About the guest speaker and his work

In his philosophically and scientifically balanced book, Quentin Hiernaux asks deep questions followed by clear-cut conclusions. He offers solid views on plant intelligence, by breaking down our current understanding of the words ‘behaviour’ and ‘cognition’.
Continuous research confirming that plants can strategically adapt to their environment, Hiernaux clarifies the current controversy surrounding plant cognition. To do so, he follows the analogy that one cannot react to something if it was not acknowledged. Therefor plants have to be able to perceive and sense external stimuli. Even though we cannot see plants move, we have proven that they can make very precise decisions, have a memory and are aware of environmental changes. Hiernaux’s book really does a great job in stating that; as a society we might have to reconsider our scientific understanding of previously ‘lesser’ living beings and start to research their potentially superior skills.

The different topics presented during his presentation:

History of plant sciences

Quentin provides an overview of how plants have been viewed throughout history within the Western dominant scientific framework.

- Plants as one of the lowest forms of life, in a hierarchy of life described from Aristotle onwards.
- In modern times, with the emergence of modern science, a mechanistic view of life develops. With humans being the 'animate' exception.
- In the 20th century, we have a behaviourist view that considers human and non-human life as a black box that we cannot know on the merits, but which we can investigate it by observing stimulus and response from that black box.

Cognition and behavior

Today, in the 21st century, our knowledge of plants is developing rapidly. And we increasingly see how complex plants are. This motivated a group of scientists to talk, provocatively, about plant neurology. Which, of course, is an oxymoron given that plants have no nervous system.
We now look at plants with more knowledge, increasingly discovering the inherent nature of that life form. We need to investigate: what are cognition and behavior exactly? Do plants have a memory? And what can be considered memory?
Research shows that plants, individual specimens, have a memory and learn. But…without a nervous system!?
Incidentally, our understanding of cognition is also evolving along with the growth of our understanding of cognition in humans. For instance, we now know that cognition is not purely in our brain but is also present in our body. Cognition is incorporated.

Our discussion points and unresolved questions

1) If plants were to have a free will, meaning they can randomly make their preferred choice, we would not be able to scientifically prove it yet with experimentation. This might undermine our current scientific understanding of ‘intelligent’ plants. We have not theorised whether humans have a free will. Hormones, rationality and metaphysical input might affect conscious decision making in strange ways. So you might never know ‘why’ some individual reacted that way.
    - *Are you fully in control of your everyday decisions?*

- *So how about plants?*
- *Will science ever be able to prove if we have a free will?*

2) While observing the behavior and responses of plants, we have analysed that they operate with some sort of intelligence. So how about plants being sentient? Alongside the evolution of our understanding of plants, and the evolution of our own theories, we are also 'discovering' other knowledge systems that have their own view of plants. Knowledge systems from other than the western dominant scientific tradition, such as from shamanism. Read, for example, Robin Wall Kimmerer: A braid of sacred grass. Those other traditions often have a different attitude to plants, and lead to a different way of dealing with plants. They state plants to be helpful, caring and friendly creatures. This is difficult prove at the moment, because there is no scientific parameter that allows one to measure sentience. So for now, this theory will stay in the emotional realm. A valid option for now seems to be to allow different knowledge systems to coexist and develop side by side. To let that diversity of dealing with plants inspire each other.
   - *How can we combine our gaze and the gaze of these other traditions, how do we deal with that?*
   - *Do shamans interact with plants on a level we (Western people) have no knowledge about?*
   - *Are we able to feel plant sentience or is it our imagination?*
   - *Are humans sentient as a species?*

3) The development of ethics concerning plants can follow two strategies: biocentric or ecocentric. Biocentric: we consider organisms as a separate form of life, we focus on individual plants, and consider them as subjects. This is what often happens in non-scientific (non-Western) knowledge systems.
   Ecocentric: we look mainly at ecology, biotopes, the interrelationships between all those life forms that make up an ecosystem, and consider especially the relationships between all those life forms. And we explore how this view of the whole system can guide our behaviour.
   - *Are ethics and durability on our planet and all life on it the next step in human evolution?*
   - *Is the unethical way of life damaging for our own health?*
   - *What are the advantages to society of an ethical lifestyle towards all life?*

4) The crucial role of empathy in accepting plants as cognitive and highly complex beings. This is a basic prerequisite for being plant-conscious. Education plays a crucial role in developing this empathy. It is not possible to develop empathy for something you do not encounter in your daily life. Quentin refers to the fact that in recent decades, children's exploration range has dropped from about 15 kilometres to 0 km. Children are staying indoors more often. As for public communication and public outreach, you could argue that any strategy is good. There are different perspectives and angles to develop empathy for plants. We do not have to lock the relationship between people and plants into one story. So even (anthropocentric) metaphors can be useful to bring insight and help develop empathy. As long as, of course, one explains that it is a metaphor.
   - *If empathy can be learned, shouldn’t we teach it at school?*
   - *How can we teach empathy?*

- *Is the unknown necessarily the unloved?*