

“Doman am diran che j’erbo a coro...” (they do!)¹

Graziella Acquaviva and Mauro Tosco

Science hour in an (imaginary) Piedmontese medium primary school. The teacher asks Gioanin how trees breathe. Gioanin promptly says they do not. The nerdy girl to his side proudly answers that trees breathe through their leaves. Obviously unconvinced, in the last panel Gioanin replies: *Doman am diran che j’erbo a coro...* (“Yeah, right... Tomorrow they gonna tell me trees can run”).²



- Bondì cerea, magistra..
- Bondì, fieuj. Ancheuj i foma lesson ëd Siense.



- Gioanin: com a respiro j’erbo?
- Òh fàit, j’erbo a respiro pa.



- Brav ti. Cò it dise Bianca?
- J’erbo a respiro con le feuje.



- Has-to capì, Gioanin?
- Doman am diran che j’erbo a coro...

“Running Trees?” (from Tosco, Rubat Borel and Bertolino 2006: 83; drawings: Alberto Bonis and Franz Berta)

¹ As per Italian academic regulations, we state that Graziella Acquaviva is the author of sections 1 and 2, while Mauro Tosco authored the first unnumbered section. Section 3 has been written by both authors, who also jointly edited this issue of *Kervan*.

² Roughly: /du'maŋ am=di'raŋ ke='j=ærbu a='kuru/.

And yes, trees indeed move. But the wood which ‘began to move’ (Macbeth, Act V, Scene 5), or the Ents in Tolkien’s Middle-earth and their last march on Isengard do much more – they speak to the human mind, they resonate with images.

We want this issue of *Kervan* to resonate with them.

1. Plants and memory: experiments in vegetal neurobiology

The first and foremost interest of mankind towards plants has always been associated to the possibility of their use, either in building, nutrition or therapy. Aristoteles’ dictum whereby plants have a soul but not sensations went unchallenged up to the 18th century, when Carl von Linné, better known under the Latinized form of his name as Linneus, declared that plants are different from animals and humankind, but only for the absence of movement (Tompkins and Bird 2009: 8). Year 1880 saw the publication of Charles Darwin’s *The Power of Movement in Plants*, where the father of evolutionism reflected on the root tips and its characteristics and proposed that the root tips act like the brain of an “inferior” animal thanks to their ability to simultaneously perceive different environmental stimuli, and to react to them through the movements of the plants’ parts³. At the beginnings of the 20th century, Raoul Heinrich Francé put forward the idea that the plant’s body could freely move, and that the movements are unnoticeable to us only because of their extreme slowness, as when worm-like roots dig deep in the soil. When the soil is dry, roots move looking for humidity, making their way in underground tunnels which may extend, as in the case of the clover, even to 40 feet⁴. Gradually, the destroyer cells deteriorate in their contact with stones, gravel and sand, and get reproduced; as soon as they reach a source of food, they die and are replaced by cells in charge of dissolving the mineral salts and collecting nourishment. Francé again was of the opinion that growth is a set of movements: plants are constantly busy bending, turning, shaking. When a tendril finds a possible support, within twenty seconds it will try to engulf it, and in less than one hour this process will have reached a point when any removal will be extremely difficult. The tendril will then spiral around the support and pulls the shoot towards itself. Were it to be moved, within a matter of hours the shoot too will point to another direction (Tompkins and Bird 2009: 9-10).

³ Already in 1874, J.-H. Fabre in *La Plante* argued that plants were animals’ “sisters”, insofar they too live, feed and reproduce themselves.

⁴ A single rye plant produces a total of about thirteen million small roots, reaching a length of approximately 608 kms (more than 370 miles; Tompkins and Bird 2009: 9).

Nowadays, the existence of a special sensory and evaluative area within the root apex has been established thanks to the new field of vegetal neurobiology. Just as biology, biophysics, ecology and agriculture, vegetal neurobiology takes into account biotic and abiotic stress, plants communication, signal transmission and adaptation abilities. But vegetal neurobiology's outlook differs considerably, insofar as it contends that "superior" plants not only receive signals from the environment, but also possess mechanisms to rapidly transmit signals and can process the informations they get from the environment. They therefore display a learning ability, which in its turn implies the quest for a goal, the ability to estimate mistakes, and the availability of mnemonic mechanisms. When roots are considered the locus of neural activity, they become the most important organ; their tips are like a front moving forward and led by a multitude of command centers. The whole root system leads the plant with something akin to a collective or distributed mind, itself growing and developing; at the same time, it acquires important data for the nourishment and survival of the plant itself (Mancuso 2005: 7). Plants coexist and, insofar as they cannot dislocate themselves, their survival is strictly linked to their capacity to overcome the competition of nearby plants. To this end, it is essential that they benefit from a system enabling the fast perception of signals emitted from neighboring competitors and an adequate reaction to possible threats. A well known example of an interaction system between plants is "allelopathy": through the emission in the environment of harmful or repulsive compounds, a plant may affect the growth and development of neighboring plants. Plants are also able to emit compounds positively affecting the receiving plant through the phenomenon of allelobiosis. Allelobiosis requires communication to take place between healthy, undamaged plants, and that communication brings a benefit to the receiver and somehow conditions its growth. We also know that plants of the same species or variety transmit chemical messages concerning the available resources (Mancuso 2006: 247-248). It is possible that these data enable the affected plants to better cope with the environmental needs. For example, the growth of barley seeds is hindered by an allelopathic answer when they get exposed to certain volatile molecules emitted by species such as *Sasa cernua* or *Eucalyptus globulus*. If those same seeds are exposed to volatile compounds emitted by mature barley plants, we get an allelobiotic answer which enables the seeds to change their growth strategy and increase their root apparatus to the expenses of the aerial one.

Given that plants can react to external stimuli, it is logical to infer that they can store data and, in case, recall them in due time. Mancuso (2005: 11-12) stresses the existence of many examples of plants' mnemonic activities: a common case is provided by the phenomenon of vernalization – an evolutive mechanism which prevents early blooming in plants which can bloom in spring if they have passed through a cold period in winter.

Studies on vegetal neurobiology are rapidly expanding: in May 2005, numerous researches in this new discipline have been presented for the first time to the scientific community at the “First Symposium on Plant Neurobiology,” held in Florence at the *Accademia dei Georgofili*; on the model of LINV (the “Laboratorio Internazionale di Neurobiologia Vegetale” in Florence), several laboratories have launched projects on vegetal neurobiology, while the “Society for Plant Neurobiology” attracts more and more members from leading universities and research centers, and the American journal *Plant Signaling and Behaviour* is entirely dedicated to vegetal neurobiology (Mancuso 2006: 240-241).

2. ITIS: ImageryTreeImageSymbol

Imagery alludes to an original, it suggests identification but also unfulfilled identity. From this chasm an opening is created. Different approaches to the imagery have been attempted, from Lévi-Strauss' structuralist theories, with their stress on the combinatorial logic which would be responsible for the elaboration of the imagery (Karsz 1976: 175), to Lotman's (2006) formalist proposals and Eliade's (1959) hermeneutical approach, which vindicate the problem of interpretation and the role of the individual to the investigation of the hidden meaning. In response to Sartre's position, Gilbert Durand (in D'Amato 2012: 29) moving from the need to overcome any form of rigidity, investigated the very nature of dell'imagery, pulling together its elements of anthropological invariance and transcultural variation; Wunenburger, in his *Philosophie des images* (1997), digs further, and stresses the median role of the image, which lies suspended in its being both “sensible apparence” and “figurative image”, intimately connected with its metaphor par excellence – the mirror.

If images develop out of each individual's experience and determine his or her choices, esthetic phantasies and creative imagination, the environment defines each individual's expressive space (Bovi 2010: 35). Thought, image and word are the main basis of the significant which the individual represents to himself. The word becomes then the precondition for any form of “significant” (Warburton 2004: 17). The subject is immersed in the environment and his or her movements can alter the spatial and perceptual relations with the objects also in their social and motivational features, thereby originating the symbolic process of the experience as well as meanings which are inherent to the creative process and which, though variously defined, can be characterized as magical, mythical, and sacred.

Lifšic (1978: 2) maintains that each individual's sense of belonging to the traditions and/or symbolic life forms of his or her community is amplified from a social fissure which, paradoxically, harks back to the original form of the Self, often to a “history before history” whose roots rest deep in

the ground, in water, in the totality of nature. This implies going back to man's original language — a language of great creative potentials where man is surrounded by wide semantic horizons, through which s/he can create and re-create a new idea of Self and of the world. Leaving the present time and magically joining the time of the sacred, the time of origins, the poet can now enter a world “other”, the world of Gods or of the Ancestors. In this way, the act of poetry becomes “to see things with a new and original eye” (Gaglione 2014: 72),⁵ where outward and inward appearance find their symbolic representation in the metaphorical images which stem from the text and the language which expresses them.

The word itself becomes then a word-image. The process of coming back to the original form of the Self leads to a deeper observation of the world around us and the elaboration of images which can hark back to an oneiric or primal phase where objects and natural phenomena acquire an anthropomorphic shape. According to Jung (2008), mythical natural phenomena would be “psychic events”, symbolic expressions of the inner, unconscious drama taking place in the soul and accessible to human conscience through their projection onto natural phenomena. An example is provided by the Swahili poetic production by Euphrase Kezilahabi, and what could be called his “animistic memories.” In the final verses of his poem *Ngoma ya kimya* (“The Dance of Silence”; Kezilahabi 1988), for example, the line *Lakini labda miti hii michache yakumbuka* (“But maybe these trees remember...”) points to the tree roots as the vessels where certain facets of the past are preserved.

The tridimensional nature of trees — roots, trunk, branches — bears a strong symbolic value in its very numerical value and in its relationship with many sacred triads, namely time (past vs. present vs. future) and space (height vs. width vs. length). Likewise, trees combine three elements: earth, water and air. In different epochs and places, trees (and woods) have stood for one of the first hierophanies. Through its root buried deep in the ground and its branches rising to the sky, the tree is universally thought of as a symbol of the relationship between earth and sky. In this sense it has a “central” meaning, and the “Tree of the World” becomes synonymous with the *axis mundi*. Different species are identified to this effect: the Ash in Scandinavia, the Linden in Germany, the Olive in the Islamic world, the Birch or the Larch in Siberia. The Chinese *Chien-mu* tree stands at the center of the world, where no shadow is cast and no echo reverberates: it has nine branches and nine roots, through which it reaches, respectively, nine skies and nine springs which are inhabited by the dead. Chinese symbolism makes use of the tied tree (standing for the union of yin and yang), and of the tree whose branches blend together after having been taken apart, and which stand for separation

⁵ Italian original: “vedere le cose con occhio nuovo e originale” (translation by Graziella Acquaviva).

followed by a renewed unity (Chevalier and Gheerbrandt 1997: 21-23). The Tree of Life acquires a special meaning in Jung's thought: through its fruits and its use in genealogy, it conjures the Mother. Not surprisingly, many goddesses have been adored in the shape of a tree or a whole wood. Likewise motherly is the motif of the interwoven branches; the trees both absorb and excrete through their roots and their foliage; the trees beget – not unlike those monsters of legends who swallow their victims only to transfigure and spit them out again (Chevalier and Gheerbrandt 1997: 32-33). From a psychological point of view, therefore, the tree is a pillar supporting the subject's projections and expressing his or her complexes and distress. According to Jung (2012) the trees are “philosophical”, i.e., real but pertaining to archetypal reality (the reality which lays at the basis of the phenomena and processes of psychic life). We can therefore understand why the image of the miraculous tree or plant frequently appears among the archetypal representations of the unconscious, and comes to correspond to that Self which, in Jung's theory, designates the unity and totality of personality and encompasses both the conscious and the unconscious soul – i.e., both what is and what is not (yet) an object of experience.

3. An overview

Most articles in the present issue of *Kervan* were originally presented at the Conference *Immagini Culturali del Regno Vegetale: aspetti simbolici e prospettive interpretative* (“Cultural Images of the Plant Kingdom: symbolic aspects and Interpretative Perspectives”), which was devised and organized by Graziella Acquaviva and held at the University of Turin on March 16-17, 2015.⁶ Just as a few contributions presented at the conference are here missing, a few articles (namely, Bellino's, Drocco's, and Borri's) have been added.

We divided this collection of essays into a Prelude and four Movements, imagining it like a journey along the banks of a river flowing through different interpretative perspectives on the vegetal world.

In the Prelude, Antonino Pollio and Gianluca Del Mastro lead us to the dawn of western food production. What is more, their articles perfectly epitomizes, in its neat balance of philology and ethnobotany, that multidisciplinary approach to culture which was one of the (maybe too ambitious?) goals of the Turin conference.

⁶ We thank the Department of Humanities (StudiUm) and the Department of Culture, Politics, and Society (CPS) of the University of Turin for their kind financial and logistic support in the organization of the Conference.

The first Movement is one of sacred images: in Alberto Pelissero's overview of plant symbolism in the Indian world, trees can be the *axis mundi*, while the *aśvattha* (*Ficus religiosa*) is the *bodhi* tree – the Tree of Awakening under whose shade the Siddhārta Gautama became the Buddha; or still, human beings are born from vegetables in the *Rāmāyaṇa*.

Gianni Pellegrini delves deep into the night jasmine (*Nyctanthes arbor tristis*), whose flower is assimilated to the ascetic renouciant (*saṃnyāsin*), and whose wide-ranging echoes range in India from mythology to medicine.

Alessandro Mengozzi guides us to the silent and speaking trees of a Biblical tradition which follows the Mesopotamian model of the dispute and is itself enriched in the Targum and in Classical Syriac literature. It is a tradition where '[P]lants and trees are humanized as spokesmen who, sometimes ironically and playfully, put into stage values and knowledge of the Bible centred culture of their authors, audiences and readerships' (from the author's Abstract).

With Sarah Kaminski we see these sacred plants as they travel through the centuries, down to the Jewish annual festivity of *Tu Bishvat* (The Trees Festivity of the Trees) and to Rabbi Nachman from Breslav (19th century), who, pondering on the indissoluble bond between human being and the plant's world, urged his disciples to understand that "every plant and plant/ has its own and specific melody" – an exhortation popularized in more recent times by the Israeli chansonnière Naomi Shemer in her famous "Song of Trees".

With Movement 2 we reach narratology: Esterino Adami explores the metaphorical meanings and intertextual implications of phytonims in the anglophone literature from India, while Alessandra Consolaro focuses on the complex sociocultural and political meanings of vegetal metaphors in Hindi literature.

Francesca Bellino takes us back in time to the plant kingdom as depicted in the *Masālik al-abṣār fi mamālik al-amṣār*, the Arabic-language encyclopedia by Šihāb al-Dīn Ibn Faḍl Allāh al-'Umarī (1301-1349), until Andrea Drocco pushes us back onwards in time and to the East along the path of Padre Vincenzo Maria di S. Caterina da Siena in his *Viaggio all'Indie Orientali* (1672).

In Movement 3 our journey takes us through vegetal anthropomorphism and metaphorical usage in different cultures: Graziella Acquaviva analyzes the vegetal metaphors abundantly found in Swahili poetry as a window to the Swahili world view; Enrico Comba explores the symbolic use of plants in the indigenous cultures of North America, and Francesco Remotti recalls the centrality of vegetal metaphors even among the Banande farmers of North Kivu (Zaire), who proudly call themselves *abakondi* ("those who destroy the forest"), and whose "entire culture is based on the

principle of the ‘cut’ (*eritwa*)” and whose “social and political organization is due to the historical achievement of their territory wrested from the forest” (from the author’s Abstract).

Fieldwork dominates Movement 4, starting with Ilaria Micheli’s work among the Kulango horticulturalists of Côte d’Ivoire and their complex relationships with and conceptualization of the plant kingdom. From an overview of the agricultural calendar and its plant-dedicated feasts, we discover the special role played among others by the *laasagyo* tree and grasp the very conceptualization of the plant among the Kulango.

Germana Chiusano’s contribution stems from work carried out among the *bedik* community of Senegal. The author investigates the relational and symbolic relationship between man and nature and between knowledge and territory, and the social, cultural and territorial practices and knowledges of the Bedik: how they access and exploit natural resources, and how the complex and multidimensional relationships which develop between man and the environment are reflected in the traditional ritual practices.

We move to the south with Gilberto Borri’s work on the traditional healers-herbalists of the Bakonzo (Uganda), their role and how they cope (or try to) with the challenges posed by Western culture and pharmaceutical products, as well as with the renewed interest towards traditional drugs.

We could not close our volume and our voyage without a word on the jewel of ethnodiversity: Soqotra. In the final contribution, Luigi Guiglia and Daniela Bouvet lead us through a journey through the island’s climates and at least a portion of its impressive wealth of endemic species and their role in the local economics and ecology as reflected in the botanical knowledge of the islanders.

Let our authors speak now, and let the plants speak through them. Let us sail to the realm of plants, to the plant kingdom. Let our journey begin...

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