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Univ.-Prof. Dr. mult. **Hilarion G. Petzold** (EAG) in Association With:

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Ecopsychosomatics

An Integrative Core Concept in the "New Nature Therapies"

Hilarion G. Petzold, Ralf Hömberg*

* From the "European Academy for Biopsychosocial Health" (EAG), state-approved institution of further professional training, Hückeswagen (Head: Univ.-Prof. Dr. mult. Hilarion G. Petzold, Prof. Dr. phil. Johanna Sieper. Mailto: forschung@integrativ.eag-fpi.de, or: info@eag-fpi.de, Information: <http://www.eag-fpi.com>).

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Ecopsychosomatics is a concept in > psychotherapy, > body therapy and > natural therapy, in > environmental medicine and in the alternative > environmental, ecology and >¹ green care movement, which investigates the inextricable connection between man and > the environment, between man and > nature and wants to influence it interventively. It deals with environmental factors that are harmful to health and their effects and with health-promoting influences of the environment and nature on humans. It is aimed at using positive ecological influences through ecopsychosomatic methods, i.e. methods with an effect on body, soul, spirit and social behaviour such as > natural therapies, > forest medicine, green exercises², > walking therapy, > green care activities etc., in healing and health education as a health enrichment³. But it is also aimed at counteracting stress factors, sensitising people to environmentally destructive activities and thus preserving⁴ nature's healing potential and its significance for >salutogenesis.

1. Ecopsychosomatics - Forms and Development

The healing effects of beneficial nature experiences are known in all cultures and led to the worship of sacred mountains, groves, healing springs. Places with "good air", healing climate for the restoration of physical and mental health through stays in forests, in the mountains, at the sea, at springs, in caves became the basis of the > climate therapy with the climatic health resorts or the > thalasso therapy, at the sea with the seaside resorts⁵. Beside the somatic effects also "geopsychische effects" were determined - experience of relaxation, reassurance, liberation, encouragement, well-being, equilibrium - in the antiquity one spoke of the Euthymie (ευθυμία), *Democritus* (fr. DK B3, B191, B174) coined the term⁶ for a condition of lucky and cheerful calmness, in which a right measure in the life prevails (βίου συμμετρίη, *Democritus* fr. 191). Impressive landscape, aesthetic experiences of nature affect soma and psyche - the healing temples of >Asklepios⁷ stood in magnificent landscapes with all the effects of nature and all the possibilities of culture. As is well known, they had a theatron, an odeon, a stadium and operated an "euthyme therapy of well-being", the soma/body, psyche/soul, nous/spirit in the sacred space and area of the Asklepieion (Ἀσκληπιεῖον), the temple as a place of healing and recovery. The space of nature was also used in Hippocratic medicine, as the example of the physician Herodicus, one of the teachers of Hippocrates (5th century BC)⁸, shows. He used running therapy through the landscape, diets, massages in a holistic

practice that could be described as "ecopsychosomatic". That may suffice for examples.

If one takes ecology into account, it becomes clear that the somatic and the psychological are influenced. "*If I enter a room, it changes me, I change myself, I change the room, the room changes me*" (Petzold 2016p). This is shown by the neurobiological findings and the empirical "ecological psychology" to which we refer⁹ in the integrative approach of therapy and supervision and which will play an important role in the development of a "clinical ecology" that we will need just as much as we need a ">clinical sociology", a ">clinical philosophy"¹⁰, a ">clinical social work"¹¹ - not to mention "clinical psychology".

The concept of ecopsychosomatics was developed in three fields of work:

I. In > psychotherapy, > body psychotherapy and > natural therapy as an extension of traditional > psychosomatics. Since the 1970s, > *Hilarion G. Petzold*¹², *Hildegund Heini*, *Anton Leitner*¹³ and their collaborators have developed psychosomatic concepts and treatment methods in which environmental-theoretical considerations and theories on the environment-person fit have been incorporated with a view to the evolutionary rootedness of man in his corporeality and in his ecological contexts, i.e. in nature, but also in the world of work¹⁴. They should be¹⁵ used to develop "ecological modelling"¹⁶ and "eco-psychosomatic" interventions in psychosomatic disorders for "ecological/contextual causes→". This was intended to overcome the implicit dualism in the traditional concept of psychosomatics. In the meantime, the understanding of psychosomatics has expanded:

The "modern scientific findings go far beyond this simple view of the division into soul and body. They confirm a continuous complex and constantly adapting interweaving of body, feelings and environment. Traditionally, the term psycho-somatic is still used, even if a complex bio-psycho-eco-social understanding determines the psychosomatic thought and action guidelines."¹⁷

Today, modern eco-psychosomatic medicine relies in the clinical field on approaches from the "new natural therapies" and >Green Care movement and on research from "Environmental Psychology" and "Quality of Life Research"¹⁸.

II. In > environmental medicine, too, attention was paid to a view of ecopsychosomatics. The harmful effects of environmental pollution have been investigated because the introduction of harmful substances and sensory over-stimulation (noise, heat, odour, etc.) can¹⁹ lead to somatic diseases and psychovegetative disorders. *Sigrun Preuss*²⁰ is a pioneer here. However, the term has not been widely used in the field of environmental medicine because the topic is discussed under the terms "eco-syndromes" and "multiple chemical sensitivity" (MCS)²¹.

III The term "eco-psychosomatics" was used in the movement for alternative ecology and natural spirituality by *Werner Sattmann Freese* and *Stuart Hill* (2008). Ecopsychosomatics should "explore the synergies between body-mind and person-planet unity"²² in order to enable a "Learning for Sustainable Life" (LfSL) and an "ecological transformation". Illness should be used "in a psychosomatic learning process to achieve a higher level of wholeness ... with the learning goal of sustainable living and **eco-self** consciousness"^{23, 24}. Here connections are made to the > Gaia hypothesis" and "planetary medicine" of > *James Lovelock* and > *Lynn Margulis*²⁵ and to concepts of "Ecopsychology", which was²⁶ founded by > *Theodor*

Roszak, protagonist of the counterculture and American ecology movement. In the context of the natural therapy movement, biologist and author *Clemens Arvey*²⁷ has recently taken up the concept of "ecopsychosomatics" in popular books with great resonance. With reference to the > biophilia hypothesis of *E.O. Wilson*²⁸, on results of the > forest medicine and forest therapy to the Japanese "forest bathing"²⁹ and to the psychotherapeutic ecopsychosomatics of *Petzold*³⁰ he represents an experience-educational practice of the health promotion and the outdoor training as³¹ "healing from the forest" - without clinical references.

The concepts of ecopsychosomatics are often only hints and sketches. A differentiated ecopsychosomatic theory and practice has so far only been presented in integrative therapy with its natural therapeutic approaches.

2. Integrative Ecopsychosomatics

The integrative approach has elaborated the >psychophysical problem, which has not been dealt with in depth in the majority of psychotherapeutic approaches, as a "body-soul-spirit-world-problem" in the sense of an emergent >monism (*Petzold* 2009c, *Petzold*, *Sieper* 2012a): From the biological organism of man rooted in nature as the *material* basis, through cerebral activity in association with other subjects, mental-emotional and spiritual-cognitive phenomena *emerge* as informational, *transmaterial* (not immaterial-transcendent) reality, i.e. experientially felt reality, thoughts, fantasies, which become conscious to the body subject. It itself can be understood as the result of an ultra-complex >emergence process and its permanent repercussions, because **culture affects nature**, the emerging affects the emerging - again and again. This permanent retroactivity, this interplay of effects must be better understood if emergence is not regarded as a mere "bottom-up event" and thus misunderstood. The reaction of the thought to the thinking person is a central thought of integrative ecopsychosomatics, for how else could a person use his experience of nature and his contemplation of nature to "**change his life**"? And "You must change your life", as *Sloterdijk*³², paraphrasing *Rilke*, with a view to the anthropogenic catastrophe demands from everyone. The **body** is seen as an entanglement of material and transmaterial reality (hand, *material*, amputated hand as phantom limb: *transmaterial*; brain, *material*, thought: *transmaterial*, language as expression of culture, its semantic-informational world: *transmaterial*). Thus a neurobiological-reductionist materialism with the concept of > emergence, which always also includes socially mediated contents (learned language) and always also experiences³³ complex informational repercussions from cultural space, is given an expanded possibility of consideration that allows qualities of "higher cognitions", values, aesthetics, cultural achievements to be explained more complexly than merely biologically (however never without biology). Culturalist, anthropological and mundane dimensions in their interaction become visible and gradually more comprehensible. Man is a natural and cultural being, always determined by his "brain and his subjectivity", by mentalization processes that are never only the product of this brain, but are also determined by the social/human and ecological/mundane reality that this brain has absorbed and processed and processed in exchange with other "brains and subjects". In the interaction with other people and nature, in this unity of the body-subject, it processes information that has been taken up for the rest of one's life in a meaningful and meaningful way, thereby creating new information. The human *capacity for sense perception, sense processing and sense creation* remains active as long as "brain and subject" - according to the integrative formula - remain able to work and the surrounding social world and ecology make life possible

(Petzold, Sieper 2012a). Therefore, the concept of information must not only be understood technically, but also socio-culturally meaningful and ecologically/mundane meaningful things are transferred with the respective stream of information. The integrative concept of **eco-psychosomatics** is also based on this foundation, which is only briefly outlined here. With the components **soma** and **eco** we have in the nature of our organism a **material** basis. In the quality of life, its liveliness in relation to the environment, however, *basal transmaterial* emergences can already be seen. In the emerging personality or subjectness formed by the information streams of socialization, enculturation and ecologization, the component **psycho** is addressed for the highly *complex transmaterial* emergences to be assumed, which only became possible as such, because social, cultural and ecological influences - from childhood on - had previously provided meaningful information, which made further broader emergences possible. The topic cannot be further explored here (see Petzold 2009c, Petzold, van Beek, van der Hoek 1994).

"Ecopsychosomatics (inaugurated by *Petzold* and colleagues since the 1970s) is based on the *"informed body, the informing world and the living life context, a mundane conviviality*. Abandonment, exclusion and aggressive threats have an increasingly stressful effect. This applies to living beings in forests and fields, in rivers and seas as well as to the coexistence of humans, who then experience *"affiliat stress"* as well as *"multiple alienations from nature"* (Petzold 2012c). Since these influences come from the **socio-ecological environment** of the human being, which must always remain in view for the understanding of such phenomena, the integrative procedure speaks of *"ecopsychosomatics"*. Another reason to create this term was the "psychosomatic dilemma". The term **psychosomatics** was first coined by the German physician *Johann Christian Reil (1759-1813)*. Depending on the basic view one understands different things with regard to the *"psycho" - "somatic" interactions* which this composition word implies. In the *psychoanalytic-psychological* basic view (*Freud* and various others) one assumes unconscious conflicts, which are triggered in a disease- and personality-specific life situation and appear in constitutionally vulnerable organs or organ systems, without which a sufficiently organ-medical cause can be diagnosed. In reverse, *somato-psychic* interactions can also be described (e.g. about 1/3 of heart attack patients subsequently react with a depressive and/or anxious disorder. Stressing psychosocial events, such as separation, can in turn lead to stress-pathophysiological vasoconstriction with heart pain via adrenaline and noradrenaline release). The basic *psychophysiological psychosomatic* views are derived from stress research (*Pawlow/Cannon/Selye*). Here psychosomatic illnesses are attributed to the fact that physiological human nature demands action in stressful situations, but the socio-culturally created or shaped environment imposes on the human being to endure stress, whereupon psycho-physiologically differentiated stress concepts were developed in order to explain the psychosomatic development of organically manifest illnesses (such as high blood pressure, stomach ulcers etc.). *Learning theory psychosomatics* assumes that physical predispositions are superimposed, aggravated and consolidated by learning processes in order to become visible in psychosomatic disorders. Those who constantly eat under time pressure stress unconsciously associate food with stress, which sooner or later accompanies every stress situation with a secretion of gastric juice, which in phases in which there is no food in the stomach leads to self-degulation of the stomach wall and thus, promoted by bacterial influences, to the development of a stomach ulcer. Internal psychosomatic approaches that are conceptualized in terms of system theory

can also be described (Thure v. Uexküll, 1908-2004). **Psychosomatics** as a discipline of origin for eco-psychosomatics, starting from various fields of origin, set out to overcome the dualism of body and soul. This task may have seemed easier than I thought. With a few exceptions (*Neuropsychotherapy*: Grawe 2004; ; *Neuropsychosomatics*: (Henningsen et al. 2006; Rüegg 2011), the implicit dualism, presumably in the reductionist pull of our zeitgeist, was often carried forward by "psychogenic" or "somatogenic" associations. This was not consistent with the extended "**bio-psycho-social-ecological**" integrative theoretical approach, since no living being can be abstracted from its context/continuum (Petzold 2016.i) As the concept of an "*ecological health and disease theory*", ecopsychosomatics examines the positive, negative, damaging or even toxic effects of **micro, meso and macro contexts** (living and working spaces, gardens, stables, homes and clinics, neighbourhoods, cities, landscapes, forests, waters, oceans, air ...) on humans in all their *dimensions* (body, soul, spirit, social network, ecological integration). This is done with the aim of detecting *stressful or even toxic effects* (noise, heat, humidity, pollutants, constriction, ugliness, irritant deprivation or over-stimulation) and contributing to the alteration of such effects. For psychological, psychosomatic and somatic disorders or illnesses, the negative environmental influences can result in "**ecological stress**" (negative stimulation from the environmental context or traumatic overloads such as toxic contaminations, contamination, excessive noise, excessive exposure to light), which is often exacerbated by *problematic social conditions* (social hotspots, slums, cramped housing, etc.). On the other hand, bright, friendly, ecologically healthy and beautiful environments have a constructive, relaxing, stress-reducing character and promote "**ecologically salutogenic stimulation**" (*adequate stimulation and stability-maintaining needs*), health and well-being" (Petzold 1990g). **Ecopsychosomatic interventions** must therefore provide *preventive* environmental resources with a good fit and *curative* resources that are lacking, change *dysfunctional fits* and treat the disorders caused by them" (Petzold, Orth 1998b). The damage to living organisms (polluted workplaces, environmentally polluted urban districts, crown diseased trees, algae, overused lawns, chemical soil and air pollution ...) raise questions that go beyond a purely biological view and call for an "**extended understanding of ecology**". (in Petzold 2015a, in part . summarized and supplemented, Hömberg 2016)

The integrative concept of "ecopsychosomatics" forms the basis of an **ecologically oriented therapy** in the sense of the **new nature therapies** (garden and landscape therapy, forest therapy, animal-assisted therapy, green meditation, green power training³⁴).

Within the framework of >"Integrative Therapy" and its methods such as >"Integrative Movement Therapy" and "Integrative Natural Therapies", due to their basic anthropological orientation, the human being was always seen as an "informed body" (body-subject)³⁵ in its structural, life-worldly embeddedness in an ecology surrounding it, which it absorbs, interiorises and "embodies" in complex biographical learning processes (ecologisation³⁶) (> embodiment). Today, *Wolfgang Welsch's* philosophical "mundanology" looks at man "from the world" and speaks of *homo mundanus* (Welsch) or *homo oecologicus* (Petzold³⁷) because, as the palaeobiological and humanbiological findings show, humans are always shaped by their environment and are determined by this ecologicity. In Integrative

Ecopsychosomatics, therefore, the aim is always to reach the "whole human being" as "body, soul, spirit being in context and continuum", i.e. in his >"world of life" and in his "span of life" with a "biopsychosocial-ecological approach"³⁸. The concept of the body and the concept of nature by > *Merleau-Ponty*³⁹ and its non-dualistic conception will be used and founded on the idea of the "informed body"⁴⁰ embedded in the world. This bridge concept combines body and nature philosophy with neurobiology and ecology. In the ecopsychosomatic view, in addition to the experiences of >socialisation in the human life span and the experiences of >enculturation, cultural mediation, especially the experiences in the ecological world in childhood, youth, adult life are also considered as ecologisation⁴¹. Research in >environmental psychology has shown from a developmental perspective how important good ecological contexts are for health.⁴² From a dimensional point of view, people as "*body, soul, spirit beings*" are always embedded in socio-cultural and ecological space-time relationships, and therefore therapeutic treatment offers must also be made on all these *levels of existence* (Petzold 2003), which makes a "bundle of measures"⁴³ necessary. The *biological and physical basis of existence* (soma) is massively influenced by ecological contexts and ecopsychosomatics makes use of this, e.g. through breathing, movement, nutrition and natural therapies, and supplements medicinal or other medical interventions. Also mental state is determined⁴⁴ by the surrounding ecologies. *Mental disorders* (psyche) are therefore also treated ecopsychosomatically through >garden, landscape and forest therapy and support emotion- and cognitive-centred interventions of >psychotherapy, for example in >behavioural therapy or >systemic therapy⁴⁵, or in creative therapies. Ecopsychosomatics takes into account that experiencing nature and the "green environment" stimulates mental activity and promotes⁴⁶ learning. In practice, this is done through nature-related > psychoeducation, green writing⁴⁷ projects, imagination and green meditation⁴⁸, which, like many approaches of > meditation, become⁴⁹ directly effective on the physical level. From this, "bundles of treatment measures" can be derived for the treatment of complex disorders from an eco-psychosomatic perspective.

3. Ecological Health and Disease doctrine

Ecopsychosomatics is a concept of "ecological health and disease theory", which is based on the entanglement of an *informed body*⁵⁰ with an *informative environment* (Petzold 2006) with adequate environmental stimulation (stimulation) and supply of needs (conservation/maintenance and solid resource situation) - i.e. with a good fit - sees a salutogenic quality for human development and lifestyle guaranteed. On the other hand, if the fit is poor due to dysfunctional environmental stimulation (traumatic overload, conflicting stimulation, etc.) and lack or undersupply (deficient stimulation, loss of resources) - i.e. due to "ecological stress" - a risk of pathogenic developments is assumed. Pathogenic stimulation as well as threatening resource situations generate stress (in the sense of overstraining experiences and *Hobfoll's*⁵¹ ecological stress theory). Person-environment conflicts cause anxiety, activate the stress axis⁵² and generate psychophysical stress, which can⁵³ massively burden the immune

system and have a pathogenic effect. Such burdensome eco-psychosomatic influences must be countered by relieving, calming eco-psychosomatic interventions. Forest medicine has provided convincing research results for the calming, stress-buffering and immune-strengthening influence of forest stays (Li 2014). Ecopsychosomatics and a developing "clinical ecology" must therefore provide *preventive* environmental resources with a good fit and a benign spectrum of action, and *curative environmental* resources that are lacking and dysfunctional fits must be changed in order to treat the disorders caused by them. Nature therapies such as >garden, landscape and forest therapy offer such possibilities in connection with psychotherapy, body therapy and medical >naturopathy.

4. Harmful Ecological Influences/Oxins

In addition to a lifestyle orientation in the sense of >salutogenesis, ecopsychosomatics also deals with pathogenic effects of the environment through >oxins, which trigger pathophysiological reactions. The directly or indirectly harmful emissions can be visible or invisible, e.g. noise, odour, electromagnetic radiation, mould infestation in rooms, fine dust (NOx = > nitrogen oxides) from car exhaust gases and much more (Preuss 1995). The primary focus here is on curative, symptomatic and detoxifying as well as preventive intervention orientation with dose-response relationships to be researched (building design, protective measures, safeguarding of emission sources). Furthermore, it is important to advise patients from a medical and biological point of view ecopsychosomatically in terms of their health security and possible therapeutic measures.

5. Ecopsychosomatics as a "Green Care" is „Caring For People and Caring For Nature”

Ecopsychosomatics can only be developed into "caring for people" and "caring for nature" (>"green care") in an interdisciplinary way - in the double sense (*Petzold* 2016)i). Man has been deeply rooted in nature for over 85,000 generations and has thus developed a close and perceptible bond with it. "Multiple > alienations" cause dissension and states of suffering. To re-establish meaningful connections makes it possible to achieve or regain a variety of healing pathways in which qualities of life (freshness, green and water effects, closeness to nature and natural aesthetics, feeling for vitality and circulation, etc.) can be attained or regained.

Summary: Ecopsychosomatics – an Integrative Core-Concept in the “New Nature Therapies”

The text presents in a compact way the concept of "ecopsychosomatics" as the core concept of "New Nature Therapies", which aims to overcome the hidden dualism in the concept of psycho-somatics. The human-environment interweaving is emphasized and shows how the environment permanently influences the psychological and somatic. Therefore, environmental influences must be considered and used therapeutically in every therapeutic practice.

Keywords: Ecopsychosomatics, Dualism, Man-World-Connection, Nature therapy, Integrative Therapy

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¹ In diesem Text bedeutet das Verweiszeichen > vor wichtigen Begriffen, dass diese bei Bedarf in Fachlexika nachgeschlagen werden sollten oder mit kritischem Blick in der deutschen **und** englischen Wikipedia – sie können sich wechselseitig korrigieren – (<https://de.wikipedia.org/>), so dass so eine schnelle weiterführende Information ermöglicht wird.

² Vgl. die in den angelsächsischen Ländern verbreitete und durch Forschung und öffentliche Förderprogramme unterstützte Green Exercise oder Green Gym-Bewegung https://en.wikipedia.org/wiki/Green_exercise (aufgerufen 10.02.2017).

³ Vgl. die Green prescriptions, die medizinisch verordneten naturtherapeutischen Maßnahmen https://en.wikipedia.org/wiki/Green_prescription, Petzold, H. G., Frank, R., Ellerbrock, B. (2011): GOING GREEN IS HEALTH ENRICHMENT. *Integrative Therapie* 3, 291 – 312. <http://www.fpi-publikation.de/images/stories/downloads/integrative%20therapie/2011-3-going-green-heildende-kraft-landschaft-integrative-naturtherapie.pdf>. (aufgerufen 10.2.2017) oder die „Waldmedizin“ vgl. Qing Li (2014).

⁴ Definition aus Petzold, H. G. (2015): Die „NEUEN NATURTHERAPIEN“ – Klinische Ökologie und Ökopsychosomatik in der „Green Care-Bewegung“ – Caring for Nature and Caring for People. In: Grüne Texte 8/2015 <http://www.fpi-publikation.de/artikel/gruene-texte/2.html>

⁵ Angela Schuh (2004): Klima- und Thalassotherapie. Grundlagen und Praxis, Stuttgart: MVS Medizinverlage.

⁶ Petzold, H. G., Moser, S., Orth, I. (2012): Euthyme Therapie - Heilkunst und Gesundheitsförderung in asklepiadischer Tradition: ein integrativer und behavioraler Behandlungsansatz „multipler Stimulierung“ und „Lebensstilveränderung“ in: Psychologische Medizin, Heft 3, 18-36 und 4, 42-59 und in: Textarchiv 2012. <http://www.fpi-publikation.de/images/stories/downloads/textarchiv-petzold/petzold-moser-orth-2012-euthyme-therapie-heilkunst-asklepiadische-tradition-integrativ-behavioral.pdf>; vgl. Wolfgang Röd (1976): Die Philosophie der Antike I: Von Thales bis Demokrit. München: Beck. 3. Auflage 2009

⁷ Jürgen W. Riethmüller (2005): Asklepios. Heiligtümer und Kulte. 2 Bände. Heidelberg. Verlag Archäologie und Geschichte.

⁸ Georgoulis, A.D., Kipidou, I.S., Velogianni, L., Stergiou, N., Boland, A. (2007): Herodicus, the father of sports medicine. Knee Surgery, Sports Traumatology, Arthroscopy, 3, 315-318. vgl. <https://en.wikipedia.org/wiki/Herodicus>.

⁹ Petra Brinker (2016): „Die ökologische Dimension in der Supervision – Beiträge der ökologischen Psychologie und Ökotheorie“. Supervision.Theorie – Praxis – Forschung, Eine interdisziplinäre Internet-Zeitschrift 13/2016; <http://www.fpi-publikation.de/downloads/download-supervision/download-nr-13-2016-petra-brinker.html>

¹⁰ H.G. Petzold (1991/1993): Integrative Therapie. Bd. I Klinische Philosophie. Paderborn: Junfermann; Martin Poltrum (2009): Klinische Philosophie: Logos Ästhetikus und Philosophische. Wien: Parodos.

¹¹ H. Pauls (2011): Klinische Sozialarbeit – Grundlagen und Methoden psycho-sozialer Behandlung; zweite überarbeitete Aufl. Weinheim und München: Juventa.

¹² Petzold, H.G. (2006p), Hömberg, R. (2016).

¹³ Leitner, A., Sieper, J. (2008).

¹⁴ Petzold, H.G., Heinl, H.(1983): Psychotherapie und Arbeitswelt, Paderborn: Junfermann.

¹⁵ Petzold, H. G. Hömberg, R. (2014): Naturtherapie – tiergestützte, garten- und landschaftstherapeutische Interventionen. Psychologische Medizin 2, 40-48. In: www.FPI-publikationen.de/materialien.htm - POLYLOGE: Materialien aus der Europäischen Akademie für psychosoziale Gesundheit – 11/2014; <http://www.fpi-publikation.de/downloads/download-polyloge/download-nr-11-2014-hilarion-g-petzold-ralf-hoemberg.html>

¹⁶ Leitner, A., Sieper, J. (2008) S. 212.

¹⁷ Website der „Österreichischen Gesellschaft für Psychosomatik und Psychotherapeutische Medizin“ http://www.oegppm.at/default3.asp?active_page_id=338&parent_page_id=262&pparent_page_id=1 (10.2.2017)

¹⁸ Fleury-Bahi, G., Pol, E, Navarro, O. (2017).

¹⁹ Vgl. <http://www.spektrum.de/lexikon/psychologie/oekopsychosomatik/10840> (10.2.2017).

²⁰ Preuss, S. (1995): Ökopsychosomatik. Umweltbelastungen und psychovegetative Beschwerden. Heidelberg: Asanger. Vgl. die Rezension ihres Buchen bei <http://www.sgip.org/gipt/psysom/oeko-ps.htm>.

²¹ Ring, J., Eberlein-König, B., Behrendt, H. (1999): "Eco-syndrome" ("multiple chemical sensitivity"-- MCS). Zentralbl Hyg Umweltmed. 202(2-4):207-18; Eberlein-König, B., Przybilla, B., Kühnl, P., Golling, G., Gebefügi, I., Ring, J. (2001): Multiple chemical sensitivity (MCS) and others: allergological, environmental and psychological investigations in individuals with indoor air related complaints. Int J Hyg Environ Health. 205(3):213-20.

²² Sattmann-Frese, Hill (2008) S. 267.

²³ Sattmann-Frese, Hill (2008) S. 194. Es wird „eine ‚eco-psychosomatic‘ medicine gefordert, die „auf komplexe Fragen von Wohlbefinden (wellness) und Krankheit (illness) mit Bezug auf emotionale, psychosoziale und Umweltfaktoren“ (ebenda S. 194).

²⁵ Vgl. Lovelock, J.E.; Margulis, L. (1974): „Atmospheric homeostasis by and for the biosphere: the Gaia hypothesis“. *Tellus*. Series A. Stockholm: International Meteorological Institute. 26 (1–2): 2–10; Lovelock, James (2001) *Gaia: The Practical Science of Planetary Medicine*. [Gaia Books 1991]. New York: Oxford University Press. Kritisch: Tyrrell, Toby (2013): *On Gaia: A Critical Investigation of the Relationship between Life and Earth*, Princeton: Princeton University Press.

²⁶ Nicht mit der empirischen, akademischen Umweltpsychologie zu verwechseln (vgl. Steg, L., van den Berg, A.E., de Groot, I. M. (2012): *Environmental Psychology: An Introduction*. West Sussex: Wiley-Blackwell).

²⁷ Clemens G. Arvay (2016); C.V. Arvay (2015): *Der Biophilia-Effekt - Heilung aus dem Wald*. Wien. Edition a.

²⁸ Wobei eine durchaus zu problematisierende Auffassung von „Biophilie“ vertreten wird, denn der Begriff besagt bei Wilson, ein Interesse des Menschen an der Natur (auch zur Jagd oder Übernutzung), nicht etwa Naturliebe (philia). Vgl. kritisch Petzold (2016i).

²⁹ Qing Li (2014); Ralf Hömberg (2016).

³⁰ Petzold, H.G. (2006p).

³¹ Clemens Arvay, Mariya Beer (2016): *Das Biophilia-Training: Fitness aus dem Wald*. Wien: edition a.

³² Sloterdijk, P. (2009a): *Du mußt dein Leben ändern*. Frankfurt: Suhrkamp; Sloterdijk, P. (2013): *Der globale Schutz des Klimas und der Umwelt erträgt keine weitere Verzögerung mehr*. Tagesanzeiger (Zürich), 2. März 2013, 29, 31.

³³ Vgl. die wesentliche, kritische Diskussion des Informations- und des Emergenzkonzeptes bei Peter Janich (2006): *Was ist Information*. Frankfurt: Suhrkamp. S. 124ff., 134ff.

³⁴ Vgl. Petzold (2017d); Petzold, Hoemberg (2014)

³⁵ Petzold, Hilarion G. (2017): *Der „informierte Leib“ – „embodied and embedded“ - Leibgedächtnis und performative Synchronisationen*. (Neueinstellung von 2002j/2017). *Polyloge* (Internetzeitschrift). Online verfügbar unter <http://www.fpi-publikation.de/images/stories/downloads/polyloge/petzold-2002j-2017-der-informierte-leib-embodied-and-embedded-leibgedaechtnis-polyloge-03-2017.pdf> (aufgerufen 09.1.2017); Petzold, H. G. et al (2003): *MENSCHENBILD und PRAXEOLOGIE*. *Polyloge* (Internetzeitschrift). Online verfügbar unter <http://www.fpi-publikation.de/images/stories/downloads/polyloge/petzold-2003e-menschenbild-praxeologie-30-jahre-theorie-und-praxisentwicklung-fpi-polyloge-06-2003.pdf> (aufgerufen 09.01.2017).

³⁶ Petzold (2016) S. 231f.

³⁷ Petzold, H. G. (2015): *Integrative Therapie aktuell 2000 – 2015. Transversale und mundane Hominität. Den Menschen „von der Welt und der Natur her“ denken – Klinische Kompetenz & soziales Engagement, ökologischer Naturbezug & kritische Kulturarbeit*. <http://www.fpi-publikation.de/downloads/download-polyloge/download-nr-20-2015-hilarion-g-petzold.html> und Petzold (2016), wo anthropologisch von einer „ökologischen Hominität“ gesprochen wird.

³⁸ „Approche biopsychosociécologique“. *Petzold, H.G. (1965): Géragogie - nouvelle approche de l'éducation pour la vieillesse et dans la vieillesse. Publications de L'Institut St. Denis* 1, 1-19; <http://www.fpi-publikation.de/images/stories/downloads/textarchiv-petzold/petzold-1965-gragogie-nouvelle-approche-de-l-education-pour-la-vieillesse-et-dans-la-vieillesse.pdf>, S. 3. (10.2.2017).

³⁹ Merleau-Ponty, M. (1995): *La Nature. Notes de Cours de Collège de France*. Hrsg. v D. Seglard, Paris: Edition du Seuil; dtsh (2002): *Die Natur*. München: Fink; vgl. H. Bischlager (2016): *Die Öffnung der blockierten Wahrnehmung, Merleau-Pontys radikale Reflexion*, Bielefeld: Aisthesis.

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- ⁴⁰ Petzold, H.G., Sieper, J. (2012): "Leiblichkeit" als "Informierter Leib" embodied and embedded – Körper-Seele-Geist-Welt-Verhältnisse in der Integrativen Therapie. Quellen und Konzepte zum „psychophysischen Problem“ und zur leibtherapeutischen Praxis. In: Petzold, H.G. (2012): Die Menschenbilder in der Psychotherapie. Interdisziplinäre Perspektiven und die Modelle der Therapieschulen. Wien: Krammer, 243-321. <http://www.fpi-publikation.de/images/stories/downloads/polyloge/petzold-sieper-2012a-leiblichkeit-informierter-leib-embodied-embedded-konzepte-polyloge-21-2012.pdf> (10.2.2017)
- ⁴¹ Vgl. Petzold (2006, 2016)
- ⁴² Fleuri-Bahi et al. (2017).
- ⁴³ Petzold, H. G. (2014i): Integrative Depressionsbehandlung auf neurowissenschaftlicher Grundlage – Veränderung des „depressiven Lebensstils“ mit „Bündeln“ komplexer Maßnahmen in der „Dritten Welle“ Integrativer Therapie. Bei: <http://www.fpi-publikation.de/artikel/textarchiv-h-g-petzold-et-al-/index.php>
- ⁴⁴ Flade, A. (2010): Natur psychologisch betrachtet. Bern: Huber. Steg et al. (2012).
- ⁴⁵ Astrid Habiba Kreszmeier (2012) Systemische Naturtherapie. Heidelberg: Auer.
- ⁴⁶ Tim Grant, Gail Littlejohn (2005): Teaching Green -- The Elementary Years. Toronto: Green Teacher; NAP (2007): Green Schools: Attributes for Health and Learning. Washington: National Research Council. National Academies Press.
- ⁴⁷ Klempnauer, Elisabeth (2017): Green Writing - Schreiben in der Natur und von Naturerfahrungen – Ein integrativer Ansatz kreativen und biographischen Schreibens, Hückeswagen: Grüne Texte.
- ⁴⁸ Petzold, H. G. (2015b): „Green Meditation“ – Ruhe, Kraft, Lebensfreude. Green Care 2, 2-5 und erw. POLYLOGE Ausgabe 05/2015. <http://www.fpi-publikation.de/polyloge/alle-ausgaben/05-2015-petzold-hilarion-g-2015b-green-meditation-ruhe-kraft-lebensfreude.html>.
- ⁴⁹ Ulrich Ott (2010): Meditation für Skeptiker. München: Droemer.
- ⁵⁰ Hilarion G. Petzold (2004): *Der „informierte Leib“, „embodied and embedded“*. Ein Metakzept für die Leibtherapie. In: Gustl Marlock, Halko Weiss: *Handbuch der Körperpsychotherapie*. Verlag Schattauer, Stuttgart 2006. Hilarion G. Petzold (2003): *Integrative Therapie. Modelle, Theorien und Methoden für eine schulenübergreifende Psychotherapie*. 2. Aufl. Junfermann Verlag, Paderborn 2004, ISBN 978-3-87387-066-6 (3 Bände).
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