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# The Scientific Basis of the Agricultural Course

## Objective Idealism and Agricultural Individuality

Biodynamic Agriculture relies on a science of knowledge of which is little reflected in the present day. The present article shows that the care for this very basis of knowledge is of great meaning to the practical work in this anthroposophical field of life. The origin of thought of the second lecture in the Agricultural Course, which was held in Koberwitz 1924, can be traced back to the first written works of Rudolf Steiner.

The Agricultural Course of Rudolf Steiner demands greatly of the farmer's forces of knowledge. Not taking them seriously could very easily lead to mistakes within the "anthroposophical practice", warns Rudolf Steiner in a report about his Course. On the one hand, it could happen that "spiritual knowledge cannot permeate into real life, that it becomes some sort of theory, [...] or some sort of faith in words", on the other hand that "there is no right way to teach that the spiritual is really able to participate in the practical work."<sup>1</sup> Therefore, it is important that the spiritual side is correctly penetrated by the will, so that spirituality and practical handling can be interwoven, i.e. brought into harmony with each other. In such a way Rudolf Steiner portrays his intention in the Agricultural Course, to firstly "bring together the knowledge about the conditions for a prospering of agriculture" and from there "to draw the real, practical conclusions, which shall then be realized in the immediate application and which have their meaning only in this immediate application" (2.2).<sup>2</sup>

Today those "practical conclusions" are applied worldwide. However, the question of how a "faith in words" can be overcome still remains current. Rudolf Steiner's thoughts are indeed

1 Rudolf Steiner: ›The Agricultural Course. The birth of the Biodynamic Method. Eight lectures by Rudolf Steiner‹ (GA 327), Rudolf Steiner Press, Forest Row, 2008.

2 In the following, the Agricultural Course will be quoted with first number as the lecture, the second one as the paragraph, i.e. "2.1" refers to the second lecture, first paragraph).

3 Herbert Witzemann: ›Über die Erkenntnisgrundlagen der biologisch-dynamischen Wirtschaftsweise‹, Genf 1975, p.2 . 4 Ibid., p. 15.

5 . Rudolf Steiner: ›Goethean Science‹ (GA1), Spring Valley New York 1988. p. 93.

6 Hans Heinze: ›Mensch und Kosmos‹, Dornach 1983; Immanuel Voegelé: ›Die Landwirtschaftliche Betriebsindividualität‹, in: ›Neu-Aufbau: Biologisch-Dynamischer Landbau 1945-1949‹, Darmstadt 1976, S. 496-506; Nicolaus Remer: ›Rudolf Steiners Landwirtschaftlicher Impuls: Tierhaltung und Bodenfruchtbarkeit‹, Amelinghausen 1996.

not easily accessible and the overcoming of the “faith in words” finally leads to the epistemological question: How are those thoughts to be understood?

Before a content-related discussion of the Agricultural Course can be taken up, it should therefore be clarified, wherein the method of the Course lies. Only on that safe ground the student can thereafter follow the Course in such a way that its content becomes revealed to him step by step. Otherwise, there is a danger that this content will be misunderstood.

In a short writing, Herbert Witzemann has committed himself to this very question and writes:

The holistic science, which underlies biodynamic agriculture, can only be honored unrestrictedly in its specific character if one familiarizes oneself with the epistemology of the anthroposophically orientated spiritual science, which is in itself without preconditions.<sup>3</sup>

Witzemann refers to the epistemology which Steiner presented on the basis of Goethe’s scientific works. He describes how the “modern farmer” shall train his “power of judgement in beholding” [german: *anschauende Urteilskraft*, Translator’s note] in the sense of Goethe, whereby he can develop “trust in the statements, which Steiner made accessible as result of his spiritual, reality-saturated insight”.<sup>4</sup> Steiner called the worldview, which is based on this epistemology, “objective idealism.”<sup>5</sup>

Other authors have considered the Goethean beholding from different perspectives as fundamental for the Agricultural Course.<sup>6</sup> However, an explicit reference to this can hardly be found in today’s publications. The present article intends to verify this Goethean reference by studying the second lecture of the Course. In this lecture, Steiner introduces the term of an agricultural farm as a “fully self-contained individuality” (2.2). This concept underlies the whole Course; therefore, the way in which Steiner introduces it is very meaningful. Thus, the focus shall not be on the individual thought-content, but on the thought sequence of the *Course*.

## Objective Idealism

In his very first works, Steiner devotes himself to the epistemology of objective idealism:

Proceeding strictly according to natural-scientific met-

hods, I found in objective idealism the only satisfying world view. My epistemology shows the way by which a kind of thinking that understands itself and is not self-contradictory arrives at this world view. I then found that this objective idealism, in its basic features, permeates the Goethean world view.<sup>7</sup>

Fundamental for this theory of knowledge is that sensory perception and concept (idea) are the two sides of reality. The former is directly given to us; the latter can only be achieved through our own activity of thinking:

*Reality, insofar as we meet it with open senses, confronts us. It confronts us in a form that we cannot regard as its true one; we first attain its true form when we bring our thinking into flux. Knowing means: to add the perception of thinking to the half reality of sense experience so that this picture of half reality becomes complete.*<sup>8</sup>

Consequently, the meaning of the idea is defined as follows:

In the *idea* we recognize that from which we must derive everything else: the principle of things. What philosophers call the absolute, the eternal being, the ground of the world, what the religions call God, this we call, on the basis of our epistemological studies: the *idea*.<sup>9</sup>

Insofar, the idea is not of subjective nature, but is self-sustaining:

When we have pressed forward to the point where the beginning of something occurs to us as idea, we then

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7 GA 1, p.93 f. In his autobiography ›Chapters in the Course of My Life, 1861-1907‹ (GA 28), Steiner comes back to this concept of objective idealism: “Schröer was an idealist; and the world of ideas was for him the driving force in the creation of human beings and nature. For me this idea was the shadow of a full-living spiritual world. At this time, I even found it difficult to put into words for myself the difference between Schröer’s and my way of thinking. He spoke of ideas as the driving force in history. He felt life in the being of ideas. For me, the spiritual life was behind the ideas, and these were only their appearance in the human soul. At that time, I could find no other word for my way of thinking than ‘objective idealism’. What I wanted to say was that the essential aspect of the idea is not that it appears in the human subject, but that it appears on the spiritual object like color at the sensory perception, that the human soul – the subject – perceives it there like the eye perceives the color at a living being.”

8 GA 1, p. 111.

9 GA1, S. 121.

10 Ibid., p. 134.

11 Rudolf Steiner: ›The Science of Knowing‹ (GA 2), Spring Valley New York, 1988. p. 90.

12 Ibid.

13 GA1, p.127.

behold in the idea something totally complete in itself, something self-supported and self-sustaining; it demands no further explanation from outside at all, so we can stop there. We see in the idea – if only we have the capacity for this – that it has everything which constitutes it within itself, that with it we have everything we could ask. The entire ground of existence has merged with the idea, has poured itself into it, unreservedly, in such a way that we have nowhere else to seek it except in the idea. In the idea we do not have a picture of what we are seeking in addition to the things; we have what we are seeking itself.<sup>10</sup>

In the realm of organic nature, this second half of reality is the idea of the organism, whose inner lawfulness has to be cognized:

We must see what works in from outer circumstances as confronted by something that does not passively allow itself to be determined by them but rather determines itself, actively, out of itself, under the influence of the outer circumstances.

But what is that basic factor? It can, after all, be nothing other than what manifests in the particular in the *form of the general*. In the particular, however, a definite organism always manifests. That basic factor is therefore an organism in the form of the general: *a general image of the organism*, which comprises within itself all the particular forms of organisms.

Following Goethe's example, let us call this general organism *typus*.<sup>11</sup>

### The scientific knowledge of organic nature

Therefore, the *typus* is “the animalness in the animal, the general plant in the specific one”.<sup>12</sup> It shall be understood by an intuitive way of thinking (“the power of judgement in beholding” of Goethe), because no single sensory perception can display it. The *typus* is thus the common theme, the red thread for the investigation of the organic world. A scientific path underlies its recognition within the sensory world: “Scientific thinking must emerge step by step as an overcoming of that dark form of reality which we have designated as the directly given, and lift it into the bright clarity of the idea.”<sup>13</sup> The methodology does not differ from physics: hypotheses are formed and tested on the basis of lawfulness.

If an organic science wants to be a science in the sense that mechanics or physics is, it must therefore know the *typus* to be the most general form and must then show it also in diverse, ideal, separate shapes. Mechanics is indeed also a compilation of diverse natural laws where the real determinants are altogether hypothetically assumed. It must be no different in organic science. Here also one would have to assume hypothetically determined forms in which the *typus* develops itself if one wanted to have a rational science. One would then have to show how these hypothetical configurations can always be brought to a definite form that exists for our observation. Just as in the inorganic we lead a phenomenon back to a law, so here we develop a specific form out of the archetypal form.<sup>14</sup>

14 GA2, p. 93 f.

15 GA2, p. 100.

16 GA1, p. 57.

This development of the form is based on the comparison: “In inorganic science it is the system; in organic science it is the comparison (of each individual form with the *typus*) ”.<sup>15</sup> Thus, Goethe followed this very path in his discovery of the intermaxillary bone. He started from the *typus* of animals, which he had intuitively grasped (the archetypal animal [german: *Ur-Tier*, *NT*]). This led to the hypothesis of the necessary presence of the intermaxillary bone in the human being. On the skull of a human embryo, he could verify his hypothesis. So Rudolf Steiner: “An organism can be apprehended only as an intuitive concept. Goethe shows by his deed that it is granted to the human being to apprehend it in this way.”<sup>16</sup>

Subsequently, this line of thought will be followed in the second lecture of the Agricultural Course. At the beginning of the second lecture, Rudolf Steiner presents his core idea (2.1-2.3):

**The agricultural individuality in the light of objective idealism**

A farm fulfills its being, in the best sense of the word, if it is conceived as a kind of individuality in itself – a self-contained individuality. [...] Whatever you need for agricultural production, you should try to possess it within the farm itself.

Rudolf Steiner himself asks for the justification of this self-containedness: “Is it not a matter of indifference whether we get our cow dung from the neighborhood or from our own farm?” To answer this question, “we need to have this ideal

17 Rudolf Steiner speaks of “the earth itself” (GA 327, p. 21)

18 “We may leave man out, but we cannot neglect animal life” (GA 327, p. 39)[2.32]

19 The entomologist Karl Friederichs developed the concept ‘holocoen’ in 1927, Arthur Stanley developed the concept ‘ecosystem’ in 1935. These concepts are based on idealistic resp. deterministic approaches. The idealistic approach was then represented by other prominent ecologists in Germany (e.g. August Thienemann and Richard Woltereck) but fell into oblivion after the Second World War. In today’s science, however, it is again discussed how individualities of higher order can be grasped. Turner’s “extended organism” (2000) comes close to the concept of the holocoen. Cf. Kurt Jax ›Holocoen and Ecosystem: On the Origin and Historical Consequences of Two Concepts‹, in: ›Journal of the History of Biology‹ Vol. 31, Issue 1 (1998), p. 113-142; J. Scott Turner: ›The Extended organism: The Physiology of Animal-built Structures‹, Cambridge 2000.

20 With Rudolf Steiner this comparison is the result of his own spiritual insight, about whose evidence and clarity he has repeatedly expressed his certainty. This clarity, however, is not attainable for a reader without this capacity of spiritual perception.

concept of the necessary self-containedness of any farm.” The formation of this concept is the intention of the whole lecture.

What is here the underlying view of a “farm”? In the further course of the lecture, it becomes clear that Rudolf Steiner takes into account all plants and animals, including the lifeless realm (mineral world and atmosphere).<sup>17</sup> The human being is however explicitly excluded from this.<sup>18</sup> Today, such a wholeness of the living realms (biocenosis) and the lifeless realms (biotope) are usually conceptualized as an “ecosystem”. However, the “system” concept in an “ecosystem” implies a functional view of causal relationships, above all from substance and energy flows. Contrarily, in an idealistic worldview, the totality of biocenosis and biotope is conceived as a higher-level life entity (organism). The today almost unknown concept of holocoen was developed merely for this idealistic view and corresponds to Steiner’s view.<sup>19</sup> Indeed, he considers the “being” of an agricultural holocoen as an “agricultural individuality”. This complies with the Goethean approach of an entelechy. The *typus*, according to Goethe, comprises a part of nature (namely all plants) on the whole earth. The agriculture individuality, according to Steiner, comprises the whole nature on a part of the earth, (namely the spatially limited farm). The agriculture individuality is consequently the entelechy of the holocoen of an agricultural farm.

Rudolf Steiner first announces an “observation” to form the concept of agriculture individuality (2.4 to 2.10). He draws a horizontal line on the blackboard to depict the soil as the “basis of agriculture”. With this line, he introduces at the same time the separation into “underground – aboveground”. A comparison follows: The ground is compared with the human diaphragm, the aboveground with the stomach and the underground space with the head. As an explanation Steiner points to the relations between the living processes in the human being and in nature (2.8). Hence, “diaphragm”, “stomach” and “head” are not to be taken spatially or anatomically, but as processes of an organism. The observation is taken further in relation with “extraterrestrial influences”: the planets “below” the sun have an effect above the earth (in the “stomach”), the planets “above” the sun underground (in the “head”).

Thus, the new concept “agriculture individuality” is derived from the combination of already existing concepts (“head”, “stomach”, “underground”, “above ground” etc.).<sup>20</sup> The reader (or the listener in Steiner’s time) of the Course can develop this

new concept through “intuitive thinking”. His way of thinking is intuitive, because the concept is not covered by any sensory perception. In the following, Rudolf Steiner further will afterwards develop his concept in this systematic way in all areas of nature: in the biotope, in the realm of plants and animals.

First, the biotope is considered (2.11 to 2.24). In the “head”, the planetary forces are perceived “underground” by silicic stone and are led upwards (to the “stomach”) through the clay. Those forces are called “cosmic forces”. On the other hand, the forces “active in the stomach” are called “terrestrial”. They are drawn into the ground by limestone. At this point of the Course, the “cosmic-terrestrial” contrast has been introduced conceptually. Subsequently, Steiner integrates these new concepts into the sensory world. For this purpose, he considers all four elements - earth, water, air and warmth- constituting the biotope. Within the terrestrial “stomach”, warmth and air are dead, while within the cosmic “head” they are alive. On the other hand, water and earth are alive in the terrestrial “stomach” – they are dead in the cosmic “head”. Rudolf Steiner is confident that “a real science” will confirm these statements with “exact data”. By this, he sets tasks for future scientific research.

Finally, these new concepts have to find their way into practical work: “How can we really make use of this knowledge for plant growth?” Steiner shows how clay, when added to the soil, can support the upward guidance of cosmic forces. He also depicts how the annual rhythm of cosmic forces should be taken into consideration for plant cultivation.

Thereafter, Steiner depicts the terrestrial-cosmic classification for plants (2.25 to 2.47). He shows how seed formation is of a cosmic nature; it is explained as “driving into chaos”. Germination, as a contrast, is terrestrial, insofar as the seedling shows the tendency “to grow hypertrophied, to grow out in all manner of directions”. Accordingly, the cosmic forces have a radiant effect “on the flow [...] up until seed formation” and are observed in stem formation. Contrarily, the terrestrial forces tend to go to the periphery (unfolding of leaf and flower). Again, the cosmic-terrestrial classification in the sensory world is «pursued quite precisely»: In the plant form, its color and the fruit taste. He clarifies how sensory perceptions and the new concepts come together: “This, therefore, is the ABC for our judgement of plant-growth. We must always be able to say, what in the plant is cosmic, and

## From biotope to animal kingdom

21 GA1, p. 29. Herder (in collaboration with Goethe) also sought this ground form in all beings: "In the first part [of his book], Herder holds the following view about the nature of the world. A principle form must be presupposed, that goes through all beings and realizes itself in different ways. 'From stone to crystal, from crystal to metals, from these to plant creation, from plants to animals, from these to the human being, we saw the form of organization rise, with it the forces and drives of the creature become more diverse, and finally all unite in the form of man, as far as he could encompass them.' The thought is perfectly clear: An ideal, typical form, which as such is not itself sense-perceptibly real, realizes itself in an endless number of spatially separated entities with differing characteristics all the way up to the human being."

22 GA2, p. 90.

23 Ibid., p. 94.

what is terrestrial." Subsequently, these concepts are again associated with practical life, namely with plant breeding. Instead of blind trial and error, one should rather penetrate the whole life process "rationally" in order to breed new varieties.

In a next step, Steiner classifies animals in a similar way (2.48 to 2.54). The cosmic part of the animal lies in the region from the heart to the head, the terrestrial part from the hearth to the belly. Rudolf Steiner invites his audience to study these working forces: "Go to a museum and look at the skeleton of any mammal." With this cosmic-terrestrial approach, one should study the color of the animal, the "structure and consistency of its substance" from front to back, from head to belly.

In retrospect, one can see how each realm is systematically arranged according to its 'cosmic-terrestrial archetypal form'<sup>21</sup>. This archetypal form is the "form of the generality"<sup>22</sup> that underlies nature as a whole. Thereof Rudolf Steiner derives all special real forms of animals and plants in the sensory world. The biotope with its four elements is depicted in the same way. Steiner explains how this archetypal form can be recognized in an empirical scientific way and how this approach can be practically useful.

Thus, Steiner consistently pursues the path of knowledge of Goethean science: "One would then have to show how these hypothetical configurations can always be brought to a definite form that exists for our observation."<sup>23</sup> The farmer should impregnate the sensory world with the concepts of the "cosmic-terrestrial" classification. By doing this, he will recognize the general in the realms of nature, i.e. the unity in it.

### The living together of the three kingdoms

Thereafter (2.48-2.50, 2.55) the focus is put on the "common life" of those three realms. "For this is the peculiar fact: the best – if I may call it so- cosmic qualitative analysis takes place of its own accord, in the life of a certain district of the Earth, overgrown as it is with plants, along with the animals of the same region." Stating this, Steiner responds to his initial question.<sup>24</sup> Again he expresses the wish for this new concept of "common life" to be scientifically verified. Hence, the scientific path of the objective idealism is followed up.

In a next step, Rudolf Steiner explains how to establish a relationship between all realms from the terrestrial-cosmic form. Namely, how to "discover, from the form and figure of the animal, a definite relation between the manure, for example, which

the animal provides, and what the soil needs whose plants are eaten by the animal.” In practice, the “right amount” of domestic animals ratio can be calculated from this ratio. Again, a “right science” is needed for this purpose.

At this point, the clear structure of the Agricultural Course becomes recognizable. At first, unity is shown in all realms; afterwards Steiner depicts the relationship amongst all of those realms. In this way, the basic form becomes an organism: unity becomes a living wholeness, full of interconnections. The concept of an “agricultural individuality” is now fully developed. Steiner concludes: “Thus if you can read the forms in the nature, you will perceive all that is needed by the self-contained individuality, which a true farm is.” Thus, the “agricultural individuality”, e.g. the entelechy of the holocoen of an agricultural farm, can be understood as an idea in the sense of objective idealism: “In the idea we do not have an image of what we are looking for in the things, but we have what we are looking for in itself.” It is neither an image (metaphor), nor a being, whose principle would lie beyond our thinking capacity. This individuality is the idea in itself, which we can bring to revelation step by step in our own consciousness through our own thinking activity.

In the Agricultural Course, Steiner gives a clear description of a scientific way to form this idea. First, the farmer should learn to recognize the form of the general in every appearance of the inanimate biotope, the plant realm and the animal kingdom. In a second step, the relationships between those realms are also to be recognized. From it, the wholeness of the farm becomes clear. The farmer develops in this intuitive way the form of the agricultural individuality for his own holding. Steiner precisely explains this scientific path:

Thus, each thing must necessarily call upon a twofold thought activity. First, the thought corresponding to the thing has to be determined in sharp contour. Afterwards, all threads are to be determined that lead from this thought to the whole thought-world. Clarity in the details and depth in the whole are the two most significant requirements of the reality. The former is a matter of mind, the latter a matter of reason.<sup>25</sup>

Accordingly, Steiner repeatedly wishes for a “true science”. He

## The farmer's path of knowledge

24 “Is it not a matter of indifference whether we get our cow dung from the neighborhood or from our own farm?” (GA 327, p. 29)

25 GA1, p. 129.

welcomed very much the formation of a research ring (Forschungsring) during the Course: it basically ensured the continuity of his Course. Lilli Kolisko's research also corresponds to the purpose of the Course.<sup>26</sup> Even though her results may not meet the requirements of modern science, her approach and way of thinking are exemplary..

### Meaning for the agricultural practice

Rudolf Steiner encourages the farmer to go along this path with the aim to go into practice. He emphasizes that his teaching "has only his meaning when put in practice". What is meant here by "meaning"? The depicted scientific path leads to "the power of judgement in beholding" of Goethe. Steiner explains how, according to Goethe's and Spinoza's view, this intuitive knowledge means "a merging with the divine":

The laws that our spirit recognizes in nature are therefore God in His very being; they are not only made by Him. What we recognize as a logical necessity is so because the being of the divinity, i.e. the eternal lawfulness, is inherent in it.<sup>27</sup>

Acting on this basis is depicted as follows::

Where we make no personal claim, where we only act because something objective drives us, where we find in the act itself the motive for our action, there we act morally. But there we act out of love. All self-will, everything personal, must disappear there.<sup>28</sup>

The more vividly the idea of agricultural individuality lives within the spirit of the farmer, the more objective and loving his activity should become, since he acts completely in harmony with this idea. This is because he himself is then acting in full accordance with this idea. Immanuel Voegelé put it in this way:

As a farm designer, a farmer orders and regulates both the course of functions within individual areas and the relations between the areas. He determines the sphere of action of single factors by extent and intensity. This leads to interactions which changes with the course of the year, but still remains harmonious, and finally to the emergence of a self-founded being. The farmer's creative

<sup>26</sup> See the work on the influence of seasons and soil depth on crystal formation in Lilli Kolisko & Eugen Kolisko, ›Die Landwirtschaft der Zukunft‹, Schaffhausen 1953, p. 55-63.

<sup>27</sup> GA1, p. 166.

<sup>28</sup> GA1, p. 180.

power becomes the “entelechy”, the “self-determining” forces and “the princip that calls itself into being out of itself” of the farm individuality. As a farm designer, the farmer could be compared to a musician, who composes a whole symphony from a musical original motive, or to an architect who has to design and construct a building pure in style according to a predetermined ground plan and given building material.<sup>29</sup>

This musical original motive is the “cosmic-terrestrial” archetypal form, which underlies every natural appearance. It is now the task of the farmer to recognize this archetypal form in the sensory world through his thinking activity and compose with it. This composition – as a whole – then becomes the idea of an agricultural individuality and comes to life through the farmer’s own deeds. However, the path Steiner paved is not an artistic, but a scientific one.

From this, one can understand how Rudolf Steiner introduced the concept of “individuality” at the beginning of the second lecture of the Course (2.2): “A farm fulfills its being, in the best sense of the word, if it is conceived as a kind of individuality in itself – a self-contained individuality.” This means that if the farmer understands this very idea, those two sides of reality are united through him and the being of agriculture is fulfilled “in the best sense of the word.”

Obviously, this scientific path does not exclude other paths that are based on meditational practice. Steiner described such paths in other works.<sup>30</sup> In such a way, the third lecture of the Agricultural Course about the activity of substances builds on such a meditative approach. However, in the second lecture, Rudolf Steiner appeals to the farmer’s forces of knowledge. The farmer should form within himself the concept of an agricultural individuality. This is the way to overcome the “faith in words”, that was initially mentioned.

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29 Immanuel Voegelé: ›Die Landwirtschaftliche Betriebsindividualität...‹, p. 501.

30 Rudolf Steiner: ›How to reach knowledge of higher worlds?‹ (GA 10)