

# Rethinking Botanical Nativism: Oral History, Plant-Based Cultural Heritage and the Indigenous-Exotic Binary in Western Australia

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## Abstract

This paper begins with a series of questions that highlight the intricate relationship between natural heritage and plant indigeneity. In the Anthropocene – the designation of our current era of anthropogenic climate change impacting negatively on the ecosystems of the planet – what does the future hold for people with well-developed and enduring affections for indigenous flora? Conversely, what are the implications of having acutely aversive feelings towards the non-indigenous plants of a place – those ‘invasive’, ‘feral’<sup>1</sup> or ‘weed’<sup>2</sup> species with which the indigenous (or native) species must often compete for resources? Moreover, how does an *unnatural plantscape*, consisting of non-native plants, impact, or even deaden, embodied sensory experience and appreciation of a place? Finally, how might the binary categories of *natural* or *unnatural* plantscape be defined, in the eyes (and in the noses, and on the tongues and fingers, that is, through the bodies) of community members with long-standing involvements with and emotional attachments to their flora?

Such ideas are necessarily entangled but also individually weighted with historical attitudes and cultural terminologies reflecting patterns of beliefs and biases towards the natural world, as the article will show. Developed in the context of the botanically diverse Southwest ecoregion of Western Australia (WA), the article aims to address these questions through an examination of the indigenous-exotic binary evident in oral histories conducted with plant enthusiasts in the city of Perth, WA, between 2009 and 2015. For the purpose of this discussion, the term *plant enthusiast* is used to refer to activists, artists, botanists, conservationists, horticulturalists, seed savers, tourists, writers and others who have affinities for plant life and who devote a considerable portion of their time, resources and energies to the protection or appreciation of the environment and, in particular, its plant taxa. The physical context of this discussion is considerably important. The southwest, including the Perth metropolitan area, is an internationally recognised biodiversity ‘hotspot’ and a site of extensive scientific research, international tourism, and conservation efforts at the local and international levels.<sup>3</sup> The region supports a vast endemic array of plant, animal, and fungal species – many of which are seriously threatened, endangered or face extinction.<sup>4</sup> Moreover, of the Southwest’s more than eight-thousand total plant species, approximately thirty-five per cent are endemic, or occurring nowhere else on earth in a non-cultivated, or wild, state.

## Conserving biocultural heritage in Western Australia

Despite the national and global focus on its species richness, the Southwest is not only a hotspot of biodiversity but also of biologically-related cultural diversity. Hence, cultural heritage is part and parcel of the biological heritage of the region. To put it differently, cultural and biological forms of heritage are, in practice,

interwoven – an interdependence expressed in the concept ‘biocultural diversity’, as posited by anthropologists, historians and heritage scholars.<sup>5</sup> As biodiversity vanishes, the cultural heritage surrounding it also becomes threatened. In Australia, the conservation of biocultural heritage is challenged by different factors, including climate change, species loss, suburban development, cultural fragmentation and a lack of conservation methodologies that take both nature and culture into equal consideration. In the state of Western Australia, for example, ninety-seven per cent of the biodiverse *kwongan*, or heathland, ecosystem near Perth has been cleared since European settlement.<sup>6</sup> In response to diminished plant populations and increasingly fragmented bushland areas, measures such as gene banking and seed propagation aim to ensure the continuity of plant species in repositories (in national parks, ecological reserves and botanical gardens). Although critical to environmental conservation, such strategies, grounded in scientific methodologies, on the whole do not tend to encompass the safeguarding of biocultural heritage, including intangible forms expressed in human memories of plants and elicited in interviews – the subject of this article.

In 2013, with these concepts and questions in focus, the author began an online archival initiative, FloraCultures ([www.FloraCultures.org.au](http://www.FloraCultures.org.au)), in order to document various manifestations of biocultural heritage in the rapidly changing capital area of Perth. Seeking a dialogic middle ground between disciplines – and more broadly between the sciences and the humanities – FloraCultures examines the complex intersections between cultural and biological heritage, where the decline of plants in the environment (living, growing organisms) is understood to affect the vitality of the cultural heritage referent to those plants.<sup>7</sup> One of the conservation outcomes of FloraCultures has been an online repository promoting the overlays between cultural heritage (for example, digitised versions of paintings, photography, prose, poetry, interviews, and other cultural artefacts) and Perth’s native flora (wildflowers, orchids, shrubs, bushes, trees) through a variety of media, specifically including, for the present discussion, oral histories with Perth residents. The initiative seeks to preserve the tangible and intangible heritage of Southwest plants where *tangible natural heritage* refers to physical substances (*of living plants*), cultural artefacts (*made from, or referring to, plants*), and natural sites or ecosystems (*containing plants*).

In contrast to its tangible counterparts, *intangible natural heritage* comprises knowledge, practices, skills, representations, and expressions (including memory) that are derived from the environment (including its plantscape, defined as the landscape configured or perceived in terms of its plant life) and developed by a culture over time.<sup>8</sup> This term has evolved from theoretical advances in intangible cultural heritage, characterised as ‘forms of cultural heritage that lack physical manifestation [and evoke] that which is untouchable, such as

knowledge, memories and feelings'.<sup>9</sup> UNESCO acknowledges 'oral traditions and expressions ... social practices, rituals and festive events ... knowledge and practices concerning nature' as intangible heritage needing urgent conservation globally today.<sup>10</sup> In working across these categories of nature and culture with reference to indigenous plant life, FloraCultures also seeks to advance human rights and cultural identity, particularly in Western Australia, in relation to natural heritage. The project recognises the importance of local flora to human heritage, identity and well-being; and, conversely, the significance of human conservation efforts to ensuring the continuity of botanical communities.

Interviews were conducted at the homes of the participants or at botanical sites, such as reserves and parks. Interviewees were asked about the former distributions of local species; childhood, family and community-based recollections of plants; sensory experiences of smelling, touching, tasting, hearing and seeing; local practices and events involving flora; and current environmental conditions affecting their local flora. The subjects were given space to speak freely about topics not directly addressed in the questions but which they believed to be relevant. The interview process served as a mechanism for eliciting and illuminating aspects of the intangible biocultural heritage surrounding Perth's plants. Importantly, one of the predominant themes that emerged in the interviews is the firm distinction between a *natural* and an *unnatural* member of the plant community. Often in striking ideological terms, the interviewees differentiated between *indigenous* (natural) and *exotic* (unnatural) where *indigenous plants* were regarded as those present in the Western Australian environment at the time of British settlement in 1829. Whereas the *indigenous, native* or *local* plants belonged to their greater community, *exotic, invasive* or *naturalised* weeds (e.g. South African cape daisies, or *Osteospermum* spp.) were viewed as outcasts and recent assailants that arrived after British settlement, from elsewhere in Australia, or from Africa, Europe or the Americas. Exotic plants were introduced to the Perth area unintentionally by colonists (in ship ballasts or cargo) or intentionally by agriculturalists (as food for livestock or to control land erosion), and have come to thrive in many parts of the city. In the interviews, exotic plants were often pitted against their indigenous counterparts. Many exotic species were at times demonised, hated and expunged, whereas most local species, especially those with prominent or showy flowers such as orchids, were valorised, loved and protected. These complex dynamics played out in the oral history work with Perth plant enthusiasts, as this article goes on to elaborate, revealing the problem of imposing conceptual categories on the natural world.

### The indigenous-exotic binary

Traveling north from the city of Bunbury to Perth, a distance of about 150 kilometres, one can easily notice visually stunning examples of the region's invasive plants, especially along railways lines and other disturbed areas. A prominent example is Pink Wild Gladiolus (*Gladiolus caryophyllaceus*), a cosmopolitan species that many tourists and locals enjoy photographing. Despite its beauty, profusion and human appreciation, Wild

Gladiolus is a garden escapee alien to Western Australia and originating in South Africa where, ironically, it is endangered. Around Perth, it is ranked as a high priority species where it rapidly overtakes bushland habitats.<sup>11</sup> If Gladiolus is the quintessential invasive plant – an *unnatural* species that *unnaturalises*, or corrupts, the local bush, converting it into an alien (and alienating) environment – then, for contrast, consider the Wreath Flower (*Lechenaultia macrantha*) whose remarkable pink, circular and prostrate flower appears briefly in the springtime (Figure 1). Most botanists and conservationists would agree that this species is genuinely native to Western Australia – part of the state's endemic flora. Although it is not listed as threatened, the plant is limited to areas in the northern Wheatbelt east of Geraldton, Western Australia (about four hours north of Perth by car) and is also linked to regional, community and, in terms of tourism, economic identity. It is indeed a charismatic plant, one that attracts legions of wildflower tourists each wildflower season; if Gladiolus is a quintessentially bad species, Wreath Flower is a paradigmatically good one.



Figure 1. Indigenous Wreath Flower (*Lechenaultia macrantha*) (pink and white) near Geraldton, Western Australia (Photo: John Ryan)

A prominent weedy tree species of Perth is the Lemon-Scented Gum (*Corymbia citriodora*) which lines the avenues of Kings Park and Botanic Gardens overlooking the Central Business District of the city (Figure 2). In areas of the coastal Swan Coastal Plain environment in which Perth is situated, this tree has become a serious weed and an aggressive species that overtakes native habitats.<sup>12</sup> If the Lemon-Scented Gum is a naturalised exotic plant – one which has reached a relative state of equilibrium with pre-existing species and also which has gained cultural significance in Perth – should it be considered part of the *natural* or *unnatural* plantscape? Is it only when a plant fails to conform to the ecological



Figure 2. Introduced Lemon-Scented Gum (*Corymbia citriodora*) at Kings Park and Botanic Gardens Near Perth (Photo: John Ryan)

status quo and, instead, reaches weedy proportions that it becomes unnatural? In contrast, consider the indigenous Tuart (*Eucalyptus gomphocephala*). At Kings Park, visitors can admire a venerable Tuart in the centre of the constructed landscape of the botanical garden (Figure 3). This particular Tuart has been carefully managed by arborists at the park to ensure its survival because of its centrality to the Aboriginal heritage of the park. To be sure, the tree is recognised by the local Aboriginal people, the Whadjuck Nyoongar, as a culturally significant being that should be preserved, despite its state of increasing decay and decline. Is staving off the inevitable demise of a tree, for cultural heritage reasons, a *natural* or *unnatural* act within the largely cultivated plantscape of Kings Park?

These examples of Western Australian flowers and trees imply that, despite the rigidities of perceptions and ideologies, there is no fixed line demarcating *native* and *exotic* plant species and that, in practice, the categories blur. Yet, whilst the indigenous-exotic binary is contested by researchers in plant science and ecophilosophy for these reasons, the premise underpins many practical, on-the-ground conservation initiatives with a brand of hardline biological nativism. Noss notes the contradictions inherent to the indigenous-exotic binary, arguing that ‘the terms “exotic” and “native” are about as ambiguous as any in our conservation lexicon (except perhaps “natural”)’.<sup>13</sup> Nonetheless, Devine defines the terms *alien*, *non-native*, *exotic*, *introduced* and *non-indigenous* more prescriptively through a geographical criterion, stating that ‘these labels apply to any animal, plant, or microbe found outside its natural range’.<sup>14</sup> Thus, an alien plant, or weed like Pink Wild Gladiolus, is one that is out of place, out of its natural range in South Africa. Other



Figure 3. Indigenous Tuart (*Eucalyptus gomphocephala*) at Kings Park. (Photo: John Ryan)

theorists focus on the *behaviour* of the plant in question, arguing that an exotic species is one that has failed to adapt cooperatively to the environment of local species.<sup>15</sup> Thus, an alien plant is one from somewhere else, from outside its natural range, but, more importantly, a diasporan that turns into a botanical miscreant in its new place. The environmental philosopher Holmes Rolston describes a native species as one that has adapted well, regardless of where it came from. Still, other scholars have critiqued the links between nature, natives, natality and nation that undercut any scientific or ecological rationale for the indigenous-exotic binary.<sup>16</sup>

Mark Woods and Paul Moriarity present five criteria of exoticity. Through the *human introduction criterion*, an exotic species is defined as the result of intentional or accidental introduction by humans. The *evolutionary criterion* states that a species is native if it originally evolved in the area. But the question remains, just how long must a plant have evolved in a region to be considered an original member of the flora? According to the *historical range criterion*, an exotic species has moved (or been moved) into an area where it has not previously existed. The *degradation criterion* defines an exotic species as harmful to the local environment. Hence, exotic plants are non-indigenous species that harm the ecosystem or displace indigenous flora. The last criterion of Woods and Moriarity is the *community membership criterion* in which exoticity is defined as a biological existence outside an ecological ‘community of mutual dependence and controls’.<sup>17</sup> According to this criterion, a species is native to the degree that it is an integrated, or acculturated, member of a community. The last criterion specifies that an exotic species can become native over time if it achieves a state of dynamic equilibrium with local flora and fauna.

Most Western Australian exotics meet the *human introduction criterion*. An exotic plant is defined by biologists and conservationists as one introduced since European colonisation in 1829; in contrast, a native plant is one that existed at that date, as documented in the early writings of botanists and visitors to the Swan River Colony (the settlement era name of Perth). Moreover, most native (or indigenous; the terms being used synonymously) WA plant species, such as the Wreath Flower, meet the *evolutionary criterion*; in fact, the nutrient-deficient soils and demanding climate of Western Australia have forced local indigenous plants to adapt to harsh conditions over time. However, the *historical range criterion* is complicated when we consider the Gondwanaland origins of Western Australian flora, underlying a shared genetic ancestry with South African species. The historical range requirement is oversimplified if we accept 1829 as the cut-off date. For example, although the Lemon-Scented Gum originates in the eastern states, most people would recognise the trees as native in Western Australia. Finally, the *degradation criterion* is exemplified by Pink Wild Gladiolus displacing native plants. However, to the contrary, there are numerous species from outside of WA that have become important members of ecological communities, such as American Sweetgum (*Liquidambar styraciflua*) nuts eaten by endangered black cockatoos in Perth suburbs. This is an example of the *community membership criterion* of Woods and Moriarty.

### Interviews with Perth's plant enthusiasts

FloraCultures' interviewees conveyed empirical knowledge of native and non-native plants, such as former distributions or interactions between species, gained through their own long-term observations. For these individuals, an *unnatural plantscape* is an obvious, phenomenological and emotional category of experience in which exotic species supplant native ones, where invasive plants corrupt, destroy or colonise a formerly diverse, functional and species-rich landscape. As a consequence of bearing witness over time to the transformation of a plantscape from largely native to largely non-native, my interviewees' memories clearly bear dimensions of loss and grief, or what Glenn Albrecht terms *solastalgia*, a form of psychological distress caused by ecological change, or 'a homesickness while one is still at home'.<sup>18</sup> As a consequence, often implied in these interviews was a sense of antagonism towards the non-natives mixed with despair over the seemingly unending struggle to protect native species and local bushland areas. The oral histories suggested that an *unnatural plantscape* constitutes an interplay of scientific, environmental, aesthetic, emotional, and sensory values. In demonstrating these themes, this section now turns to the examination of some excerpts from the work with the participants, specifically one scientist, two conservationists and one artist.

Born in England in 1914, the centenarian plant scientist David Goodall came to Australia in 1948 after studying botany at Imperial College in London. Professor Goodall is now an Honorary Research Fellow in the School of Natural Sciences at Edith Cowan University in Perth, and

is considered to be the oldest working scientist in Australia (ECU). For Goodall, the category of *indigenous* plants is a biological, aesthetic and, to some extent, emotional reality. In biological terms, indigenous plants are particularly those species that can be affected by *Phytophthora cinnamomi*, a soil-borne water mould, responsible for a condition termed *root rot* or *dieback*, whereas exotic plants are generally immune. Goodall's assessment of indigeneity, in plant pathological terms, reflects Woods and Moriarty's evolutionary criterion for exoticity in which a species is regarded as native if it originally evolved in an area. However, in an unfortunate turn of circumstances for conservation, the place-specific evolution of WA plants underlies their susceptibility to the *P. cinnamomi* micro-organism. When I asked Goodall about the major threats to plant diversity in the Perth area, he comments that '*Phytophthora* is very serious. It's so easy to spread it around if one walks in the area. I believe it was imported. I don't think there was a comparable endemic infection before it came.'<sup>19</sup> In this instance, *Phytophthora* itself is an unwanted exotic that colonises aggressively, degrades the local environment, kills indigenous plants and generally flouts the community membership criterion of Woods and Moriarty.

What is more, from Goodall's perspective, indigenous Australian plant species are simply those that did not exist in England, at least based upon his childhood memories of the country. Considering his first impressions of the Australian plantscape when he arrived in the late 1940s, he responded:

The most obvious thing is the trees. The eucalypts [gum trees] particularly. They're dominant and don't exist in the flora of England, of Europe at all. They are peculiar to Australia as original members of the flora. The casuarinas [sheoaks] are also peculiar to Australia. And other species I remember include the West Australia Christmas Tree, *Nuytsia floribunda*, which is a very striking parasite.<sup>20</sup>

In this interview extract, there is an aesthetic or perceptual basis to defining the indigeneity of WA plants. David calls attention to the Christmas Tree, a hemiparasitic species that is endemic to the Southwest of WA and flowers brilliantly in golden colours in December of each year around Perth. In characterising the tree as a 'striking parasite', Goodall intergrades aesthetics with ecology; additionally, in Goodall's view, the indigeneity of the Christmas Tree is linked to Western Australian identity and reflects the kinds of adaptations that the plants of the region must make to the extreme climatic conditions of the landscape (high solar radiation, drought, nutrient-deficient soils). Thus, indigenous plants become established in the plantscape through ecological mechanisms, such as predation, parasitisms and mutualisms, but also through cultural and historical associations.

To a lesser extent, for Goodall, botanical indigeneity (and, conversely, botanical exoticism, invasiveness, or naturalisation) involves emotional and mnemonic aspects related to inhabiting a place over time. Goodall intimates a sense of loss when he witnessed the destruction of the bush near his former home in Yanchep, about 45 minutes by car north of Perth. He commented, with a degree of restraint, that:

We certainly see the loss of bushland in the northern suburbs. I *was not unhappy* to move out to Yanchep because of that [italics added].<sup>21</sup>

In other words, he *was not unhappy* to relocate to Maylands, one of the earliest Perth suburbs where the degradation of the original bushland is no longer as evident, where the process of unnaturalising the plantscape has already largely run its course. However, in this statement, particularly his use of a double-negative grammatical structure, Goodall circumvents the deeper emotional and personal consequences of habitat destruction, avoiding, in Albrecht's terms, the sense of solastalgia, or the distress of bearing witness to ecological change in one's home-place.

Whereas Goodall is reserved in matters of experience, such emotional aspects are more palpable in an interview with Kim Fletcher, a conservationist born in the Perth suburb of Armadale in 1937 to a family of wildflower enthusiasts and orchid lovers. Fletcher presently works as a volunteer guide with Kings Park and Botanic Garden where he leads tours of the grounds for the public. He is a retired teacher who devotes his time and energies to bushland conservation in Armadale where he still lives. Much of my interview with Fletcher discussed the rare orchid species he used to see in Perth growing up during the 1950s. Thus, for Fletcher, indigenous plants are related to, and to some extent derived from, family and childhood memories:

Where I grew up was ideal for collecting orchids, particularly Spider and Enamel Orchids. It was sandy country. This has now disappeared altogether as bushland. It's covered with suburbia, and that probably started in the late '50s, early '60s.<sup>22</sup>

The solastalgic distress of witnessing the loss of native orchids near his home was a dominant theme in the interview. Fletcher recalls where orchid species once occurred, but much of the plantscape has since been overtaken by invasive weeds:

Next to a drain under flooded gums there was a huge patch of what was formerly called *Caladenia menziesii*, the Rabbit Orchid. But many times I've gone back with a tear in my eye, looking at where they were among the weeds'.<sup>23</sup>

Specific weed culprits register sharply in Fletcher's recollections, as ecological miscreants or bio-invasers that have dramatically disturbed the equilibrium of the plantscape:

There were lots of *Kunzea ericaefolia* growing in Spearwood. They were so common. During the '80s, the site was cleared for housing. There is still some native bush there but it's been invaded by Arum Lilies and goodness knows what else.<sup>24</sup>

Like Pink Wild Gladiolus, Arum Lilies (*Zantedeschia aethiopica*) were introduced to Western Australia from South Africa and now proliferate in wetland areas. The degradation criterion of Woods and Moriarity is especially salient in Fletcher's conceptualisation of exotics such as the Arum; non-indigenous plants are those that have the capacity to overtake a plantscape, rendering it unnatural, fragmented, homogenous, or, even, emotionally depressing.

The perils posed by weed species recurred in an interview with Collin and Joy Wornes, the volunteer managers of the Wubin Herbarium, located about four hours

northeast of Perth in a region of massive agricultural production known as the Wheatbelt. Their shire of Dalwallinu is internationally recognised for its diversity of Wattles or Acacia species. An event called Wattle Week is celebrated annually. In their oral history interview, they discussed the problems of wattles from eastern Australia turning into noxious weeds once transported to Western Australia. Joy Wornes commented:

That's the problem in the south of WA now. Eastern states' species of Acacia were introduced, and now they are jamming the waterways.<sup>25</sup>

Collin Wornes further explained that:

Down south [near Albany, WA], they have put wattles into a new habitat where they don't have competition. So the eastern states' species are killing our bushland. We have got to be careful too. But fortunately it is too dry here. Put those species in a high rainfall area and they'll go berserk in the bush. If you are going to introduce a species from interstate, make sure it doesn't take over your own bushland. Most of our weeds here [in Dalwallinu shire] are South African plants. We've got to be careful with things we introduce from South Africa'.<sup>26</sup>

The expressions 'killing our bushland', 'take over your own bushland' and 'go berserk' imply many of Woods and Moriarity's criteria. The exotics are introduced from the Eastern States or South Africa by deliberate human action. The wattles are pre-adapted to the higher rainfall areas of the south coast area of WA, but not to the dry climate of Dalwallinu and the greater Wheatbelt area. Moreover, these weed species historically did not occur in WA and were only recently transported, even within the frame of living community memory. Most importantly, exotic wattles degrade the local plantscape and, as aggressive colonisers, fail the community membership measure.

As the final interviewee presented in this article, Holly Story is an artist who, over the last twenty years, has used local plant materials in prints, embroideries, installations and sculptures. One indigenous species that is essential to Story's botanical art is the Western Australian Bloodroot (*Haemodorum spicatum*), which she uses as a dye. Story commented:

... from *Haemodorum*, the Blood Root ... and the Kangaroo Paw (*Anigozanthos manglesii*) does the same thing ... – you can get beautiful pinks and mauves. It's not really a red, it's a range of pinks and mauves that you can push into a bluish colour if you use a different pH in the dye baths. I have learnt to manipulate colour slightly. I just think that's a most gorgeous colour. It's like the South Coast [of WA] sunsets. Especially in winter when the light's coming through the dark clouds, you get these amazing pink and salmon colours'.<sup>27</sup>

In this passage, the visual aspects of Bloodroot embody the aesthetic qualities of the South Coast environment, about five hours south of Perth by car. Indigeneity is an aesthetic category, for Story, that represents the broader environment of which the plant is part and parcel. Despite its aesthetic signification, Bloodroot, in Story's view, is also evolutionarily adapted to the difficult Western Australian climatic context:

They grow in such difficult places. They seem to have refined everything to the absolute essential, so that the flowers of *Haemodorum* are black basically, and very small'.<sup>28</sup>

Summarising Story's perspective, indigenous plants are those species with aesthetic characteristics that can be manipulated in a tactile artistic practice, resulting in artefacts that are symbolic of the region and its particular beauty.

### Conclusion: Rethinking biological nativism

In conclusion, many theorists, including Devine, Hettinger, Low, Mabey and Peretti, have asserted, or implied, that biological nativism does not rest on strong scientific foundations. Although it is clear that the demarcation between indigenous and exotic plants is indistinct at best, these interview excerpts indicate that a native or exotic plant can be constructed in ways not accounted for in Woods and Paul Moriarity's schema. For Kim Fletcher, an exotic plant is one that confounds, interrupts or destroys a family-based sense of place in relation to flora; *exotic* is therefore an emotional exten-

sion of the community membership criterion. What is more, David Goodall suggests that exoticism versus indigeneity can be construed at the dynamic interface of science, aesthetics and emotional responses. Ecological adaptation is a core principle for Collin and Joy Wornes in their conceptualisation of weedy tree species. For Holly Story, indigenous Western Australian plants, not exotic South African or Eastern Australian ones, underpin her identity as an artist and provide the means for her to develop creative responses to, and expressions of, regional character. Therefore, the indigenous-exotic binary and the unnatural landscapes of Western Australia are not only scientific concerns, but also questions of community, culture and human individuality – aspects that should be further considered in oral history research on exoticity and nativeness in WA or elsewhere in the world.

### Endnotes

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