

Spiritual Experiences in Nature, Eco-Friendliness and Human Well-Being

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Abstract

The influence of spiritual experiences on the benefits of nature on health and well-being has been the subject of a small but increasing body of empirical research. This paper presents an overview of these studies and presents the author's own research into the spiritual and other deep-felt values held by forest and nature managers. Analysis of respondents' statements yielded three clusters of concepts: 1) the intra-personal process; 2) the relation between the manager and the forest; and 3) the relation between the manager and the transcendental. This paper discusses the interactions between these concepts and argues that the dynamics found in them can be interpreted as a 'spiritual journey', an iterative learning process with the spiritual experience as the 'ultimate' (though ephemeral) goal. This journey can be visualised in a lemniscatic form which combines empirical learning with intuitive learning, thus reconciling the outer and the inner world and generating meaning. The model is then applied to discuss benefits and pitfalls of the spiritual experience in nature. Benefits are mostly connected to spiritual growth generating psychic and physical health. Pitfalls can be identified when the two cycles are not fully completed, not balanced or separated altogether, the latter potentially leading to extreme forms of either materialism or immanentism. The challenge is to bring the balance back again, to be beneficial for the environment as well as for human well-being.

INTRODUCTION AND PROBLEM STATEMENT

In accordance with the conference theme, this paper explores the influence of spirituality – religious or non-religious - on the benefits of nature on health and well-being. Many accounts exist of spiritual experiences encountered by people in nature: ecstatic visions of early sunrise over a moorland, eye-to-eye encounters with wild animals, elation while discovering a sea turtle swimming beside oneself in the ocean; the types of experiences are naturally widespread and diverse. There is a growing body of research into nature and effects of spiritual experiences, mostly based on literature research. There is less material on spiritual experiences in nature outdoors, and even less so in empirical studies on the latter. An interesting conclusion is drawn by Peter Antes (2004) as to religious experiences in general: people are not merely overcome by such experiences, but they are actively involved in shaping form and content: they 'make' the experience even while it is ephemeral and not consciously sought. The experience presents itself according to the person's cultural background, knowledge, state of mind, and the environment around him. Many authors recognize the important role of nature in experiencing the spiritual (Williams and Harvey, 2001) but few have studied this role in depth and the less so empirically (e.g., Terhaar, 2009). However, in the last decade various empirical studies have been carried out on nature and effects of spiritual experiences in nature; I will discuss them and in addition present my own research and discuss the outcome in terms of a framework which visualizes the experiential and inspirational 'journey' that people make when being in, or dealing with nature.

It is often assumed that nature experiences in general, and spiritual nature experiences in particular, are beneficial for a person's mental or even physical health; however, this assumption can be questioned. For instance, nature experiences may not only be benign but also frightening (cf. Van den Berg and Ter Heijne, 2004; Terhaar 2006, 2009). It is also assumed by some that spiritual experiences in nature are beneficial for the

environment; for instance, it is argued that spiritual inspiration induces eco-friendly behaviour, such as public environmental engagement, adopting an eco-friendly lifestyle, or selecting a ‘green’ professional career (Williams and Harvey, 2001). It is likely that such behaviour is also beneficial to human well-being as it supposedly involves a healthier way of life, helps reduce adverse environmental impact and so on. The question is: can we establish robust causal relations between the three phenomena? Knowledge about the subject is at best piecemeal and fragmentary. The evidence for a positive relation between nature and human health is slowly building up but still contains many uncertainties (KPMG, 2012). Even thinner is the line between spiritual experiences in nature and human health and well-being. This paper does not pretend to provide an answer to the question. However, the framework I propose in this article can be used not only to describe the journey a person simultaneously makes in real life and in spirit, but also to identify the effects and pitfalls a person may encounter along his journey. Some of the salient pitfalls will be discussed as well as relevant literature reflecting on these pitfalls. This way this paper hopes to contribute to further research.

EMPIRICAL RESEARCH INTO SPIRITUAL EXPERIENCE CARRIED OUT SO FAR

There is a large body of research (e.g., Van Koppen, 2002; PBL, 2012; Sijtsma, 2013) into people’s valuation of nature, forests etc. Respondents usually bring forward a range of experiences including spiritual experiences when they describe their relationship with nature. These studies seldom specify the nature of spiritual experiences, or place their value in perspective.

Other research focuses on sacred places (Verschuuren et al., 2007) and indigenous spirituality as far as it has a bearing on nature [see, e.g., Snodgrass and Tiedje (2008) for a valuable overview of the relation between indigenous spirituality and the environment; and De Pater (2008) on indigenous forest management]. These studies focus on the eventual outcome and impact on the environment rather than on the nature of the experience itself. The focus of this paper is on in-depth studies of the experience itself and the way people deal with such experiences and derive inspiration from them.

Transcendent Experience in Wilderness and Forest Environments: Theoretical Frameworks

1. Approaches to Spiritual Experiences. Based on earlier work by Fredrickson and Anderson (1999), Williams and Harvey (2001) and others, Van Trig and Van Koppen (2003) describe two theoretical perspectives to approach spiritual experience, as follows:

- 1) In the *personal* approach spiritual experience is seen as an intensive inner experience, a transcendent, ecstatic, flow or peak experience. In this approach, though, nature has only marginal influence and is at most an impulse for the experience which could be exchanged for other triggers such as music. Williamson and Harvey (2001) describe this category as “a strong sense of compatibility and familiarity” (2001:256) that resemble the experience of ‘flow’ described by Csikszentmihalyi (1999).
- 2) In the *interactive* approach spiritual experience is perceived as intentional, i.e. directed towards another object or subject. In this view nature has a two-fold influence:
 - a. nature can create the necessary *indirect* conditions (quietness, silence, opportunities for mountaineering and other activities) that may induce a spiritual experience;
 - b. nature can *directly* induce the spiritual experience. It could, for instance, evoke “strong feelings of insignificance“ in face of the greatness of the forest (Williams and Harvey 2001:255);

Many other authors confirm this two-fold characterization; some sub-divide the second category into:

- i. ‘Significant life experiences’: a shocking moment that triggers a certain realization or insight;
- ii. ‘Magical’ moments of wonder, awe or fascination. This has also elements of ‘flow’ (Verboom and De Vries, 2006).

In the second approach, therefore, nature plays an important part. To explain its working, Van Trigt and Van Koppen derive two perspectives from literature:

- 1) The fact that natural phenomena are often suggestive due to their physical appearance (Williams and Harvey, 2001), their cultural, social and historical meaning (Schama 1995) or due to projection of Jungian archetypes (e.g., Schroeder, 1992).
- 2) The experience of ‘sense of place’: a complete awareness of a specific place or environment which encompasses the whole process of meaning-creation (Fredrickson and Anderson, 1999).

2. Elements of Spiritual Experiences. Empirical research by Van Trigt and Van Koppen (2003) into spiritual experiences with trees and forests in the countryside of the Netherlands revealed six elements which determine the spiritual value of trees and forests: 1) quietness; 2) protection and safety; 3) beauty; 4) longevity; 5) the seasonal cycle and imperturbability; 6) visibility of the seasons and growth processes. These elements were found to induce contact with one’s inner self (1, 2), an experience of unity (2), deep feelings (3), awareness of a higher reality (4), life questions and sense-making (4, 5 and 6). Williams and Harvey (2001), who carried out their research in Australia, found that spiritual experiences were predominantly induced by extraordinary or overwhelming wilderness phenomena; Van Trigt and Van Koppen (2003) found that, in addition, also daily-life encounters with small and common creatures - such as a dandelion – could trigger similar experiences.

A more extensive list of nature-induced spiritual elements is proposed by by Terhaar (2005, 2009). She investigated what she calls ‘mystical’ experiences among a hundred foresters in the USA and in addition studied literature about the mystical experience in general and the writings of ‘nature’ authors such as Thoreau and Muir in particular. From this material she derived the following seven ‘key dimensions’ of mystical experience: 1) a feeling of unity; 2) ineffability, i.e. inability to fully describe the experience; 3) Noëtic quality (the knowledge acquired is perceived as objective, certain and absolute); 4) a strong ‘affect’ (strong emotions, usually positive but also negative emotions; 5) feelings of timelessness and spacelessness; 6) paradox (“this experience *is* so but *cannot* be so”) and; 7) presence of an “Other” (one is alone with a single Other, often a divine being). Terhaar claims that these dimensions are universally valid – although her sources are mainly from the Anglo-American world. She also points out that these dimensions apply to positive as well as to negative intensive experiences which she regards as having equally transformative potential as positive ones.

3. Spiritual Experience Visualised as a Journey. My own research was directed to find an initial framework for the description and explanation of spiritual and other deep-felt values held by forest and nature managers. The lead question was how these values would inspire them into action, i.e., dealing with nature to the extent of making it one’s job. I held in-depth interviews with 12 foresters and farmers who had established wood plantations on their land. Analysis of their statements with the Grounded Theory method eventually yielded three domains or clusters of concepts: 1) the intra-personal process, 2) the relation between the manager and the forest, and 3) the relation between the manager and the transcendental. The domains have been published elsewhere (De Pater and Scherer-Rath, 2009). In this paper I will concentrate on the interaction of the concepts, or elements, with each other. My contention is that a spiritual experience – be it ephemeral by nature – does not usually stand alone. As a person travels through life, he or she learns, physically as well as mentally and spiritually. As for the latter, all religious traditions know the ‘travel of the soul’, the *via mystica*. This presupposes an ‘ultimate goal’ of some form or another that surpasses the here and now – in other words, is transcendent. People will always, consciously or unconsciously, strive for this goal (Emmons, 2003). For one reason it may help them to reconcile with the inconsistencies of the world, the paradoxes of life which cannot be solved by reasoning or physical efforts alone. The efforts to reconcile with the consequences of this fact and thus maintain a healthy psychical and physical balance, we may call spiritual striving. This spiritual striving, like other forms of development, can be perceived as a learning process, a journey towards the ultimate.

I have visualised this journey using a ‘model’¹ inspired by the agricultural systems expert, Richard Bawden (1997). He presents a model for an “integrated critical learning system” based on Kolb’s experiential learning model. In essence, he combines this model – a cycle – with an ‘inspirational learning cycle’ thus creating a dynamic lemniscate. The elements I found in my research fit well into such a lemniscatic form (Fig. 1).

The model runs as follows: Starting from practical forest management interventions, and colored by his or her forest knowledge, the forester comes to realize the connection between knowing and acting, intuition and ratio. He/she starts to wonder which leads to a certain retreat. Some sort of ultimate concern arises to view; the striving for it is termed ‘spiritual reverence’, the (unnamable) purpose itself, the ‘Ultimate’. Certain ‘spiritual’ experiences in nature such as a feeling of ‘unity’ or ‘timelessness’ induce the approach of this purpose. For a moment one can be touched by experiences of nature, especially by a peak experience, and the result is being-grasped. The profession becomes a vocation. At this stage the current flows through the ‘filter’ of the normative worldview which is determined by dispositions such as love, attitudes such as respect for nature, compartments such as the vision of an ideal forest, and a basic compartment such as professional ethos, etc. Through this confluence of inspiration and feeling – ‘aesthetics’ – a connection with nature arises and grows. This leads to a sense of responsibility and ethical considerations which culminate in ‘Biocentric Responsibility’: inspiration-born responsibility prompting action. It also inspires action for the *human* environment – reflecting what Joas calls self-transcendence (Joas, 1999). This movement meets cognition (the right circle), and from the collision *meaning* is sparked off. The movement continues in the empirical (right) cycle: ethical considerations permeate practical management planning, especially concerns such as forest conservation, technical interventions, protection issues, conflicts, etc. These are reflected in management visions and goals, which in turn direct field operations. Now we are back to *praxis* again and the next cycle takes off. Ideally, every round leads to a higher level of insights and meaning. Note that the moments are not necessarily sequential – let alone causal – but according to many accounts seem to occur simultaneously. ‘Meeting the ultimate’ tends to happen in a flash, as a spark, an elusive affair (see also Terhaar, 2005, 2009). It is even not advisable to try and dwell in that moment, as many spiritual traditions explain. They caution the traveller to go on, back to the world again. This way one reconciles with the world, not by denying it or trying to surpass it, but by facing its shadows as well as its brightness.

BENEFITS AND PITFALLS OF SPIRITUAL EXPERIENCES IN NATURE

Benefits

Earlier authors claim that spiritual experiences in nature are beneficial for the individual for a number of reasons (Williams and Harvey, 2001:249ff). This resonates with the Biophilia hypothesis posed by E.O. Wilson saying that the human need to affiliate with nature is biologically based (Kellert, 2005). Terhaar, too, concludes from her research that mystical experiences – negative as well as positive – are beneficial for the individual because they: 1) help the process of personal transformation; 2) give meaning to one’s life; and 3) provide a framework for values and ethics, especially in the environmental domain.

Verboom and De Vries (2006) state that peak experiences are especially beneficial for young children, since they help the growth and development process and, moreover, build positive attitudes towards nature later on. They go as far as describing favourable conditions and even programmes for children to increase their opportunity for peak experiences in nature. Van den Berg (2006) cautions that in these conditions a balance should be struck between wonder and fear, safety and challenge. A too frightful experience could be traumatic and cause the opposite impact.

For adults, too, the spiritual journey into nature may be fearful instead of blissful only (Van den Berg and Ter Heine, 2004; Terhaar, 2009). However, under the right

¹ ‘Model’ is not the right term because it gives a false suggestion of measurability.

conditions these frightful experiences are *not* the inherent pitfalls on the journey, but they are part and parcel of the spiritual process. They have to be overcome, not by denying them or destroying them from a distance, but by meeting them eye to eye and engage with them, ultimately at the peril of one's life. According to myth, the hero slays the dragon not by running away or gunning it down from a chopper. Instead he presents himself and engages with the dragon – and also with himself (Campbell, 1973). In this engagement he has to discard any projection of what he thinks he is, and present himself as he *is*. Jungian psychologists would call this individuation. In the spiritual journey, the self becomes conscious and known, and acquires more and more aptitude to balance with the world (Schroeder, 1992).

Risks

If frightful encounters as such are not a pitfall on the spiritual journey into nature, there are other risks which are of a systemic nature and therefore are indicated as a 'pitfall' (Hedlund-de Witt, 2011). They are described as follows:

1. False Projection. This occurs when the cycle is not completed *while one thinks one does*. The seeker can leave the journey at many moments and often for very good reasons. When this is done consciously, this is not the pitfall. However, it is a pitfall when a person goes astray and out of the cycle while thinking he is still in. Hedlund-de Witt (*op. cit.*) in describing the pros and cons of 'contemporary spirituality' describes this as the potential for narcissism: many 'New Agers' pursue forms of self-improvement which, though often harmless in themselves and providing spiritual insights, bear certain risks. One of them is that when the exercise evokes painful emotions, frustrations or anger that are not adequately dealt with, the growth process is curbed. The result may be perpetuation of wrong projections, in Jungian terms entailing an incomplete individuation process (Schroeder, 1992), child-like and egocentric behaviour.

2. Unlimited Self-Exploration. This is related to the previous risk and occurs when one goes round and round in the left circle: endless self-development, inner consciousness courses, vision quests, etc. Again, these pursuits can be quite beneficial and harmless in themselves, but when they are no longer in touch with the 'real world' the same narcissistic, egocentric behaviour can be the result. (Hedlund-de Witt, *op. cit.*). Moreover, this in turn can lead to inaction as far as the outer world is concerned. For example, in India some strands of Hindu spirituality were criticized by the environmentalist Anil Agarwal (2000) for attaching too much spiritual power to sacred phenomena like Mother Ganga River which tended to exonerate the believers from taking action in the real world and clean up her filthy waters.

3. Instrumentalization and Commodification. There is a growing danger that the whole cycle – sometimes including the right side, the experiential cycle – is reduced to a product on the market for happiness. Commercialization of spirituality in general and its socio-cultural consequences is widely criticized (for an overview, see Hedlund-de Witt, 2011). There is no reason to believe that spiritual nature experiences are *a priori* exempt from this risk, especially when they are collectively organized. Among the wide range of nature travels advertised on the Internet there are many offering a spiritual element of some sort: spirit-in-nature tours, mystical journeys, nature retreats, etc. Many of these are inspired by one or another kind of indigenous spirituality and include elements of shamanism, vision quests, sweat lodge and medicine wheel ceremonies, etc. The mere fact that they carry a price and can be booked on the Internet does not necessarily make them spiritually risky. On the contrary, such travels are increasingly important as mediators for a growing young and nature-alienated urban population. Many of these enterprises are led by sincere and creative organisers who work hard to find practical ways to reconnect man with nature. However, as in other idealistically motivated enterprises such as ecotourism, the chance is conceivable that the balance between idealism and entrepreneurship may topple towards monetary profit above spiritual goals when the riding gets rougher. This should be further investigated.

4. Disbalance or Separation. Pitfalls of a more philosophical nature occur when the two

cycles are disbalanced or separated. Often dualism itself is accused of being ecologically destructive (e.g., by Haverkort, 2009). I do not entirely share this view. The two cycles are *ipso facto* a dual representation of the spiritual journey, a distinction between the non-material and the material sides of it. However, they are connected, and meaningfully so. The movement flows from one cycle to the other and back and again, thereby creating meaning to which both parts contribute equally. The pitfall is there when either one cycle gets prevalence above the other, or when the two cycles are entirely separated. We have already seen that neglect of the right cycle – undervaluing the material side of life and concentrating on the transcendent – leads to narcissism and inertia. There has been an intensive debate – started by Lynn White’s famous essay (1967) – whether the undoubtedly dualistic Western (‘book’) religions (Campbell, 2007) – especially Judo-Christianism focusing on a transcendent God – are at the roots of today’s environmental crisis; in the slipstream, transcendentalism became quite unpopular among environmentalists (Zimmerman, 2000) although with some prominent naturalists (e.g., Thoreau) it did not vanish altogether (Taylor, 2011).

5. Extreme Materialism. When the balance shifts to the experiential – right – cycle and neglects the inspirational – left – cycle, the right one can ‘absorb’ the left one entirely. This leads to extreme materialism, a worldview that is cut off from its non-material roots, and sometimes to a complete mechanistic worldview. Ken Wilber (2000) describes the process as ‘flatland’: the belief that all phenomena are matter and matter only, to the detriment of ecology and culture. The pitfall of commodification of nature experiences and spirituality falls into this pattern.

6. Extreme Immanentism. Here the opposite of the former takes place: the left cycle is not ‘erased’ altogether but ‘flows over’ into the right cycle. In this worldview immanence is prevalent: the belief that all material phenomena are imbued with ‘life force’ or a divine immanent being (Campbell, 2007). This is the predominant strain of most Eastern religious traditions (Hinduism, Buddhism, Chinese traditions) as well as of many so-called ‘indigenous’ spiritualities. It is increasingly believed in the West, too, as Campbell extensively demonstrates. Much of it is present in today’s rekindled pre-Christian nature religions termed as ‘neopaganism’ or Earth-based religiosity (Zimmerman, 2000), ‘New Age’ or ‘contemporary spiritualities’ (Hedlund-De Witt, *op. cit.*), many of which are congruent with the environmental movement. Not all of these highly varied traditions are absolutely immanentistic and many combine it with a belief in some sort of transcendent being. When immanentism is taken to its ultimate consequence and the possibility of transcendent divinity is excluded, though, it provides a pitfall that has not been given as much attention as the others and I would therefore like to discuss.

The pitfall – a too immanentistic view of the divine and its consequences – is very well described by Zimmerman (2000). He recognizes that earth-based religiosity is vitally important in the process of reconnecting humanity with the ecological environment. He then discusses the dangers when such religiosity is entirely immanentistic, i.e., denies all notion of a transcendent being ‘out there’, outside the here and now. Based on the thinking of Heidegger and Ken Wilber (e.g., Wilber, 2000) he argues that humankind needs transcendentalism in its thinking: without the transcendent domain humankind would lose its anchor point: the world would be seen as a system only, a ‘Great World System’ as Wilber calls it, ‘Indra’s web of life without Indra’ (my words), in which there is no place for human beings. Spirituality is there but it flows only through the right cycle, an endless flow through matter without an ‘Ultimate’ on the other side. Humans are just a strain in the web, no more than ‘clever animals’, objects without a subject. Consequently, they crave for compensation: “By unleashing the world-shaping power of his rationality, Western “man” desperately attempts to demonstrate that he is *not* nothing, that he *does* exist, despite not having any place in the world system described by the very same modern science which makes possible his efforts to control nature” (*op. cit.*:183). We cannot deny that this focus on the right cycle, be it immanentistic or materialistic, has done great good to relieving hunger, poverty and disease in the world, as well as ignorance and sectarianism as the result of modernization. The romantic return to a simplified tribal life advocated by various

Earth-based religionists is therefore dismissed by both Wilber and Zimmerman, the former criticizing this move as the ‘pre/trans fallacy’ (*op. cit.*:180): “the categorical error to confuse earlier and less complicated stages of development (...) with post-rational perspectives because they are both non-rational” (Hedlund-de Witt, *op. cit.*:5). Worse, Zimmerman (*op. cit.*:171) sees a parallel with the Nazi movement with its bioregionalist cry for ‘Blut und Boden’ and calls for alertness on similar ecofascist tendencies in our times. On the other hand he hastens to explain that there is a great difference between the contemporary neopaganists and Nazism, namely the absence in the former of the totalitarianism and racism which made the latter so dreadful. Wilber, taking the same stance and bringing it further, is optimistic about the future of human well-being: “Wilber makes it clear that modernity’s crisis of meaning can be solved neither by a spasm of life-denying transcendentalism and otherworldly yearning, nor by a renewal of immanentistic nature religiosity, but rather by developing a multi-dimensional, non-dual ontology that allows room for experiencing the transcendental and subjective domains that have for so long been neglected” (*op. cit.*:191). In other words, the two cycles shall be run again, but at another bend of the road.

CONCLUSION

Spiritual experiences in nature are not only incidental rosy events that can be ‘organised’ or ‘consumed’; they signify a process of connection and spiritual growth: the spiritual journey or *via mystica*. In this process, internal and external experiences merge into a dynamic interaction which can be visualised as a double cycle (lemniscate). Apart from the benefits and inspiration that such a journey can bring for the person and his or her environment, several possible pitfalls can be identified when the two cycles are not fully completed, not balanced or separated altogether. Further research is needed to validate the model and how to deal with the pitfalls. When they occur, the challenge is to bring the balance back again in both sides of the lemniscate, in all the diverse forms this world has to offer. This would be beneficial for the environment as well as for human well-being.

Literature Cited

- Agarwal, A. 2000. Can Hindu beliefs and values help India meet its ecological crisis? p.165-179. In: C. Chapple and M.E. Tucker (eds.), *Hinduism and Ecology; The intersection of earth, sky, and water*. Cambridge, Mass.
- Antes, P. 2004. How to Study Religious Experience in the Traditions. p.33-45 In: S.J. Sutcliffe (ed.), *Religion: Empirical studies. A Collection to Mark the 50th Anniversary of the British Association for the Study of Religions*. Ashgate, Aldershot.
- Bawden, R.J. 1997. The community challenge: The learning response. Invited Plenary Paper, 29th Annual International Meeting of the Community Development Society, Athens, Georgia, 27-30 July.
- Campbell, J. 1973. *The hero with a thousand faces*. Princeton University Press, Princeton, N.J.
- Campbell, C. 2007. *The Easternization of the West. A thematic account of cultural change in the modern era*. Paradigm, London.
- Csikszentmihalyi, M. 1988. The flow experience and its significance for human psychology. p.15-35. In: M. Csikszentmihalyi and I.S. Csikszentmihalyi (eds.), *Optimal experience. Psychological studies of flow in consciousness*. Cambridge University Press, Cambridge.
- De Pater, C. 2010. Spiritual values inspiring indigenous forest management. p.153-172. In: F. Wijssen and S. Marcos (eds.), *Indigenous Voices in the Sustainability Discourse. Spirituality and the struggle for a better quality of life*. LitVerlag, Berlin.
- De Pater, C., Scherer-Rath, M. and Mertens, F. 2008. Forest Managers’ Spiritual Concerns. *J. Empirical Theology* 21:109-132.
- Emmons, R.A. 2003. *The Psychology of Ultimate Concern. Motivation and Spirituality in Personality*. Guilford, New York.

- Fredrickson, L.M. and Anderson, D.H. 1999. A qualitative exploration of the wilderness experience as a source of spiritual inspiration. *J. Environmental Psychology* 19:21-39.
- Haverkort, B. 2009. Towards Co-evolution of Different Ways of Believing: Possible Contributions of Religions and Religious Studies to Sustainable Development. p.59-82. In: C. De Pater and I. Dankelman (eds.), *Religion and Sustainable Development. Opportunities and Challenges for Higher Education*. LitVerlag, Berlin.
- Hedlund-de Witt, A. 2011. The rising culture and worldview of contemporary spirituality: A sociological study of potentials and pitfalls for sustainable development. *Ecological Economics* 70:1057-1065.
- Joas, H. 1999. *Die Entstehung der Werte (The origin of value)*. Suhrkamp, Frankfurt am Main.
- Kellert, S.R. 2005. Biophilia. p.183-188. In: B.R. Taylor et al. (eds.), *The Encyclopedia of Religion and Nature*. Thoemmes Continuum, London.
- KPMG. 2012. Groen, gezond en productief (Green, healthy and productive). *The Economics of Ecosystems & Biodiversity (TEEB NL)*. KPMG Advisory N.V., Amstelveen.
- PBL. 2012. *Assessment of the Human Environment 2012*. PBL Netherlands Environmental Agency, The Hague.
- Schama, S. 1995. *Landschap en Herinnering (Landscape and Memory)*. Contact, Amsterdam.
- Schroeder, H.W. 1992. The spiritual aspect of nature: a perspective from depth psychology. p.25-30. In: G.A. Vander Stoep (ed.), 1992. *Proc. Northeastern Recreation Research Symposium, Saratoga Springs, New York, 7-9 April*.
- Sijtsma, F.J. 2013. *Waardering en financiering van de Nederlandse natuur. Argumenten voor grootschalige innovatie in private financiering van natuur, onder blijvende eindverantwoordelijkheid van het Rijk ("Valuation and financing of nature in the Netherlands. Arguments for large-scale innovation in private financing of nature under the permanent final responsibility of the national government")*. Rijksuniversiteit Groningen. <http://www.rli.nl/publicaties/2013/advies/onbeperkt-houdbaar>.
- Snodgrass, J.G. and Tiedje, K. 2008. Guest Editors' Introduction: Indigenous Nature Reverence and Conservation – Seven Ways of Transcending an Unnecessary Dichotomy. *J. for the Study of Religion, Nature and Culture* 2:6-29.
- Taylor, B. 2011. Editors' introduction: Toward a Robust Scientific Investigation of the Religion Variable in the Quest for Sustainability. *J. for the Study of Religion, Nature and Culture* 5:253-262.
- Terhaar, T.L. 2005. *Nature, trauma, and the soul: The mystical experience in nature as a wellspring of spiritual values*. Ph.D. dissertation. Proquest, Ann Arbor.
- Terhaar, T.L. 2006. *Intense Human Experience of the Spiritual in Nature*. Paper presented at the Inaugural Conference, the International Society for the Study of Religion, Nature and Culture, Gainesville, Florida.
- Terhaar, T.L. 2009. Evolutionary Advantages of Intense Spiritual Experience in Nature. *J. for the Study of Religion, Nature and Culture* 3:303-339
- Van den Berg, A. and Ter Heijne, M. 2004. Angst voor natuur. Een theoretische en empirische verkenning ("Fear for nature. A theoretical and empirical exploration"). *Landschap* 3:137-145.
- Van Koppen, C.S.A. 2002. *Echte natuur; een sociaaltheoretisch onderzoek naar natuurwaardering en natuurbescherming in de moderne samenleving ("Real Nature. An Investigation into the Social Theory of Nature Valuation and Nature Conservation in Modern Society")* (orig. Dutch). Ph.D. Thesis, Wageningen University.
- Van Trigt, A., Van Koppen, K. and Schanz, H. 2003. Spirituele waarden van natuur; een analyse van spiritualiteit in relatie tot bomen en bos ("Spiritual values of nature; an analysis of spirituality in relation to trees and forest"). *Landschap* 20:155-163.
- Verboom, J. and De Vries, S. 2006. *Topervaringen van kinderen met de natuur. Zes antwoorden op de vraag wat een topervaring is, waarom topervaringen gewenst zijn, en of en hoe je de voorwaarden kunt scheppen voor een topervaring. (Children's peak*

- experiences in nature. Six answers to questions about what a peak experience is, why peak experiences are desirable, and whether and how favourable conditions can be created to induce peak experiences). Alterra, Wageningen.
- Verschuuren, B., Wild, R., McNeeley, J.A. and Oviedo, G. (eds.) 2010. Sacred Natural Sites. Conserving Nature and Culture. Earthscan, London.
- White, L. 1967. The historical roots of our ecological crisis. *Science* 155:1203-1207.
- Wilber, K. 2000. Sex, ecology and spirituality (2nd ed., revised). Shambhala, Boston.
- Williams, K. and Harvey, D. 2001. Transcendent experience in forest environments. *J. of Environmental Psychology* 21:249-260
- Zimmerman, M.E. 2000. Possible Political Problems of Earth-Based Religiosity. p.169-194. In: E. Katz, A. Light and D. Rothenberg (eds.), *Beneath the Surface. Critical Essays in the Philosophy of deep Ecology*. MIT Press, Cambridge, Mass.

Figures

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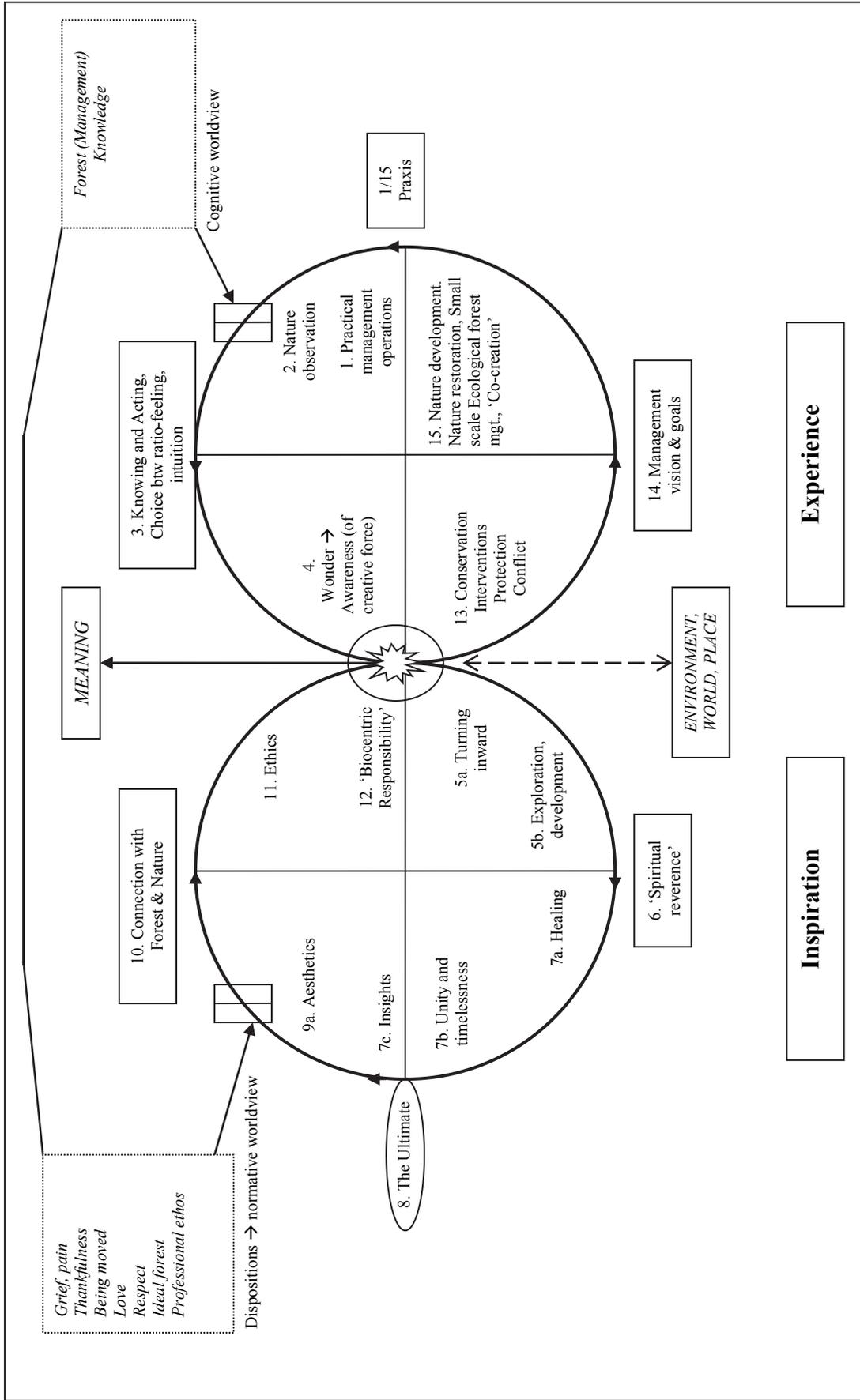


Fig. 1. Dynamic model for the description of spiritual experiences of forest managers.