if their parents are religious-minded. Furthermore, a school director told me about growing tensions between Jewish students and those with Muslim immigration background.

5 Cultural Memories and Cultural Innovations: A Conclusion

As we have seen, in the neighborhood of Belunce the former social roles have been inversed: the Jews, who frequently were economically depended from Muslim patrons before their emigration to France, themselves became patrons for Muslim employees in the new, post-emigration reality in France. Still, a patron–clients relationship can only be developed in the context of a common cultural heritage and discourse, and these can be found in the collective memory of both communities, and activated as a cultural reserve in an analogous social and natural environment. The neighborhood of Belsunce functions as such niche that offers social actors a possibility to activate and revitalize their cultural patterns, although with certain innovations. This amalgam of memories and innovations is reflected in the meaning of the word *lagmi*, which has acquired a new meaning in the cultural niche of Belsunce, where old relations, going back to the pre-migration past, appear in new forms, redefined. The neighborhood is a hub of transition and exchange in which goods, money, and memories are circulating among members of different groups and among individuals, and where Jewish and Muslim agents use their collective memories to reinvent their relationships.

References Cited

Abulafia, David
2006 Mediterraneans. In: W. V. Harris (ed.), Rethinking the Mediterranean; pp. 64–93. Oxford: Oxford University Press.

Braudel, Fernand (dir.)
1985 La Méditerranée. L'espace et l'histoire. Paris: Flammarion. (Collection Champs, 156)

Davis, John
1977 People of the Mediterranean. An Essay in Comparative Social Anthropology. London: Routledge and Kegan Paul.

Driessen, Henk
1992 On the Spanish-Moroccan Frontier. A Study in Ritual, Power, and Ethnicity. New York: Berg.

Gronover, Annemarie
2006 Religiöse Reserven – Überlebensstrategien in Palermo. Tübingen. [Dissertation, Kulturwissenschaften der Eberhard-Karls-Universität Tübingen]
2007 Religiöse Reserven: Eine Ethnographie des Überlebens in Palermo. Münster: LIT Verlag. Forum Europäische Ethnologie, 10)

Haller, Dieter
2005 dtv-Atlas Ethnologie. München: Deutscher Taschenbuch Verlag. (dtv-Atlas, 3259)

Hauschild, Thomas
2008 Ritual und Gewalt. Ethnologische Studien an europäischen und mediterranen Gesellschaften. Frankfurt: Suhrkamp.

Horden, Peregrine, and **Nicholas Purcell**
2000 The Corrupting Sea. A Study of Mediterranean History. Oxford: Blackwell.

Peraldi, Michel (dir.)
2001 Cabas et containers. Activités marchandes informelles et réseaux migrants transfrontaliers. Paris: Maisonneuve & Larose.

Ricoeur, Paul
2000 La mémoire, l'histoire, l'oubli. Paris: Éditions du Seuil.

Seghers, Anna
2005 Transit. Berlin: Aufbau-Verlag. [10. Aufl.]

Témime, Émile
1997 Marseille transit. Les passagers de Belsunce. Paris: Éditions Autrement.

Wieviorka, Michel
2005 La différence. Identités culturelles. Enjeux, débats et politiques. La Tour d'Aigues: Éditions de l'Aube.

Ancient Hindu Scriptures Show the Ways to Mitigate Global Warming through Responsible Action

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In today's world, we do not pass a day without reading or hearing the words "climate change." In December 2009, politicians and policymakers converged in Copenhagen, at the global climate change conference, to find ways to ease the crisis. Whatever comes out of it may not change much of what occurs in day-to-day lives of people – be it the scarcity of water in their backyard wells or vanishing birds in their gardens. They may still go unnoticed.

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The small house sparrows, for instance, that once abounded in India are today fast disappearing. In 2002, the World Conservation Union added this once common bird to the "Red List" of endangered species because its population declined by 50% over the last 25 years. From England to India, these tiny birds are today facing possible extinction due to toxic chemical cocktails in their food chain (IUCN 2009).

It is commonly known that for decades human creativity has developed resource-intensive economies with their unprecedented toll on air, water, climate, and the nature in general (Perfecto et al. 2009). However, the technocratic approach to industrialization has ignored certain spiritual and philosophical values that have channeled human energy within culturally-specific ethical boundaries for centuries. Human society requires not only scientific solutions but also spiritual guidance in its use of limited resources of our planet (Gardner 2006). In this context, one can also ask if the teachings of ancient Sanskrit scriptures may persuade contemporary Hindus to take action aimed at mitigating the effects of human action on the environment. In this article, we address the seldom discussed topic of climate change and spirituality in the context of Hinduism, as the vast majority of people who inhabit the Indian sub-continent, the scene of an unprecedented economic development today, follow various forms of the Hindu faith. Hinduism also exists among a significant population outside the Indian sub-continent, with a total of over 900 million adherents globally.

The Planet in Peril

The human impact on our planet has reached a critical stage and brought hundreds of species to the verge of extinction. On the other hand, it also produced some wired varieties through "genetic engineering" (Rees 2004). Some 484 animal and 654 plant species have been officially declared as "extinct" since 1600, when the record keeping started, but this is only the tip of a massive iceberg. The species extinction rates are now running at least 1000 times higher than the normal rate determined by natural selection (IUCN 2009). We have thus far transformed about a half of our planet into the areas of expanding farming, forestry, pasture, urbanization, industry, services and transportation. Every decade the area twice the size of France is being deforested.

The Millennium Ecosystem Assessment (2005), a comprehensive study conducted by 1360 renowned scientists, concluded that the stability of world's ecosystems has been already severely damaged. Of twenty four basic services examined in that study, including freshwater, food, climate, and air quality, fifteen (62.5%) are presently being degraded or used unsustainably. Interestingly, the Asia and Pacific region contains 23% of the world's land area but up to 58% of the world's population (Starke 2008). Patterns of the unsustainable use of resources as well as conflicting policies are already causing irreparable loss of forests and affect overall biodiversity in Asia, including certain biological hotspots in India (Mittermeier et al. 2000). The continued deforestation aggravates the already precarious state of the remaining forested areas in that region since the demand for forest products cannot be satisfied, even by a sustainable harvest. The diversity of plants and animals is declining, carbon emission is above the earth's carbon-fixing capacity, and the human population pressure is exceeding the population of all species of nonhuman primates combined (Starke 2008). The survival of humanity depends only on a wise and ethical management of natural resources. We argue, therefore, drawing on ancient Hindu teachings, that a more ethical approach to development will result in a radical lifestyle change of future generations because only then the hazards related to the global warming can be minimized (Agoramoorthy 2009).

Teachings of the Ancient Hindu Scriptures Concerning Nature Care

Hinduism has neither a single founder nor a single scripture, and – consequently – it does not have any common, dogmatically determined set of teachings. It is rather a way of life in which what we commonly define as "religion" determines all social structures and social interaction. The stories, legends, and characters featured in the "Vedas," the "Puranas," in "Ramayana," "Bhagavatgita," and in "Upanishads" are still cherished by religious Hindus wherever they happen to live.

More importantly, these scriptures strongly emphasize the importance and value of each and every organism in the ecosystem. In this regard, the "Upanishads," containing deeply mystical teachings, are perhaps the most significant. The term *upanishad* derives from *upa* (near), *ni* (down), and *s(h)ad* (to sit), and it may be translated as "sitting around." This etymology points to a group of students who sat around their *acharya*, or spiritual master, in order to learn from him secret doctrines. In the tranquility of the forest hermitages the "Upanishad" thinkers

meditated and contemplated about the problems of deepest concern to all humanity, and communicated their knowledge to the students near them (Radhakrishnan 1953).

Moreover, in those ancient works one finds such concepts as *dharma*, *artha*, *kama*, and *moksha*. While the first three are seen as "worldly," the last one, *moksha*, signifies liberation from worldly affairs and from the cycle of rebirths. The texts that deal with such liberation are also concerned with the nature of cosmos, including the supreme-being and the human soul. In fact, *moksa* is a way to abandon the established order of society and to pursue ultimate self-realization. In other words, while the doctrine of *dharma* promotes righteous behavior on Earth, the teachings on *moksha* advance detachment from the worldly desires and concerns (Ingalls 1957).

However, only few people are able to follow the path of detachment and to acquire the absolute knowledge of the real "self" (*atman*). More popular scriptures, such as the "Bhagavadgita," intend to bridge *dharma* and *moksha* paradigms so that also the untrained majority of people could understand and follow at least the rules of righteousness rather than the demanding task of detachment and ultimate liberation. As such, they serve as a type of law codes for human conduct in society and in the world in general.

The Hindu scriptures also emphasize *bhakti* or devotion to God, and most people of the Hindu faith generally abide by it. In this context, the planet Earth is revered as a mother or goddess, known by such names as *Bhu*, *Bhumi*, *Prithvi*, *Vasudha*, *Vasundhara*, and *Avni*. She can be seen in temples together with Lord Vishnu and is worshiped as his consort. Similarly, the oldest sacred text in the Hindu corpus, the "Rig-Veda," contains inspiring hymns regarding the Earth (Nelson 1998). In "Manu Smriti," also known as the "Laws of Manu," one reads for instance: "Impure objects such as urine, feces, spit or anything which has these elements, as well as blood or poison should not be cast into water" (Buhler 1964). The "Manu Smriti" is regarded as the foundation of the Hindu lawful conduct. It was compiled in late 200 BCE in India, and it's one of the 18 *smritis* of the "Dharma Sastra" (laws of righteous conduct). Unlike the "Vedas," however, which are considered to be eternal, or of divine origin, the *smritis* are man-made and susceptible to human error, and as such they are not absolute (Buhler 1964).

The preservation of sacred groves, forests, and gardens as well as pilgrimage to holy sites are not only recommended but also mandated by the Hindu scriptures. Interestingly, some of the sacred groves in the Western Ghats forest region harbor highly endangered plants and animals even today (Agoramoorthy 2009). Vedic scriptures state clearly that the five major elements of nature – namely, earth, water, fire, space, and air – are sacred (Chapple and Tucker 2000). Rivers are particularly revered and the "Puranas" teach that a person can gain salvation by bathing in the Ganges. Still the same goal can be achieved merely by catching the sight of river Narmada. This river was considered so holy that the crime of attempted suicide was treated with leniency if the offense was committed in the river! Furthermore, the "Rig-Veda" contains numerous hymns of praise for great rivers – the most important among them having been the extinct Sarasvati that flowed east of the Yamuna into the Rann of Kutch and created an intricate network of fertile streams extending from today's Punjab to West Bengal. The climate those days was characterized by abundant rain and monsoons – the manifestations of god Indra. The flora and fauna mentioned in "Rig-Veda" included the Brahma bull, water buffalo, and elephant, along with the sacred trees of Pipal and Ashvatta that can be seen across India even today.

More importantly, several great civilizations, including the Indus valley culture, fell not because of invading armies but due to ecological disasters, for example the drying up of the holy river Sarasvati around 1900 BCE (Diamond 1994). Nonetheless, it did not terminate the civilization but rather forced communities to relocate into the better watered region of the Gangetic plains to the east. The history of Hindu scriptures also point to that territorial shift: the Vedic literature emerged in the Sarasvati basin and the Puranic literature (compiled later) was created in the culture centers located along the river Ganges.

The planting of trees in the villages of ancient India was celebrated as the "festival of trees," according to "Matsya Purana." Furthermore, the "Varaba Purana" states that one who plants 5 mango trees does not go to hell, and similarly, the "Vishnu Dharmottara" claims that one who plants a tree will not suffer after death (Kane 1973). The scriptures also condemn those who cut and destroy forest and trees (Nagar 2007). Another important text, the "Arthashastra" ("study of money"), compiled by Kautilya during 4th century BCE, concerns not only economic topics but also a wide range of societal issues, such as for instance the fines for destroying trees, sacred groves, and forests. Yet another text, "Matsya Puranam," narrates a wonderful example of caring for the Earth. The goddess Parvati was planting a sapling of Ashoka tree (*Saraca indica*), and a sage asked her why she was growing trees instead

of raising children. Parvati replied that one that digs a well where there is little water lives in heaven for as many years as there are drops of water in it. One large reservoir of water, she continued, is worth ten wells. One son is like ten reservoirs and one tree is equal to ten sons; the planting of trees was thus her way of saving the universe (Nagar 2007). This story makes even more sense today, when humanity is faced with the global warming crisis after the mass deforestation that took place in the course of the 20th century.

Spiritual Values Promote Nature Care

India is a land of natural and ethnic diversity, and it has a rich history of great empires, unique cultures, and artistic ingenuity. Ecological sensitivity is also part of its cultural heritage. Saint Jambeshwar (born in 1451), for instance, was a serious ecologist (Nugteren 2005). Protecting trees and forests was still a common practice 280 years ago, when villagers from the Bishnoi community in Rajasthan State willingly accepted death after defy the cutting of trees by royal servants. Specifically, in 1730 the king of Jodhpur, Abhaya Singh, wanted wood to build his fortress. A village woman, Amrita Devi, confronted the king's servants by pointing to the holiness of trees. When loggers began cutting, she hugged a tree and was killed. The outraged villagers followed the brave woman's example, hugged trees and were likewise killed (Nugteren 2005). The carnage continued till the bewildered king rushed to the scene. It was too late, however, and many had been kill7ed. Those heroic villagers were perhaps the first environmental activists in human history.

At the onset of British colonization in 1850s, people across India were forced to abide by the colonial law, and the practice of the traditional scriptures-based righteous law started to wean off. Later, the intellectual colonization by the West and the advent of the mass media further confounded the people of Hindus faith. However, the Hindu society managed to retain its oral tradition and the scriptures-based righteousness for generations to certain extent. In order to revive the teachings of the Hindu scriptures, many temples and spiritual organizations across India are now promoting lectures and discussions, particularly on the easily understandable "Bhagavadgita."

Some of India's leading Hindu temples have also started reforestation programs. The tree-planting activities, initiated by the Venkateswara temple (devoted to the Lord Vishnu) in Tirupati (Andra Pradesh State, south India), are a good example. The temple displays billboards with a catchy phrase "Trees, when protected, protect us." The sentence is a paraphrase of a paragraph of the "Laws of Manu" which states that "dharma or righteousness, when protected, protects us" (Buhler 1964). When Hindu pilgrims visit temples, they are usually given a piece of blessed fruit, sweet or food to take home, which is called *prasada* (Sanskrit meaning "God's grace" or "gift"). The Venkateswara temple's main *prasada* has been the *laddue* – a tennis ball-sized sweet made of flour and sugar. It is in relation to this ancient custom that the temple started "Vriksha Prasada," or a "plant gift" program, which consists in giving the pilgrims a sapling of a native plant species. The temple has also established a large nursery in the midst of a vast natural forest and encourages pilgrims to take home tree saplings. In this way, since 1981, the temple has inspired the planting of over 2.5 million native trees across India. As the Venkateswara temple is the most visited worship site in the world, it has a great potential to revive forest growth in India and elsewhere.

Another example is the high altitude Himalayan temple of Badrinath (3130 m), located in the area where the mountain forest shrank significantly, not least because of the presence and activities of pilgrims. In response, local residents, in cooperation with the temple priests and the G. B. Pant Institute of Himalayan Environment, planted thousands of trees since 1993. The Institute supplies saplings of local plant species such as the Himalayan birch, oak, maple, spruce, and juniper. The priests provide the symbolic component to that initiative by blessing the saplings and urging pilgrims to plant trees as a sign of religious devotion. In this context, they evoke the image of Lord Shiva who rinses the forest with water of the holy river Ganges, using his matted hair, and urge devotees to plant the saplings for Shiva in order to restore his hair so that people downstream can be also benefit from the holy river (Bernabaum 1999).

Finally, not only temples but also non-profit organizations promote nature care by planting trees. One example here is the non-profit agency known as Sadguru Foundation (*sadguru* meaning "true teacher" in Sanskrit), based in the rather dry Gujarat State. The origin of Sadguru Foundation can be traced 40 years back to the saint named Ranchhod Dasji Maharaj. One of his disciples, Arvind Mafatlal, a wealthy industrialist, came in contact with the saint during the 1967 Bihar famine (Jagawat 2005). At that time, the saint advised the industrialist to serve the poor, and as a result the trust was founded. During the last decade alone, the foundation has planted over one million saplings a year, in

1000 villages located in the arid areas of western India, covering the states of Gujarat, Rajasthan, and Madhya Pradesh (Jagawat 2005, 2009).

Conclusion

Spirituality and human values can help one to work dutifully and selflessly. In the philosophy of Vedanta one finds the concept of *yajya* (*yaj* meaning "worship," "harmonious association," "charity"). When one performs his or her duties according to the meaning of this concept, the ego and selfish desires, associated with fame, wealth, and material values, will not predominate. The benefits obtained from selfless work should be shared with others. This attitude, or karma yoga, will lead us along the path of purification of mind and toward a freedom from desires that, in themselves, yield both pain and pleasure. Thus, the "Patanjali's Yoga Sutras" mandate five basic ethical guidelines of *yama* (social discipline) and *niyama* (individual discipline). The social discipline includes *ahimsa* (non-violence), *satya* (truthfulness), asteya (non-stealing), *brahmacaraya* (observing celibacy) and *aparigraha* (abstinence from greed). The individual discipline includes *sauca* (cleanliness), *santosa* (contentment), *tapas* (austerity), *svadhyaya* (self-study) and *Isvara pranidhana* (surrender to God) (Woods 2003). If people follow the above guidelines, significant behavioral changes can occur not only on the individual level but also in the society at large. This will ultimately lead to a conduct that benefits both nature and humanity. It's time to remember that all organisms are connected to each other, and nature has given people everything necessary for maintenance of a balanced and harmonious life. Otherwise we cannot avoid disasters – be it the global warming, the melting of icecaps and the rising of sea levels. Each and every human on this planet must play his or her role dutifully and honestly to simplify our lives in order to maintain the harmony of moral, ecological, and societal values.

We were often told in high school classes that history repeats itself. So we ought to learn from past mistakes to avoid making them again. For instance, after decades of using chemical fertilizers, and after poisoning soil, water, and air, we should finally realize that organic farming is better. Nothing in the ecosystem is redundant; each and every organism, including humans, has a role to play in the process of sustaining the balance of nature. Unfortunately, we often tend to forget this basic fact. Confucius said that life is really simple, but we insist on making it complicated. One may ask, therefore, what will happen if we do not make peace with our planet by doing our duties ethically and adhering to spiritual values? The answer has been given by Anthony De Mello (2007: 50): "In a conflict between Nature and your brain, back Nature; if you fight her, she will eventually destroy you." It is now time to reinvent an ecological way of living based on spiritual values in order to mitigate the climate change. The road map is provided by the ancient India's philosophy.

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References Cited

Agoramoorthy, Govindasamy
2009 Sustainable Development. The Power of Water to Ease Poverty and Enhance Ecology. Delhi: Daya Publishing House.

Bernabaum, Edwin
1999 Badrinath's Trees. Local Forests Being Restored as Pilgrims Now Plant Trees as Offering to God. *Hinduism Today* 21: 23–24.

Bühler, Georg
1964 The Laws of Manu. Delhi: Motilal Banarsidass. (The Sacred Books of the East, 25) [Transl. in 1886]

Chapple, Christopher Key, and **Mary Evelyn Tucker** (eds.)
2000 Hinduism and Ecology. The Intersection of Earth, Sky, and Water. Cambridge: Harvard University Press.

De Mello, Anthony
2007 Call to Love. Meditations. Anand: Gujarat Sahitya Prakash.

Diamond, Jared
1994 Ecological Collapses of Past Civilizations. *Proceedings of the American Philosophical Society* 138: 363–370.

Flood, Gavin D.
1996 An Introduction to Hinduism. Cambridge: Cambridge University Press.

Gardner, Gary T.
2006 Inspiring Progress. Religion's Contributions to Sustainable Development. New York: W. W. Norton.

Ingalls, Daniel H. H.
1957 Dharma and Moksa. *Philosophy East and West* 7: 41–48.

IUCN (International Union for Conservative of Nature)
2009 The IUCN Red List of Threatened Species. Gland: IUCN Press.

Jagawat, Harnath
2005 Transforming the Dry Lands. The Sadguru Story of Western India. Delhi: India Research Press.

2009 Sadguru Foundation Annual Report. Dahod: Sadguru Publication.

Kane, Pandurang Vaman
1973 History of Dharma Sastra. Poona: Bhandarkar Oriental Research Institute.

Millennium Ecosystem Assessment
2005 Ecosystems and Human Well-Being. Synthesis. Washington: Island Press.

Mittermeier, Russel A., Norman Myers, and **Christina Goettsch Mittermeier**
2000 Hotspots. Earth's Biologically Richest and Most Endangered Terrestrial Ecoregions. Chicago: University of Chicago Press.

Nagar, Shantilal
2007 Matsya Mahāpurāṇa. Delhi: Eastern Book Corporation.

Nelson, Lance E. (ed.)
1998 Purifying the Earthly Body of God. Religion and Ecology in Hindu India. Albany: State University of New York Press.

Nugteren, Albertina
2005 Belief, Bounty, and Beauty. Rituals around Sacred Trees in India. Leiden: Brill. (Studies in the History of Religions, 108)

Perfecto, Ivette, John Vandermeer, and **Angus Wright**
2009 Natures' Matrix. Linking Agriculture, Conservation, and Food Security. London: Earthscan.

Radhakrishnan, Sarvepillai (ed.)
1953 The Principal Upaniṣads. London: George Allen & Unwin.

Rees, William E.
2004 Is Humanity Fatally Successful? *Journal of Business Administration and Policy Analysis* 30–31: 67–100.

Starke, Linda (ed.)
2008 State of the World 2008. Innovations for a Sustainable Economy. New York: W. W. Norton.

Woods, James Haughton
2003 The Yoga Sutras of Patañjali. Delhi: Dover Publications.