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# Native Species, Human Communities and Cultural Relationships

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## ABSTRACT

Species are ordinarily conceived of as being native or non-native to either a geographical location or an ecological community. I submit that species may also be native or non-native to human communities. I argue, by way of an analogy with varieties of domesticated and cultivated species, that this sense of nativity is grounded by the cultural relationships human communities have with species. A further analogy is drawn with the motivations of varietal nativists – who seek to protect native varieties of domesticated and cultivated species for the sake of their cultural value – to argue for the consideration of the cultural value of native species in environmental policy decisions regarding invasive non-native species.

## KEYWORDS

Species, culture, value, community

## INTRODUCTION

There is an ongoing debate amongst ecologists, environmental philosophers and conservationists about the phenomenon of non-native species. The debate has revolved around two questions; the conceptual question of what makes a species a non-native (or native) species, and the axiological question of in what circumstances they should be disvalued (or valued). It is the intention of this paper to contribute towards an answer to both these questions by focusing on the cultural relationships human communities form with species. I will argue that these relationships enter into conceptualisations of species as native or non-native, and into the value judgments made of them.

## THE CLUSTER CONCEPTION OF NATIVITY

Woods and Moriarty (2001) have offered the resources for a five-criteria cluster conceptual analysis of *nativity* as applied to species.<sup>1</sup> As a cluster concept, for a species to fall under the concept of nativity it is neither necessary nor sufficient that it satisfies any particular one of the five criteria. Further, a species may satisfy each criterion to a greater or lesser extent.<sup>2</sup> A species is, however, more (or more clearly) native insofar as it satisfies more of the criteria below, and is more (or more clearly) non-native insofar as it fails to satisfy more of the following criteria:

1. *The Non-Human Introduction Criterion:*

- Species *S* is more native to geographical location *L* to the extent that *S* has not been introduced to *L* by human beings.

2. *The Evolutionary Criterion:*

- Species *S* is more native to geographical location *L* to the extent that *L* is in *S*'s area of evolutionary origin.

3. *The Historical Range Criterion:*

- Species *S* is more native to geographical location *L* to the extent that *L* is within *S*'s historical range.

4. *The Non-Degradation Criterion:*

- Species *S* is more native to geographical location *L* to the extent that *S* does not cause ecological harm at *L*.

5. *The Ecological Community Membership Criterion:*

- Species *S* is more native to ecological community *C* to the extent that *S* is a member of *C*.

## NATIVE SPECIES, HUMAN COMMUNITIES ...

Criteria (1)–(5) conceive of species as standing in a relation: the *nativity relation*. Criteria (1)–(4) conceive of the nativity relation as holding between a species and a particular *geographical location*. Criterion (5) construes species as entering into the nativity relation with an *ecological community*.<sup>3</sup> Criteria (1)–(3) conceive of the nativity relation as obtaining in virtue of certain *natural historical facts*; either the historical fact that humans did not introduce the species to that location, or that the species evolved at that location, or that the species has historically occurred at that location. Criterion (4) conceives of the nativity relation as holding in virtue of certain *causal facts*;<sup>4</sup> the facts that the species causes no ecological degradation at that location. Criterion (5) conceives of the nativity relation as obtaining in virtue of the species entering into *ecological relations* with other members of the ecological community.

## VARIETAL NATIVITY AND CULTURAL VALUE

The main purpose of this paper will be to argue for the inclusion of a sixth criterion for nativity in the above cluster concept. This section, in which I will argue that varieties of domesticated and cultivated species may be native to human communities, will provide the basis for an analogy with wild species to establish this sixth criterion. Further, again by way of establishing an analogy with wild species, it will demonstrate that the cultural relationships that ground the nativity of varieties of domesticated and cultivated species to human communities are a significant factor influencing the positive value judgments made of such varieties. I have chosen to argue on the basis of an analogy with domesticated and cultivated varieties because of the illumination I think it can provide regarding the conceptualisation of a species as native or non-native, and in particular the role that cultural relationships play in value judgments. As will be seen, unlike in discussions of varietal nativity, the cultural relationships human communities form with *wild* species are rarely identified, much less appealed to, in environmental policy decisions which turn on a species' classification as native or non-native.

*Varietal nativity*

Livingston (1994: 36) has written that '[d]omesticated species have become placeless "exotics" foreign to every natural community in the world. In an ecologic sense they belong nowhere'. I agree, but there is also a sense in which domesticated and cultivated species are native. Sagoff (1999, my emphases) argues that 'cattle, cotton, [and] corn [species that count as non-native under criteria (1)–(5)] are surely *as American* as sunflower seeds, cranberries, and Jerusalem artichokes [species that count as native under criteria (1)–(5)]'. It is in virtue of having 'become associated with a place – part of its natural and

*human* history', that such so-called 'exotic' species may 'become an integral part of *our community*' and are to be considered 'as American' as the (ordinarily conceived) native species.

Sagoff's remarks seem to suggest that domesticated and cultivated species may be native (or non-native) not only to *natural* communities but also to *human* communities. The important insight here, and the one which I will be exploring in depth, is that flora and non-human fauna may be native to human communities. However, for the purposes of the current section, I suggest that careful reflection reveals a slightly different conclusion from the one above: that *varieties* of domesticated and cultivated species (rather than species as such) may be native (or non-native) to human communities. When, for instance, Sagoff says that cattle are as American as cranberries because they have become integral parts of American history and communities, he is surely not thinking of *any* breed of cattle but (most probably) of the ubiquitous Hereford breed which populate the classic image of the American cattle ranch. *Qua* (domesticated) species, the Hereford and the Latvian Brown are the same (i.e. *Bos taurus*), but since the Latvian Brown has never been part of American agriculture<sup>5</sup> it is plausible to say that, *qua variety* of domesticated species, it is non-native to American communities.

What grounds the nativity relation between varieties of domesticated and cultivated species, and human communities? We might say that it is the historical fact that a variety was bred in a particular human community. This idea is analogous to the evolutionary criterion for species and shares some of its intuitive appeal, but it also shares its weakness, namely, that it is too restrictive a criterion of nativity. Many varieties, such as the Hereford breed of cattle (originally bred in the UK), have spread far beyond their place of origin and are considered native in their new communities. Perhaps an analogy with the ecological community membership criterion is more fruitful. Just as species develop ecological relations which ground their membership of an ecological community (which in turn grounds their nativity to that community), varieties develop cultural relationships and associations which ground their nativity to a human community. Such associations include the names bestowed on varieties (e.g. Hereford or Latvian Brown) and their place in local cuisine and traditional folk customs. If a variety lacks these cultural associations we may say that it is non-native to the human community.

#### *Native varieties and cultural value*

Varietal nativists are to be contrasted with *biological* nativists in being concerned with the protection of native *varieties* of domesticated animals and cultivated plants, rather than with native wild *species*. Unlike biological nativists, varietal nativists are explicit in their appeal to cultural value when seeking to protect native varieties. The Irish Seed Saver Association talks of ensuring a 'living

agricultural legacy'<sup>6</sup> and of 'old ... varieties [being] intrinsic to our cultural identity';<sup>7</sup> the American Livestock Breeds Conservancy seeks to conserve 'rare breeds [that] are part of our national heritage'<sup>8</sup> and SAVE (Safeguard for Agricultural Variety in Europe) speaks of the value of traditional varieties and breeds in terms of their 'cultural-historical heritage'<sup>9</sup> and the importance of 'cultural variety in agricultural flora and fauna';<sup>10</sup> Iowa-based Seed Savers Exchange value the 'folk origins' of many varieties, 'grown by generations of families, ethnic enclaves and [often isolated] communities'.<sup>11</sup> Native Seeds/SEARCH in Arizona works to 'preserve knowledge about the traditional uses' of different varieties and thereby 'celebrate cultural diversity', arguing that while the extinction of traditional varieties results in a loss of genetic diversity, '[t]he loss, in human terms, is equally severe'.<sup>12</sup> Growing traditional varieties serves to 'keep traditional agricultural and culinary practice alive ... When peoples once sustained by agriculture lose their agricultural traditions, their survival as a culture may also be at risk'.<sup>13</sup>

All of the above organisations were founded in response to the increasing homogenisation of agriculture and horticulture. The British Pig Association laments that, just 15 years after '[t]he Howitt report of 1955 declared that diversity of breeds was the major handicap to the British Pig Industry',<sup>14</sup> and that it should therefore concentrate on far fewer breeds, five of the sixteen native pig breeds were extinct, and soon all traditional breeds had lost most of their cultural significance, being 'at best curiosities to be displayed at county shows'.<sup>15</sup> The Irish Seed Saver Association expresses dismay at the replacement of traditional, open-pollinated varieties of plants and vegetables by F1 hybrids forcefully marketed by multinational corporations.<sup>16</sup> The hybrids, chosen for their suitability for mechanised agriculture and transportation, have to be repeatedly purchased since they do not produce viable seed that can be saved. Further, the sale of many native, traditional varieties is disallowed under an EC Directive that requires all seeds to pass through a costly registration process.<sup>17</sup> In the same way that Livingston considered domesticated species non-native to every *natural community*, the commercially developed and commercialised varieties lack the cultural associations of the traditional, native varieties such that they may be considered non-native to every *human* community.

The 1992 *Global Biodiversity Strategy* warns that '[t]he loss of genetic, species, and ecosystem diversity both stems from and invites the loss of cultural diversity. Diverse cultures have bred and sustained numerous varieties of crop, livestock, and habitats. By the same token, the loss of certain crops, replacement of traditional crops with export crops, the extinction of species embedded in religion, mythology, or folklore ... are cultural as well as biological losses'.<sup>18</sup> The anthropologist Virginia Nazarea (1998: 7) has suggested that since 'cultural knowledge and practices associated with traditional varieties are in imminent danger of being swamped by modern technologies', alongside efforts to store genetic information in gene banks there ought to be efforts to archive cultural

information in what she calls ‘memory banks’. Native Seeds/SEARCH is doing just this in their Culture Memory Bank project. They document ‘agricultural practices, stories, songs, and recipes associated with specific crops in [their] seed bank ... [combining] the geneticist’s concern for conserving unique traits of a crop with a folklorist’s concern for conserving oral history about the crop’.<sup>19</sup>

#### THE CULTURAL CRITERION

I argued in the previous section that varieties of domesticated and cultivated species may be native (or non-native) to human communities. It is the cultural associations of such varieties that ground the nativity relation, and furthermore are a significant locus of the value placed upon them. I will now extend this claim to wild species. I suggest that the cluster conceptual analysis be supplemented with a sixth criterion of nativity:

##### 6. *The Cultural Criterion:*

- Species *S* is more native to human community *H* to the extent that *S* has cultural associations with *H*.

The cultural criterion contrasts with criteria (1)–(5) in two ways. Firstly, in contrast to criteria (1)–(4) above, the cultural criterion does not conceive of species as standing in the nativity relation to a geographical location, and in contrast to criterion (5) it does not conceive of species standing in the nativity relation to an ecological community. Rather, according to the cultural criterion, species stand in the nativity relation to *human communities*. Secondly, the cultural criterion does not, as criteria (1)–(3) do, conceive of the nativity relation obtaining in virtue of certain natural historical facts; nor, as criterion (4) does, in virtue of (the absence of) certain causal facts; nor, as criterion (5) does, in virtue of the existence of certain ecological relations (which themselves ground a species’ membership of an ecological community). Rather, the cultural criterion conceives of the nativity relation as obtaining in virtue of the existence of certain *cultural associations*.

##### *Cultural associations*

Below I enumerate the kinds of cultural associations that play a role in constituting the nativity of certain species to human communities. Further, analogous to *varieties* of domesticated and cultivated species, these cultural associations will also be a significant factor influencing the positive value judgments made of these species and a (frequently unarticulated) reason for desiring their protection. For the sake of illustrating the cultural criterion as clearly as possible, the examples I provide are all species that are ordinarily conceived as uncontroversially native to the UK under criteria (1)–(5).<sup>20</sup>

An important cultural association of species involves the acquisition of **vernacular names**, such as the northern lapwing being known as the peewit. A spectacular example is the plant lords-and-ladies, with nearly a hundred vernacular names, including those which recall former uses (starchwort), and those which make both genteel (Jack in the pulpit, from Cornwall) and vulgar (dog's cock, from Wiltshire) reference to its appearance (Mabey 1996: 6–7). Plants, being free, ready to hand and, in places, in virtually limitless supply have proved a resource for countless **children's games**. 'Soldiers' is played with ribwort plantain, cleavers and burdock are furtively stuck to clothes, and chains and bracelets are made from daisies. Predictions of a subject's liking for butter are made by holding buttercups under their chin, finding a four-leaved clover is lucky, the time is told by blowing dandelion 'clocks' and wishes are made when their windblown seeds are caught, and kisses are solicited under mistletoe. Wild species are also harvested for local **cuisine**. Sloes, the fruit of blackthorn, are used for flavouring gin, elderflowers for making cordial and 'champagne', elderberries for making wine, rosehips and rowan berries for making jelly and syrup, blackberries for making jam, and hops and heather for sweetening ale. **Children, streets, public houses and places are named** after local species; Iris, Rose, Poppy, Rowan, Heather, Holly, Daisy, Violet and Ivy; Cherry Avenue, Beech Close, Birch Drive and Willow Road; The Royal Oak, The Elms, The Holly Bush, The Bluebell, The Swan; Nettlebed (Oxfordshire), Nettlecombe (Dorset), Nettleham and Nettleton (Lincolnshire), and the Nettlesteads (Kent, Surrey and Suffolk) (Mabey 1996: 67). Flora and fauna can become associated with **political causes and identities**, for instance the thistle with the political identity of Scotland, which plant was adopted by the Scottish monarchy at the same time that the English kings were adopting the rose.<sup>21</sup> Marren (1996: 455) observes that they 'symbolised a growing sense of nationhood at a time when symbols and allegories were potent'. Wild species can also come to have associations with **religion**. Lily-of-the-valley and primroses are used in memorial poesies, and holly and ivy are hung in churches at Christmas. Wild flowers are carved on church pews, sewn on kneelers and altar cloths, and featured in stained-glass windows (Mabey 1996: 36). Yew trees stand in the grounds of at least five hundred ancient churches (Mabey 1996: 28). Wild plants are used as bases for **architectural motifs and decoration**. As Mabey notes, we use plants as 'the most prolific source of decorative motifs on everything from stained glass to serviettes' (Mabey 1996: 7). Wild species are managed to provide a sustainable resource for traditional rural **crafts**, such as thatching (common reed) and broom-making (hazel and birch) (Sparkes 1977: 29). Wild species and the landscapes they populate have always been a source of **literary and aesthetic** inspiration, particularly since the Romantic era, with Robert Burns ('This Song'), John Clare ('The Nightingale's Nest') and Gerard Manley Hopkins (in his Journal) moved by the bluebell, and Wordsworth by his 'host, of golden daffodils'. Countless picturesque paintings of bracken-covered



hillsides, pollarded willows and red deer stags have been produced. Many wild flowers were thought to possess **medicinal** properties, some of which have been scientifically substantiated, such as willow bark being the source of aspirin, and some of which have not, such as the practice of administering milkwort to nursing mothers. **Agriculture, horticulture and silviculture** are clearly the most direct way in which cultural relationships with plants and animals are formed. **Hunting and fishing** are popular rural sports. Species hunted or fished for food and sport in the UK include red deer, fox, red grouse, mountain hare, salmon, brown trout, eel and many species of wildfowl and waders, including mallard, teal, gadwall, greylag goose and woodcock (BASC 1984). Wild species also have a long history in **folklore and mythology**. The fires of the Celtic spring festival of Beltane were made from birch and oak wood, birch representing renewal, purification and fertility.<sup>22</sup> Sick children were passed naked through a specially made cleft in an ash tree, which was then bound after the ceremony.<sup>23</sup> Hawthorn trees have a strong connection in Celtic mythology to the Underworld; the thirteenth-century Scots poet and mystic Thomas the Rhymer was seduced by the Faery Queen under a hawthorn.<sup>24</sup> Rowan trees protected the dwelling by which they grew, their red berries affording protection from witchcraft and enchantment.<sup>25</sup>

#### THE CULTURAL CRITERION EXPLAINED AND DEFENDED

Having enumerated the kinds of cultural associations that ground the nativity relation between species and human communities, I will now further explain how the cultural criterion functions. I will firstly attempt to outline some standards or guidelines to determine when a species satisfies the cultural criterion. Secondly, I will illustrate how it is a non-geographical criterion by drawing an analogy with the ecological community membership criterion. Thirdly, in the context of a discussion of the process of naturalisation, I will examine the implications of the cultural criterion for species ordinarily conceived of as non-native, providing examples of such species that plausibly satisfy the cultural criterion. Fourthly, I identify the destruction of cultural value as an overlooked impact of invasive non-native species. Lastly, in answer to three objections, I advance a rationale for including a cultural element in a concept that is ordinarily conceived of as strictly geographical or ecological.

##### *The satisfaction of the cultural criterion*

I turn now to the question of how to determine if a species satisfies the cultural criterion. Firstly, it seems clear that none of the cultural associations enumerated above are either necessary or sufficient for satisfaction of the criterion. Secondly, nothing so crude as the sheer number of cultural associations ought to

sway judgment, since I think it plausible to say that some cultural associations are more significant than others. I think that there are three factors involved in weighing the contribution of associations or practices surrounding a species; (i) the length of time the association or practice has existed, (ii) its cultural significance, and (iii) whether it is culturally 'alive' or 'dead'. As an example of (i), the cultivation of apples (*Malus domestica*) and the Scottish political association with the thistle (*Cirsium vulgare* or *Onopordum acanthium*) are both ancient, and intuitively ought to carry more weight in a judgment of cultural embeddedness than a more recent association or practice. With regard to (ii), the religious association of the yew (*Taxus baccata*) plausibly has more cultural significance than the appearance of its name on a street in a modern housing development. Factor (iii) recognises that, for instance, many vernacular names have passed out of use, medicinal properties of plants (genuine or otherwise) are no longer utilised, and folklore and ceremonies live on only in books. The long-forgotten folklore associated with the rowan (*Sorbus aucuparia*) seems to make less of a contribution to its satisfaction of the cultural criterion than the horticultural relationships that it currently enjoys with gardeners. These three factors will interact in various ways, but, roughly, a scale may be imagined whereby an ancient, significant and continuing cultural association or practice carries most weight in a judgment of whether a species satisfies the cultural criterion and a recent but moribund, culturally superficial association carries least weight.

*The cultural criterion as a non-geographical criterion*

The cultural criterion is a non-geographical criterion of nativity. A criterion of nativity is non-geographical if it asserts that the nativity relation obtains between a species and something other than a geographical location. Such criteria allow for the possibility that a species may move to a geographical location at which it has never before been present while remaining native to whatever it is that it conceives species as being native to.<sup>26</sup> It shares this feature with the ecological community membership criterion, according to which the nativity relation is severed 'only when the species movement is ecological and not merely geographical' (Hettinger 2001: 198). For instance, one day some members of species *S*, which has been historically resident on island *A* with an ecological community of type *T*, make it to a nearby island, *B*, which also has an ecological community of type *T*. On the same day some different members of *S* make it to island *C*, which is equidistant from *A*, but which has a substantially different type of ecological community, *U*. On *B*, unlike *C*, the members of *S* 'will already have adapted with the species and types of abiotic features ... and the system's resident species ... [will have] significantly adapted' to them (Hettinger 2001: 198). Although the two sets of members of *S* have moved to equidistant geographical locations, one set continues to satisfy the ecological community membership criterion for nativity and the other set fails to. Similarly,

if a human community translocates and takes with it a species with which it has many significant cultural associations, then that species may continue to satisfy the cultural criterion in its new geographical location if those associations and practices continue. Nineteenth-century 'acclimatisation' societies took many native European species to Australia, New Zealand and North America (Bright 1999: 133–141), and it is plausible to say that those species satisfied the cultural criterion for nativity to their (translocated) human communities. For example, the European fox (*Vulpes vulpes*) was introduced to Australia for the traditional British hunt (Livingston 1994: 41). We now might make an analogous claim to the one for the ecological community membership criterion above: according to the cultural criterion the nativity relation is severed only when the species movement is cultural and not merely geographical.

*Non-native species and cultural naturalisation*

In this section my supplemented cluster conceptual analysis of nativity is tested against difficult cases, as any conceptual analysis must be. If the addition of a sixth criterion to the analysis of nativity outlined above is to be defensible, then we must consider it with regard to species whose native status is uncertain. Such species are typically called 'naturalised', where naturalisation is the process by which a non-native species becomes native. Different senses of naturalisation may be distinguished corresponding to different criteria of nativity. Firstly, a species may *ecologically* naturalise when it adapts to local species and the local environment (Hettinger 2001: 209) and thereby come to satisfy the ecological community membership criterion. Secondly, a species may *historically* naturalise in the sense of being resident for sufficient time to satisfy the historical range criterion. Thirdly, Hettinger suggests that a species *evaluatively* naturalises when we judge that its presence in an ecological assemblage is not the result of 'significant, ongoing human influence' and that it is therefore a 'natural' member of that assemblage (2001: 211). This sense of naturalisation is closely connected to the non-human introduction criterion; the effect of the historical fact that a species was introduced by humans may 'wash out' over time such that it no longer influences a judgment of non-nativity.

I suggest that there is a sense of naturalisation which corresponds to the cultural criterion; a non-native species *culturally* naturalises when it develops significant cultural associations such that it satisfies the cultural criterion.<sup>27</sup> It is clear that many species that count as non-native under some or all of criteria (1)–(5) have nonetheless come to satisfy the cultural criterion and thereby have culturally naturalised. The rabbit (*Oryctolagus cuniculus*) is one such species. It was introduced to the UK in the twelfth century, but its rich cultural history includes commercial breeding in extensive warrens for food and fur, being the source of numerous place names (derived from either 'warren' or 'coney', a vernacular name for the rabbit), being a persistent agricultural pest as well as

a quarry for country sportsmen (Rackham 1986: 49), featuring as characters in children's tales such as Beatrix Potter's Peter Rabbit and Lewis Carroll's White Rabbit, and being popular both as pets and with rabbit fanciers.

I turn now to contrast two species in order to show that the satisfaction of the cultural criterion may count decisively *against* a species being classified as non-native. This will also serve as a more difficult test case for the supplemented conceptual analysis. Firstly, the horse-chestnut (*Aesculus hippocastanum*) fails to satisfy the non-human introduction (it was introduced to the UK in the sixteenth century), evolutionary or the historical range criteria, but it causes no ecological harm and it is plausible to say that it has developed ecological relations in areas where it is present, thereby satisfying the non-degradation and ecological community membership criteria. Further, it has a significant place in UK culture. According to Mabey (1996: 261–264) it has 56 streets named after it in London alone; both its February buds and May 'candelabra' blossom are used in flower decorations; they populate innumerable parks and grounds of stately homes; their fruit, conkers, supply the children's game of the same name, as well as enlivening our vocabulary with "conk", slang for bash and also for head, which, in a neat conker circle, is also called your "nut". And past-their-prime, over-played conkers are, of course, "old chestnuts". It seems, therefore, that the horse-chestnut satisfies three and fails to satisfy three of the criteria for nativity. If nativity is a cluster concept then the boundaries between nativity and non-nativity will be vague and, correspondingly, judgments about when a species is native or non-native will be indeterminate (Woods and Moriarty 2001: 176). It is therefore indeterminate whether the horse-chestnut is native or non-native. Either way, however, its cultural associations contribute towards the judgment that it is native and weigh against the judgment that it is non-native. Secondly and in contrast, the holm oak (*Quercus ilex*), introduced at roughly the same time as the horse-chestnut and otherwise similar to it with respect to criteria (1)–(5), has developed no such wealth of cultural associations. In virtue of failing to satisfy the cultural criterion it is plausible to say that it is more (or more clearly) non-native than the horse-chestnut. These results show that a conceptual analysis of nativity which includes the cultural criterion accords better with actual usage of the concept since, I believe it is fair to say, people are on the whole happier to accord native status to the horse-chestnut than to the holm oak for the very reasons the cultural criterion is sensitive to.

There might be a concern that the term 'cultural naturalisation' has xenophobic or anti-immigrationist undertones. This is a charge that has long dogged conservationist's focus on non-native species,<sup>28</sup> and the cultural criterion might be accused of contributing to the grounds for this charge. However, unlike the demands of anti-immigrationists, the cultural criterion does not require non-native species to 'fit in' to the existing culture in order to become culturally naturalised. It is, in fact, neutral with regard to the nature or origin of the cultural associations that constitute nativity under the cultural criterion. If, for example, people in the

UK were to adopt the Japanese culinary practice of eating the young shoots of Japanese knotweed (*Fallopia japonica*), this would count perfectly well towards its cultural naturalisation. The cultural criterion is therefore no more amenable to a fostering or perpetuation of a latent xenophobia in environmentalism (if any such exists) than any of the other criteria for nativity.

*Invasive non-native species and cultural value*

There is a global campaign by governments and international institutions against invasive non-native species. Typically, economic, human health and ecological impacts are appealed to as justification for the resources expended on this campaign.<sup>29</sup> A well-known example of an invasive non-native species with severe economic, human health and ecological impacts is the brown tree snake (*Boiga irregularis*), unintentionally introduced in the early 1950s to the Pacific island of Guam. It impacts the economy by climbing electrical lines and causing power cuts (Bright 1999: 181–182). It is mildly venomous and is responsible for approximately 1 in 1,000 emergency room visits on Guam (Fritts and Leasman-Tanner 2001). It has also had a severe ecological impact, causing a devastating decline of Guam's native avifauna, primarily by predated upon bird's eggs. Fifteen species have already been driven to local extinction (Woods and Moriarty 2001: 170).

I demonstrated above that where non-native (i.e. commercially developed) varieties of domesticated and cultivated species threaten the survival or cause (through economic rather than ecological mechanisms) the extinction of native varieties they are explicitly disvalued by varietal nativists for their destruction of cultural value. Analogously, where invasive non-native species threaten the survival or cause the extinction of species that satisfy the cultural criterion (which will typically, though not necessarily, satisfy a large enough subset of the other criteria to count as native), they ought to be disvalued for their destruction of cultural value. For example, beyond the economic, human health and ecological impacts, Guam's residents, particularly the indigenous Chamorros, will have lost significant cultural relationships with the avifauna driven to extinction by the brown tree snake; as Blackford notes, 'Guam's residents viewed the snakes' extirpation of their native birdlife as an attack on their culture' (2005: 4). This potential impact on local culture is, however, rarely articulated in policy discussions regarding invasive non-native species. This results in a separation of the concerns of the biological nativist, who wishes to protect native species for the sake of preserving global biodiversity and avoiding bio-homogeneity, and the cultural nativist, who wishes to protect indigenous cultures for the sake of global cultural diversity and avoiding cultural homogeneity (Hettinger 2001: 214–219). Recognising that culture is often shaped by the surrounding natural environment brings these concerns together. To repeat the insight of the 1992

*Global Biodiversity Strategy*, 'loss of ... species [and] ecosystem diversity both stems from and invites the loss of cultural diversity'.<sup>30</sup>

#### *Responses to objections*

I turn now to offer a rationale for the inclusion of the cultural criterion in the cluster conceptual analysis of nativity in the face of three objections. Firstly, it might be objected that since many species ordinarily judged to be non-native satisfy the cultural criterion it is therefore not an appropriate component of the concept. This concern expresses the expectation that the set of species picked out by the cultural criterion should be roughly co-extensive with the set picked out by criteria (1)–(5). But Hitchmough (2005: 32) suggests that, due to urbanisation and a 'look-but-don't-touch' nature conservation attitude, many of the cultural relationships we once had with our native flora have been lost, and that 'we have transferred our traditional relationships with native plants to exotic plants', in particular the ones that we prefer to garden with. This would seem to suggest that the cultural criterion is satisfied by a large number of species which fail to satisfy criteria (1)–(5), and that the expectation of co-extensiveness is confounded.

In answer to this objection I would firstly grant that, since cultural relationships are, on the whole, formed more readily than ecological relationships, evolutionary adaptations or historical ranges, a greater number of species that are newly arrived in geographical locations or ecological communities will satisfy the cultural criterion (in virtue of human communities at those locations quickly forming cultural relationships with those species) than the ecological community membership, evolutionary or historical range criteria. But I would remind those who object on these grounds that I have framed the concept of nativity as a cluster concept. The satisfaction of the cultural criterion is therefore neither necessary nor sufficient for a species to be classified as native. It is plausible to argue that rhododendron (*Rhododendron ponticum*) satisfies the cultural criterion; it is planted in gardens, its flowers are enjoyed in parks and used as decorative motifs, and it enjoys an infamous place in conservation culture in the UK.<sup>31</sup> It nonetheless fails to satisfy perhaps any other criterion for nativity and is therefore, under the cluster concept, very clearly non-native. The fact, therefore, that the set of species picked out by criteria (1)–(5) is substantially (if not, due to my moderately demanding satisfaction guidelines, radically) non-co-extensive with the set picked out by the cultural criterion should not militate against its inclusion in the cluster concept of nativity.

A second concern might be that the cultural criterion is too value-laden a criterion to determine a species' nativity. As I have argued, cultural associations both contribute towards constituting the nativity of a species *and* towards positive value judgments of it. But this very feature is displayed by other criteria. Woods

and Moriarty (2001: 181) enumerate five values at stake when considering policy decisions which turn on the classification of species as native or non-native:

- Ecosystem health
- Biodiversity
- Naturalness
- Animal welfare
- Anthropocentric values of nature, such as economic, aesthetic and recreational values

There appear to be strong connections between criteria (1)–(5) and certain of the values above. I will provide three examples.<sup>32</sup> Firstly, it is in virtue of the historical fact that humans did not introduce a species into an area that it both satisfies the non-human introduction criterion (and is thereby more clearly native to that area) *and* is positively valued for its naturalness. Conversely, it is in virtue of the historical fact that humans introduced a species into an area that it both fails to satisfy the non-human introduction criterion and is disvalued for unnaturalness. Secondly, it is in virtue of the fact that a species causes harm to ecosystem health, biodiversity, animal welfare or economic values that it fails to satisfy the non-degradation criterion (and is thereby more clearly non-native) *and* that it is disvalued. Thirdly, it is in virtue of the existence of certain ecological relations that a species both satisfies the ecological community membership criterion *and* may be valued for its contribution towards ecosystem health or aesthetic value. It is no surprise, therefore, that the cultural criterion exhibits this strong conceptual and axiological connection, and this feature should not motivate a rejection of the cultural criterion. There is widespread recognition that judgments about nativity and non-nativity are far from value-free. Mabey (2005: 42), for example, observes that ‘[a]rguments about the status of aliens often resolve, on closer inspection, into concerns about something else: about bad behaviour, inappropriateness, bad cultural fit’.

A third possible objection, which might seem particularly important to ecologists and biologists, is that it is anathema to the ecological, biological and natural historical nature of the concept of nativity to include human-centred considerations in judgments about the nativity of species.<sup>33</sup> I have two responses to this understandable reservation. Firstly, the success of the philosophical project of conceptual analysis depends on best capturing all of the constitutive elements of the concept such that it accurately reflects the way the concept is used in practice. One aspect of my proposal to supplement Woods and Moriarty’s analysis of the concept of nativity with a sixth – non-natural scientific – criterion is therefore an attempt to better reflect the way the concept is actually used. As evidence for the claim that one element to the concept of nativity as it is commonly used concerns the place of species in the cultures of human communities, consider Aitken’s (2004: 37) observation that many people would be surprised to learn

that numerous species, such as the house-mouse, little owl and sweet chestnut, would count as non-native to the UK (under the more traditional criteria). My postulation above that the frequent classification of the horse-chestnut as native can be explained partly by its rich cultural history finds concurrence in Scott and Waterton's (2004: 1) claim that 'publics are likely to judge the problem of NIS [Non-Indigenous Species] not solely in ecological terms'. If, they argue, policy-makers and environmental managers wish to engage in fruitful and well-supported conservation campaigns involving the control of non-native species, they would do well to adopt a 'more pragmatic, perhaps more human-centred (less ecologically centred) definition of NIS'. Such a definition, it is implied, would be more in tune with the public's understanding of what makes a species native or non-native.<sup>34</sup>

A second response to the objection that human-centred considerations ought not enter into judgments about the nativity of species is that to acknowledge our cultural attachments to species as an element in their classification would both better serve conservation interests and be more appropriate to the nature of the conservation endeavour. Firstly, as Aitken (2004: 40) cautions, if conservationists 'wish to involve and enthuse ordinary people in nature conservation, they would do well to take on board such peoples' understanding of what it means for a species to be valued or to belong'. If I am correct and the existence of cultural associations contribute toward judgments of nativity, then conservationists who seek support from or try to involve the public in either the control or conservation of species that satisfy the cultural criterion (whether or not they are native or non-native by the lights of some or all of the other criteria) are likely to find their efforts objected to or well-supported by the public respectively.

Secondly, since nativity is primarily a concept employed by conservationists, an acknowledgement of the human-centred element of the concept would bring it more into line with the human-centredness of the conservation endeavour.<sup>35</sup> Conservation, as characterised by Aitken (2004: 43), is the safeguarding of nature in something like the form that we currently know and cherish it. The nature that we know is the result not only of millions of years of evolution, but also millennia of cultural relationships, and it is cherished not only for its wildness and 'otherness', but also for its familiarity and involvement in our lives and the lives of our predecessors. Nativity is not only a descriptive concept employed to classify nature, but also a normative concept used to guide conservation practice in its endeavour to safeguard nature. If it is to guide conservationists appropriately in their task, some acknowledgment is required of the role cultural relationships play in the shaping of the natural world into its current familiar (but increasingly threatened) form, and of the corresponding value that attaches to species with which human communities have long associations. The inclusion of the cultural criterion in a cluster conceptual analysis of nativity, while leaving the concept a primarily ecological, geographical and natural historical one, achieves this acknowledgment. Though some have proposed abandoning the



concept of nativity as a guide to conservation policy and practice,<sup>36</sup> I believe it is sufficiently rich and flexible to accommodate the additional dimension proposed here and thereby should continue to function in practical deliberations concerning how to safeguard the nature we know and cherish.

### CONCLUSION

In this paper I have carried out a sustained examination of an overlooked dimension of the debate surrounding the distinction between native and non-native species. I have argued, through an analogy with varieties of domesticated and cultivated species, that the cultural associations, relationships and practices that human communities engage in with wild species play a role both in the conceptualisation of a species as native or non-native and in the value judgments made of them. I have also urged that policy responses to invasive non-native species should take their cultural impact into account. Lastly, I argued that a cluster conceptual analysis of nativity that includes the cultural criterion both accurately captures common usage of the concept and, given plausible characterisations of our conservation endeavours and our long and rich relationships with wild species, will better guide conservation policy deliberations toward popular support and more successful safeguarding of the nature we know and cherish.

### NOTES

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<sup>1</sup> Woods and Moriarty (2001) actually offer a five-criteria cluster concept of *non-nativity* (or *exoticality*), from which they derive this five-criteria cluster concept of *nativity* (pp. 175–176). This necessitates criteria (1) and (4) being stated negatively, since they are derived from positive criteria (the ‘human introduction criterion’ and the ‘degradation criterion’ respectively). Note, therefore, that the phrase ‘non-human introduction’ is not intended to mean that a species was introduced to a location by a non-human, but is rather that humans did *not* introduce the species to that location, i.e. the explanation for its occurrence there involves no reference to human activities. Note also that I have slightly modified the name Woods and Moriarty confer on criterion (5) from ‘community membership criterion’ to ‘ecological community membership criterion’ to avoid confusion later in the paper.

<sup>2</sup> For example, satisfaction of the historical range criterion will be a matter of degree since it specifies no particular length of time or specific date to determine the historical range.

<sup>3</sup> Woods and Moriarty's understanding of the ecological community membership criterion is equally open to the interpretation that species are native or non-native to geographical locations, since they draw on Hettinger (2001), who is more clear in construing species as standing in the nativity relation to ecological communities (or, as he prefers, 'assemblages') *at geographical locations*. However, since each interpretation seems fair, and since the 'native to an ecological community' interpretation will provide most illumination for explaining the sixth criterion of nativity to be introduced below, this is the one I shall use.

<sup>4</sup> Or, more accurately, the absence of causal facts.

<sup>5</sup> Oklahoma State University Department of Animal Science's Breeds of Livestock resource (2006) <http://www.ansi.okstate.edu/breeds/cattle/>.

<sup>6</sup> Irish Seed Saver Organisation (2006) <http://www.irishseedsavers.ie/index.php>.

<sup>7</sup> Miklis, Michael. 'Recovering Traditional Native Grains'. Irish Seed Saver Organisation (2005) <http://www.irishseedsavers.ie/article.php?artid=49>.

<sup>8</sup> The American Livestock Breeds Conservancy (2006) <http://albc-usa.org/>.

<sup>9</sup> Monitoring Institute for Rare Breeds and Seeds in Europe (independent scientific branch of SAVE) (2002) <http://www.save-foundation.net> and <http://www.monitoring.eu.com/>.

<sup>10</sup> SAVE Foundation (2002) <http://www.save-foundation.net>.

<sup>11</sup> Seed Savers Exchange (2006) <http://www.seedsavers.org/>.

<sup>12</sup> Native Seeds/SEARCH (2005) <http://www.nativeseeds.org/v2/content.php?catID=1020>.

<sup>13</sup> Native Seeds/SEARCH (2005) <http://www.nativeseeds.org/v2/content.php?catID=1020>.

<sup>14</sup> British Pig Association <http://www.britishpigs.org.uk/trad3.htm>.

<sup>15</sup> British Pig Association <http://www.britishpigs.org.uk/trad5.htm>

<sup>16</sup> 'Why Save Seeds?' Irish Seed Saver Association (2003) <http://www.irishseedsavers.ie/article.php?artid=92>.

<sup>17</sup> DEFRA (Department for Food, Environment and Rural Affairs), UK Plant Varieties Rights Office and Seed Division (2004) <http://www.defra.gov.uk/planth/pvs/seedcert/index.htm>.

<sup>18</sup> World Resources Institute (WRI), World Conservation Union (IUCN), and United Nations Environment Program (UNEP), *Global Biodiversity Strategy* (1992: 11). Available at [http://www.wri.org/biodiv/pubs\\_description.cfm?pid=2550](http://www.wri.org/biodiv/pubs_description.cfm?pid=2550).

<sup>19</sup> 'Storing Traditions for the Future: The Cultural Memory Bank Project' (2008) <http://www.nativeseeds.org/v2/content.php?catID=1013>.

<sup>20</sup> That I am illustrating the range of cultural associations that may ground a species' nativity to a human community by using species that count as native to the UK under criteria (1)–(5) demonstrates that 'native to a human community' need not (indeed, often *will not*) mean 'introduced (to a geographical location) *by* a human community'. There is therefore no necessary contradiction in a species counting as native under both the non-human introduction criterion and the cultural criterion, since (as I will demonstrate below) human communities will form cultural relationships with species that occur naturally in their locality as readily as those they introduce from elsewhere. Note that, because of the density of species names that appear in this section I will refrain from the convention of following the common name with the scientific name.

<sup>21</sup> It is a matter of debate whether it is the cotton thistle (*Onopordum acanthium*) or the spear thistle (*Cirsium vulgare*). See Marren (1996) for the arguments either way.

<sup>22</sup> Paul Kendall, 'Mythology and Folklore of the Birch', in *Caledonia Wild!* (Newsletter of Trees for Life), Summer 1999. Available at <http://www.treesforlife.org.uk/forest/mythfolk/birch.html>.

<sup>23</sup> Paul Kendall, 'Mythology and Folklore of the Ash', in *Caledonia Wild!* (Newsletter of Trees for Life), Summer 2002. Available at <http://www.treesforlife.org.uk/forest/mythfolk/ash.html>.

<sup>24</sup> Paul Kendall, 'Mythology and Folklore of the Hawthorn', in *Caledonia Wild!* (Newsletter of Trees for Life), Winter 2002/3. Available at <http://www.treesforlife.org.uk/forest/mythfolk/hawthorn.html>.

<sup>25</sup> Kendall, Paul. 'Mythology and Folklore of the Rowan' in *Caledonia Wild!* (Newsletter of Trees for Life), Spring 2000. Available at <http://www.treesforlife.org.uk/forest/mythfolk/rowan.html>.

<sup>26</sup> There is a second sense in which a criterion of nativity may be understood to be non-geographical; if a species' movement to a geographical location at which it has never before been present is not sufficient for the nativity relation to fail to obtain between the species and its new location. The non-human-introduction and non-degradation criteria are non-geographical in this sense (and the historical range and evolutionary criteria are *geographical* in this sense), but it would be a category-error to describe the ecological community membership and cultural criteria in this sense, since it is not geographical locations to which they assert species are native to, i.e. they are non-geographical in the first sense. Of course, if the ecological community membership and cultural criteria were recast as geographical criteria in the first sense ('*S* is more native to geographical location *L* to the extent that *S* is a member of ecological community *C*/has cultural associations with human community *H* at *L*') then it would be appropriate to say that they were non-geographical criteria in the second sense, but I think that something of interest and distinctiveness about these criteria is lost in this recasting, for all the conceptual neatness gained.

<sup>27</sup> This idea has been expressed by Warren (2005: 14).

<sup>28</sup> See Pollan (1994) and Peretti (1998) for arguments that biological nativism has xenophobic undertones. See Simberloff (2003) for a forceful rebuttal.

<sup>29</sup> See for example McNeely et al. (2001).

<sup>30</sup> World Resources Institute (WRI), World Conservation Union (IUCN), and United Nations Environment Program (UNEP), *Global Biodiversity Strategy* (1992: 11). Available at [http://www.wri.org/biodiv/pubs\\_description.cfm?pid=2550](http://www.wri.org/biodiv/pubs_description.cfm?pid=2550).

<sup>31</sup> Analogous to Hettinger's insistence that the community (or assemblage) membership criterion does not require a species to be a 'good [ecological] fit' (Hettinger 2001: 197), the cultural criterion does not require a species to be a good cultural fit. 'Negative' cultural associations (e.g. those surrounding feared predators) still count towards satisfaction of the cultural criterion.

<sup>32</sup> I am aware of the considerable problems with each of these examples (see, for example, Sagoff (2005) for the problem of how to conceptualise ecological 'harm'), but I hope they will be familiar as arguments used in conservation contexts.

<sup>33</sup> By 'human-centred' I do not mean anthropocentrism in the sense of being centred on human goods and interests. Rather, I am merely highlighting that the cultural criterion, in contrast to criteria (1) – (5), makes reference to human relationships with wild species.

<sup>34</sup> The fact that people do not judge the native/non-native status of species solely in ecological terms can also be seen by the considerable success of the *Britannica* series of books – *Flora Britannica* (Mabey 1996), *Birds Britannica* (Cocker and Mabey 2005) and the forthcoming *Bugs Britannica* (see <http://www.rhgweb.co.uk/minisites/bugsbritannica/index.html>). These books are largely compilations of submissions from the general public regarding the kinds of cultural associations – with plants and trees, birds and invertebrates respectively – enumerated above. The books are liberally populated with entries on species that count as non-native under criteria (1)–(5), but which have been embraced by – and are considered to belong to – the human communities that constitute Britain (which is itself a human community to which species are considered to belong).

<sup>35</sup> This claim is made by Aitken (2004: 47) for her re-interpretation of nativity as 'belonging'. See footnote 36 below.

<sup>36</sup> Aitken (2004: 33–50), for example, has suggested that the 'formal understanding' of nativity (which may be roughly equated with criteria (1) and (3)) is untenable, and has suggested a re-interpretation of the concept as the human-centred, intuitive and non-empirical notion of 'belonging'. My inclusion of the cultural criterion in a cluster conceptual analysis allows the formal understanding to be retained while introducing elements that Aitken wishes to capture in her re-interpretation; 'to belong is to be ecologically integrated [which is roughly equivalent to criterion (5)] in a way that is both meaningful and relevant to us. It is to have attained a place in the hearts and cultural history of the local people' (p. 44). Sagoff (1999; 2005) has also mounted significant challenges on several fronts to the concept of non-nativity. In particular, he argues that its basis in ecological science is defective, resulting in a lack of explanatory power regarding undesirable characteristics (1999); there is a tautologous link to the concept of ecological harm (1999; 2005: 228–230); and there are epistemological problems with identifying non-native species and invaded sites and predicting which introduced species will become invasive (1999; 2005: 223). As such, the concept's usefulness as a guide to which species to control or eradicate is undermined (though see Simberloff 2005 for replies). Though my proposal here does not answer his specific criticisms regarding the ecological grounding of non-nativity, it does acknowledge and address his concern that we are explicit when our arguments concerning non-native species stray from the descriptive resources of ecology to the prescriptive grounds of our aesthetic, ethical or historical values (Sagoff 1999).

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