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THE CORRELATION EFFECT OF HORTICULTURAL ACTIVITIES – THE INFLUENCE OF WORKING WITH PLANTS ON HUMAN EXPERIENCES

Part I: The practical approach to a theoretical framework and model of the benefits of Green Care on the micro level

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Abstract

Self-reflective processes while working with plants set impulses to understand and change personal problem solving strategies. The approach of correlating horticultural activities to inner-psychic experiences has been developed by working with psychiatric patients in hospital and after care settings. For a conceptual foundation, Shepard's phyto-resonance term has been very helpful. Plants and gardens amplify intangible qualities of the self and of structural inner relationships. Considering findings in psycho-physiology, environmental psychology, neuro-science and psychology, the phyto-resonance hypothesis is developed as basic principle for explaining effects of the people-plant-relationship.

Foreword

Since working with people and plants for many years (horticultural therapy), I am not only wondering "What do people do in a garden and what do patients specifically do in a garden"? I started questioning also: "What do plants do?"

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and “How do we actively influence ourselves by working with plants (and animals also)?” and “What are we receiving because we see plants and seek their companionship”? Is there a reversal effect, which correlates human activities with plants to activities of mind and emotions?

1. Introduction

Resonance is the “sounding together” of two physical entities or bodies. Resonance is also the reaction to a speaker's or a sender's message.

Phyto-resonance is the human reaction to plants.

While looking for what is happening between plants and people at horticultural activities, processes containing similarities with “a tree of recognition”: the plant may help people to understand themselves. The wider meaning of the resonance phenomenon will be explored in the article “Phyto-Resonance Hypothesis - a model to describe the process between plants and human beings.

The article is inspired by Charles Lewis and by Paul Shepard and relies on previous work done by Roger Ulrich, Rachel and Stephen Kaplan, and Diane Relf. Other inspirations came from psychological experiences published in “Geopsyche” by Hellpach already in 1911.

1.1 Tangible and intangible qualities

Plants resemble qualities, which people have or need, like stability and rooted-ness, flexibility and elegance; plants might also seem beautiful, ornamental, strong or weak, restful or restless, only to mention a few of their characteristics.

Paul Shepard, Professor for Human Ecology, suggested, to view the garden as “the inner landscape projected”. He continues: “The great outside may therefore be read as it amplifies not only intangible qualities of the self but sets of those inner relationships that are more structural than the boisterous life of desire, anger, and anxiety, which flit through our being like animals.” (Shepard, 1994, 156)

Which qualities people are looking for depends on their personality, their personal experiences and their projections. Shepard suggests “that plants (...) represent a little known but widely experienced holographic correspondence between the natural world and the mind. The analogous plant-human encounter might have different characteristics.” (Shepard 1994, 154). “Phyto-resonance – (understood) as interaction of internal aspects of the self and external plants - could act at more fundamental levels than in correspondence with animals” (Shepard 1994, 154).

To my knowledge, phyto-resonance in this sense was used initially by Paul Shepard, an environmentalist and professor for human ecology, in his pre-

sentation for the conference on “The healing dimensions of people plant relations” at the University in Davis, California, in 1994.

1.2 Needs of humans and plants

In some relations, plants live on planet earth similar to human beings. They populate the earth, physically starting from (or underneath) the surface they lift up to the sky, making as much contact as they need. They spread and use their space as much as possible, depending on their own – genetic - ability and the space available. Plants too densely growing will compete, starve and grow poorly, plants growing on their own will sometimes starve, too, because they themselves are depending on the community of plants to create a supporting and safe atmosphere, at least they grow differently if grown solitary or in a group. It all differs not very much from the needs of human beings. Therefore one can find qualities, which humans and plants need alike.

1.3 What are plant qualities good for?

One might use these qualities for working with patients, who are severely disturbed and who feel limited, to talk with patients about their thoughts, feelings, problems, and things threatening them. It seems an easy path to patients who find it difficult to express themselves verbally. Patients most often find it convenient and non-threatening to use plants in order to talk about their thoughts and feelings. They may find out, what they need and start to acknowledge what they are able to do and change their way. Nature and plants are examples of life in ever changing forms. They deliver metaphors for life’s movements otherwise hidden. They will be specified in “Examples of horticultural activities” (2.1)

1.4 Changes of life conditions

Patient’s suffering and their diseases have many reasons. Sometimes it is maladjustment to changing life conditions and patients need to find out, what they can do about it. Changes in the life of plants may have many different forms. They are occurring slowly and they are often to be foreseen. Changes in plant life make sense and have a meaning which most people are able to understand. They might not be willing to accept and follow the withering of a much beloved plant, its vanishing beauty or grandiosity, but they watch the process of change and may learn to follow natural processes.

Plants are perfect companions, who precede, accompany or follow human beings. Moreover they create the atmosphere where we live in as human beings.

They provide food and shelter and give security.

On this basis a foil for therapeutic work has been developed, which might be useful in GREEN CARE and in HORTICULTURAL THERAPY. As a foil it is a meaningful background, which helps to relate and understand what is happening on a deeper level. It is named "Horticultural activities and psychic experience" (Neuberger 1988, p.11).

2. Correlation

Correlation means a mutual relationship between two entities. In our issue it describes a mutual relationship between what people do to plants and what they do to themselves. This is an assumption which needs to be explained. "We exist in a field of relatedness (...): i.e., we (...) understand the world around us through the multifold, interlaced and intersecting correlations it manifests" (Rummel 1976). Rummel adds "because two variables are highly correlated does not mean that one causes the other. In statistical terms, we say that correlation does not imply causation" (Rummel 1976). As I observed, working in a specific way with plants can lead to a certain state of mind with accompanying thoughts and feelings. I want to describe phenomena which may occur (emphasized by a.) when patients are working with plants carefully and conscientiously. It may well be true for people in good health.

Correlation is a qualitative description of two (or more) phenomena, the correlation coefficient is a quantitative description, not covered by this article.

2.1 Correlating Horticultural activities and psychic experience

While gardening with psychiatric patients for many years conceptual ideas were developed, which are used as a foil to draw personal meaning from what patients are experiencing while working with plants. ¹

In the following some examples of horticultural tasks are given and the *possible psychic experience (set in italics)* are described. In practice, it is advised to brake down each task into single repetitive activities. The individual can be asked to explain what they are doing and to invite them to connect it with personal meaning.

¹ The question can be applied to people working with animals: what do people care for in themselves?

2.2 Examples of horticultural activities and correlating personal experiences

Soil preparation

Digging, loosening, raking out, preparation for good and healthy growing. Patients give their power to mix the soil, to destroy lumps and to flatten out the seed bed.

Possible psychic experience: New beginning is possible, hope and confidence at hand; inventory, objectives, treatment plan are regarded: What is the physical condition, the personal situation? What does the patient want?

Patients may prepare their willingness to arrange parts of their life and reflect on their personality. Patients prepare for new developments, a new and positive approach to life. From experience with many people, digging sometimes has an upsetting effect, raking and flattening out is useful for levelling out upsetting emotions.

People feel content and relieved, when looking at the smooth surface of the soil, they worked on. Moreover, soil preparation means, “establishing a facilitating environment for the dialogs that follow” (Shepard, 1994). In horticultural terms, a flat seed bed makes following tasks usually easier and more precise, like line drawing for planting or sowing.

Sowing

Burying the seed in the earth; laying down seeds for new propagation.

Possible psychic experience: Sowing means: growth, propagation; development of a solid personal nucleus with a meaning for patients' life and relationships.

Usually the awareness of the seeder is increased and can be focused on the seed grain. Sowing supports self assurance The process of covering the grain confirms what has been done and leaves it to its own process.

Planting

Giving pre-cultured plants their final location and the space they need to develop fully.

Possible psychic experience: Integrate discovered potential; help patients skills to “root and spread”. Conciliating for a better coping with the environment; patients realize that their experience has important and meaningful components for their person and their life; the full meaning may be recognized later. In order to grow, patients also need space for living, movement, and development, as less space may impose stress.

Planters feel relieved and affirmative, when looking at the newly planted bed. The feel more content the better their work was carried out.

Care and maintenance

Watering, fertilizing, and hoeing; supplying plants with water, nutrition and air;

maintaining necessary space for each plant.

Possible psychic experience: Patients acknowledge that it is necessary to do something for the plant as well as for themselves. What do patients care for, while they are caring for plants? What needs protection, what needs fostering? How do patients profit by their work?

Patients learn to care for plants (and animals) as well as for themselves. They become aware that they need physical, intellectual, and emotional nurturing for healthy growth.

Care and maintenance both focus on affirmative thoughts, feelings and activities to support development, to prevent from destruction and to change in a desired way.

Growth

The most interesting process is the growth process. Although it does not fit into the examples mentioned above as a specific human activity, the growth process releases a lot of interest in patients and most people when they are asked.

Growing means: Developing the potential of a seed or a plant or a human being; developing to its full appearance (gestalt). Growing is the activity of all living beings.

Possible psychic experience: Opening up to development, change, and acceptance; giving room to a natural process which has its own inner laws. The natural process can be fostered by positive conditions of the environment, prepared by the patient. It is exciting to see, how patients change and grow under the influence of a positive environment.

We could add to this list other activities like: pricking, weeding, hoeing, cutting, scything, composting, plant protection, harvesting etc.

The effect of any activity on the person's physical, emotional and mental state can be observed and used for specific purposes. Every activity has its own quality, depending on

- the state of soil, weather and stadium of plant growth
- the personal history and present state of mind
- and how one performs the task.

One may change the tool in use and think about how a different tool may influence the effect on the plant and correlating more to the desired effect on the person.

3. Effects on the individuals and on the plants side are inter-related

There is an effect on both sides: on the plant's (or animal's) side, which can be observed and on the individual's side, which can be reported. This approach sug-

gests to examine the reflective process (something “thrown back”) while working concentrated and thoroughly with plants (and animals as well).

In every activity aspects can be focused which are meaningful for the individual and important for the appropriate and desired outcome. Harvesting e.g. can be very powerful, when the patient is feeling stuck and emotionally aroused: If a patient feels no result from a conversation, harvesting may help (Neuberger 6/1988). Scything may be the appropriate task for focusing self-destructive trains of thoughts.

Directing these thoughts to the outside and making them useful for a horticultural task means changing their impetus from a destructive to a constructive activity. The more an activity is tailored to the individual, the more effective it will be in regards of personal profit.

Using this approach, patients may develop self-esteem, practical, social and emotional skills. Fundamentals are provided to change inappropriate thoughts and behaviour, evoked by illness, undesirable development or inappropriate socialization. It may help to live more in harmony and content in a network, which gives contact and stability.

3.1 Related approaches

Correlational aspects are widely used and can be found in different therapeutic approaches and in human ecology:

Self-efficacy – which Bente Berget² called “a believe in one’s ability to perform behaviours which will create an expected and desirable outcome. When the patient says “Go!” to the animal and the animal starts going, the patient knows, where it came from. It is the patient’s expressed clarity and their relation, which made the animal “go”.

Phyto-resonance - the reciprocal relationship of internal aspects of the self and external plants (Paul Shepard 1994)

Active Imagination, using plants to foster developmental abilities (Gallegos 1987)

Counter-transference in Psychoanalysis – the psychoanalyst experiences feelings which belong to the patient

Feelings of counter-transference –the therapist’s feelings while the patient is talking and acting. It is a kind of psycho-physical answer experienced by the therapist.

² personal information at the Bruxelles Cost 866 meeting

4. Conclusion

The correlation of horticultural activities to the experience of working with plants has been shown by examples of general horticultural activities. By working in the surrounding plant world of garden like settings, people influence their thoughts, sensations and emotions in a specific way. The correlation effect is explaining the active process between people engaged in horticultural activities. This activity is influencing their well-being in a meaningful way. Further exploring related phenomena in psycho-physiology, cybernetics, bio-mechanics, environmental psychology, psychoanalysis, Balint group work, socialisation processes, neuroscience and human ecology lead to the phyto-resonance hypothesis, explained and explored in another article.

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Phyto-Resonance Hypothesis

Part II: A model to describe the process between plants and Human beings.

Part of a theoretical framework and a model of a benefits of Green Care on the micro level.

1. Phyto-resonance hypothesis

Following the path of self-reflective processes, the way of correlation as explained above, the path of response and resonance, of active imagination and inner representations, and the phenomenon of counter-transference, more and more aspects can be found which all contribute to a

1.1 Phyto-resonance hypothesis

Phyto-resonance is the trace which a plant leaves in human beings. It is our human ability to respond to plants without words. People respond in their psycho-physiology in a way which shows relations to the physical appearance of the plant in actual sight, or to the plant as an image or a term. This process is also called representation. It leads to the acknowledgement of living plants and trees as essential constituent of the “umwelt³” (surrounding).

Of course, every object people see, being animate like animals, or inanimate like a house or any other structure, can leave traces in mental and psycho-physical representations, because in the human perception and recognition system there is a constant tracking of known/unknown, similar/dissimilar, adding/sorting out, at work. There is a distinct, perceptible difference between the representation of trees and houses: Trees (and plants) respond on the vitality level – people experience the actual feeling of being alive.

³ Umwelt, a term coined by Uexkuell (1864-1944), meaning the surrounding of any being alive.

2. Foundation of the Phyto-resonance Hypothesis

The “Phyto-Resonance Hypothesis” is presently built on ten stems. They have been contributed from different interdisciplinary sources in a constructive way to establish a theoretical foundation for why Green Care (in its different forms) is effective. The ten stems are:

2.1. Observations and research in psycho-physiology. PSYCHO-PHYSIOLOGY is the study of bridging human experience with the environment. Stimuli have a certain way of being processed. They depend on the construction of the human sensory system, which has been formed in relation to the environment. It contains clues to decipher environmental information. The Savannah theory builds on that.

2.2. Findings in NEURO-SCIENCE show that viewings and thoughts of plants and outdoor scenes have their correspondance in the human brain. They are processed e.g. in the building related region of the collateral sulcus, where scenes can be related to prominent activation peaks in a bottom-up process. Highly specialized brain-regions still need to be checked for their interrelations with involuntary attention.

2.3. The recognition of the environment depends on the way information is processed. CYBERNETICS has prepared some useful methods to examine processes among different systems, like humans and plants.

2.4. When examining how people are influenced by plants, which is the main point in phyto-resonance, it is useful to observe how plants react to environmental conditions and to watch their physiology and BIO-MECHANICS. Trees can easily be compared with humans. The shape of a tree shows its history and is its own biomechanical diary.

2.5. The Kaplans as representatives of ENVIRONMENTAL PSYCHOLOGY suspect that a “special resonance” can exist between people and natural environment, leading to an exceptionally high level of compatibility

2.6. The FEELINGS OF THE COUNTER-TRANSFERENCE as an important psychological factor have been found useful for understanding patients in therapy. It is the inner answer of the therapist to the presence of the patient. Basically, it is the therapist’s resonance feeling, experiencing sensations on the physical, the emotional and the mental level in relation to the patient. Medical doctors in Balint-groups, a professional intervision approach, found a similar phenomenon and called it “MIRRORING”: colleagues not involved in a problem-situation experience important physical sensations in relation to a medical and psychological case report.

2.7. In the process of SOCIALISATION children form inner representations of their relationships to their parents and to the environment. Important patterns of parents as well as from nature and plants are received and stored in the brain. Decisive for the anchoring of experiences with nature, plants and trees, is the extent and activation of emotional systems in the human brain. Representation is closely related to resonance.

2.8. Patients can name aspects evoked by plants which can be understood as their individual answer to a specific plant. As a group they are able to name important aspects of the term “resonance” as it can be used in relation to plants. (PATIENTS INPUT)

2.9. Phyto-resonance includes conscious and non-conscious RECOGNITION-processes. As it conveys meaning it gives reassurance and helps to build self-confidence. But it is a challenge to one’s awareness to understand and recognize what is going on between humans and their natural environment.

2.10. According to Shepard, the author of the term, “plants represent a holographic correspondence between the natural world and the mind”. Phyto-resonance may be seen as interaction of internal aspects of the self and external plants. (HUMAN ECOLOGY)

3. Do different people respond to plants similarly?

Not all people respond alike. A lot owes to their present state of mind and their preoccupation with thoughts and feelings belonging to other than the actual situation in sight. A careful observer will detect these aberrations in work movements. People seeking nature like settings for distraction and enjoyment for 20 to 60 minutes report improved states of well-being. The phyto-resonance hypothesis tries to explain these effects.

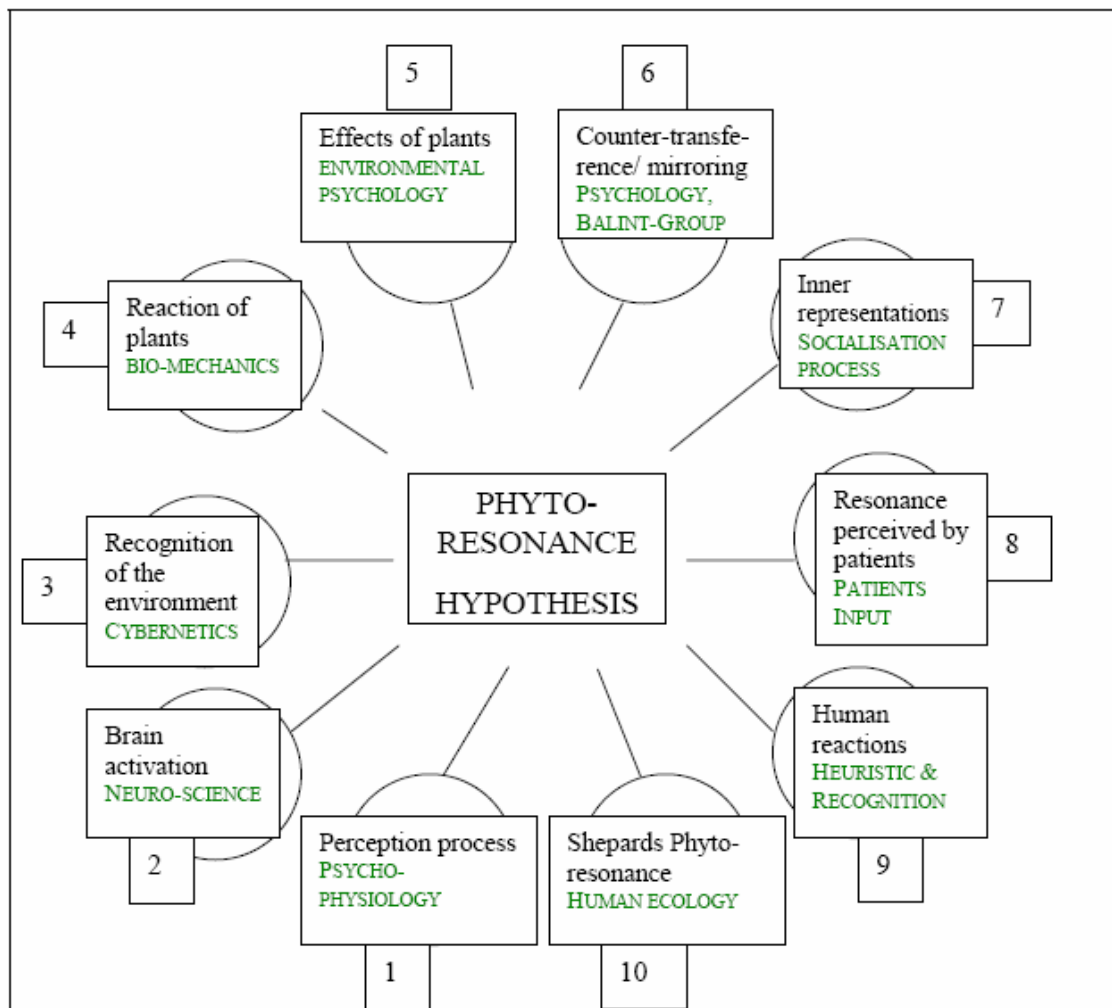
4. Conclusion:

Even though one may argue that many differing meanings of “resonance”, such as reaction, representation, resonance-feelings, mirroring, perception and recognition are cited, they come from totally different areas and have little in common. It is the different facets from different angles which form a meaningful set of thoughts. In their wide spread sources they form a conscious as well as an unconscious and none the less effective matrix:

Phyto-resonance is the trace which a plant leaves in human beings. It is the human ability to understand plants without words. People respond in their psycho-physiology in a way which shows relations to the plant in actual sight, to the plant as an image and to plant related terms, as well as the individuals present state of mind.

Table 1. Resonance hypothesis in the centre of relevant approaches

The graphic shows aspects, methods, observations and approaches in research to establish the phyto-resonance hypothesis.



Phyto-Resonance Hypothesis in different aspects

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