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The Aliens Have Landed!

Reflections on the Rhetoric of Biological Invasions

BANU SUBRAMANIAM

Two years ago in a special issue on *Biological Invaders* in the prestigious journal *Science*, an article begins as follows:

One spring morning in 1995, ecologist Jayne Belnap walked into a dry grassland in Canyonlands National Park, Utah, an area that she has been studying for more than 15 years. "I literally stopped and went, 'Oh my God!' she recalls. The natural grassland—with needle grass, Indian rice grass, saltbush, and the occasional pinyon-juniper tree—that Belnap had seen the year before no longer existed; it had become overgrown with 2-foot-high Eurasian cheatgrass. "I was stunned," says Belnap, "It was like the aliens had landed." (Enserink 1999)

One of the ironies in the world today is that in this era of globalization, there is a renewed call for the importance of the "local" and the protection of the indigenous. With the increased permeability of nations and their borders,¹ and the increased consumption and celebration of our common natures and cultures, we begin to obsess about our different natures and cultures with a fervent nationalism, stressing the need to close our borders to those "outsiders." The anxieties around the free movement of capital, commodities, entertainment, and the copious consumption of natural and cultural products have reached fever pitch. In the realm of culture and the economy,² nationalisms, fundamentalisms,³ WTO protests, censorship of "foreign" influences, calls for the preservation of national cultures abound.⁴ In the realm of nature, there is increasing attention to the destruction of forests, conservation, preservation of native forests and lands, the commodification of organisms, and concern over the invasion and destruction of native habitats through alien plant

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and animal invasions.⁵ “Development” is one area⁶ in which both the natural and cultural worlds implode.⁷ At the heart of the critiques is the fundamental question of what we mean by nature and culture. Who gets to define it? Are nature and culture static and unchanging entities? If nature and natural processes shift and change over time, as most biologists believe, how do we characterize and accommodate these evolutions?

Over the last two decades, feminist and postcolonial critics of science have elaborated the relationship between our conceptions of nature and their changing political, economic and cultural contexts. Nature and culture, they have argued, are co-constituted, simultaneously semiotic as well as material. Through Haraway’s “material-semiotic worlds,” (Haraway 1997) can emerge a history of “naturecultures,” (Goodeve 1999) tracing and elaborating the inextricable interconnections between natures and cultures.

Nowhere is this more apparent than in the growing panic about alien and exotic plants and animals. Newspaper articles, magazines, journals, and web sites have all sprung up, demanding urgent action to stem the rise of exotic flora and fauna. For anyone who is an immigrant or is familiar with the immigration process, the rhetoric is unmistakable. First consider the terminology: A species that enters the country for the first time is called an “alien” or an “exotic” species; after an unspecified passage of time they are considered residents; after a greater unspecified passage of time they are considered naturalized species (Earthwatch 1996).

As Nancy Tomes argues, our anxieties about social incorporation (associated with expanding markets, increasingly permeable borders and boundaries, growing affordability of travel, and mass immigration) have historically spilled into our conceptions of nature. For example, she documents how our panic about germs has historically coincided with periods of heavy immigration to the United States, of groups perceived as “alien” and difficult to assimilate. She documents these germ panics in the early twentieth century in response to the new immigration from eastern and southern Europe and in the late twentieth century to the new immigration from Asia, Africa and Latin America. “Fear of racial impurities and suspicions of immigrant hygiene practices are common elements of both periods,” she writes. “These fears heightened the germ panic by the greater ease and frequency with which immigrants travel back and forth between their old, presumably disease ridden countries and their new, germ obsessed American homeland” (Tomes 2000).

I will argue in this paper that the recent hyperbole about alien species is similar to the germ panics and is in response to changing racial, economic, and gender norms in the country. The globalization of markets and the real and perceived lack of local control feed nationalist discourse.⁸ Despite the supposed low unemployment rates and a great economy, the search of companies for cheap labor abroad, and the easing of immigration into the country have increasingly been perceived as threats to local employment. These shifts continue to be interpreted by some elements of both the right and the left as a problem of immigration. Immigrants and foreigners, the product of the “global,” are perceived to be one of the reasons for the problems in the “local.” These shifts and trends are evident in the national rhetoric surrounding alien and exotic plants and animals.

They Came, They Bred, They Conquered⁹

Newspapers and magazines introduce the topic of biological invasions with the sound of alarm. Consider some of the titles:

Alien Invasion: They're green, they're mean, and they may be taking over a park or preserve near you (Cheater 1992); Aliens Reeking Havoc; The Invasion of the Woodland Soil Snatchers (Stewart 2001); Native species invaded (ABC News 1998); Bio-invasions spark concerns (CQ Researcher 2000); It's a Cancer (Verrengia 1999a);¹⁰ Creepy strangler climbs Oregon's least-wanted list (Brinckman 2001); Biological Invaders Threaten U.S. Ecology (McDonald 1999); U.S. can't handle today's tide of immigrants (Yeh 1995); Alien Threat (Bright 1998); Biological Invaders Sweep In (Enserink 1999); Stemming the tide of invading species (Kaiser 1999); Congress Threatens Wild Immigrants (Weiner 1996); Invasive Species: Pathogens of Globalization. (Bright 1999)

The majority of these titles do not specify that the article is about plants and animals but rather present a more generalized classic fear of the outsider, the alien that is here to take over the country. An opening line of an article reads: “The survey is not even halfway done, yet it has already revealed a disturbing trend: immigrants are forcing old-timers out of their homes” (Stewart 2001). Invaders are reported to be “racing out of control” causing “an explosion in slow motion” (Hebert 1998). Aliens,

they claim, are redrawing the global landscape in ways no one imagined. Exotic plants, they argue, are irreversibly altering waterways and farmlands. The “irreversibility” is highlighted as a way to stress the sharp departure from the past—a vision of how we are moving from a peaceful, co-evolved nature in perfect harmony and balance to an uncertain future with alien and exotic plants and animals. They argue that we cannot re-capture the glorious past or our nostalgia for a pure and uncontaminated nature in harmony and balance if we do not act now to stem the tide of outsiders.

The parallels in the rhetoric surrounding foreign plants and those of foreign peoples are striking. Like the earlier germ panic surrounding immigration and immigrants, questions of hygiene and disease haunt exotic plants and animals. Similar to the unhygienic immigrants, alien plants are accused of “crowd(ing) out native plants and animals, spread(ing) disease, damag(ing) crops, and threaten(ing) drinking water supplies” (Verrengia 1999a). The xenophobic rhetoric that surrounds immigrants is extended to plants and animals.

The first parallel is that aliens are “other.” One *Wall Street Journal* article quotes a biologist’s first encounter with an Asian eel, “The minute I saw it, I knew it wasn’t from here,” he said (Robichaux 2000). Second is the idea that aliens/exotic plants are everywhere, taking over everything: “They’re in national parks and monuments. In wildlife refuges and coastal marine sanctuaries. In wilderness areas that were intended to remain living dioramas of our American paradise lost” (Verrengia 1999). “Today, invasive aliens afflict almost every habitat in the country, from farms and pastures to forests and wetlands—and as every homeowner knows, gardens, flower beds and lawns” (Cheater 1992, 25).

The third parallel is the suggestion that they are silently growing in strength and number. So even if you haven’t noticed it, be warned about the alien invasion. If you haven’t heard about biological invasions, it is because, “invasion of alien plants into natural areas has been stealthy and silent, and thus largely ignored.” E. O. Wilson states “alien species are the stealth destroyers of the American environment” (McDonald 1999). Articles remind us that alien plants are “evil beauties”—that while they may appear to look harmless and even beautiful, they are evil because they destroy native plants and habitats (Cheater 1992).

The fourth parallel is that aliens are difficult to destroy and will persist because they can withstand extreme situations. In an article on the invasion of the Asian eel in Florida:

The eel's most alarming trait, though, is its uncanny ability to survive extreme conditions. In one study by a Harvard zoologist, an Asian swamp eel lived seven months in a damp towel without food or water. The olive-brown creature prefers tropical waters, yet it can flourish in subzero temperatures. It prefers fresh water but can tolerate high salinity. It breathes under water like a fish, but can slither across dry land, sometimes in packs of 50 or more, sucking air through a two-holed snout. Even more of a riddle is how to kill the eel: It thus far appears almost immune to poisons and dynamite. (Robichaux 2000, A.12)

The fifth parallel is that aliens are "aggressive predators and pests and are prolific in nature, reproducing rapidly" (Verrengia 1999b). This rhetoric of uncontrollable fertility and reproduction is another hallmark of human immigrants. Repeatedly, alien plants are characterized as aggressive, uncontrollable, prolific, invasive and expanding. One article summarized it as "They Came, They Bred, They Conquered" (Bright 1999). Alien species are characterized as destroyers of everything around. A park warden is quoted as saying, "To me, the nutria (swamp rats) are no different than somebody taking a bulldozer to the marsh" (Verrengia 1999b).

Sixth, once these plants gain a foothold, they never look back (Cheater 1992). Singularly motivated to take over native land, articles imply that they have become disconnected to their homelands and will never return and are, therefore, "here to stay." Finally, like human immigrants, the greatest focus is on their economic costs because it is believed that they consume resources and return nothing. "Exotic species are a parasite on the U.S. economy, sapping an estimated \$138 billion annually, nearly twice the annual state budget of NY, or a third more than Bill Gates' personal fortune" (Verrengia 1999a).

Not only are aliens invading rural and natural habitats, they are also endangering the cities. "Cities invaded" articles cry. From historical sites to urban hardwoods, alien bugs are reported to be causing millions of dollars worth of damage (Verrengia 1999a). "Just as human immigrants may find more opportunities in an already overcrowded city than in a small town, invasive plants take advantage of the constant turnover and jockeying for position that characterizes species-rich ecological communities. The classical dictum that 'diversity begets stability,' Stohlgren says, is simply not true in some ecosystems. Communities with high

diversity tend to be in constant flux, creating openings for invasives. From a conservation perspective, the results of these multi-site, multi-scale studies are disturbing. The invasions may threaten some of the last strongholds of certain biologically rich habitats, such as tall-grass prairie, aspen woodlands, and moist riparian zones.” (USGS News Release 1999)

The Oversexed Female

One of the classic metaphors surrounding immigrants is the oversexualized female. Foreign women are typically associated with superfertility—reproduction gone amuck. Such a view suggests that the consumption of economic resources by invaders today will only multiply in future generations through rampant over-breeding and overpopulation. Consider this:

Canada thistle is a classic invasive. One flowering stem can produce as many as 40,000 seeds, which can lie in the ground for as long as 20 years and still germinate. And once the plant starts to grow, it doesn’t stop. Through an extensive system of horizontal roots, a thistle plant can expand as much as 20 feet in one season. Plowing up the weed is no help; indeed, it exacerbates the problem; even root fragments less than an inch long can produce new stems. The challenge posed by thistle is heightened because, like other troublesome aliens, it has few enemies. (Cheater 1992, 29)

Along with the superfertility of exotic/alien plants is the fear of miscegenation. There is much concern about the ability of exotic plants to cross-fertilize and cross contaminate native plants and produce hybrids. Native females are, of course, in this story passive helpless victims of the sexual proclivity of foreign/exotic males.

Responding to Alien Species

Journalists and scientists borrow the images of illegal immigrants arriving in the country by means of difficult, sometimes stealthy journeys, when they describe the entry of exotic plants and animals. Alien plant and animal movements are described with the same metaphors of illegal,

unwelcome and unlawful entry. For example: “Exotic species—from non-native fish to various plants, bugs and shellfish—have found their way into the country in numerous ways, such as clinging to ships, burrowing into wooden shipping crates, in food, aboard aircraft or in water discharged from foreign freighters” (Hebert 1999) (*italics mine*).

So how do we respond to these unlawful and stealthy entrants? Paralleling images of armed guards patrolling borders, the nation responds in kind to plants and animals.

“The alien species invasion—Interior Secretary Bruce Babbitt of the Clinton Administration calls it an ‘explosion in slow motion’—is turning even staunch conservationists into stone killers” (Verrengia 1999a). Like immigration and the drug problems, we need to “fight” and wage wars against exotic/alien plants and animals. In 1999, President Clinton signed an executive order creating the National Invasive Species Management Plan directing federal agencies to “mobilize the federal government to defend against these aggressive predators and pests” (Hebert 1999). Thus the “Feds” were called on to “fight the invaders,” and defend the nation against the “growing threat from non-native species” (Hebert 1999). It is implied that the situation is so dire and the number of invaders so great that even the most humane individuals cannot help but turn into killers (conservationists) in order to respond to the violations of alien species that are just not “welcome” into the country (Verrengia 1999b).

One magazine published an article titled “When Ecologists Become Killers,” allegedly transforming life-lovers into “killer conservationists” (Verrengia 1999a). Like the human immigration problem, the resources are scant and the strategies often futile. “Two dozen federal agencies have stitched together a crazy quilt of detection and eradication efforts with state and local authorities. But much of the effort is aimed at ports, borders and threats to crops. There is little left over to combat emergencies” (Verrengia 1999a).

A recent review sponsored by the Ecological Society of America published in *Issues of Ecology* (Mack et al. 2000, 12) concludes that the current strategy of denying entry only to species already proven noxious or detrimental should change. Instead of an “innocent until proven guilty,” we should instead adopt a “guilty until proven innocent.” This strategy is further racialized when a biologist rephrases this by suggesting that we ought to replace our current system of “blacklisting” imported species (where a species must be proved to be harmful before it is banned) with a “whitelist” (where species must be proved to be safe before entry) (Todd

2001).¹¹ Thus, exotic and alien plants are marked as guilty, foreign, and black and, therefore, kept out purely by some notions of the virtue of their identity.

Natives

What is tragic in all this is of course the impact on the poor natives. “Native species invaded,” (ABC News 1998) “Paradise Lost,” (Verrengia 1999b) and “Keeping Paradise Safe for the Natives” (Stone 1999) are the repeated cries. Native species are presented as hapless victims who are outcompeted and outmaneuvered by exotic plants. Very often, exotic plants are credited with (and by implication, native species are denied) basic physiological functions such as reproduction, and the capacity to adapt. For example, “When an exotic species establishes a beachhead, it can proliferate over time and spread to new areas. It can also adapt—it tends to get better and better at exploiting an area’s resources, and at suppressing native species” (Bright 2000).

Invaders, Interior Secretary Bruce Babbitt says, “are racing out of control as the nonnative species in many cases overpower native species and alter regional ecosystems” (Hebert 1999). Experts warn of the growing invasion of foreigners into the nation’s aquatic systems, threatening native species, waterways and ecology. Not only do they crowd out native plants and animals, but they also endanger food production through the spread of disease, and damage to crops, and they affect humans through threatening drinking water supplies. Consider this:

English ivy joins 99 plants on a state list of botanical miscreants that includes Himalayan blackberry, Scotch thistle and poison hemlock. With dark green leaves and an aristocratic heritage, however, it looks like anything but a menace.

Don’t be fooled.

The creeper loves Oregon, where it has no natural enemies.

It needs little sunlight. It loves mild, wet climates.

Robust and inspired, English ivy jumps garden borders, spreading across forest floors, smothering and killing ferns, shrubs and other plants that support elaborate ecosystems and provide feeding opportunities for wildlife. Insatiable, English ivy then climbs and wraps trees, choking off light and air. (Brinckman 2001, A. 14)

Articles invariably end with a nostalgic lament to the destruction of native forests, and the loss of nature when it was pure, untainted, and untouched by the onslaught of foreign invasions. At the end of one article, a resident deplores the dire situation, "I grew up on the black-water," he declares, "and I'm watching it disappear, it's really sad." And the article concludes, "Spoken like a true native" (Verrengia 1999b).

The Rhetoric of Biological Invasions

In this essay I have traced the striking similarities in the qualities ascribed to foreign plants and animals and people. The xenophobic rhetoric is unmistakable. The point of my analysis is not to suggest that we are not losing native species, nor that we should allow plants and animals to flow freely across habitats in the name of modernity or globalization. Instead it is to suggest that we are living in a cultural moment where the anxieties of globalization are feeding nationalisms through xenophobia. The battle against exotic and alien plants is a symptom of a campaign that misplaces and displaces anxieties about economic, social, political, and cultural changes onto outsiders and foreigners.

In his article "Natives and Nativism," Jonah Parette persuasively argues that the language of exotic/alien plant and animal "invasions" reflects a pervasive nativism in conservation biology making environmentalists biased against alien species (Parette 1998). Nativism strongly grounds most of the literature against biological invasions. For example, the final chapter of one of the many recent books on the topic is entitled "Going Local: Personal Actions for a Native Planet." Such rhetoric conjures up a vision where everything is in its "rightful" place in the world and where everyone is a "native" (Van Driesche and Van Driesche 2000).

The "natives," however, are, of course, the white settlers who reached the Americas to displace the original natives, to become its new, true natives. In this chapter it is the white settlers that come to be the "local" and the "native." The chapter includes many suggestions for how ordinary citizens can help towards a quest for a native planet by eliminating the exotics—from drawing public attention to the issue of exotics by writing op-ed pieces on biological invasions to the local newspaper, pressuring local conservation groups to take up this important yet unpublicized issue, to planting native plants in one's gardens.

I want to be clear that I am not without sympathy or concern about the destruction of habitats, which is alarming. Indeed, we need to publicize and spread awareness about the destruction of species and habitats. However, in their zeal to draw attention to the loss of habitats, some journalists and scientists feed on the xenophobia rampant in a changing world. They focus less on the degradation of habitats and more on alien/exotic plants and animals as the main and even sole problem. In contrast to humans, where the politics of class and race are essential, thriving on the fear of not all immigrants, but immigrants from particular places and of particular classes, the language of biological invasions renders all outsiders (Devine 1999), even the familiar albeit non-local, into the undesirable alien.¹² Conservation of habitats and our flora and fauna need not come at the expense of immigrants.

Instead, let us consider exotic/alien species in their diversities. Mark Sagoff points out that the broad generalizations of exotic/alien plants obscures the heterogeneity of the life histories, ecologies, and contributions of native and exotic plants (Sagoff 2000). For example, he points out that nearly all the U.S. crops are exotic plants while most of the insects that cause crop damage are native species. It seems to me the height of irony that alongside a national campaign in the United States to keep out all exotic/alien plants in order to preserve the purity and sanctity of native habitats, there is simultaneously another campaign that promotes the widespread use of technologically bred, genetically modified organisms for agricultural purposes.¹³ In these cases, the ecological dangers of growing genetically modified crops in large fields are presented as minimal. Concerns of cross-fertilization with native and wild plants for which there is little empirical evidence are dismissed as anti-science/anti-technology. Ultimately, it would seem that it is a matter of control, discipline, and capital. As long as exotic/alien plants know their rightful place as workers, laborers, and providers, and controlled commodities, their positions manipulated and controlled by the natives, their presence is tolerated. Once they are accused of unruly practices that prevent them from staying in their subservient place, they threaten the natural order of things.¹⁴

What is most disturbing about displacing anxieties attending contemporary politics onto alien/exotic plants is that other potential loci of problems are obscured. For example, some scholars point to the fact that exotic/alien plants are most often found on disturbed sites (Mack et al.

2000). Perhaps the increase in exotic/alien plants is less about their arrival and more about the shifts in the quality of natural habitats through the process of development that allow their establishment. When habitats are degraded by humans, the change causes a shift in the selection pressures on plants at those sites. A displacement of the problem on the intrinsic “qualities” of exotic/alien plants and not on their degraded habitats may produce misguided management policies. Rather than preserving land and checking development, we instead put resources into policing boundaries and borders and blaming foreign and alien plants for an ever-increasing problem. Unchecked development, weak environmental controls, and the free flow of plants and animals across nations all serve certain economic interests in contemporary globalization. Displacement of blame onto foreigners does not solve the problem of the extinction of species and the degradation of habitats.

More central to issues of native/exotic plants are questions of what gets to be called a “native” species. Given that the majority of U.S. Americans are immigrants themselves, the re-invention of the “native” as the white settlers and not “Native Americans” is striking. The systematic marginalization and disenfranchisement of “Native Americans” makes the irony all the more poignant. In Southern California where my project is based, questions of what are deemed native and exotic are deeply fraught. How do we develop dynamic models of “nature,” which do not need to be artificially managed to remain the same year after year? How do we understand the human species as part of nature, in all its shifts and evolutions? These important questions can guide biologists in the development of experimental research. Is it possible to characterize exotic/native plants? Do they all share common life history parameters and ecological traits? How heterogeneous and diverse are the species within those categories? How static and co-evolved are native communities? What is the relationship of plants and their soil communities and what impact do exotic plants have on them? Do they destroy and degrade these communities? As ecologists, we can test these theories, intervene and participate in the national conversation not only on exotic plants, but also on immigration and race relations.

As feminists, we must intervene in the global circulations of science. Feminist and postcolonial critics of science have shown us repeatedly how larger political, economic and cultural factors inform and shape scientific questions, answers, practices and rhetoric. While I have largely

focused on science that has reached and been popularized in mainstream culture, the scientific community is much more heterogeneous.¹⁵ There is a long tradition of dissent and alternative views in most scientific fields. Many ecologists and conservation biologists have developed alternate models and disagree sharply with the dominant framework of conservation biology.¹⁶ Feminists in the humanities and social sciences can and must build alliances with progressive scientists in the natural and physical sciences. Further, women's studies programs must make it a goal to produce a scientifically and technologically proficient group of students and faculty who are not relegated only to the role of "critics" (important though this is) but are also members of the scientific enterprise, producing knowledge about the natural world, a world that is deeply embedded in its social and cultural histories. Studying "naturecultures" means being cognizant of how science is embedded in these cultural contexts. Just as science does not mirror nature, we must not reduce science to mirroring politics either—right or left. Living in naturecultures means developing a self-reflexivity, continually wrestling with the interconnections of natures and cultures, politics and science, the humanities and the sciences, and feminisms and science.

NOTES

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1. Connections between the body as fortress and nation as fortress, the body and nation in late capitalism, can be seen in Emily Martin (1997). For thinking about the persistence of national states in an age of globalization, see Comaroff and Comaroff (2000).
2. For provocative thoughts about the production of ethnicity and civil society/nation, botanical taxonomies, immigration policies in the U.S., see Moallem and Boal (1999).
3. For some recent work on ethnocentrism and nationalism produced as a certain politics, see Paola Bachetta's article on xenophobia and the Hindu right in India (1999).
4. For national cultures, cultures, and questions of cultural nationalism, see Sahlins (2000). For cultural nationalism and new modes of citizenship, see Aihwa Ong (1999).

5. For an excellent discussion of how environmentalists in governmental and non-governmental organizations, corporations and financial institutions have sought to fashion a new environmentalism based on markets, see Charles Zerner (2000).
6. For discourses of development under current conditions of IMF regulations etc., see the work of Arturo Escobar. In particular see Escobar (1997).
7. I use “implode” in Donna Haraway’s sense of “heterogeneous and continual construction through historically located practice, where the actors are not all human” (Haraway 1997, 68).
8. For standard discussions on globalization, see work by David Harvey and Saskia Sassen. See a recent article by Sassen (2000). An interesting reflection on nationalism and movement can be seen in Arjun Appadurai (1999).
9. Section title in Christopher Bright (1999, 51).
10. Quote by refuge biologist, Keith Weaver in Joseph B. Verrengia (1999a).
11. Daniel Simberloff quoted in Kim Todd (2001).
12. I am indebted to an anonymous reviewer for this insight.
13. The campaigns are of course not conducted by the same groups. Many ecologists have expressed reservations about genetically modified food. My point, however, is about the rhetoric that circulates in the mainstream U.S.
14. Anna Tsing makes a similar point in her analysis of native and exotic bees (Tsing 1994).
15. In this piece, I have largely focused on the popular press and those scholarly articles and scientists who have been publicized by the mainstream press. Scholarly articles, most often, do not share the sensationalism of the popular press. However, the same biologists employ different rhetoric in scientific and popular writings. The relationship of the popular and scholarly press is a complex one and beyond the scope of this essay.
16. For example, see the recent Keller and Golley (2000).

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