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Aesthetic and spiritual values of ecosystems: Recognising the ontological and axiological plurality of cultural ecosystem 'services'

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ABSTRACT

This paper explores spiritual and aesthetic cultural values associated with ecosystems. We argue that these values are not best captured by instrumental or consequentialist thinking, and they are grounded in conceptions of nature that differ from the ecosystem services conceptual framework. To support our case, we engage with theories of the aesthetic and the spiritual, sample the discourse of 'wilderness', and provide empirical evidence from the recent UK National Ecosystem Assessment Follow-on Phase. We observe that accounts of spiritual and aesthetic value in Western culture are diverse and expressed through different media. We recognise that humans do benefit from their aesthetic and spiritual experiences of nature. However, aesthetic and spiritual understandings of the value of nature lead people to develop moral responsibilities towards nature and these are more significant than aesthetic and spiritual benefits from nature. We conclude that aesthetic and spiritual values challenge economic conceptions of ecosystems and of value (including existence value), and that an analysis of cultural productions and a plural-values approach are needed to evidence them appropriately for decision-making.

1. Introduction

Aesthetic and spiritual values of ecosystem are frequently mentioned in the literature about the valuation of ecosystem services. In the major reports such as the Millennium Ecosystem Assessment (2005) (MA) spiritual and aesthetic values are included in the tables of values. A search across all the MA reports reveals 227 occurrences of 'aesthetic' and 335 of 'spiritual'. Sometimes they are briefly described by single adjectives. A list of such adjectives applied to spiritual from The Economics of Ecosystems and Biodiversity (TEEB, 2010, all volumes) is fairly typical: *spiritual renewal; spiritual enlightenment; spiritual benefits – i.e. existence value; spiritual enrichment; spiritual experience; spiritual identity; spiritual use; spiritual enlightenment*. The collective sense of these adjectives is that spiritual value is akin to the psychological benefit encounters with ecosystems can bring; a similar understanding is also implied for aesthetic value. Whereas this approach appears to presume the cultural context of Western developed nations, an alternative approach is also evident. Here the focus is on traditional, rural cultures - either in developing countries or indigenous groups, such as First Nation Canadians, in developed ones - and the primary benefit is understood to be the maintenance of their culture (Cooper, 2016). There is a good number of studies of these cultures that explore their spiritual and aesthetic approaches to the environment around them, conceptualised by the researchers, if not their research subjects, under the heading of ecosystem services (e.g. Adamowicz et al., 1998; Ishii et al., 2010), especially on the way indigenous people relate spiritually to their natural contexts (e.g. Abram et al., 2014; Pert et al., 2015).

These valuable studies are not yet matched by a similar attention to aesthetic and spiritual values of ecosystems in the developed, highly-economised cultures of the West, i.e. countries such as Britain. Here the characterisation of the aesthetic and spiritual within the ecosystem services literature remains underdeveloped (Church et al., 2011; La Rosa et al., 2016, who also claim that inattention to cultural ecosystem services (CES) leads to them having little impact on decision-making). Layke (2009), in compiling and assessing current ecosystems services indicators, found no measures of spiritual or religious benefits from nature, and our review has found no new monetary techniques for valuing these benefits. However, new work is appearing (e.g. Bieling, 2014; Bryce et al., 2016 in this issue; Daniel et al., 2012; Hernandez-Morcillo et al., 2013; Kanowski and Williams, 2009; Kenter et al., 2016a in this issue). Spiritual motivations for protecting ecosystems

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may also be stronger following the lead of the Pope's encyclical (Francis, 2015; see also Cafaro (2015)).

Several explanations for this limited attention to CES may be offered. Cultural services are often not discrete, but bundled up with others, e.g. Canadian salmon have cultural values as well as food value (Klain et al., 2014), they are not easily localised (Klain and Chan, 2012), and changes in them are not measurably marginal or well-correlated with other ecosystem services (Kirchoff, 2012); CES are everywhere and nowhere (Chan et al., 2016). This makes them hard to quantify, let alone price, and so attention mostly goes to CES like recreation (Chan et al., 2012a) that are easy to measure (Milcu et al., 2013). Spiritual value is a prime example of this and so it is sometimes exempted from the Total Economic Valuation process (TEEB, 2008; Turner et al., 2003).

With these difficulties come calls for more work by social scientists to work on them (e.g. Daniel et al., 2012). The UK National Ecosystem Assessment (NEA) did involve social scientists, especially two work programmes of the Follow-On (on cultural services and on shared values). Intriguingly, an 'Arts and Humanities' report came to be written as an annex to the cultural services report in response to the advocacy of the main work programme (Church et al., 2014). However, most arts and humanities work on the relation of culture and nature occurs without reference to the field of ecosystem services research. Where there is engagement across these academic disciplines the encounter may be experienced as 'fraught' (Satterfield et al., 2013). Fish (2011) remarks that cultural theorists may be more inclined to critique the CES field than support it and James (2015) claims that those who call for arts and humanities engagement in the Valuing Ecosystem Services movement (or VES movement for short) do not really want the arts and humanities world to challenge its dominant assumptions of value.

This paper develops some of the arts and humanities contribution to Work package 6 on shared, plural and cultural values of the NEA Follow-On (Kenter et al., 2014). True to form, it challenges the dominant assumption of value in Valuing Ecosystem Services (VES) ('services') and its dominant conceptions of nature ('ecosystems'). We argue that the core conceptual framework of ecosystem valuations (that combines science and economics) is at odds with the conceptual frameworks for beauty and the spiritual that are in common use in Western cultures, however dominated by economic thought these cultures appear to be. The aesthetic and the spiritual are refractory under the discourse of ecosystem services valuation. We argue that they are contrary ontologically in their conceptions of nature and axiologically in their conceptions of the value relationship between nature and human life.

This work is a response to calls for arts and humanities involvement specifically in conceptual studies (Milcu et al., 2013) and for work in industrialised and urban societies (Gomez-Baggethun and Barton, 2013). This paper asks what are the conceptions of nature and of value that typify aesthetic and spiritual discourses in Britain as an example of Western culture. (The use of the term 'ecosystem' rather than 'nature' at this point would prejudge the issue.) 'Discourse' is used in the wide sense of any communication around nature and value, perhaps printed text or common conversation, intentional artworks or incidental cultural artefacts (Castree, 2013), in fact, any type of cultural production. We direct the attention of the VES community to the method of interpreting these cultural productions to elucidate the values a society places on nature. We emphasise, alongside some other voices (e.g. Comberti et al., 2015; Fish and Saratsi, 2015; Winthrop, 2014), that there is a recognition of duties to nature as well as benefits that flow from nature.

With other papers in this special issue of Ecosystem Services we share the view that these discourses fall under the cultural category of ecosystem services (Millennium Ecosystem Assessment, 2005). We share the perspective that they are plural in that there is a variety of conceptions that may conflict with other conceptions held in a particular society; specifically they may conflict with attempts to reduce value to instrumental value, including economic or monetary value. Further, we agree they are shared in the sense that the 'formation' of these conceptions and evaluations (Kenter et al., 2016b in this issue, 2016c in this issue) is a shared and social process and also that the implications of these valuations apply to people collectively as a society or community and not to them merely as an aggregation of individuals (Irvine et al., 2016 in this issue; Kenter et al., 2015).

We begin our conceptual analysis by setting out a common conceptual framework adopted by much VES work as a framing metaphor, though contested by others. We then compare that with the conceptions of nature and value in aesthetics and spirituality. In doing this we are (1) answering the call for arts and humanities engagement, (2) attending to the neglected field of aesthetic and spiritual value in the Western world, and (3) supporting those voices in the field with further arguments that there are duties to nature as well as benefits from nature. In Section 3 we advocate a method of interpretation of discourses and cultural productions, a method yet to be adopted by the VES community. In this second section we first discuss the method before exploring the idea (trope) of wilderness and what that reveals about aesthetic and spiritual values of nature. Others in this special issue report on evidence of spiritual and aesthetic value in deliberative and interpretive-deliberative ecosystem service valuation exercises (in this issue: Bryce et al., 2016; Edwards et al., 2016; Fish et al., 2016b; Kenter et al., 2016a; Kenter, 2016; Ranger et al., 2016), so in Section 4 we include some of this evidence to illustrate consilience with our analysis. We end by discussing our conclusions in relation to other VES work and join the chorus advocating maintaining a plurality of values up to the point of decision-making.

2. Conceptual analysis

It would be surprising if the term 'ecosystem services' was in frequent use among aestheticians and those writing about nature and spirit; they will have their own favourite terminology (Williams, 1976). But behind any terminological differences, are there fundamental similarities in the conceptions of nature? The literature around VES has attempted to set out a clear conceptual framework. This has evolved and may differ in detail among research programmes, but there is a common core with two elements: a taxonomy of benefits in a Total Economic Value (TEV) (Common International Classification of Ecosystem Services (CICES) version 4.3, 2013; de Groot et al., 2002; MA, 2005) (which is an implicit axiology), and a model of how these are produced – flows from stocks (an implicit ontology). Both have become widespread: "bodies of knowledge so persuasive as to seem unrhetorical – to seem, simply, the way the world is" (Gross, 1990, about science in general). Yet neither are uncontested, particularly by those who point out that they are metaphors that may help understanding in some circumstances, but though they highlight some things, they hide others (Jax et al., 2013; Larson et al., 2011; Norton and Noonan, 2007). There are implicit ethical dimensions in the choice of metaphors (Cooper, 2000a) and criticisms of the dominant models include Norgaard (2010), for the way they blind us to the need for major institutional change, Luck et al. (2012), for excluding potential motivations, and Tadaki et al. (2015), for imposing a rationality on other people.

The language of natural capital and ecosystem services maps onto the metaphor of stocks and flows. The account of the 'flow' has been developing: consider the two-box diagram at the head of the MA report in 2005 (ecosystem services to human well-being) and then the six-column diagram from the UK NEA (2011) (ecosystem processes, through ecosystem services, to goods and their value). The 'cascade model' of Haines-Young and Potschin (2010) and Potschin and Haines-Young (2011) is particularly clear and continues to be developed (Spangenberg et al., 2014; Fish et al., 2016a in this issue). In this cascade model humans and the economy are seen as part of an

overarching whole, but they are set at one end of a transaction chain. At the other end is what might loosely be termed nature conceived as a functioning system, an ecosystem, which is influenced by human interactions (for good or ill), but at this end of the cascade the human actors are diagrammatically external to the ecosystems, a bit like production engineers (Haines-Young and Potschin, 2010). These ecosystems are analysed analogously to complex machines, in which the greatest interest is in their processes and outputs rather than in their components (so long as the processes and their outputs are maintained, it does not matter much if the working components are swapped for others of equal effectiveness). Interestingly, Jax et al. (2013), whose illustration of a simplified cascade provides the base for a series of ethical questions, include the question of the appropriateness and purpose of the model itself in the illustration. An alternative model is Ostrom's (2007, 2009) 'Social-Ecological System' Framework, that may come to be adopted by the VES world, even as it continues to develop (McGinnis and Ostrom, 2014). It is more complex than the cascade model in its account of the human element, yet the basic dualism of resource and agent remains. Raymond et al. (2013) point out that these VES frameworks are all production metaphors that frame the problem as maximising human benefits. They go on to recommend consideration of other metaphors. This we now do in contrasting this ontological framework with that adopted when speaking of the beauty of Nature.

Furthermore, theories of valuation (axiology) also will look very different if one is asking about beauty. There are different perspectives among those who value nature for aesthetic and spiritual reasons and those working in the VES field (Satterfield et al., 2013; Setten et al., 2012; Winthrop, 2014). The VES literature may debate the adequacy of monetary value to capture all that is thought important (TEEB, 2008), but there appears to be a consensus that what is to be valued is 'what nature does for us' (Defra, 2015; Juniper, 2013).

The standard VES model attends to ecosystem processes that produce goods and services that are of benefit to humans. Some of these benefits are clearly economic, others, e.g. health benefits, may best be assessed independently from the economic, and still others, the rather ineffable cultural benefits such as the spiritual and the aesthetic, may have to be left as uncertainly characterised until new methods to integrate their values are established (Bateman et al., 2010). Nevertheless, all these values exist because humans are receiving benefits, whether as satisfied preferences, improved health, inner calm, or, most tenuously, the satisfaction of knowing that something exists in the world even if one has no other benefit from it (the economists' existence value; Mace and Bateman, 2011). All these values are species of consequentialist value. Are there other types of value that people concerned with beauty or the spiritual might affirm?

2.1. Nature and value in aesthetics

Visual beauty, especially of landscape, is often where aesthetic valuing begins but this narrow conception is also critiqued (Brady, 2003; Carlson, 2000, 2010; Saito, 1998). The visual approach is the natural outcome of the interaction of pictorial studies with the direct appreciation of nature *senso lato*. This 'scenery model', a legacy of the picturesque movement, is problematized by Carlson (2000, 2010). Aesthetics as a discipline is greatly influenced by reflection on human artworks because these visual representations and interpretations of life may communicate beauty more deeply than can language. The common term 'landscape' is derived from painterly studies 'landskips' (Hutcheson, 2004; Wylie, 1998). The view from a particular vantage point and framed as a scene, at least mentally, is what is assessed for scenic aesthetic value. This conception shares with 'ecosystems' a distancing of the human subject from the environmental object that is under scrutiny. However, attention is directed, as in a painting, to the actual component parts of the view and their static composition rather than to dynamic processes that may not be visually obvious.

Attention to literature, and to conversations of the general public, is reminding people that there is more to natural beauty than the purely visual, and certainly more than the static scene (Brady, 2003; Carlson 2000, 2010; Selman and Swanwick 2009). Berleant (1992, 2013) has argued strongly for an 'aesthetics of engagement' which breaks down distancing, and embraces more immersive, multisensory appreciation. The scent of the pine trees, hands stroked through ears of barley, the wind on one's face accompanied by scudding clouds and their shadows; these also are beautiful. Now the human subject is integral and is becoming an object within it, an object subjected to wind and rain, impressed upon by odours, physically exhausted by labouring within it (as walker, gardener, farm labourer). Hepburn (1984:13), for example, points to how aesthetic experience of nature offers opportunities for reflexivity; we are 'involved in the natural situation itself ... both actor and spectator, ingredient in the landscape ....we are in nature and a part of nature; we do not stand over against it as over against a painting on a wall.' Nature is a co-production of non-human happenings, from geological processes to seed germination, and the long history of human culture (Fish et al., 2016a in this issue), especially 'agri-culture' (Pretty, 2002). The aesthetic shaping of nature by humans arises not merely from the practical, but involves moulding nature to an aesthetic. Cooper and Lonsdale (2004) provide an example of how observations of ancient trees lead to a cultural image of an ideal 'ancient (or veteran) tree' that is then put into effect through arboricultural practices that shape real trees to meet the ideal. The present relationships of humans and the rest of nature generate structures, products and, significantly, meaning (Fischer and Eastwood, 2016). Humans are no longer set apart as engineers and consumers.

Of course humans draw benefits from this. We desire what makes life worth living. The beauty around us brings joy, solace, inspiration; it is life-enhancing (Brady, 2006). At times we shall seek this out in special landscapes that have been accorded the status of being noteworthily pretty (such places may have official designations in Britain such as National Parks and Areas of Outstanding Natural Beauty). We are prepared to spend money and effort on going on holiday to such places. Policy makers are interested in this and commission studies (Swanwick et al., 2006). These may identify widely-shared subjective preferences that are temporally stable, such as for openness and remoteness (Daniel et al., 2012; Natural England, 2009). These preferences can be subsumed into the VES paradigm. Not so readily subsumed is the beauty of the unpretty and the daily - the falling of dying leaves, the miniscule symmetry of a flower of a common weed, perhaps. Conceptual attention here is shifting away from benefits-to-the-observer to something less dependent on the individual pleasure seeker. Enlightenment philosophers such as Kant and Hutcheson used the concept of disinterestedness in their analysis of aesthetics. This was not indifference to beauty. Disinterestedness referred to a separation of aesthetic value from both an interest in an object as a means of sensory gratification and from an interest in using it as a means to some utilitarian end (Kant, 2000: 91ff). Kant also distinguished what he called judgements of the agreeable from judgements of taste (or beauty). For Hutcheson (2004: 25) also, the pleasure which accompanies beauty is 'distinct from that Joy which arises from Self-love upon Prospect of Advantage.' This can be translated into contemporary debates in aesthetics as the distinction between aesthetic preference, a subjective expression of liking, and aesthetic judgement. Aesthetic judgements are normative in that some judgements are better or more reliable than others. They are also judgements of value, often expressed as a narrative rather than as a scalar comparator, least of all as a computable numeric. They are largely independent of the individual prejudices that are bound up in subjective preferences. The debate is over what the bases of these normative evaluations are, and what kinds of reasons can be provided to support them in contrast to preferences.

A common approach argues that the aesthetic response (which underlies ascriptions of aesthetic value) is correctly characterised as

involving attention to the qualities of the object for their own sake (Carroll, 2012; Iseminger, 2006). For example, aesthetically appreciating swans in a tree-lined lake on a summer's day rests on its aesthetic qualities, perhaps the snowy white feathers, graceful forms and elegant display of the swans within an attractive setting. This illustrates how aesthetic appreciation is not concerned with valuing the birds and lake as a kind of resource, where they serve some instrumental end. Pleasure arises secondarily from that engagement with those qualities which are appreciated for their individual distinctiveness. In this respect, the interest we take from an aesthetic perspective is focused on the natural thing in question, rather than on our own satisfaction (Stecker, 2003).

One implication is that although aesthetic value involves pleasure or liking, that pleasure cannot be detached from the object-centred appreciation of particular aesthetic qualities in the natural world. It is readily possible for the observer to obtain similar levels of psychological pleasure in ways other than looking at the swans, e.g. through a good meal. It is not possible for the aesthetic judgement of the qualities of the swans to be replaced by a substitute experience, e.g. looking at swans on another lake, as the judgement is of that particular lake and not the personal experience. Secondly, although such pleasure may be considered a benefit to those who experience it – perhaps it enhances their well-being – it is a secondary outcome of aesthetic attention to the world. The aesthetic judgement is timeless in that, once made, the judgement stands. It may be revised on further reflection or experience, but it cannot be repeated. However, the pleasure experience of viewing the swans is located in a moment of time, accessible later merely as memory. It may be repeated at a return visit, but if there is less pleasure in this second visit that does not change/revise the pleasure at the first visit. One can say, "I think Lake Windermere is beautiful" (present continuous); but, "I enjoyed seeing Lake Windermere" (simple past). In this way, aesthetic value is a form of non-instrumental value.

Another relevant line of argument concerns the objectivity of aesthetic value, even if not its universality. The theory of 'scientific cognitivism' argues that aesthetic judgments have objective force on the condition that they are informed by scientific knowledge (Parsons, 2008). The most well established position, Carlson's (2000) 'natural environmental model', rests on an argument by analogy. It is argued that in art appreciation, art history and criticism provide the foundation of informed judgments. For environmental aesthetics, instead, Carlson claims that the most legitimate and 'objective' source will be the natural sciences, such as geology and biology. Such knowledge, the argument goes, will ensure aesthetic judgments accord with their objects, enabling a grasp of relevant aesthetic qualities. In Carlson's own example, if one were to appreciate a whale without knowing it to be a 'mammal,' one might see it as a clumsy fish instead of recognising its majesty as it moves apparently effortlessly through the ocean (Carlson, 2000, 2008). In this approach, with scientific knowledge in tow, we are able to appreciate aesthetic qualities that are otherwise unnoticed or misapprehended. Such knowledge can also enable us to appreciate ecological processes and find value where previously we did not. For example, coming across the remains of an elk carcass may appear disgusting, but viewed as part of the necessary process of decomposition and an ecological cycle, the carcass may come to be seen as part of a beautiful whole (Rolston, 1998). The carcass may well reduce our pleasure in a walk, and we might well avoid passing it in future, but we may still recognise its aesthetic value according to this approach.

Consider another analogy, the beauty of the human body. An evolutionary approach might attend to the sexual attractiveness of potential mates and the different degrees of attraction inspired by different members of the opposite sex. Theories of fluctuating asymmetry alongside Darwin's original ideas of sexual selection imply that the most attractive individuals are the ones that signal their good health and fitness through visual features such as good proportion. There is evidence for the attractiveness of symmetry, along with 'normalness', clear sexual dimorphism and, in males, dominance markers (e.g. Buggio et al., 2012; Puts, 2015). Biological fitness has an equivalence to Aristotle's virtue applied to non-human objects; they are both about ideal suitability to the role the tool is expected to play in life (Nichomachean Ethics III 6). More reflective consideration of human beauty sees past a sexual attractiveness (indicating reproductive fitness) to the visible signs of character such as the lines of experience in an old person's face. Here beauty is the expression of the moral virtue of the human subject. On this analogy the natural world has an objective beauty to the extent its health, its proper functioning, is evident (a dazzling display of well-formed flowers would be an example). On the deeper analogy of the aged face, evidence of the resilience of nature under wanton human exploitation will be beautiful to those with eyes to see it (perhaps butterfly-bushes in an urban wasteland). Aldo Leopold included something similar in his 'Land Ethic'. He encouraged us to develop our aesthetic sensibility for nature in order to judge what is 'esthetically right', thus suggesting not only a link between aesthetics and ethics-as-duty, but also the possibility that the two realms of (non-instrumental) value may be inseparable (Leopold, 2000: 189).

While knowledge is important for enabling the discovery of value in nature, its stipulation as a necessary condition for appropriate (or objective) aesthetic appreciation of nature has led to challenges. Most relevant to our discussion here is that objectivity can be difficult to achieve in practice, not least because of the variety and diversity of experience, background and values that people bring to aesthetic appreciation of nature (Brady, 2003; Moore, 2008; Parsons, 2008). Approaches that allow for more diversity and, specifically, jettison the requirement of knowledge of the sciences, include those which emphasise intersubjectivity of aesthetic values (Brady, 2003, 2016).

Intersubjectivity is initially evidenced by observed agreements between individual aesthetic judgments at the scale of societies or communities. Individual judgments may have their own particular inflections based on a person's specific background knowledge, experience, emotions, etc., yet nonetheless agreement and connections with other individual aesthetic judgments of the same aesthetic subject matter come to be established. The explanation for this shared aesthetic judgement is not the happenstance of individuals agreeing. The aesthetic judgements of individuals of particular natural occurrences, e.g. a specific local landscape, will be the product of the historical development of general aesthetic sensibilities in society, scientific knowledge, local tradition and the actual features of the landscape, their health and disposition. In addition to these, which may be largely unspoken in their application to the landscape in question, a debate may be generated by a development threat, say, or the arrival of some researchers applying deliberative methods. Such debate may lead to the acknowledgement of differences of opinion, but will also lead to deeper, more thoughtful judgements. These will be supported, among other things, by forms of testimony and proof anchored in the perception of aesthetic qualities (Sibley, 2001). Forms of aesthetic conversation and discussion (for example, telling stories about shared experiences, e.g. of the sea, or reflecting on a beautiful sunset) do more than reveal agreement in our judgments because they educate, elucidate and enrich shared intersubjective judgements of beauty. If conversations stray from aesthetics to ethics this will be no novelty. The Enlightenment concept of disinterestedness was initially put to use in moral philosophy and then applied to aesthetics (Rind, 2002; Stolnitiz, 1961). Against the tradition of Hobbesian egoism, moral philosophy of the time emphasised benevolence and right action, whether or not it was in one's personal interest. By extension, something is judged to be beautiful, whether or not the beholder has any personal or other interest in it (e.g., economic).

In this way aesthetic value acts as an indicator of a non-instrumental value that justifies a duty of care for the natural world, irrespective of self-interest or human benefit. The links between ethics and aesthetics have more recently found their way into environmental

aesthetics through 'aesthetic preservationism' (Fisher, 2003). This view holds that the sensitive perception characteristic of aesthetic attention and the discovery of beauty, majesty and so on in the natural world, can instil in us a care and respect for nature. In this way, a kind of aesthetic awareness potentially feeds into ethical attitudes and forms of environmental action (Hargrove, 1989; Hettinger, 2007; Lintott, 2006). The valuing of aesthetic qualities in a landscape may be cited as a motivating factor in any moral actions to protect it. This echoes Leopold's Land Ethic that brings aesthetic and ethical value together through what is 'esthetically right'.

This analysis has traced a line of thought very different from that of VES. Nature may or may not be seen as embracing human culture, but its aesthetic value lies not primarily in its delivery of benefits, such as uplifted spirits, but in a beauty that is judged to lie in aesthetic qualities. Aesthetic judgement is non-instrumental and objective to the extent that the interests of the observer are set aside and appeal is made to reasons and methods of proof appropriate to aesthetics, e.g., identification of aesthetic qualities and perceptual proof (Brady, 2003; Sibley, 2001). It is not surprising if this leads to common judgements that survive the 'test of time'. This idea, which originates in Hume and has been widely discussed in aesthetics, suggests that works of art which have been admired for generations come to belong to a canon of great art. Similarly, we find something like a set of natural places, species, etc., which have become deeply valued over time and across communities, as evidenced by forms of legal protection and designations such as national parks and World Heritage sites. These legal protections may be seen as the practical application of the duty of care derived at least in part from the shared objectivity, or intersubjectivity, of aesthetic value. We recognise that beauty is a contested concept, but we would argue that it remains relevant in ecological thinking and in our aesthetic and spiritual relations with the natural world.

Aesthetics is an academic discipline very different to religious studies or theology, usually allocated to disparate university departments. Our analysis in this section retains this distinction, but in practice the distinction is hard to maintain. Several observe that cultural dimensions of ecosystems come bundled together (Chan et al., 2012a; Klain et al., 2014; Milcu, 2013; Plieninger et al., 2013), as our examination of wilderness later will demonstrate. There is an overlap and gradation from beauty to the holy (Coates et al., 2014) that deserves exploration elsewhere. Such a project should look at the frequency with which Western atheist intellectuals turn to landscape beauty to compensate for the loss of the transcendent or noumenal in nature (Diffey, 1993; contrast Brady, 2013).

2.2. Spiritual conceptions of nature and value

Before considering how nature is conceived spiritually, it is useful to establish what we mean by 'spiritual', at least in a Western context. Definitions of the religious and spiritual in disciplines such as sociology and anthropology are highly varied and context dependent. They will be stretched in one direction if the aim is to encompass the full range of global cultures; and stretched in another direction if they are used in debates over secularisation and the putative superiority of the spiritual over the religious (Ammerman, 2013; Swinton and Pattison, 2010). Most of the research into the 'spiritual' has been undertaken with respect to fields such as health or psychology and little with respect to the natural world (e.g. Rowson, 2014, in Britain; unlike in North America, e.g. Fredrickson and Anderson, 1999; Warber and Irvine, 2008; Zuefle, 1999). Inspection of the ecosystem services literature suggests that 'spiritual value' is used without reference to these debates. Instead it is deliberately unspecific so that it can encompass values within practised religions of all sorts together with those values that are akin to them, while lacking religious features such as belief in god(s) or organised structures. Recent studies of spiritual value that involve interviewing or questioning local people often proffer sentences to elicit responses. Such sentences may begin, "I value this place because …", the 'becauses' covering a diversity of potential values. Under the category of spiritual, a sample of texts of such sentences include: "I feel part of something that is greater than myself; feel more connected to nature; I gain perspective on life" (Bryce et al., 2016 in this issue); "they are a sacred, religious, or spiritually special place to me or because I feel reverence and respect for nature there" (Ancona et al., 2016; Brown, 2013); "inspires me to be aware of forces or entities larger than myself. This can be the basis for both negative and positive feelings including emotions like awe, reverence, humility, and even fear" (Klain et al., 2014).

Any working definition should be specific to the culture of the people whose valuations are being sought. Within the Western tradition the main religion has been Christianity in all its diversity. For example, data from the 2011 Census for England and Wales (Office for National Statistics, 2012) records approximately 59% Christian, 25% no religion, 7% not stated, 9% other religions. If many of those who self-identify as of no religion are descended from those brought up as Christian, that would imply that over 80% are likely to conceive of the religious or spiritual in a Christian or post-Christian frame, dissenting and dissociating themselves from it to varying degrees. We shall focus on this frame, though we acknowledge the substantial minority, which has grown steadily in Britain since World War Two, who belong to other religions. Proportions will differ in other European countries and North America, but the overall picture is likely to be similar. The Census data show a rapid decline in the proportion of people who claim to be Christian and there is a similar decline in church attendance. Some have described a shift from organised religion to new spiritualties (Heelas and Woodhead, 2005). A widespread sense that the spiritual has taken over from the religious may, in part, lie behind the term 'spiritual value' of ecosystems, alongside a wish to respect the diversity of practised religions. The informal and semi-organised practice of nature spirituality, together with earth-based spirituality and the varieties of modern Paganism, might be expected to grow. However, the numbers involved appear small as Shterin (2007) points out in reviewing Heelas and Woodhead. More widespread may be attitudes to nature that are developments derived from Christian thought and a persistent undertow of paganism. In the western regions of Britain and Ireland the Celtic heritage of a close relationship with nature, including its expression in Celtic Christianity, remains a lively tradition (Bradley, 1999; MacInnes, 1950, 1982).

The diversity in the spiritual stances in post-Christendom Britain can usefully be understood using Taylor's (2007) nuanced analysis of secularisation in Western societies, typifying it into three forms. Secularity-3 is his term for the loss of innocence of belief in today's world (secularity-1 is secularity in the public space; secularity-2 is the decline in religious belief and practice). Whatever a person believes, one way or another, they have done this as a choice, aware of the other choices they could have made. In practice, not surprisingly, people come to hold a diversity of beliefs gathered from various sources – and not necessarily consistent with each other. These are all ways of handling the experience Taylor calls 'fullness', the 'something more' that materialist and reductionist language is not adequate to express. There is also the recognition that the answers to some questions inevitably lie beyond us, and that there is much we do not even know we do not know. Swept up into the 'spiritual', then, though not necessarily named as such, might include a recognition of this 'fullness', and things like an appreciation of the integrity of animal life, as well as on-going religious practices.

The international literature that mentions spiritual with ecosystems tends to view the spiritual functionally, e.g. what psychological or social function 'spiritual' encounters play, or even categorise the benefit as provision of spiritual information (Chiesura and de Groot, 2003). This coheres with an economic perspective that views nature primarily as a resource. Consistent with this conception, Natural England (2009) provides the following definition of the spiritual in a UK context: "a deep-seated, harder-to-access value, often delivered in more solitary

moments; could be delivered by iconic wildlife, or a single feature tree, as well as by more traditional features such as burial mounds, standing stones, or churches. Also associated with water (still lakes or slow-moving streams and rivers) and with high places; can be created by the weather, such as a dramatic shaft of light or particular colours" (p6) (compare Radford and James, 2013). Note here the terminology of 'delivery' that assumes an ecosystem is the provider. It may almost be expected that, if park-keepers have done their job properly, nature is guaranteed to deliver. Contrast this with the view that spiritual experiences do not come to order at our bidding, being gifts from 'the beyond' when we are spiritually open to receive them. Yet the choice of the word 'spiritual' in VES literature over, say, 'psychological value' implies much more than just improving mental well-being.

Although spiritual approaches to nature, such as a meditative walk, may increase contentment and be motivated in part by the desire to be able to 'live with myself', to undertake them with the aim of increasing personal happiness is to subvert them. Rowson (2014) has recently marshalled arguments that happiness can only be a by-product. The essence of spirituality in this view is self-giving, a setting aside of personal desires. In this, spirituality joins forces with traditional religion. For those who espouse spiritual value, a Total Economic Valuation (TEV) is likely to be judged a very partial affair (Paavola and Adger, 2005). The TEV, as an acknowledgement of all that nature does for us, is more welcome than a disregarding of nature, but it does not recognise the reciprocal duties of humans within the natural world, duties that may come at various levels of cost and human dis-benefit. Spiritual practices such as sacrifice and fasting would be examples of costly behaviour that are contrary to preference satisfaction, as are caring interventions. The normative ethical paradigm of religion has traditionally not been consequentialist. Its injunctions have been towards enhancing virtues such as care for others, or have been deontological, emphasising duties towards others and recognising their rights. Concomitantly, value lies in the flourishing of the other, rather than in their value to me.

Spiritual values can be characterised as transcendental values, in that they are fundamental conceptions of the relationships of humans and nature (Kenter et al., 2015; Raymond and Kenter, 2016 in this issue). Sometimes people may not be aware that they hold these values until they are evoked by an apparent threat or until they are elicited by sensitive group work (Kenter et al., 2016c in this issue). People may also be reluctant to express them for fear of social embarrassment or shame in talking about religion in public or of ridicule for holding such views in an increasingly secularist society.

If the spiritual conception of value contrasts with that of VES literature, so does its conception of nature. Orthodox Christianity conceives of humans as creatures among others in a Creation brought into being by God. Each part is related to every other and God delights and cares for the whole. Although some Christians have taken the powerful and distinct role of humans as a 'permit to despoil' (White, 1967), others subsequently argued this understanding is deeply mis-taken and that humans are merely stewards, ultimately accountable to God for their exercise of their de facto dominion on behalf of the rest of creation (Whitney, 2015). Some theologians go further to argue that stewardship itself is inadequate (e.g. Palmer, 1992) as it perpetuates a managerial model of the human relationship to the rest of creation. Modern paganism generally sees a unity of nature and the divine, the Mother of us all, humans and the rest. It tends to be critical of Christianity for elevating the role of humans, providing a justification for human exploitation. Those without a doctrinal system, when asked about their spiritual experiences often speak of a connectedness to nature (e.g. Kenter, 2016 in this issue). Though other responses include feelings of awe and insignificance before a larger reality (e.g. Keniger et al., 2013), maybe uncomfortably so. LeVasseur (2011) describes the radical existential dependency and debt to nature that generates a sense of shame, a shame only ritual can assuage (see also Trainor (2006), Winthrop (2014)). Daniel et al. (2012) write there is a risk of underestimating the spiritual. Surely an understatement, for to reduce the rest of nature to the status of a resource feels a sacrilege in the face of such awe.

3. Interpretation of cultural evidence illustrating aesthetic and spiritual values

In the argument so far, we have argued, on a conceptual level, that both spiritual and aesthetic evaluations of nature include recognition of some flow of benefit to humans but that the stronger dynamic is in the opposite direction – the duties humans have towards nature. This is partially due to their conceptions of nature, which are very different to that of VES literature, while differing also from each other. Aesthetic judgements often acknowledge the anthropogenic origin of patterns and features of nature (as in a rural landscape), yet there can also be a strong strand that sets the natural apart from the human, such as in the language of wilderness. However, either way, aesthetic evaluations are dominated by the conception of humans as the assessors of natural beauty, rather than as recipients of products or benefits. Spiritual conceptions typically affirm the oneness of people with nature, a creature among the creation or the experience of a deep connectedness. Alongside this there may be a recognition that humans have a distinctive role within nature as, likewise, other creatures have (each species having a distinctive ecological niche). Part of the distinctive role of humans is a lively moral awareness that means human interactions with the world can never be morally neutral, but are under judgement: does this interaction contribute to the flourishing of the whole? The consequences of human actions are not merely cause and effect, from which humans can learn to manipulate the world to their advantage, but nature's response categorised as blessing or retribution.

We now wish to test these conceptual analyses against the cultural evidence around us in society. This is the method of 'inspection' or 'interpretation' tabulated in Kenter et al. (2014). The cultural evidence available for inspection is highly diverse. The contemporary scene of nature writing is particularly rich (Cowley, 2008), with several major names in Britain (e.g. Jamie, Macfarlane, Jay, Croker, Mabey), with many lesser-known writers besides. The journal *EarthLines; the Culture of Nature* provides a platform for this work. In this literature readers encounter diverse evaluations of nature (e.g. Jamie, 2008, slates Macfarlane). Nevertheless, all these evaluations are deep, touching on both aesthetic and spiritual dimensions, and contest reductions of value to money. The interest of contemporary art lies no longer in landscape painting. The energy is in placing artworks in environmental settings, setting them free in nature, sometimes with the explicit anticipation of their disarticulation and absorption into the world around them (e.g. the work of Antony Gormley, Patricia Johanson). Art that addresses environmental issues has become main-stream in recent years (Brown, 2014; Kastner and Wallis, 2003). Edwards et al. (2016 in this issue) report on socially transforming art that integrates environmental or ecological concerns and on how arts-led deliberative practices can illuminate CES. In addition to art and literature, there is also more day-to-day culture. There would be value in future detailed analyses of genres like gardening, television nature programmes, village signs, street names and jigsaw puzzles. Bieling and Plieninger (2013) provide an exemplary analysis of artefacts in the Alps, while Lewis (1979) provides guidance on how to 'read' a land-scape, interpreting the way conceptions of nature are inscribed upon it. Ethnographic studies of village activities through the year would also be illuminating. Adequate accounts of these discourses cannot be merely prosaic descriptions, but will be richly woven narratives as in the widely-admired model of Schama's *Landscape and Memory* (2004).

We have chosen, for reasons of space, to sample just one conceptual presentation of nature, one 'trope', in contemporary discourse, that of 'wilderness'. This is just one way among many of writing and speaking about nature in contemporary Western culture. This inspection method

owes much to the discipline of ecocriticism (a branch of literary criticism) that examines how the more-than-human features in literary and other cultural productions. One approach of ecocriticism is to trace the concepts of human-nature relations and how these cluster into a typology of tropes. Our chosen trope is amongst the chapter headings in the textbook on this subject by Garrard (2012), alongside other well-used labels like 'Romantic', 'Pastoral' and 'Apocalyptic'. What does an inspection of 'wilderness' reveal about presuppositions in talk of nature and value? The rest of this section explores the concept of wilderness as an example of the application of the interpretive method.

It is unsurprising that humans may judge beautiful a landscape that is obviously productive – waving corn or fat sheep (consider Psalm 72). It is more striking that, with the Modern period of Western culture, the appreciation grew of the beauty of the unproductive. From being the haunt of demons, mountains came to be appreciated as sublime (Nicolson, 1959). The Romantic Movement developed this sensitivity in its critique of the industrial and the domestic. The elevation of the English Lakeland into a sacred landscape was contemporaneous with the industrialisation of the northern mill-towns of nearby Lancashire. North America possessed vast tracts of apparently empty land to the eyes of European immigrants. (The indigenous people were made 'invisible' through physical ejection and through conceptually categorising them among the 'natural'.) The 'Wild West' could be treated as new territory to be incorporated into the European economy by pushing the Frontier ever westwards. For others, though, it was seen as a pristine land, in which one could reconnect with values that had been lost in the main culture (Nash, 1982). The Frontier should bypass these places, leaving them behind the moving front as reservations, National Parks, within a country dedicated to the pursuit of happiness.

John Muir (1838–1914) was the primary campaigner for the National Parks. A Scots immigrant to the USA, he was enraptured by the wild and so motivated to campaign to preserve it (Worster, 2008). His nature writing and journals reveal aesthetic, spiritual and scientific values in many of his descriptions, such as of the Sierra Nevada:

> No Sierra landscape that I have seen holds anything truly dead or dull, …; everything is perfectly clean and pure and full of divine lessons. This quick, inevitable interest attaching to everything seems marvellous until the hand of God becomes visible; then it seems reasonable that what interests Him may well interest us (Muir, 1911).

Passages such as this reflect overlaps between aesthetic and spiritual values, though not drawn in narrowly theological terms. The Calvinism of his youth was replaced with 'a biocentric wilderness theology rooted in a consciousness of the sacrality of wild nature' (Oelschlaeger, 1991). Respect for creatures and nature emerges through his embodied experience of the mountains. The wide influence of his ideas, including his controversial emphasis on 'pristine wilderness' (Cronon, 1996), points to how his environmental values have been shared over time and across continents. They lie behind the VES concept of spiritual value for Westerners, that there must be places where people can recover from the 'burdens of urbanism' (Satterfield et al., 2013) and receive the spiritual benefits implied by the terminology of TEEB that we listed at the start. Satterfield et al. (2013) write of a 'wilderness aesthetic' that may imply people ought to experience it in this way, an overlapping of beauty and the spiritual.

In his debates with the Conservationist position of Gifford Pinchot, a sort of wise-use position, Muir was clear that wilderness areas possessed their meaning and value in not-being-useful (Worster, 2008). Pinchot was advocating a scientific and technical approach to maximise the efficient use of natural resources for the public – a forerunner of the cost-benefit analysis. His primary conflict was against 'interests' or 'monopoly', but responded to Muir on a second front (Hayes, 1959). Muir, as a Preservationist, pressed that national parks should bear almost no evidence of human activity. The typical visitor was to be a hiker through this landscape, an observer, who was redeemed by the freshness of what she saw. In this way, although in origin a protest against 'nature as utility', this wilderness approach became vulnerable to utilitarian capture. The wise-users can claim that wilderness has value through providing spiritual renewal and happiness, even if the precise monetary metric is hard to calculate. The wild is also incorporated into the consumer economy through the provision of visitor centres, trail guides and wild-camping equipment. This illustrates the double-bind of ecotourism. Its promotion requires the remoteness and absence of people the visitors crave (Scottish Natural Heritage, 2012). And yet its financial viability depends on easy access and many purchasers of its marketable products.

The wilderness trope has gained new strength in Europe through the re-wilding movement. Ostensibly, this arises from developments in the science of ecology. This has brought new understandings of the need for disturbance regimes to maintain ecosystems (Frelich et al., 2002), of the need for extensive protected areas to reduce the negative consequences for vulnerable species of habitat fragmentation and edge-effects (Lindenmayer and Fischer, 2006), and of the pre-agricultural wildwood being, arguably, more like a savannah than a forest, kept open by large grazing mammals (Kirby and Watkins, 2015; but contested by Mitchell, (2005) and others). This movement argues for the set-aside of large tracts of land into which large herbivores and top carnivores like wolves can be released and natural processes allowed to run wild (Monbiot, 2014; Taylor, 2005). It may be that enthusiasm for rewilding is more prevalent among nature conservationists than the general public. Buijs et al. (2011) draw on Cultural Resonance and Social Representation theories to analyse conflicts in the Netherlands. Here the National Forest Service has adopted a wilderness representation of nature, which has limited cultural resonance. The local protest group has framed the conflict with wider notions of nature that embrace more than the apparently-untouched.

The rewilding movement is vulnerable to a charge of bad faith. It overlooks the way that landscapes now prized for their wildness arose through local people having been excluded. In the case of the Scottish Highlands, witness the Clearances of the nineteenth century (Hunter, 2014), but also the contemporary protests at the actions of the conservation agencies excluding local people from nature reserves that had been part of their common patrimony (Mitchell, 1999). Of course, the whole world cannot be given over to wilderness. But in setting aside areas for wild nature, the danger is that it leaves the rest to be exploited. "Nature Reserves are ghettos where we can segregate unused species, terrain too wild to be useful, and images of a bygone era" (Cooper, 2000b). This example interpretation has revealed one similarity between wilderness and VES languages; they both emphasise the notion of nature as something apart from humans. As to value, wilderness language is ambivalent. In the hands of a John Muir it is a powerful call to protect nature from the depredations of human use, an argument that humans have a duty to protect it in and of itself. Yet, for those who have come to see wild areas as places where they can feel spiritually refreshed, the wild is delivering a service that benefits them, and they are prepared to pay for travel to such places, for waterproofs and cameras, and a willingness-to-pay represented by their subscriptions to nature conservation organisations – the John Muir Trust among them.

4. Interpretive-deliberative evidence

Is there also corroborative evidence for the analysis of this paper from deliberative exercises? Here we use data from investigations with a different natural focus, the sea, where humans may readily describe themselves as feeling closer to nature. Although, of course, there is overlap; the sea can be place that evokes many of the values connected with the concept of wildness. Evidence from deliberative exercises around the value of the marine environment for seaside communities and recreational marine users supports the case that people conceive of nature with themselves as integral within it. Their expressions of

aesthetic and spiritual value are about care and respect, and not merely about having nice feelings.

Case study research using deliberative approaches was conducted as part of the UK National Ecosystem Assessment Follow-on work (in this issue: Kenter et al., 2016a, 2016b and 2016c; Orchard-Webb et al., 2016). Participants were asked to speak of their personal experience of the sea in the form of story-telling in a small group setting. A content analysis of the narratives revealed a diversity of value types including expressions of aesthetic and spiritual value.

Aesthetic values emerged regularly from divers through explicit descriptions of what they saw. Some statements entwined emotional responses and spiritual values illustrating the connections between aesthetic and spiritual accounts: "I went for just a little dive under a pier. It was covered in life, the sun was shining, clear green blue, little bits of kelp, then two huge rays came past, it was like paradise. It was just a silly little shallow dive but it was magic. The most beautiful were the anemones and the plants. It was exquisite". A resident of a seaside community: "the atmosphere; the flat calm sea, the sun setting, the whole thing about canoeing along on a dead flat sea and the fish all around me. It was an amazing sensation, and that was about connecting with nature and being part of nature".

During the storytelling, people frequently described "feeling part of something larger". One diver recalled "magic moment with cuttlefish… you realise there's intelligence there, and there's a connection". Another diver described being surrounded by seals "I am part of this. I am not just watching". Story-tellers also explained how their experiences had given them meaning, "look at all the things we've done, the relics, we mined, the fisherman's huts we've left behind. It makes you reflect on things". Another: "I felt the beauty but also felt sadness, because where had all the fish gone? They were there in the past but not there anymore". Such stories show how individuals can evoke values that underpin a duty of care towards nature. A seaside community member explained "I think just being by the sea…it inspires us, it's inspiring, isn't it? " These are statements of implicit spiritual value.

Explicit statements of spiritual value were less common but one diver described his experience "like a cathedral I ticked all of these [values] and more, I added religious which is strange really because I am an atheist. I was in one place and visibility opened up and it was like a cathedral, with jewel anemones lighting up everywhere. I felt like I was in the presence of God, if there is such a thing. I was crying when I came out of the water". Another diver: "It clears my mind, it's meditative." One seaside community participant said "[I]t's a spiritual experience every time I go to the sea, especially if I'm sad or upset, I just go and sit there and watch it". Another explained why they "they wouldn't live anywhere else; it has to be by the sea… It's God given and something we should appreciate more".

This final statement encapsulates the respect and concern that is conveyed by the story-tellers for the sea. Following the stories, participants were asked which transcendental values were most evoked by their experience; 'protecting the environment' and 'enjoying life/pleasure' were those (Schwartz and Jerusalem, 1994) most frequently highlighted. They often expressed feeling as though they were a part of nature, rather than talking about it as a resource, illustrating how aesthetic and spiritual values were neither instrumental nor consequentialist.

5. Discussion

This paper has argued that at least in respect to aesthetic and spiritual values for environmental places and wildlife an economic, instrumental and consequentialist account of those values is not sufficient (compare Luck et al., 2012; Stokols, 1990). This is because aesthetic and spiritual values emerge from (and, in turn, shape) discourses that have different ontological conceptions of nature and different axiological conceptions of the value relationships between nature and humans (also see Fish et al., 2016a in this issue). The ontological claim of our conceptual analysis coincides with the findings of Flint et al. (2013) that VES articulates the view of nature as separate from humans and as open to human utilisation. This is merely one of their multi-dimensional array of human-nature conceptions, including those that integrate humans within nature (Flint et al., 2013) or see humans having a kinship with nature (Gould et al., 2015). Setten et al. (2012), from a landscape perspective, agree that nature and society are not truly separate, but that the VES framework takes people 'out of the world'. Bieling (2014) reports how the stories her German participants told assigned a 'personal agency' role to nature as well as to humans. Fischer and Eastwood (2016) argue that 'co-production' best expresses the interactions of humans and places in the construction of ecosystem processes and services and also of meaning and value. Klain et al. (2014) report that their Canadian respondents used metaphors in describing the sea that did not align with ecosystems as service providers. Ontologically, in the realm of aesthetics and the spiritual, as in these social science investigations of communities, humans are immersed in nature and nature is not conceived of as a sort of machine that humans manage in order to for it to generate products.

Axiologically we have made three claims. Firstly, aesthetic and spiritual values do not have to be solely individual preferences – matters of artistic taste and freedom of religion. Instead, they are often socially shared values, frequently intersubjective, and the outcome of historical processes in shared cultures, as shown by our analysis. In this claim we endorse the findings, amongst others, of other papers in this special issue, especially Edwards et al. (2016), Irvine et al. (2016) and Kenter et al., (2016b); and also Kenter et al. (2015). Secondly, these values are independent of human preferences according to aesthetic theories of disinterestedness or the spiritual dimension of nature. These values are not primarily instrumental, for individual or group human benefit (though there may be some emotional benefits). Our specific aesthetic and spiritual claims echo the arguments of others for non-instrumental values, e.g. relational (Chan et al., 2016) or constitutive (James, 2015). These values are closely related to the transcendental values that Raymond and Kenter (2016 in this issue) argue underpin framings of nature and ascription of meaning. These non-instrumental values do not lie in the domain of economics. They might fall within the socio-cultural domain of Martín-Lópeza et al. (2014) in their call for a multi-dimensional framework for ecosystem services. We consider they are better allocated to the domain of 'principles' in Chan et al. (2012b), who erect a tripartite taxonomy of principles, preferences and virtues, developing Sagoff's contrast of principle- and preference-based ethics (e.g. Sagoff, 1998).

The implication of this, thirdly, is that the axiological relationship is not primarily one of nature being in service to human desires, rather the ethical relationship is reversed: the duty of humans is towards nature. (This is particularly the case with spiritual value, but aesthetic values can be thought of as generating a duty of recognition.) This reciprocity is evidenced in the field by Comberti et al. (2015) in traditional societies, Kato (2006) in Japan, while in Britain, Fish and Saratsi (2015) report participants expressing the view that it is actually a privilege to look after nature. This is close to the concept of stewardship (e.g. Jobstvogt et al., 2014), although even this may be too anthropocentric for some. The ethical emphasis has shifted from consequentialism to deontology, a moral framework of rights and duties. These are incommensurate and cannot be simply aggregated (Chan et al., 2012b; Winthrop, 2014). For this reason, VES approaches struggle to incorporate rights and duties.

In cases where there are environmental benefits (e.g. from attractive views or emotional highs) some attempts may be made to incorporate these into a TEV, at least through a contingent valuation exercise. Another attempt to include them is to categorise them as existence value: how much are people willing to pay to preserve a rare species, say, just in order to know it continues to exist, even though they will never see it? This adaptation-by-expansion of the TEV

taxonomy demonstrates that economics is not an unfeeling science, indifferent to higher, non-use values. Yet, even here, theoretically what is valued is the personal benefit (e.g. a good feeling) the respondent receives from this knowledge and not the actual existence of the rare species (Housman, 2012). Turner et al. (2003) write that arguably existence value lies outside the scope of conventional economics. It is not surprising if respondents protest at being asked to put a monetary value on the continued existence of a species, offering either inflated figures or refusing to provide any figures at all (Chan et al., 2011; Kumar and Kumar, 2008; Raymond and Kenter, 2016 in this issue). What is intuited as a duty by the respondents is treated as a personal preference by the contingent valuation. This category error confounds an appropriate reply.

If aesthetic and spiritual values cannot be adequately incorporated into a TEV, that poses problems for the management of trade-offs – or conflicts (Jax et al., 2013), a term that avoids prejudging a method of solution. Here we join forces with critics of the universal applicability of economic trade-offs (e.g. Ernstson, 2013; Raymond et al., 2014; Paavola and Adger, 2005; Winthrop, 2014). That is, supposing value aggregation is ever 'fair' – Hockley (2014) draws attention to Kenneth Arrow's 'Impossibility Theorem', that it is impossible to devise an aggregation of individual preferences that satisfies certain minimal procedural standards. Clashing values are no longer a technical, optimisation problem, an uncontested trade-off. Instead, they call for hard-won compromises, debated socially and politically. Especially where the relationship is primarily one of spiritual duty, to trade-off that duty will be sacrilegious. This is not to excuse aesthetic and spiritual values from tough choices, they will still have to be made, but the decisions cannot be delegated to numerical calculations from gathered data (Holland, 2002). If aesthetic and spiritual values exist alongside other value systems, this would suggest that a plurality of discourses will need to be maintained right up to the point of a decision being made (Raymond et al., 2014, in advocating the deliberative paradigm, suggest participants/valuers and decision-makers should be one and the same). This would be no novel experience as in society there are many decision-making procedures that handle a multiplicity of incommensurable arguments: court cases, planning appeals, board-room decisions, daily life. Religious groups are used to managing conflicts between economic constraints and their core principles and they have often developed formal or informal deliberative procedures that facilitate the expression of individual preferences in contexts that lead to those preferences being subsumed into decisions that express the shared values of the group as a whole. The political process itself has to adjudicate between contrasting accounts and conflicting interest groups. Environmental decisions are no different.

In addition to its argument, this paper has also illustrated an arts and humanities approach to VES studies, demonstrating both style and method. In style, we have been unearthing and critiquing assumptions (Coates et al., 2014), particularly through conceptual analysis. In method we have drawn on disciplines such as landscape studies (Schaich et al., 2010) and literary criticism (Dudley and Coates, 2014 – annex 3) to examine and interpret cultural productions, paying most attention ourselves to literature. There is yet a rich vein of theological enquiry to explore (e.g. Brown, 2004; Inge, 2003). However, in addition to examining 'high culture', we advocate work examining the vernacular. Substantial and funded efforts are now being made in the social sciences to bring into full awareness the voices and values of a great diversity of people. However, less work has been commissioned to provide narratives of the values of nature that lie ready for inspection and interpretation in the cultural productions around us. Coates et al. (2014) emphasised that cultural meanings and values emerge from particular contexts over time, and as such they are rich and complex, resisting forms of reduction. They also articulated the ways in which the arts and humanities can contribute to a better understanding of the cultural dynamics that are reductively referred to as cultural ecosystem services. That understanding assumes that cultural relationships arise from complex interactions between humans and nature over time and that aesthetic and spiritual values, for example, should not be consigned to the 'intangible' and 'immaterial', when these terms are viewed as problematic in the VES literature (Coates et al., 2014). Substantial funding is also needed for the creative aspect of arts and humanities, their examination of what is emerging in society and their contribution to that emergence – or the recovery of what has been lost from the past. As more conceptual analyses and cultural studies are forthcoming, they will also need to be communicated in fora where other evaluations of ecosystems are at play. Both those writing and those reading will need to attend to each other if the complexity and richness of the relationships of humans and the other-than-human are to play their proper role in decision-making.

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