up the complex web of farming, healing, and governance in Oku. As a major ethnobotanical center in Cameroon, the Oku landscape and society form a multispecies assemblage suffused with cultural meaning, and these entangled social meanings cohere around the botanical properties of *Dracaena*. Its botanical affordances of plasticity (by vegetative propagation) and robust durability make it a particularly appropriate boundary object for place-making in an agrarian mode of production.

Dracaena in East Africa

On Mt. Kilimanjaro, *Dracaena* anchors Chagga homesteads, gardens of coffee and bananas, and graves as a multivocal symbol. The significance of *Dracaena* (in Kichagga, *masale*) extends far beyond the tenurial matters discussed by Moore (1986). Chagga people plant it around their houses and gardens, and express its significance in an adage stating, “the origins of the Chagga are banana, *Dracaena*, and farms.” For Chagga traditionalists, it marks lineage skull shrines (*mbuonyi*), adorns the first animal of a bridewealth exchange, and protects the doorway of a new mother’s house. It also grows on most Christian graves and in nearly all yards, and is a privileged actant and boundary object in the multispecies assemblages that Chagga call home gardens. Informants explained that these meanings cluster around this plant because it “means peace” and “holds onto life” like no other plant, so that to wish someone good fortune, you say *warefinya che isale* (may you live as long as *Dracaena*). Most importantly, however, it is an active agent, with a kind of personhood. As many Chagga said, *isale inora mesu* (*Dracaena* has eyes), and this vegetative gaze witnesses social arrangements. It sleeps quietly as long as land, society, and morality are all orderly, but if someone violates a physical or metaphysical boundary, this Foucauldian boundary object awakens and disciplines the misdeed with misfortune, illness, or “some other catastrophe!” This is why a single leaf (the third from the center of the inflorescence at the end of a stalk) is a peace-making tool. To seek forgiveness, a Chagga ties the leaf into a knot and hides it in one hand while apologizing—and then slips it suddenly into the aggrieved person’s shirt. The conflict is now “enclosed,” and the peace imposed by the leaf is mandatory—which means that, as Barth suggested, this boundary plant creates connections as much as it divides. Unlike in Oku, however, on Kilimanjaro the respect for and overall complexity of *Dracaena* is now fading and thinning. “It used to be wide, in every part of our lives,” one elder said, “but now it’s narrow and just about property boundaries.” The Chagga narratives I collected

about *masale* all describe a nostalgic longing for a lost socio-ecological system in which landscape, society, and morality were all orderly because of this polymarcating boundary plant.

The concepts developed in the new scholarship on space, place, and vegetative agency can unravel these tangles of meaning and practice by paying attention to the social distribution of power by gender, kinship, and rank and the shifting cultural definition of power itself. In both Oku and Kilimanjaro, men do most boundary-work with *Dracaena* and bring leaves from the “background” perimeter into the “foreground” of ritual practice. Both perceive the plant as particularly efficacious in contested spaces, and their cultural definitions of life relate to *Dracaena*’s potency, and not just its “potentiality” in the landscape. For example, in both areas people strategically wave fronds of *Dracaena* to welcome visiting dignitaries peacefully (and to encourage reciprocations of cash, development projects, and favors). Both are farming societies with a gendered division of agricultural labor and a kin-based distribution of political labor, so that farm boundaries define relations of production and social organization. Both fill this polymarcating boundary plant with culturally-defined agency and subjectivity to watch, to prevent, to regulate, and to protect in ways strikingly similar to Foucault’s Panopticon. And given these ethnobotanical parallels over 3,000 kilometers apart, these socio-ecological systems may represent the entangled effects of ancient “global flows” (Hart 2002) in which *Dracaena* was a strategic tool for constructing agricultural, sociopolitical, and ethnic boundaries. What makes them different is the degree to which their modes of spatial production have shifted recently. On Kilimanjaro, *Dracaena* once marked relations within and between patrilineages, but today it is much more about individuals and property, a sort of “multispecies privatization” in Hartigan’s terms (2015). Although Oku produces cash crops, it is far less integrated into the world-system than Kilimanjaro. This means, following Lefebvre, that capitalist forces determine less of its mode of spatial production, so that Oku’s usage of *Dracaena* as a boundary plant follows a more corporate pattern as a “multispecies public,” which the palace institution represents. Labeling the Oku system as a polymarcating “feudal mode of spatial production” compared to an increasingly monomarcating “peasant mode” on Kilimanjaro would overstate the contrast, but my point is that these people are producing different sorts of places from similar repertoires of culturally constructed plant agency.

Cordyline in the Caribbean

My literature search for *Dracaena* in Africa yielded some references in the African diaspora to the Americas (Sheridan 2008: 505), but fieldwork revealed that sources had misidentified *Cordyline fruticosa* as *Dracaena*. This is unsurprising, since it was only in the 1980s that geneticists resolved a longstanding taxonomical dispute about these plants (Ehrlich 1989; Griffiths 1992: 96, 718). Both genera have the botanical affordances of vegetative propagation, terminal inflorescence, and robustness. A red cultivar of *Cordyline*, ranging from bright pink to purplish maroon depending on light, moisture, and season, is used throughout the Eastern Caribbean on property boundaries, but in St. Vincent this actant is particularly polymarcating and privileged. Vincentians plant the “red dragon” on the corners of houses, gardens, and graves for both tenurial and metaphysical security. It prevents evil spirits (“jumbies”) from afflicting the members of a household, makes a spirit “stick” in its grave, and generally signifies peace and protection. Mothers bathe their babies with water and *Cordyline* leaves to cool a fever and prevent spirits from “playing with the baby.” Several elderly interviewees reported waving stalks of *Cordyline* like flags at St. Vincent’s independence celebrations in 1979.

The most complex ideological expression of this boundary plant is in the Spiritual Baptist Church. *Cordyline* guides members on their spiritual journeys to “Africa-land.” In a vision

questing ritual called “mourning,” churchgoers seclude themselves for seven to nine days of intense prayer, all the while holding a *Cordyline* leaf in their right hands, until they begin a spiritual journey. The “red dragon” leads a traveler to Zion Hill, where she climbs up to the boundary of heaven, marked by a *Cordyline* hedge. There she acquires some skill or knowledge (such as how to do a particular African dance), and then flies back to her body. She carries a bouquet of *Cordyline* and a lit white candle while recounting her journey to the boundary of heaven, and is then entitled to wear a “leaf of the dragon” in her turban-like headtie at all church functions. The agency of *Cordyline* as an actant in the Vincentian network of land use, social organization, and ideas makes it a particularly effective guide in a quest for personal power and agency. *Cordyline* occupies the same three entangled niches (economic, social-political, and ideological) in Vincentian society that *Dracaena* does in tropical Africa. It is, along with breadfruit and plantain, nearly ubiquitous in the island’s landscape. It literally roots the basic facts of land ownership in the landscape, represents appropriate and orderly social relationships, and stands at the boundary of life and death in both cemeteries and at the edge of heaven.

What are we to make of these parallel multispecies assemblages of boundary plant polymarcation? The most challenging aspect of *Cordyline* as a Caribbean boundary plant is that it is not indigenous to the area. It is from Southeast Asia, Melanesia, and Polynesia (where it is commonly known as the Ti plant³), and was introduced to the New World by European explorers and botanists in the late eighteenth century. It appears in the 1806 catalogue for the St. Vincent Botanic Garden as *Dracaena ferrea* (Guilding 1825: 41), and over the course of the nineteenth century *Cordyline* became a popular boundary marker throughout the region on plantations and the “provision grounds” where slaves (and, after 1838, an emergent peasantry) grew food (Brassey 1885: 236; Carney and Rosamoff 2009: 132; Kingsley 1871: 377). In 1917, the use of *Cordyline* was formalized as a legally valid marker in St. Vincent’s Boundary Settlement Act (St. Vincent 1966, vol. III: 2219). This tallies with the oral histories I collected about nineteenth and early twentieth century plantation landscapes, where both perimeters and internal boundaries consisted of *Cordyline*. The pattern that emerges from this patchy evidence is that *Cordyline* was a botanical technology for monomarcating imperial property relations which free smallholders adopted as a polymarcating means of producing place, society, and counterhegemonic subjectivity. Did the nineteenth-century Afro-Vincentians interpret the social and metaphysical meanings of red *Cordyline* in the context of West African green *Dracaena*? As of 1817, St. Vincent had one of the highest proportions of Africa-born slaves in the region, about 39 percent (Young 1993: 46), so it is possible that they applied African meanings to this Oceanic species (much like they did with pan-tropical trees such as the silk cotton tree, *Ceiba pentandra* (L.) Gaertn., Sheller 2007). Other than color, the plants appear similar to a layman’s eyes, with blade-like leaves atop long thin stalks, and both are remarkably hardy plants that take root easily from cuttings (the major physiological difference is that *Dracaena* has roots, whereas *Cordyline* grows from a rhizome). In any case, Vincentians now consider *Cordyline* an emphatically African plant, and this demonstrates the spatial creativity of their hybrid creole culture within an exploitative mode of production on the margins of empire. It may also represent a medium of resistance in the “contested space” of the plantation.

Conclusions

This survey of boundary-related ethnobotany has reviewed some of the classic social science literature on plants and people, delineated core analytical concepts and methods, and described three case studies of polymarcating boundary plants in different agrarian socio-ecological sys-

tems. Boundary plants are a rich topic for environmental social science because these boundary objects sit firmly at the intersections of material and symbolic phenomena and have been fundamental aspects of landscape histories of migration, settlement, colonization, exploitation, resistance, and place-making. These plants show how botanical properties, such as vegetative propagation from cuttings, acquire economic, socio-political, and cultural power and significance. That is, if we take property to be living bundles of rights and relationships rather than dead objects, boundary plants often seem to be the rope that ties these bundles together. They are both parts of the political economy of the global world-system and key aspects of culture-specific historical dynamics. Finally, they offer great potential for enhancing localized land-use systems based on diverse indigenous concepts of space, place, property, and morality as interactive relationships rather than the uniformity of capitalism's model of land as a thing destined only for mortgage and exchange. If boundary plants were more recognized and legitimized by states' legal systems, polymarcating plants could contribute to both land security and cultural distinctiveness for smallholder farmers. Boundary plants are not only "good to think with" because their rootedness connotes permanence and vitality, but also because the way they socially and symbolically demarcate land make them particularly fertile candidates for cultural elaboration. This review of boundary plants' social lives suggests that the ascription of agency to these plants reflects the ways that people conceptualize power and legitimize social organization in different social-ecological systems. Finally, ethnographic attention to these plants' complex social lives redefines the concept of boundaries by demonstrating that the ways they both divide and unify relate to their historical, spatial, and social contexts. The comparative work on boundary plants as key components of socio-ecological systems is just beginning.

■ ACKNOWLEDGMENTS

This project would not have been possible without the assistance of Nshiom Hope Chenwi, Livingstone Mboya, and Chris Harry, and the support of Middlebury College. The manuscript benefitted greatly from the keen editorial eyes of Mez Baker-Médard, Lila Buckley, Svea Closser, Marc Lapin, David Stoll, and several anonymous reviewers.

■ **MICHAEL SHERIDAN**, after building water pipelines as a Peace Corps Volunteer in Kenya, received his PhD in Anthropology and African Studies from Boston University in 2001. He now teaches anthropology at Middlebury College. Much of his work concerns the culture and politics of environmental management in sub-Saharan Africa. In 2014–2015 his work on boundary plants took him to Cameroon, Tanzania, St. Vincent, Papua New Guinea, and French Polynesia.

■ NOTES

1. For an introduction to the field margin ecology of the *bocage* landscapes of northern France, see Burel (1996) and Le Coeur et al. (2002). For comparative work see Baudry et al. (2000).
2. Much of the research on the expansion of Bantu languages, ironworking technology, and agricultural socio-ecological systems from Nigeria and Cameroon has been archaeological, linguistic, and genetic (e.g., de Filippo et al. 2012). When plants figure in this research, they are typically crop plants because some ancient names and uses are preserved in food and farming vocabulary and practices (Schoenbrun 1998).

3. In Oceania, *Cordyline fruticosa* (L.) A. Chev. is a polymarcating boundary plant in domains ranging from property relations to dance costumes. Polynesian navigators carried it, along with taro and breadfruit, to colonize new islands (Hinkle 2007; Whistler 2009: 85).

■ REFERENCES

- Amanor, Kojo. 1994. *The New Frontier*. London: Zed Books.
- Argenti, Nicolas. 2007. *The Intestines of the State*. Chicago: University of Chicago Press.
- Balick, Michael, ed. 2009. *Ethnobotany of Pohnpei*. Honolulu: University of Hawai'i Press.
- Barker, Hugh. 2012. *Hedge Britannia*. London: Bloomsbury.
- Barnes, Gerry, and Tom Williamson. 2006. *Hedgerow History*. Bollington, UK: Windgather.
- Barr, Colin, and Sandrine Petit, eds. 2001. *Hedgerows of the World*. Aberdeen: IALE.
- Barth, Fredrik, ed. 1969. *Ethnic Groups and Boundaries*. Boston: Little, Brown, and Co.
- Barth, Fredrik. 2000. "Boundaries and Connections." Pp. 17–36 in *Signifying Identities*, ed. Anthony Cohen. London: Routledge.
- Baudrillard, Jean. 1994. *Simulacra and Simulation*. Ann Arbor: University of Michigan Press.
- Baudry, Jacques, R. G. H. Bunce, and Françoise Burel. 2000. "Hedgerows: An International Perspective on their Origin, Function and Management." *Journal of Environmental Management* 60, no. 1: 7–22, doi: 10.1006/jema.2000.0358.
- Beckett, J. 1990. *The Agricultural Revolution*. Oxford: Basil Blackwell.
- Berrigan, Caitlin. 2014. "Life Cycle of a Common Weed." Pp. 165–180 in *The Multispecies Salon*, ed. Eben Kirksey. Durham, NC: Duke University Press.
- Berry, Sara. 1993. *No Condition is Permanent*. Madison: University of Wisconsin Press.
- Biersack, Aletta. 2006. "Reimagining Political Ecology: Culture/Power/History/Nature." Pp. 3–42 in *Reimagining Political Ecology*, ed. Aletta Biersack and James Greenberg. Durham, NC: Duke University Press.
- Blaikie, Piers, and Harold Brookfield. 1987. *Land Degradation and Society*. London: Methuen.
- Bloch, Maurice. 1998. "Why Trees, Too, Are Good to Think with: Towards an Anthropology of the Meaning of Life." Pp. 39–55 in *The Social Life of Trees*, ed. Laura Rival. Oxford: Berg.
- Bohannon, Paul. 1963. "Land, 'Tenure,' and Land-tenure." Pp. 101–111 in *African Agrarian Systems*, ed. Daniel Biebuyck. London: Oxford University Press.
- Boserup, Ester. 1965. *The Conditions of Agricultural Growth*. Chicago: Aldine.
- Brassey, Annie. 1885. *In the Trades, the Tropics, and the Roaring Forties*. London: Longman, Green & Co.
- Brokensha, David, Dennis Warren, and Oswald Werner, eds. 1980. *Indigenous Knowledge Systems and Development*. Washington, DC: University Press of America.
- Burel, Françoise. 1996. "Hedgerows and Their Role in Agricultural Landscapes." *Critical Reviews in Plant Sciences* 15, no. 2: 169–190, doi: 10.1080/07352689.1996.10393185.
- Burkhill, H. 1985. *The Useful Plants of West Tropical Africa*, 2nd ed. Kew: Royal Botanic Gardens.
- Carney, Judith, and Richard Rosomoff. 2009. *In the Shadow of Slavery*. Berkeley: University of California Press.
- Chanock, Martin. 1991. "Paradigms, Policies, and Property: A Review of the Customary Law of Land Tenure." Pp. 61–84 in *Law in Colonial Africa*, ed. Kristin Mann and Richard Roberts. Portsmouth, NH: Heinemann.
- Cleaver, Frances. 2000. "Moral Ecological Rationality, Institutions and the Management of Common Property Resources." *Development and Change* 31: 361–383, doi: 10.1111/1467-7660.00158.
- Cohen, Anthony. 1985. *The Symbolic Construction of Community*. London: Routledge.
- Comaroff, John. 1996. "Ethnicity, Nationalism, and the Politics of Difference in an Age of Revolution." Pp. 162–184 in *The Politics of Difference*, ed. Edwin Wilmsen and Patrick McAllister. Chicago: University of Chicago Press.
- Comaroff, John, and Jean Comaroff. 2009. *Ethnicity, Inc.* Chicago: University of Chicago Press.
- Cronin, Mike, and Daryl Adair. 2002. *The Wearing of the Green*. New York: Routledge.

- de Filippo, Cesare, Koen Bostoen, Mark Stoneking, and Brigitte Pakendorf. 2012. "Bringing Together Linguistic and Genetic Evidence to Test the Bantu Expansion." *Proceedings of the Royal Society of London B: Biological Sciences* 279, no. 1741: 3256–3263, doi: 10.1098/rspb.2012.0318.
- de Soto, Hernando. 2000. *The Mystery of Capital*. New York: Basic Books.
- Douglas, Mary. 1966. *Purity and Danger*. London: Routledge and Kegan Paul.
- Dowdeswell, W. 1987. *Hedgerows and Verges*. London: Allen and Unwin.
- Durkheim, Emile. 1915. *The Elementary Forms of the Religious Life*. London: Allen and Unwin.
- Dwiartama, Angga, and Christopher Rosin. 2014. "Exploring Agency beyond Humans: The Compatibility of Actor-Network Theory (ANT) and Resilience Thinking." *Ecology and Society* 19, no. 3: 28, doi: 10.5751/ES-06805-190328.
- Ehrlich, Celia. 1989. "Special Problems in an Ethnobotanical Literature Search: *Cordyline terminalis* (L.) Kunth, the 'Hawaiian Ti Plant.'" *Journal of Ethnobiology* 9, no. 1: 51–63.
- Escobar, Arturo. 1996. "Construction Nature: Elements for a Post-structuralist Political Ecology." *Futures* 28, no. 4: 325–343, doi: 10.1016/0016-3287(96)00011-0.
- Feld, Steven, and Keith Basso. 1996. *Senses of Place*. Santa Fe, NM: School of American Research Press.
- Flynn, Donna. 1997. "'We are the Border': Identity, Exchange, and the State along the Bénin-Nigeria Border." *American Ethnologist* 24, no. 2: 311–330, doi: 10.1525/ae.1997.24.2.311.
- Foucault, Michel. 1979. *Discipline and Punish*. New York: Vintage Books.
- Garson, John, and Charles Read, eds. 1892. *Notes and Queries on Anthropology*. London: Royal Anthropological Institute of Great Britain and Ireland.
- Gershon, Ilana. 2010. "Bruno Latour (1947–)." Pp. 161–176 in *From Agamben to Žižek*, ed. J. Simons. Edinburgh: Edinburgh University Press.
- Gillson, Lindsey, Michael Sheridan, and Dan Brockington. 2003. "Representing Environments in Flux: Case Studies from East Africa." *Area* 35, no. 4: 371–389, doi: 10.1111/j.0004-0894.2003.00188.x.
- Gluckman, Max. 1965. *The Ideas in Barotse Jurisprudence*. New Haven, CT: Yale University Press.
- Griffiths, Mark, ed. 1992. *The New Royal Horticultural Society Dictionary of Gardening*. London: MacMillan.
- Guilding, Lansdown. 1825. *An Account of the Botanic Garden in the Island of St. Vincent from Its Establishment to the Present Time*. Glasgow: Richard Griffin and Co.
- Gupta, Akhil, and James Ferguson, eds. 1997. *Culture, Power, Place*. Durham, NC: Duke University Press.
- Guyer, Jane. 1981. "Household and Community in African Studies." *African Studies Review* 24, nos. 2–3: 87–137.
- Hann, C. 1998. "Introduction: The Embeddedness of Property." Pp. 1–47 in *Property Relations*, ed. C. Hann. Cambridge: Cambridge University Press.
- Hardin, Garrett. 1968. "The Tragedy of the Commons." *Science* 162: 1243–1248, doi: 10.1126/science.162.3859.1243.
- Hart, Gillian. 2002. *Disabling Globalization*. Berkeley: University of California Press.
- Hartigan, John. 2015. "Plant Publics: Multispecies Relating in Spanish Botanical Gardens." *Anthropological Quarterly* 88, no. 2: 481–507, doi: 10.1353/anq.2015.0024.
- Harvey, David. 2009. *Cosmopolitanism and the Geographies of Freedom*. New York: Columbia University Press.
- Hinkle, Anya. 2007. "Population Structure of Pacific *Cordyline fruticosa* (Laxmanniaceae) with Implications for Human Settlement of Polynesia." *American Journal of Botany* 94, no. 5: 828–839, doi: 10.2307/27733245.
- Hirsch, Eric. 1995. "Landscape: Between Place and Space." Pp. 1–30 in *The Anthropology of Landscape*, ed. Eric Hirsch and Michael O'Hanlon. Oxford: Clarendon Press.
- Hodder, Ian. 2012. *Entangled*. West Sussex: Wiley-Blackwell.
- Home, Robert, and Hilary Lim, eds. 2004. *Demystifying the Mystery of Capital*. London: Cavendish Publishing Ltd.
- Ives, Sarah. 2014. "Uprooting 'Indigeneity' in South Africa's Western Cape: The Plant that Moves." *American Anthropologist* 116, no. 2: 310–323, doi: 10.1111/aman.12096.

- Juul, Kristine, and Christian Lund, eds. 2002. *Negotiating Property in Africa*. Portsmouth, NH: Heinemann.
- Kennedy, Geoff. 2008. *Diggers, Levellers, and Agrarian Capitalism*. Lanham, MD: Lexington Books.
- Kenyatta, Jomo. 1965. *Facing Mt. Kenya*. New York: Vintage Books.
- Kingsley, Charles. 1871. *At Last*. London: Harper and Bros.
- Kirksey, Eben, and Stefan Helmreich. 2010. "The Emergence of Multispecies Ethnography." *Cultural Anthropology* 25, no. 4: 545–576, doi: 10.1111/j.1548-1360.2010.01069.x.
- Kohn, Eduardo. 2013. *How Forests Think*. Berkeley: University of California Press.
- Koloss, Hans-Joachim. 2000. *World-view and Society in Oku (Cameroon)*. Berlin: Dietrich Reimer.
- Kuper, Hilda. 2003. "The Language of Sites in the Politics of Space." Pp. 247–263 in *The Anthropology of Space and Place*, ed. Setha Low and Denise Lawrence-Zúñiga. Malden: Blackwell.
- Lamont, Michèle, and Virág Molnár. 2002. "The Study of Boundaries in the Social Sciences." *Annual Review of Sociology* 28, no. 1: 167–195, doi: 10.1146/annurev.soc.28.110601.141107.
- Latour, Bruno. 1988. *The Pasteurization of France*. Cambridge, MA: Harvard University Press.
- Latour, Bruno. 2005. *Reassembling the Social: An Introduction to Actor Network Theory*. Oxford: Oxford University Press.
- Law, John. 2009. "Actor Network Theory and Material Semiotics." Pp. 141–158 in *The New Blackwell Companion to Social Theory*, ed. B. Turner. West Sussex, UK: Wiley-Blackwell.
- Le Cœur, Didier, Jacques Baudry, Françoise Burel, and Claudine Thenail. 2002. "Why and How We Should Study Field Boundary Biodiversity in an Agrarian Landscape Context." *Agriculture, Ecosystems & Environment* 89, nos. 1–2: 23–40, doi: 10.1016/S0167-8809(01)00316-4.
- Leach, Melissa, Robin Mearns, and Ian Scoones. 1999. "Environmental Entitlements: Dynamics and Institutions in CBRNM." *World Development* 27, no. 2: 225–247, doi: 10.1016/S0305-750X(98)00141-7.
- Lefebvre, Henri. 1991. *The Production of Space*. Cambridge, MA: Blackwell.
- Lewellen, Ted. 2002. *The Anthropology of Globalization*. Westport, CT: Bergin and Garvey.
- Lipuma, Edward. 1988. *The Gift of Kinship*. Cambridge: Cambridge University Press.
- Low, Setha, ed. 1999. *Theorizing the City*. New Brunswick, NJ: Rutgers University Press.
- Low, Setha, and Denise Lawrence-Zúñiga. 2003. "Locating Culture." Pp. 1–47 in *The Anthropology of Space and Place*, ed. Setha Low and Denise Lawrence-Zúñiga. Malden: Blackwell.
- Malinowski, Bronislaw. 1922. *Argonauts of the Western Pacific*. New York: E.P. Dutton.
- Malinowski, Bronislaw. [1935] 2013. *Coral Gardens and Their Magic*. Hoboken, NJ: Taylor and Francis.
- Mamdani, Mahmood. 1996. *Citizen and Subject*. Princeton, NJ: Princeton University Press.
- Marder, Michael. 2013. *Plant-Thinking*. New York: Columbia University Press.
- Marshall, E., and A. Moonen. 2002. "Field Margins in Northern Europe: Their Functions and Interactions with Agriculture." *Agriculture, Ecosystems and Environment* 89, nos. 1–2: 5–21, doi: 10.1016/S0167-8809(01)00315-2.
- Marx, Karl. [1867] 1915. *Capital, vol. 1*. Chicago: Charles H. Kerr and Company.
- McCay, Bonnie, and James Acheson, eds. 1987. *The Question of the Commons*. Tucson: University of Arizona Press.
- Merrifield, Andrew. 2013. *Henri Lefebvre*. Hoboken, NJ: Taylor and Francis.
- Mintz, Sidney. 1985. *Sweetness and Power*. New York: Viking.
- Moore, Donald. 1993. "Contesting Terrain in Zimbabwe's Eastern Highlands: Political Ecology, Ethnography, and Peasant Resource Struggles." *Economic Geography* 69, no. 4: 380–401, doi: 10.2307/143596.
- Moore, Sally Falk. 1986. *Social Facts and Fabrications*. Cambridge: Cambridge University Press.
- Morgan, Lewis Henry. 1878. *Ancient Society*. New York: Henry Holt and Company.
- Myers, Fred. 1991. *Pintupi Country, Pintupi Self*. Berkeley: University of California Press.
- Myers, Natasha. 2015. "Conversations on Plant Sensing: Notes from the Field." *NatureCulture* 1, no. 3: 35–66.
- Neeson, J. 1993. *Commoners*. Cambridge: Cambridge University Press.
- Newman, David. 2003. "On Borders and Power: A Theoretical Framework." *Journal of Borderlands Studies* 18, no. 1: 13–25, doi: 10.1080/08865655.2003.9695598.

- Oreszczyn, S., and A. Lane. 2000. "The Meaning of Hedgerows in the English Landscape: Different Stakeholder Perspectives and the Implications for Future Hedge Management." *Journal of Environmental Management* 60, no. 1: 101–118, doi: 10.1006/jema.2000.0365.
- Ostrom, Elinor. 1990. *Governing the Commons*. Cambridge: Cambridge University Press.
- Paulson, Susan, and Lisa Gezon, eds. 2005. *Political Ecology across Spaces, Scales, and Social Groups*. New Brunswick, NJ: Rutgers University Press.
- Peters, Pauline. 2009. "Challenges in Land Tenure and Land Reform in Africa: Anthropological Contributions." *World Development* 37, no. 8: 1317–1325, doi: 10.1016/j.worlddev.2008.08.021.
- Platteau, Jean-Philippe. 1996. "The Evolutionary Theory of Land Rights as Applied to Sub-Saharan Africa: A Critical Assessment." *Development and Change* 27, no. 1: 29–86, doi: 10.1111/j.1467-7660.1996.tb00578.x.
- Pollan, Michael. 2001. *The Botany of Desire*. New York: Random House.
- Pollard, Ernest, D. Hooper, and N. Moore. 1977. *Hedges*. London: Collins.
- Rackham, Oliver. 1986. *The History of the Countryside*. London: J. M. Dent.
- Rappaport, Roy. 1984. *Pigs for the Ancestors*, 2nd ed. New Haven, CT: Yale University Press.
- Reed-Danahay, Deborah. 2015. "Social Space: Distance, Proximity, and Thresholds of Affinity." Pp. 69–96 in *Thinking Through Sociality*, ed. Vered Amit. New York and Oxford: Berghahn Books.
- Robertson, A. 1984. *People and the State*. Cambridge: Cambridge University Press.
- Ross, Eric. 1998. *The Malthus Factor*. London: Zed Books.
- Schoenbrun, David. 1998. *A Green Place, a Good Place*. Portsmouth, NH: Heinemann.
- Sheller, Mimi. 2007. "Arboreal Landscapes of Power and Resistance." Pp. 207–218 in *Caribbean Land and Development Revisited*, ed. Jean Besson and Janet Momsen. New York: Palgrave Macmillan.
- Sheridan, Michael. 2008. "Tanzanian Ritual Perimetrics and African Landscapes: The Case of *Dracaena*." *International Journal of African Historical Studies* 41, no. 3: 491–521.
- Sheridan, Michael, and Celia Nyamweru, eds. 2008. *African Sacred Groves*. Oxford: James Currey.
- Shipton, Parker. 1994. "Land and Culture in Tropical Africa: Soils, Symbols, and the Metaphysics of the Mundane." *Annual Review of Anthropology* 23: 347–377, doi: 10.1146/annurev.an.23.100194.002023.
- Silber, Ilana. 1995. "Space, Fields, Boundaries: The Rise of Spatial Metaphors in Contemporary Sociological Theory." *Social Research* 62, no. 2: 323–355.
- Soja, Edward. 1996. *Thirdspace*. Cambridge, MA: Blackwell.
- St. Vincent. 1966. *Laws of St. Vincent*. Kingstown: Government Printer.
- Stone, Glenn. 1994. "Agricultural Intensification and Perimetrics: Ethnoarchaeological Evidence from Nigeria." *Current Anthropology* 35, no. 3: 317–324.
- Strathern, Andrew, and Pamela Stewart. 2001. "Rappaport's Maring: The Challenge of Ethnography." Pp. 277–290 in *Ecology and the Sacred*, ed. Ellen Messer and Michael Lambek. Ann Arbor: University of Michigan Press.
- Swanson, Tod. 2009. "Singing to Estranged Lovers: Runa Relations to Plants in the Ecuadorian Amazon." *Journal for the Study of Religion, Nature and Culture* 3, no. 1: 36–65, doi: 10.1558/jsrnc.v3i1.36.
- Thompson, James, Jens Gebauer and Andreas Buerkert. 2010. "Fences in Urban and Peri-urban Gardens of Khartoum, Sudan." *Forests, Trees and Livelihoods* 19, no. 4: 379–391, doi: 10.1080/14728028.2010.9752679.
- Turner, Victor. 1967. *The Forest of Symbols*. Ithaca, NY: Cornell University Press.
- Turner, Victor. 1977. "Process, System, and Symbol: A New Anthropological Synthesis." *Daedalus* 106: 61–80.
- Walker, Peter, and Pauline Peters. 2001. "Maps, Metaphors, and Meanings: Boundary Struggles and Village Forest Use on Private and State Land in Malawi." *Society and Natural Resources* 14, no. 5: 411–424, doi: 10.1080/08941920119750.
- Warf, Barney, and Santa Arias, eds. 2009. *The Spatial Turn*. New York: Routledge.
- West, Paige. 2006. *Conservation is Our Government Now*. Durham, NC: Duke University Press.
- Whistler, Arthur. 2009. *Plants of the Canoe People*. Kaua'i, HI: National Tropical Botanical Garden.

- Widgren, Mats. 2012. "Resilience Thinking versus Political Ecology: Understanding the Dynamics of Small-scale Labour-intensive Farming Landscapes." Pp. 95–110 in *Resilience and the Cultural Landscape*, ed. Tobias Plieninger and Claudia Bieling. Cambridge: Cambridge University Press.
- Wimmer, Andreas. 2008. "The Making and Unmaking of Ethnic Boundaries: A Multilevel Process Theory." *American Journal of Sociology* 113, no. 4: 970–1022, doi: 10.1086/522803.
- Wolf, Eric. 1982. *Europe and the People without History*. Berkeley: University of California Press.
- Young, Virginia. 1993. *Becoming West Indian*. Washington, DC: Smithsonian Institution Press.
- Zane, Wallace. 1999. *Journeys to the Spiritual Lands*. Oxford: Oxford University Press.
- Zuria, Iriana, and Edward Gates. 2006. "Vegetated Field Margins in Mexico: Their History, Structure and Function, and Management." *Human Ecology* 34, no. 1: 53–77, doi: 10.1007/s10745-005-9002-0.