BOLK'S COMPANIONS
ON THE STUDY AND THE PRACTICE OF MEDICINE

Developing Clinical Intuition

A philosophy of science for medical practice

Maurits in 't Veld PhD
Majella van Maaren MD

About the Kingfisher Companion Group

The Kingfisher Companion Group aspires to broaden the perspective of science by elucidating the context behind health and disease. To this aim, the Group strives to pioneer investigative methods to complement and innovate conventional scientific views and research techniques. It examines the exploration of conscious-intuitive study in the research and practice of medicine such as the *4-step* approach employed in the Bolk's Companion series. The Kingfisher Foundation supports this development of new approaches for medical practice both logistically and financially.

The Kingfisher Companion Group works at the Louis Bolk Institute where scientific research to further the development of sustainable agriculture, nutrition, and healthcare has been conducted since 1976. The basic tenet of the Institute regarding the life sciences is that nature is the source of knowledge about life. Through its groundbreaking research, the institute seeks to contribute to a healthy future for people, animals, and the environment.

About Professor Louis Bolk

Louis Bolk (1866-1930) was a professor of anatomy and embryology at the University of Amsterdam. He developed and employed comparative scientific methods of investigation that conveyed new insights into his subjects. With the insights he gained, he was able to place his subjects into a meaningful context. To employ his method, he instructed his students to use the 'macroscope' rather than the microscope!

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The authors

Maurits in 't Veld (1966) works as a teacher of history and science in secondary education. He also worked for several years as an editor, publisher, and translator. He studied philosophy and history in Utrecht and Amsterdam, and also attended several semesters at the *"Freie Hochschule der Christengemeinschaft."* In 2015, he received his PhD on a science-philosophy study of the beginnings of language competence in human evolution, "The hermeneutic niche. Language within Darwinism."

Majella van Maaren (1964) was a general practitioner and anthroposophical physician for fifteen years, with special attention to chronic and psychosomatic complaints. Since 1999 she has been a freelance publicist and (final) editor in the (integrative) medical scientific and agricultural fields. Her main field of interest is renewal in medicine. In 2015 she became a member of the Bolk's Companions Group. Together with her husband, she runs a dairy farm with an educational branch for children in need of special care.

About the project

The project "Renewal of Medical Education," aims to produce Companions that complement medical study by demonstrating how the insights of current biomedical science can be broadened by the insights of inclusive thinking inherent in comparative science. Companion authors apply a scientific methodology that uses four consecutive steps to achieve an integrated understanding of wellness and disease. These steps are described in chapter 5 as the *4-step* approach. This approach seeks to recapture a coherent and comprehensive understanding of human nature and the environment.

BOLK'S COMPANIONS FOR THE STUDY OF MEDICINE are designed to complement medical education, specifically as it relates to human facets of current biomedical sciences.

BOLK'S COMPANIONS FOR THE PRACTICE OF MEDICINE contribute to a broader scientific basis for the clinical years of medical study and for developing the intuitive facets of medical practice.

BOLK'S COMPANIONS ON THE FUNDAMENTALS OF MEDICINE explore fundamental medical concepts and seek to broaden the medical paradigm.

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Maurits in 't Veld
Majella van Maaren

Inhoud

Introduction

Up to this point, the Bolk's Companions series have mainly discussed topics in medicine.
In them, we review a given-scientific-dataset as is customary within mainstream science. By doing this, we attempt to highlight the coherence and meaning of the found data which is often lost in analysis. We implement a *4-step* approach to do this. This allowed us to find new aspects of the different topics we were researching.
The *4-step* approach was outlined in different Companions, most recently in the Companions Wholeness in Science (Bie 2012), Endocrinology (Bie, Ghelman, Heuvel, & Luske, 2016), and From Special Needs to Realizing Your Full Potential (Niemeijer, Tellingen & Maaren, 2019).

The present Companion has a different objective. It is not about a specific medical subject, but aims to look at the *4-step* approach to scientific (medical) inquiry itself and compare and integrate it with other known research methods.
Medical subjects will also be discussed; however, the conferred case studies will serve as examples of how to apply the *4-step* approach in (medical) practice. It will become clear how implementing this approach will allow the user to develop their clinical intuition.

Evidence Based Medicine

Since the early 1990s, the dominant view in medicine is that medical practice should be based on methodically obtained evidence, specifically with Evidence-Based Medicine (EBM) (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996; Sehon & Stanley, 2003).
The pursuit of EBM has long been considered an important step for modern medical practice to become more rational and efficient. The ethos of EBM is typical to demonstrate the effectiveness of therapy, e.g. a drug, by means of a *randomized controlled trial* (RCT). Its principal methodology is to use one *standard* treatment or treatment protocol for one diagnosis in a double-blind trial, preferably with as large a group of patients as possible who meet strict inclusion and exclusion criteria. When significant improvement is demonstrated in diagnosis or symptoms in a treatment group compared to placebo, an intervention or treatment is considered a success.
The advance of EBM has led to the implementation of many protocols in daily medical practice,

each of which matches a specific diagnosis. Such protocols are considered to be "best practice" for every patient with that diagnosis, regardless of individual variances. The scope for individualization within the protocols is usually limited.

Despite the advantages of this model and the progress it has fostered, it has become increasingly clear that EBM compromises certain important aspects of medical practice.

Context and Experience

First, it is now widely understood that a disease or symptom always occurs in context. The awareness of this is growing in the medical community (Meurs, 2017). By context one means the organic context (the physical organism), as well as the psycho-social and biographical background of the patient. When we exclude context, we risk missing insights into essential aspects of the disease process. Context is by definition *individualized* and therefore eludes an evidence-based approach.
Additionally, the concept of *experience-based clinical intuition*, or experiential knowledge is once again coming to the fore (Smulders, 2008; Stolper, et al., 2011). We derive the evidence for diagnosis and therapy not merely from scientific and statistical data, but also from experience, which often speaks through intuition. Acting on the basis of experience is not necessarily contrary to EBM but it is also not the same thing.

Floor Scheepers, professor of innovation and head of the psychiatry department at Utrecht University Medical Center, Netherlands argues that in a clinical interview, doctors recognize "three kinds of truths:"
1. personal experience–the truth of patients and their family (the **context**);
2. professional truth of the physician, his/her[1] **knowledge**, **experience**, and **intuition**;
3. data reality, the measurable truth (**EBM**). (Scheepers, 2018)

Scheepers places the 'three truths' *side by side*: which indicates that she does not see them as

1 For the sake of readability, we will avoid using "his/her" and "'he/she" throughout this book but of course that is actually what is meant.

mutually exclusive or in hierarchy–they each have their important role in clinical practice. Acknowledging context (1) and experience-based intuition (2) requires of the physician to be less of a "fixer" of the problem, to which an ICPC code[2] (3, data reality) can be linked, but rather take the human encounter as a starting place for consultations. This process matches what Don Berwick calls the new era of medicine: the "moral era." It comes after two earlier eras: the first, that of "professional dominance" in which the physician had absolute authority lasted until the middle of the last century (https://pubmed.ncbi.nlm.nih.gov/21399387/). In the second era physicians lost authority to external and quantitative constraints such as protocols, diagnosis-treatment combinations and treatment quota. This is where we find ourselves today: physicians are required to conform to protocols as well as "the market" and have to justify their actions with measurable treatment and financial results. The third "moral" era that Berwick describes is characterized by a more intercollegial and qualitative accountability in which the relationship between physician and patient again becomes important (Berwick, 2016).

We may appreciate that each dataset of the above three truths is just one part of the whole (Stikker, 2018), and that the elements of the first two truths-by definition-fall outside the "data reality" of the third truth (EBM). Investigation of the patient's context and physician's experiential knowledge therefore requires *additional methodology* that can be used alongside the conventional (more causal-analytical) methods.

The *4-step* approach which is discussed in this Companion is a scientific research method in clinical practice that can be used in addition to the "data reality" (3) of quantifiable and weighable facts, as it includes context (1) and experience-based intuition (2). This method is scientifically/philosophically introduced in chapters 1, 2, 3, and 4, which discuss the methodologies within which the *4-step* approach is embedded: presence (chapter 1), dynamic holism (chapter 2), Goethean phenomenology (chapter 3), and intuition (chapter 4). The *4-step* approach itself will be discussed in chapters 5 and 6: first its theory and then its application in medical practice. Chapter 7 discusses the conclusions.

2 ICPC-code: International Classification of Primary Care: a coding standard for medical diagnoses used in medical patient records (Everdingen, et al., 2014)

Summary

Contemporary western medical practice is placing increasing value on understanding the patient's life circumstance in a broad sense. At the same time, the physician's experience-based intuition is also being rehabilitated. There is even mention of a new "moral era" in medicine and care. In addition to the "data reality" of medical practice it appears useful to consider the context in which the medical problem occurred, as well as the physician's experience and intuition. Its implementation in daily medical practice requires additional methodology. In line with this development, this Companion discusses the methodical framework to study this broader perspective. At the same time it suggests the utility of the *4-step* approach within the context of various scientific methods.

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1. Presence

1.1. Introduction

In this Companion, we explore a diagnostic method that investigates aspects of reality that are beyond "hard" data. Metrics, data, and other conventional research instruments are used supplementarily, not as the sole study tools, as we investigate the clinical situation. The research methodology we use, a *4-step* approach, takes as fact that we as physicians are an important "research instrument." Presence is a prerequisite for this approach. In this chapter we will examine this concept.

Physicians are trained to focus their attention on complaints and symptoms. Complaints and symptoms are part of data reality and require an outwardly-directed, pointed ("zoomed in") attention. Presence, or presence of mind–we will use both terms in this Companion–, implies a broader, more encompassing awareness. It is a mental/emotional state as well as an intellectual activity. In presence, we perceive both the environment and our (inner) selves in the process while our minds remain open to possibility and new information. (Senge, Scharmer, Jaworski, & Flowers, 2006). *Mindfulness* (Nhat Hanh, 2013) is an example of presence.

Presence of mind calls for an active awareness in the here-and-now:

1. what happens around us and enters through sensory impressions, and that which we can perceive
2. in our inner selves, such as emotional reactions (f.i. sympathy or antipathy), bodily sensations, emerging images and thoughts, associations, as well as being aware of when our thoughts start to wander away.

We strengthen presence of mind by creating inner space. Not by pushing things out of the way, as we do in making an outer space, but by moving towards something with our attention. We may allow impressions, such as those to which the following questions point:

How does my body feel now? Which parts of my body feel hot or cold? Do I feel tension, pressure, tingling, and if so, can I sense what it wants to tell me? What do I hear, what do I smell?

Am I cheerful? If not, what is blocking me? How is my mood? Can I come back to center when someone criticizes me? Can I calmly respond to whining? Does my environment experience me as being irritated?
Can I indeed allow my attention to move along these emotional zones? When I wander away: what sucks up my attention? Do I often have the same habitual train of thought? Do I experience the dates in my calendar as activities I want to do (warm) or as an obligation (cold)?

Incidentally, there are no "right" or "wrong" answers to these questions. Judgments about them may themselves be attentively perceived. Presence is primarily about conscious perception, free of judgment. The above questions may specifically help create presence.

1.2. Productivity versus Presence

Physicians and other healthcare professionals will generally recognize that being "present" during a patient visit yields a depth of experience, not just more information. It also helps to identify and assimilate (sometimes subtle) patterns.[3]
Despite the far-reaching benefits of presence, in many professions, people experience a *pressure to be productive*, and it is this pressure that seems to hinder attention. In an investigation into why workers experience this pressure, time constraints, protocols, and production goals are often cited. In short: the pressure to strive towards *efficiency and productivity* often dominates the clinical encounter.

In the diagram below the dual concepts "productivity" and "presence" are shown as opposed to one another (figure 1.1.).

3 Patterns in a broad sense may be noticed, such as in the course of illness, the life story, the physical presentation, or the way in which the symptoms are presented. In our Western culture, it is considered "normal" to let functions belonging to the left cerebral hemisphere (logical thinking, analyzing, categorizing, quantifying) dominate over functions of the right hemisphere (creativity, imaging, overseeing wholes, recognizing patterns, qualifying). For example, medical interventions are paid for by insurers–but giving attention is not (Bensing, 2011). For a broader picture, see also Van den Brink (2005); Rosa (2005).

Figure 1.1. Presence is besieged at work

In our current social and economic paradigm—in medicine but also in other disciplines–the left side of the diagram in figure 1.1. sets the tone and the right side is under pressure. This is an unintended effect of "profitability thinking," which has become paramount in western medicine over the last 150 years. Protocols, targets, endpoints, and (shortened) duration of a patient visit or nursing procedure have become the fixed metrics by which we measure the success of a clinical encounter. On the other hand, to be present (features on the right side) we must *make an effort*, which in turn facilitates patient satisfaction, and increased physician joy as well as improved clinical acumen (Berwick, 2016; Taris, Houtman, & Schaufeli, 2013; Van Vliet, Van Dulmen, Mistiaen, & Bensing, 2016). Moreover, a measurably improved clinical effect is accompanied by fewer side effects (Bensing, 2011).
At the same time, the data extracted using the left side of the diagram need interpretation–the metrics must be placed in context. Thus, data reality itself requires a kind of meta-presence to that which we discussed between physician and patient (see Scheepers, Introduction).

1.3. Presence between Productivity and Inefficiency; Aristotle

Aristotle's ethics (1999) is based on the idea that virtue – the good – is a balancing point in the middle of two undesirable extremes: an excess and a deficiency of a certain characteristic. We

will apply this clarifying model to the above scheme. If we take "presence" as virtue in the middle and "productivity" as an excess in one direction, then we have to add a column on the right in figure 1.1. The vice that is opposite productivity is "inefficiency." The unbalanced opposite of a strong, calculated focus on performance is when our consciousness is scattered and we become inefficient. One can experience it as a kind of withdrawal: we perceive neither ourselves nor the situation in which we find ourselves.

Excess	Virtue	Deficit
Productivity	Presence	Inefficiency
Narrowing	Spaciousness	Scatteredness
Monitor the situation according to protocol	Observe the situation including oneself at liberty	Preoccupied by indiscriminate associations, perceive neither the surroundings nor oneself
Rigid focus	Flexible focus	No focus

Figure 1.2. Presence as Aristotelian virtue [4]

4 With new techniques, neuroscientists have recently discovered brain networks that each have their own task in regard to attention. These networks correspond to the three forms of attention of figure 1.2. For example, there is the "Executive Control Network" that is activated when focus is needed to achieve a result. Second is the "Salience Network" that becomes active when we want to pay attention to the actual situation both outside and inside the body. The third network was first to be discovered: the "Default Mode Network" or "Mentalizing Network" ("rest brain") that is activated when we submit to reveries and our attention is no longer with the here and now. (Contribution of Arie Bos MD)

Being scattered is not a *professional* goal but is rather challenged or avoided at work by implementing properties of the left column. We look for dispersion during our breaks and after work for example, by picking up our smartphone without immediate need or starting a chitchat with someone. If at appropriate moments we can resist the temptation to dispersion we may find that our presence of mind actually increases. It shows us how susceptible our conscious awareness is to narrowed focus or dispersion.

Scatteredness and narrowing focus are tempting mental states when we experience unpleasant inner emotions such as restlessness, desire, sadness, or stress within ourselves. It sometimes seems more satisfying to continuously seek distraction to avoid unpleasant emotions; at times, it feels like this behavior will decrease the power or presence of the negative emotion itself. But of course it can't. Negative emotions will inevitably seek a less voluntary way to be heard, for instance through reduced concentration and flexibility, stress related complaints, or insomnia.

1.4. Flexible Focus, Wonder, and Grasping the Context

Presence has a *flexible focus*: we can freely zoom in and out. Flexible focus helps us broaden our insight into situations, it increases our understanding (cognition). Someone who can focus—that is, zoom in, should *also* be able to zoom out, contingent upon the situation. As such, this means that developing contextual awareness, seeing the coherence of what we were focusing on with its surroundings is a property of presence. An example of a strong focus is watching the red traffic light at rush hour. As soon as we see the green light we start driving. But suppose in the meantime something happens diagonally in front of us. We momentarily zoom out.

We focus to exclude things that matter less to us. But how do we know they are less important? That judgment is based on previous experience; in effect, it is a prejudice. If we are present *(have presence of mind)*, we obviously will check whether the (preliminary) judgment still holds. That actually means that our perception becomes so keen that it corrects our prejudices in the process and they in turn become less defining. When we think in this way, it makes room to experience *amazement and wonder*, which is an inner attitude we may *choose* to have. When we allow ourselves to be surprised, we perceive things we did not expect in the context. We are present

when reality corrects our judgment. According to Plato and Aristotle, wonder is the hallmark of the wise and the beginning of knowledge.[5] We call those who have the opposite attitude to life dry, blasé, biased, righteous, and short-sighted (they see the trees but not the forest).

To *"grasp" or "comprehend"* something is: to find the appropriate insight in relation to our perceptions. Before this cognitive "eureka" an "open moment" of searching occurs which, according to Goethe, resembles a mountain pass: "all inner enemies of mankind lurk on him on this mountain pass: imaginings, impatience, haste, self-conceit, rigidity, fixed thought templates, prejudice, lassitude, frivolity, changeability, and what the whole company may be called" (Goethe, 2018). It all comes down to a more and more consciously aware abiding by this searching moment, this "mountain pass," in order to avoid the cognitive "inner enemies."

1.5. More Dimensions of Presence

Presence of mind requires inner activity. This activity involves keen and conscious observation and the suspension of judgment, before applying a suitable concept to our perceptions.
Presence also has a *receptive* aspect, or rather it establishes an inner space that allows us to become more aware of a coherence in our observations. We may notice this first when we immerse ourselves for a longer period of time in, for example, art or nature. When we take a long walk, look after a garden, care for animals, or systematically observe seasonal changes, we may first notice this inner space when our observations (in the form of "information" or "data") converge and *acquire (new) meanin*g. This inner "sound box" is part ours and is part (observed) nature since natural phenomena come to expression in it. We call this experience. We know that by engaging with something with a flexible focus for a longer time period, an insight may arise on the basis of this focus (McGilchrist, 2009). What we appreciate may be captured for example in an image, music, painting, poetry, or theater. A sense of self-evidence may accompany such dynamic images and confirm that they are true pictures. The image is clear–it may be grasped by our thinking.

Presence of mind also has an *imminent* aspect. When we are present in our observations, and at the same time let go of our prejudice and expectation, an inspiring image may emerge of *what*

5 Plato Theaetetus 155d; Aristotle Metaphysics A 982b.

wants to become. Presence therefore strengthens our commitment to the future: the image that emerges is warming; we are touched by it. We feel the ambition to help *what wants to evolve*. It appeals to our feeling of responsibility and awakens an intention. After being a spectator we now become a participant in this emergent reality without losing our clarity of thought. We become engaged with the future: we feel the intention *to help what desires to become*. *The idea becomes ideal.*

This future-oriented, "warming" dimension of presence will be discussed separately as "intuition" in Chapter 4 of this Companion.

1.6. Presence in Medicine

Presence enhances the human quality of our actions and therefore also has an *ethical-moral value*. We can usually tell whether a person is attentively present or not. Such people make us feel like we are seen, heard, understood, and strengthened. It is not easy to pinpoint what they actually do to achieve this. The healing potential of this quality within therapy is called the "relationship effect." Patients who feel seen have more trust in their physician and thus are more actively engaged and have higher rates of adherence to therapy (Van Vliet, Van Dulmen, Mistiaen, & Bensing, 2016). So the physician would do well to invest time to "presence" at the beginning of a therapeutic relationship. When the relationship has started up in this way, follow-up visits are often more rich, and efficient.

Presence only exists when the physician or therapist as an individual upholds it. Within EBM, presence is not an agreed upon or relevant factor; professional and life experience are not included in the statistical data and measurement driven paradigm. This "not-wanting-to-be-subjective" attitude is an impoverishment (Marcuse, 1964) and moreover, it is illusory because the necessary follow-up question is what do the measurement results actually mean? When we attempt to interpret the data, we inevitably end up seeking individual judgment as a means to

interpretation, which is the whole concept that EBM hopes to avoid in the first place.[6] However, when science that is based on measurements alone is implausible and undesirable, what role then should the individual be given? Of course, science should not err toward the subjective in the sense of personal, fraught with sympathy and antipathy; this would hinder the (physician's} assessment. Here again the Aristotelian model (1999) may aid us.[7]

Too much	Virtue	Too little
Anti-subjective	Individual assessment	Subjectivity that hampers
Metric results	Intuition based on experience	Uncontrolled prejudice

Figure 1.4. Individual judgment as an Aristotelian virtue

According to Aristotle, we learn by *processing what we experience*. Processing means integrating sensory information about the world around us into our life story.[8] The result is called experience. Neither rigid focus nor dispersed attention alone can lead to experience; the first does not leave room for individual processing. The latter does not leave room for integration and reflection. *Presence is conditional for the emergence of experience.* Experience provides the substance to arrive at the "middle ground." After all, when we want to fathom a concrete situation we must use our individual judgment. Aristotle (1999) called this experience "wisdom" (Gr. φρόνησισ, phronèsis). Physicians, nurses, judges, policemen, and teachers use it every day. For physicians it has been the subject of research for some time now (see for example Goudsmit (2005), Stolper (Stolper & Van de Wiel, 2011a; Stolper, et al., 2011b); Maio (2016). Professionals weigh answers to questions such as "What strikes me?," "What comes to mind?," "What is happening to me?," "What does this tell me?," in their assessment in a clinical situation. This also applies to scientists, even within an

6 There is a tendency in medicine to no longer ask this question and instead only strive for measurement results: a certain bandwidth is normal ("healthy"), abnormalities require intervention to get back in line (Topol, 2012). - However, not to ask the question does not mean that there is no answer: the answer and the respondent rather may remain hidden. This can come into focus when we ask ourselves: does the bandwidth approach fit this clinical situation?

7 Virtue ethics (VE), attributed to Aristotle, is still a practicable form of ethics. In modern medicine, VE could also contribute to the moral, ethical, and qualitative actions of (care) professionals (Sanderse & Kole, 2018).

8 This is described by Rosa (2005, p. 234ff.) with a reference to Walter Benjamin. Rosa adds: "Our society is rich in events but poor in experience" (235). Thus an individual effort is required.

exact science such as mathematics. "Mathematical research is often intuitive: experience tells us what might be true. The task is then to make our intuition transparent and clear-cut" (Pol, 2019). Therapeutic intuitions will never become clear-cut like a crystal; but crystal-clear they do become.

Summarizing

The craftsmanship of the physician requires "presence," or "presence of mind" and attentive commitment. Presence is characterized by flexible focus that provides occasion to become aware of the coherence of disparate entities. It generates a sense of wonder and impetus for what "wants to become." It contributes to the quality of medical practice, including moral aspects, and helps us in our quest for professional expertise: it provides us with professional experience and intuition.
Professionals who actively apply presence will attain more experience. This experience offers insight into individual situations, including the patient's life context, and thus insight into how to act wisely: Thus presence is an addition to (and not in contradiction with) objective scientific knowledge that provides general understanding.

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2. Dynamic Holism

2.1. Presence and Science: How Do We Acquire Knowledge?

Presence can make us aware of patterns in our thinking that we normally take for granted.
How do we acquire knowledge? If we take a deep dive in to this process, we may notice that we give more credence to some aspects of our perceptions than to others. We tend to employ a focus that pre-structures our field of surveillance–one that is chiefly based on assumptions, expertise, and experience. This pre-structuring can be thought of as our *paradigm*. Paradigms include substantive assumptions such as "reality can be measured;" "matter is the one basis for reality;" "there is a causality to everything;" and "natural laws always apply everywhere." Paradigms additionally consist of core theories, core concepts, methodologies, and definitions, and determine the validity of questions.

There is no science, and therefore no medical practice, without underlying paradigm. Paradigms determine what kind of *evidence* is required to substantiate new claims as well as what kinds of research methods are accepted to verify those claims. Consequently, if our assumption is that everything that exists is measurable, we look for *measurement* results in our investigation. We cannot, however, exclude that in this system certain aspects of reality remain obscured, namely, the non-measurable. In order to investigate the unseen aspects, we have to explore beyond our paradigm and thus beyond our usual scientific scholarly frame of thought, often with dissimilar and unfamiliar research methods. Yet, by doing this, we gain a more holistic, bird's eye view of our own paradigm, which can help us assess its value and meaning as well as its blind spots. Our focus becomes a flexible focus. That does not mean we become unscientific, but rather our lens expands from what is fixed to what is fluid.

The role of paradigms in contemporary science has been extensively described by Kuhn (Kuhn, 1962). He describes it as a *historical* phenomenon. Our understanding of astronomy, for example, has moved through various paradigms prompted by Copernicus and Kepler; the same is true for physics and Einstein. In this Companion we aim to broaden the interpretation of scientific paradigms and broach the idea that we may in fact be able to use several paradigms in tandem, one after the other.

2.2. Paradigm and Presence

Two criteria may aid us when we examine paradigms.
First we may ask: does research on the basis of this paradigm provide *relevant knowledge* to me? And if so, what sort of knowledge is this?
The second criterion pertains to the *effect* of the paradigm on how we understand reality. What does this paradigm do to my sense of reality? Or: which valued aspects of reality become visible or disappear with this paradigm?

In order to effectively analyze our paradigm, we need presence. The attitudes of wonder in the sense of radical curiosity and of flexible focus (section 1.4.) will elucidate where the paradigm encourages discovery and where it forecloses.
When using ourselves as a research instrument in applying the *4-step* approach or one of the other approaches described in this book, we need to develop presence. Presence helps us become aware of the possibilities and limitations of the paradigms we apply.

2.3. Dynamic Holism

In academic medicine, the causal-analytical paradigm has become dominant. In a nutshell, it follows the direction of thought of statements such as: "DNA is the sole basis for this organism's existence" or "the brain triggers a specific thought." But would these be the only possible causal effects we could imagine? Couldn't there also be an effect from the whole on the parts? We can only answer this question when we start looking for the whole. Recent scientific discoveries can be helpful here. For example, it has been shown that the same genes that are needed for the fruit fly to develop wings, are needed for the mouse to develop legs. Caroll describes: "Discoveries in Evo-Devo have shown that identical genes are used to create totally different hearts, digestive tracts, muscles, nervous systems, and limbs" (Carroll, 2009). The *context* in which the genetic segment is found helps determine what effect it has.
Medical scientific dialogue concerns itself with research done within the causal-analytical paradigm, and mostly not (any longer) with the paradigm itself.

Figure 2.1.A. Color pattern on a single drake's feather *(Anas platyrhynchos)*

Figure 2.1.B. View of the whole bird: the feather in the drake's wing

One example of such an effect of the whole on the parts is the beautiful coloration of the wings of birds, as shown in the pictures of a drake's single wing feather and the appearance of the whole duck (Figure 2.1. A and B). Feathers each grow separately, like hairs in a mammal. Yet cohesion only manifests when the whole is considered (the *Gestalt*).
Within the causal-analytical paradigm this design is the result of undirected (accidental) mutations and natural, sexual selection (Dawkins, 2018). It is possible that these are the only basis for the beauty created from seemingly disparate parts. But what if there's more to it? (Conway Morris, 2003).

The paradigm in which wholes have a natural place is *dynamic holism. Holism* means: to assign value to wholes and coherence: "the whole is more than the sum of its parts," it is "something" in and of itself. Dynamic holism considers these wholes to be *energy complexes* that express

themselves over time. This in contrast to the causal-analytic paradigm that is employed in dominant, mainstream science.

The two paradigms, causal-analytic and dynamic holistic, do not relate symmetrically to each other. Causal-analytical thinking can be employed within the dynamic-holistic paradigm, because the latter allows an interaction between part and whole (Figure 2.2.). On the other hand, dynamic-holistic thinking is excluded by the causal-analytical paradigm. "The whole is naught but the sum of its parts." Yet, in modern physics, the monopoly of the causal-analytical paradigm is recently guardedly abandoned here and there (as in Durston & Baggerman (2017)).

These two paradigms can be combined in the same way that we might take binoculars along on a walk. If we only viewed our walk through binoculars, we would experience a skewed reality. By the same token, if we didn't pause occasionally to view things more closely, we'd miss important information about our surroundings. This metaphor establishes the primacy of dynamic-holism as the overarching method because it allows for both: it allows us to take in the landscape of our walk while also pausing to look closely at objects with our tools. Within the causal-analytic paradigm, however, there is no point in not looking through the binoculars—even for a moment. Yet the whole of the forest will elude us as we zoom in further and further. We get a one-sided, biased view.

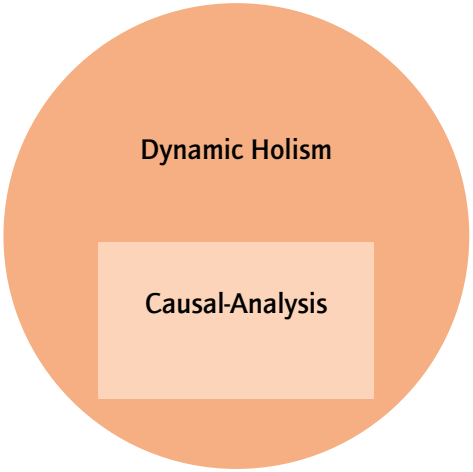

Fig. 2.2. The asymmetric relationship between dynamic holism and causal-analysis

The flexible focus we need to investigate with the dynamic-holistic technique requires presence of mind. Then we are able to choose when to zoom in and when to cast a wider view to absorb the quality of the landscape. These observations combined give a more complete picture of the whole than the one-sided focus.

2.4. Dynamic Holism in Medicine

When we say, "The whole is more than the sum of its parts," what dynamic wholes are important in medicine? We will mention two examples here:

- The human organism—its psychosocial state included—reflects on its organs and physiology. Research areas that concern themselves with this phenomenon are epigenetics and neuroscientific research involved with neuroplasticity. It appears, for example, that life experience influences DNA expression and that learning changes the brain in terms of neuron quantity and their reciprocal links (Jablonka & Lamb, 2005; Akbarian & Lubin, 2014). Life experience and learning are aspects relating to human beings as a whole, and DNA as well as the human brain are examples of parts of the human organism.[9]
- A person's biographical context (the course of their life) co-defines the impact of a distinct event. The "same" disease has a different effect in one person's biography than in another's. This is used, for instance, in mind-body interventions (Moss, 2011) and narrative medicine (Chin-Yee & Upshur, 2017). Socio-emotional context is included in these approaches and is a central element in contextual care (Ieperen-Schelhaas, 2016; Meurs, 2017).[10]

We stated that there are two criteria to assess paradigms.
First their practicality: does it provide relevant knowledge? And of what nature is that knowledge? The dynamic-holistic paradigm provides us with more knowledge about the context.
Second, their effect on ourselves: how does our access to knowledge change when we work from this paradigm? Which valued aspects of reality become visible or disappear? Regarding this second criterion, we assert that the two discussed "wholes" in medicine: the human organism and the person's biography (both the patient's and the physician's), remain whole when we use the dynamic-holistic paradigm. Physicians do not have to narrow themselves down to function as a rational decision tree and likewise, patients are not reduced to a collection of symptoms.
Practitioners take a *causal-analytical* standpoint when they zoom in on the symptoms and assign an abstract general diagnosis to them: "I had two pneumonias and an appendicitis in the office today." –They take a *dynamic-holistic* standpoint when they zoom out from the physical symptoms

9 Of course, the reverse also exists: organs and physiology affect the entire organism. Think of hormonal disruptions that can affect the whole organism both physically and psychologically.
10 Note that, strictly speaking, the two wholes (the human organism and the person's biography) are interconnected, but can each be separately identified and named.

to the physiologic and biographic context, for the sake of an individual, concrete diagnosis: "I examined Mr. Taylor." This starts with observing how a patient enters the room. How does he move? How does he make eye contact? How does he shake my hand? What strikes me about him? (e.g. his breathing or the posture)? The symptoms the patient describes are an addition to the physician's own observations. Subsequently, these are related to the patient's life situation. Where does he live? In which phase of life is he? What does he do for work? Is the patient engaged in what he is relating to me about his symptoms? What are his struggles? How is the vitality? Why does the patient show up in my practice *today*?

When physicians take a dynamic-holistic point of view, they may find that a dynamic network, an energy complex, emerges between the individual phenomena, a pattern that shows a self-evident coherence of individual facts and observations. The disrupted balance which manifests itself in physical pathology (such as a pneumonia) can also be observed elsewhere in life or in the psyche. Here again, presence and flexible focus are important to perceive coherence: the whole picture. *The disease becomes a symptom* of the imbalance in the patient's "wholeness:" be it the organism, psyche, biography, living conditions, lifestyle, or relationships.

Incidentally, when we state that illness is a symptom of an imbalance in the patient's "wholeness," we do not mean that the patient has caused his own illness by having an "improper lifestyle." This is an incorrect and erroneous idea.[11] What is meant here instead is: we can mop up the water, but if there is still an unseen open tap somewhere, we might as well look for it and–if possible–close it. Our task is to see whether a patient's complaint is related to a broader imbalance, and if so, to appreciate this imbalance. That can only come into view when we postpone the causal-analytical diagnosis (think of Goethe's mountain pass in section 1.4.). Once we see the imbalance, we may decide on a more comprehensive treatment option than just a causal-analytical route (such as only administering antibiotics in pneumonia), even as we *concurrently* use the causal-analytical insights and therapy possibilities that we have learned in medical school.

The dynamic-holistic approach allows "the whole," or rather: "a wholeness," to emerge with which we can work in practice. However, the impression should not be that what we retrieve in the manner described above is *complete* or that it allows subsequent symptoms to always be

11 Karin Spaink has written an iconic book about this misplaced interpretion (Spaink, 2007).

understood and treated in the same context. In practice, the physician will have to assess over and over again whether the previously found picture of the whole is still correct and whether the chosen treatment course is still correct.

Summarizing

Science comprises countless different systems that each find their basis in a paradigm. Paradigms determine which aspects of reality will be considered. Within current western medicine the causal-analytic paradigm is dominant; it is the structure that we employ mostly without knowing we are doing so. In this chapter we explore how medicine based solely on the causal-analytical paradigm is too limited to truly understand health in a holistic and individual way. The broader paradigm of dynamic holism examines the energy networks of dynamic wholes, such as the whole organism or the biographical context. It includes and utilizes the causal-analytic paradigm, but is not limited to it. It gives access to learning about the energy networks of living entities such as the organism or the patient's biographical context. It allows us to find a more individualized treatment. Presence is a prerequisite when we work with this paradigm.

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3. Goethean Phenomenology: Fact and Phenomenon

3.1. Introduction

Dynamic holism's paradigm puts our research object in a broader perspective. Goethean phenomenology (also called the Goethean approach) is a suitable methodology for further research within this paradigm.

The term "phenomenology" refers to different entities. Phenomenology begins in modern philosophical history at the beginning of the twentieth century with Husserl (1859-1938) whose concept of phenomenology is one of the best known. Husserl focuses primarily on the structure of the *experience of consciousness*. Many well-known researchers have elaborated on Husserl's work, thereby diversifying the concept of "phenomenology" over the last 100 years. "The" phenomenology does not exist (Farina, 2014). It is rather a collection of approaches that distinguish themselves from the Cartesian, causal-analytical tradition. In this latter tradition, the focus is on the study item as an object (or a collection of objects), which is "separate" from the investigator. In this Companion, however, we refer to a phenomenological current that has developed in the nineteenth century primarily from the *experience of nature* beginning with Goethe (1749-1832). The originality of Goethe's approach was only noticed decades after his death by Steiner (2010, 1887). Goethe himself can be seen as part of a larger tradition, sometimes referred to as "Orphic" (Sewell, *The orphic voice. Poetry and natural history*, 1961).

The two currents (Husserl's and Goethe's) do not contradict each other, although they largely proceed independent of each other. The field of embodied cognition[12] (Wilson, 2002), which

12 Embodied cognition assumes that the ability of our conscious awareness to acquire, understand, and learn (through sensory perception, thinking, and experiencing) is not just a brain function. It also strongly depends on physical abilities, in particular on individual sensory-motor skills. These individual sensory-motor abilities are themselves embedded in a more encompassing biological, psychological, and cultural context.
Practically this could mean that, for instance, a person's physical sense of balance could play a role in their assessment whether there is a "too much" or "too little" in a particular situation. See for instance M. Merleau Ponty : P*hénoménologie de la perception* [The Phenomenology of Perception, 1945]; F. Varela, E Thompson, E. Rosch *The embodied mind* (1993); A. Weber, *Enlivenment. Towards a poetics for the Anthropocene* (2019).

originated in the 1990s, has aspects in common with both currents.[13]

3.2. Phenomenon and Fact According to Goethe

Goethean phenomenology is a scientific method to *explain phenomena*.
In the Goethean approach, the *phenomenon* is the entirety of what emerges in perception; the *fact* is an isolated aspect of this, which is "ascertained" by focusing our attention (see fig. 3.1.). Language tends to distinguish between these two aspects by denoting them as verb or noun respectively. The phenomenon, as we are using the term in this Companion, refers to a process, the fact is a *"solidified" part* of the process.

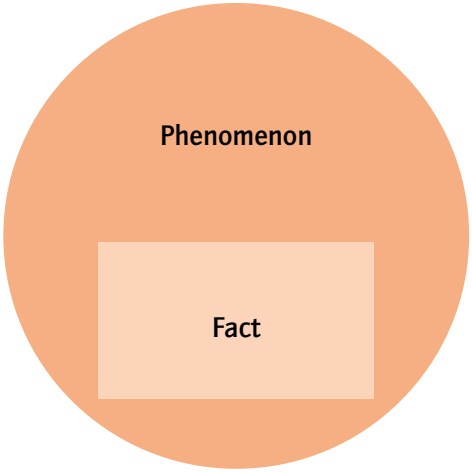

Figure 3.1. The asymmetric relation of phenomenon and fact

We can look at the following example: As we are walking through the forest we see the sun's rays illuminating the environment around us. This is the phenomenon: our walking, the experience of the light and warmth, the trees, the forest atmosphere, the sound of the birds and the wind, the buzzing insects, the smells. The photograph we took of a bundle of sunbeams through the trees is one of the facts (figure 3.2.). Consequently, phenomenon and fact are not opposites. Nonetheless, there is a sort of suppression: after the facts are ascertained, the phenomenon quietly disappears from our view. This diminishment generally goes unnoticed. For genuine insight to occur, however, awareness of the phenomenon–which is the process underlying the fact–is indispensable. Phenomenology can prevent facts from obscuring the dynamic context.
Note: the reality that the process–the phenomenon–is both with us as conscious experience and exists outside of us in nature. Goethe illuminates this in his poem Epirrhema:

13 Abram (1996) offers a brilliant example of nature-related phenomenology in the tradition of Husserl and Merleau Ponty.

Figure 3.2. Bundled sunrays

Epirrhema

Müsset im Naturbetrachten
immer eins wie alles achten:
nichts ist drinnen, nichts ist draußen;
denn was innen, das ist außen.
So ergreifet ohne Säumnis
heilig öffentlich Geheimnis.
Freuet euch des wahren Scheins,
euch des ernsten Spieles:
Kein Lebendiges ist ein Eins,
immer ist's ein Vieles.

Epirrhema

In observing nature always note
the solitary ánd the all:
naught is inside, naught is outside;
for what's inside, it is outside.
So don't think twice and grasp
The holy open secret.
Rejoice in true emergence,
and in the serious play:
No living thing is just one,
it is always many.

About the word "fact"

The word fact (Latin: *factum*) comes from *facere* (to do) and originally had a legal meaning ("what was done"). A "factum" was ascertained (fixed) under special circumstances, with a specific purpose. This origin is at odds with our preconception today, that reality consists of facts that just need to be itemized. Instead, we must say: *we construe* the facts according to our needs; what we mark as fact is our *personal choice*. Yet, facts are not arbitrary: they originate from a real process. But their existence *as facts* is due to our fixating judgment. The middle between objectivism ("reality is just facts") and subjectivism ("there are only opinions") is knowledge developed in common research that is always open to revision, in power-free dialogue (Habermas, 1981).

An example of phenomenon versus fact in medicine: treatment of postoperative pain

Research in 2003 (Benedetti, Lanotte, Rainero, Vighetti, & Pollo) showed that after major surgery patients had demonstrably less pain when a nurse would come to their bedside to tell them that they would be administered a strong painkiller. The control group consisted of patients who were imperceptibly administered an equal dose of the same painkiller with a remote regulator. These researchers also found that the analgesic effect lasted longer when patients had the impression they were still receiving analgesia even though this was stopped. Patients who were informed that analgesia was discontinued would report more pain afterwards.

In this example the fact is the pain. The phenomenon covers the whole context of origin and experience of the pain. This includes aspects such as post-operative status, given comorbidities and predispositions as well as aspects that are less objective such as previous experiences, expectations, fear, and feeling seen and understood (Neumann et al., 2009). The nurse's attention to the patient and their pain and the words used in the process ("powerful painkiller") lead to more effective pain control. In both situations the fact is "pain." When practicing medicine, the exclusive zooming in on pain as "fact" seems to obfuscate a larger truth. Awareness of pain as a phenomenon, of causal factors, the experience of pain, and its treatment in context, makes therapy more effective.[14]

14 The positive effect of such an approach is also referred to as the "placebo effect," a phenomenon that long remained misunderstood and unappreciated. It is to the credit of researchers such as Gunver Kienle (1996 and 1997), Benedetti, and Bensing who through their research have made this effect more concrete and understandable.

Figure 3.3. When Bortoft speaks about "going upstream" he is looking for inner participation in the creative process, the concept, of what we meet "downstream" as a process result

Active observation

How can we *comprehend* the experience before slicing it up, researching the separate facts, and later trying to find a causal relationship between the separate facts? This is where the Goethean approach comes in. Rather than looking for an explanation by researching the separate facts *behind* the phenomena, it articulates the exact observation of the *phenomena* and then looks *in between* the observations we make to the process that connects those observations. After having considered all sorts of aspects and instead of focusing on one element, we shift our attention from the variety of observations to the entirety, the oneness, the whole. In a music metaphor this would indicate the moment we hear the melody in between the separate notes that are played.

By the way, the acquired insight into the oneness of our object cannot be maintained as a definition or formula, separate from the diversity. *The harmonic concurrence is only present when we focus on the wealth of phenomena, and then just shift our attention.* A melody ceases to exist without the individual notes, including rhythm, intervals, and the silent moments in between. Sensing the "diversity-in-wholeness" requires conscious activity: it can only be found (heard) when we inwardly "follow" the creative genesis of our object. The inner attitude of wonder helps here (1.4.). At the same time it is important to pay attention to the "mountain pass" phenomenon,

"Downstream"

which warns of all kinds of prejudices that may cloud our view (1.4.).
Goethean phenomenology is *active participation in the process* of becoming *through empathic observation*. It is empiricism without reductionism. It is a methodology within *dynamic* holism because we participate inwardly with the *energy* (Gr. δυναμις, dynamis: dynamics), which generates the different facts and lends them coherence. For this reason, we can call it *participating* empiricism.

3.3. Participating Empiricism: Going Upstream

Bortoft describes an appealing image for this participating attitude: *"going upstream"* (Bortoft, 2012, p. 18ff). He says that our daily experience leads us downstream, in the direction of fixed shapes, there where the process of becoming solidifies into the product, the result, the fact. We do not pay attention to *how* someone is saying something, but just to *what* is said. We mainly become aware of the formed, of that which is "finished," static, and is positioning separate from and opposite us.
When we seek to go upstream, according to Bortoft, we do not focus our attention on the shape

of the object (the solidified fact), but on the process of creation–the *shaping process*. In language this results in focusing on the way things are said; observing it leads to examining the emergence of what we see.

Use of the term "upstream" also implies that we turn the direction of our (inner) gaze 180 degrees, so to speak. In doing this, we become one with what we perceive: object and subject become connected. Downstream we are opposite our perception (fact), whereas upstream we become connected with our observation in its process of becoming (phenomenon). Anyone who has sung in a choir or made music with others knows the difference. The piece of music itself can be listened to on CD, but when we participate in the genesis, the becoming in a performance, we have presence of mind and become co-creators of the music. We experience the music differently, deeper, and understand it better.

We come "upstream" by paying attention to early experiences and observations in an encounter, observations that normally pass by unnoticed. The Goethean researcher Bockemühl describes this "first impression" as follows.

> The term "first impression" refers to the moment of the very first perception of an object, in which we at the same time experience ourselves and the object, in which there is no "inside" or "outside" and yet something appears that seems to have an aim. (...)
>
> We have to search for an approach which allows for our first impressions–from which we subsequently step back so they are then outside of us—to *become meaningfully integrated into our concepts and thinking [our consciousness]*. Phenomenology of nature will not leave the examined objects remain strange or at a distance, it rather brings *conscious awareness in what at first seemed strange to us*. (Bockemühl (1997, p. 149ff). Italics in original text)

When we empathize, with presence of mind, we may find something that precedes the separation between inside and outside, between ourselves and the object we examine.

3.4. Practicing "Going Upstream"

One way to practice going upstream as a skill is to observe *different*[15] plants, animals, or landscapes over *longer periods of time*. Observe them daily to develop a sense for both what is common and for what is unusual.[16] This is known as "perceptual intelligence," or "contemplative assessment." Doing this exercise together with others who are more or less experienced, may amplify the learning experience.

- When our interest concerns a plant, we may follow the successive growth stages and pay attention to the shapes of the leaves and the silhouette of the whole plant (Romunde, 2000). We can augment our perception by drawing what we see.
- When studying animals, the relationship between behavior and physique (Gestalt) lends itself to coming "upstream" (Schad, 2012; Suchantke, 2002).
- When observing landscapes, going "upstream" is more accessible when we perceive the mood that a landscape evokes in us (Bockemühl, Awakening to Landscape, 1992).

3.5. Is the Goethean Approach Scientific? A Position Statement

Johann Goethe was a free spirit. At the end of his life he said:

> "*I am nobody's master, but if I may say what I have meant to the German people, I may call myself their rescuer. For they have experienced in me that humans must live from out of themselves, like the artist must create from out of himself. In whatever way we develop, our individuality must become visible.*" *(In: Landauer, 1968)*

He applied this to all areas of life and also to science. He corresponded with all kinds of

15 One always perceives more when one compares two or more plants, animals, or landscapes.

16 Goethe describes this as follows. "Do not search for anything behind the phenomena: they themselves are the theory. (...) One delves into the phenomenon, takes it as precisely as possible, tries to get further in understanding and practical application, and in the meantime leaves the problem [that which we want to know] quietly alone." (2018, 35/41, italics by the author.) We may remind ourselves that the word "theory" comes from the Greek θεώρειν = theorein, which means "to behold." The contemporary concept of the word "theory" has become deflated, and is at best a good hypothesis.

researchers of his time, kept up with their work and made relevant discoveries himself (Müller, 2015; Amundson, 1996). At the same time, he was looking for a method in which he could be "present" as a researcher, in which "individuality becomes visible" without reducing the scientific nature of what he was doing.

He had a natural aversion to intellectualism. He saw hypotheses as misleading, as structuring the field of observation too early. Instead, he built on keen and repetitively renewed observations. He did this with mountains and rocks, meteorological phenomena, plants and colors. He developed into a connoisseur of phenomena in these areas. For him it would have seemed rather odd that some biologists do not know or recognize plants or birds.

Essential to his approach is that observations ultimately clarify each other; they allow themselves be arranged seemingly effortlessly into an order that makes them intelligible. The interpretation of the observations follows from the ranking order and not from causes that lie at an organizationally lower level such as cells, DNA, chemistry, or photons. Because the ranking order arises in and as a consequence of many perceptions, the investigator maintains it himself. That is one of the reasons why Goethe could see himself as a "rescuer." In Goethean phenomenology, we further unfold our capacity for knowledge ánd remain maximally connected to our field of inquiry. Thus we ourselves always remain active. We do not become the product of anonymous forces, the human image that consequently emerges from a one-sided causal-analytical paradigm.

This Companion does not want to detract from the importance and achievements of regular medical science. At the same time we may be reminded that an investigative approach that is not currently taught in medical schools is not automatically unscientific. *The* scientific approach, after all, does not exist. Science is a *methodical* striving for insight and sharing that knowledge within a *scientific community* through published articles, congresses, and training courses. Goethean phenomenology does just this.[17]

Science arranges for critical evaluation of the cognitive process. Surveying the sciences in general one can arrange them on a continuum between two poles. On one side are sciences in which

17 Magazines: Der Merkurstab; Elemente der Naturwissenschaft. Book publications: Schad (1982-5); Bockemühl et al (1996); Romunde (2000); Suchantke (2002); Schad (2012); Heusser (2016).

critical capacities have led to a refined set of technical instruments, stringent procedures, and an emphasis on quantitative data gathering. Self-criticism (critique of one's own subjectivity which can obscure observation and interpretation) is, as it were, externalized. To the extent possible, scientists place observations outside and separate from themselves, aided by recording devices. This concerns mostly β-sciences such as chemistry and physics; biomedical sciences also usually strive to externalize observations.

On the other side are the sciences in which researchers control processing of more qualitative data with philosophical meta-consciousness. The available instruments are mainly self-reflexive and cognitive. The research process is extensively contemplated. One is hyper-aware of the relativity of insights, of possible bias. This concerns research areas such as cultural anthropology, history, most alpha-knowledge, and also Goethean phenomenology.[18]

Within the natural sciences, the Goethean approach is close to ethology (behavioral biology) because of its emphasis on, and refinement of, observation (Lehner, 1998). Its methodology of participating is related to that of cultural anthropology (Emerson, Fretz, & Shaw, 2001).

For interdisciplinary collaboration between scientists it is helpful to recognize that distinct methodologies are the expression of the same critical striving–and why, within different research traditions, reflective practices have developed so differently. This is implicitly owing to the (more or less conscious) choice of paradigm.

18 F.i. Goethe's essay "The experiment as mediator between subject and object" from 1793 (Goethe, 2018).

Summarizing

Goethean phenomenology or the Goethean approach, is a scientific method that can be placed within the paradigm of dynamic holism. The Goethean approach allows for an active, empathetic attempt to understand the phenomenon before it disappears from sight through fact finding. The dynamic creative principle itself can come into perspective, next to and prior to its factual consequences. The phenomenon can be understood in its genesis. Bortoft described this as "upstream" research of the phenomena. The ability to do "upstream" research can be taught and learned.
For this form of research, presence of mind (presence) particularly as "being able to wonder" is an essential condition.

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4. Intuition

4.1. Introduction

Science provides generally valid knowledge. When we gather patient data, such as fever, cough, dullness to percussion of the thorax with crepitation on auscultation, we may give meaning to these findings based on scientific understanding: the patient has a pneumonia. This is a generalized diagnosis with generalized therapy options, such as antibiotics. Yet, physicians often strive for a more individualized approach. One antibiotic may be better tolerated than another in a given patient; and maybe the patient is also advised to take rest or to stop smoking.

In previous chapters we have identified steps in a cognitive process with the aim to understand our patient (or other object of observation) better by being attentive to their context. Could we, in the above case of the patient with pneumonia, take a further step and find a more extensive meaning? Could we add to the general question: "what diagnosis does the patient have, and what treatment options are appropriate?" some more individualized questions, such as "what could the pneumonia mean in this patient at this point of time in their life?"; "can we understand why this disease appears within a larger context?". How do we find a more comprehensive meaning and why would we want this?

In answering these questions, intuitive knowledge can aid us. For some people the word “intuition” evokes an intuitive reaction–often based on a specific interpretation of the concept. This chapter explains what we mean by intuition.

4.2. From Imitation to Intuition

In the previous chapter we learned that the Goethean approach makes use of an inner conscious activity that recreates or regenerates the observed object. We become completely familiar with the phenomenon and make sure we can connect the images and ideas we form in the process. Inwardly we make them blend one into the other. This is analogous to how we hear the musical

melody as it plays between the separate notes, revealing their coherence. By doing this we go "upstream," in the direction of the creative activity that *initiates* the phenomenon's emergence – much like hearing the melody that is there before the composer writes down the separate notes.

Intuition takes us one step further. We hold the creative activity we found in the Goethean approach in the center of our consciousness and query the phenomena: what/who are you, what is your question to me, what do you need? Then we become attentively silent for a few moments. As we center our attention, we resist the temptation to require a complete answer to the core questions asked above. As we mentioned in regard to the results of Goethean research in Chapter 3, here too, a discovered insight is usually not directly transmissible; rather what we experience rests on our own efforts. The reader is only asked to *keep an open mind* to the possibility that asking such a core question makes sense.

This open, silent, questioning moment was demonstrated by the Danish pedagogue Jesper Juul. When, on parents' evenings at school, a desperate father asked him what to do with his child with a certain behavioral problem, he sometimes was silent for more than a minute before answering. In his mind, he queried, "what is this child feeling that could lead to this difficult behavior?" (Juul, 2020) Parents asked him an individual question, their input came from outside, an answer came from within: intuition.

In everyday spoken language the term "intuition" may have the connotation of a "dark premonition." *What we mean here is a clear perception which leads to insight in an individual situation.* It is clear because we can check and make sure that autosuggestion is not what is playing out. We can practice working with intuition, and investigate whether the insight we get is indeed correct and when it is not. The more experience we have, the better our intuitions will become.

4.3. Cognitive Processes via Perception and Thinking

Cognitive processes originate in perception and thinking. Of course, these are closely intertwined; there is no perception without thought and no thought without (previous) perception. Nonetheless, we want to consider the distinction for the moment, since it demonstrates one aspect of intuition.

Without much own observation we can still *know* by mere thinking or *reasoning* based on previous observations and thoughts. We do not need new observation to answer the following question confidently: "The post office only opens on Wednesdays; Gertie bought stamps at the post office; which weekday did she buy the stamps?". If someone answered with: "How should I *know*, I don't know Gertie and I *didn't see* it happen" that would certainly surprise us.

To (exclusively) *know* through perception would require that we are present at the post office on Wednesdays and all other weekdays. We would make a large number of observations there. But they all have some uncertainty: Who is Gertie? Did she indeed buy stamps? Is this the right post office? Which counter should I be looking at? In this example we will not gain insight without also some thoughts about our observations.

Intuition is distinct from reasoning because it is a perception of an inner experience. It is not the result of reasoning, it is suddenly there; it "descends." We *perceive* what we understand instantly.[19] Intuition is also distinct from perception, insofar as it is an inner perception and not primarily a sensory perception.

4.4. Characteristics of Intuition: What Exactly Do We Mean With It?

The Norwegian philosopher Ole Koksvik described the characteristics of intuitive experience (Koksvik, 2017):

a. the experience relates to something in sensory reality;
b. the experience has a content which gives the sense of being authentic;
c. the experience mobilizes me, I want and have to do something with it, it does not leave me indifferent.

We may broaden each characteristic, or rather specify it to apply it to the way we work in a *4-step* approach:

19 Aristotle, the first logician, already mentioned a non-rational knowledge about the nature of reality in his knowledge theory, see V. Kal, About intuition and discursivity in Aristotle (Kal, 1984).

a'. the experience is an inner perception which comes about after preparatory inner activity; [20]

b'. it offers an insight or conscious awareness that is not infallible (no perception is infallible) but it does improve (becomes more informative) the more we have life-experience and expert-knowledge: skilled intuition. In medical diagnostics this aspect of intuition is also called a "gut feeling" (Stolper, et al., 2011); [21]

c'. it relates to a moral aspect of an individual situation.

Schematically it looks like this:

	Koksvik	Bolk's Companions/ *4-step* specification
a. Reality	Relates to sensory perceptible reality	... but is itself an inner perception following inner activity
b. Truth	Generates the sense of being true	... but is not infallible - can be improved upon through life- and professional experience.
c. Morality	Mobilizes me	... because it deals with moral aspects of the situation

Examples of intuition in this sense:

- We see a familiar person speak cheerfully with others, but sense that something is not right, weigh this question inwardly, and an intuitive answer comes up: "She does not feel glad at all" [22].
- We see a stranger and know: I am connected to this person, even though we have not seen each other before. (This experience is not based on prior inner activity, except on augmented presence of mind since the impression is rather transient. Intuition always requires augmented

20 It differs from intuition in the sense of a gut feeling, system 2' in Kahnemann (2011), in which an immediate answer is there. The parenting issue presented to Jesper Juul had his full attention, and in the minute leading up to his answer he was inwardly active.

21 Stolper mainly speaks about the "OK/not OK" feeling (Stolper, et al., 2011); in this Companion we assume that intuition can have more content than this binary choice.

22 One may claim that we unconsciously observe and conclude this from external traits such as facial expression, gestures, or intonation. That is quite possible and in our opinion not contrary to what we mean. What matters is that the different data bring about the perception of an insight which meets the described criteria.

presence).
- We are taking a walk somewhere and suddenly know how to solve a problem at work, which we had extensively pondered before.
- We are attentively listening during a patient visit and suddenly know which–less obvious but no less–crucial question still needs to be asked.
- And: the realization I am an I. More about that in the next paragraph.

4.5. Intuition of the I in Ourselves and in Others

We know that we are an I. No healthy person doubts that. This intuitive knowing meets the three specified characteristics of Koksvik (4.4.):

a. it relates to the perceptible: my body, my life. It adds something to it which creates coherence, and thus insight;
b. it is transparent, comprehensible (I do not doubt it). It is not the product of reasoning (as if I am first skeptical whether I am an I and only later become convinced by an argument). The inner perception is that we suddenly know beyond doubt: "I am an I!" (Kohnstamm, 2002);
c. it is close to my conscience and a moral awareness about my own life and actions.

Our own I is also an "organ," a "sense organ," with which we perceive that the other person has an I and in what state their I is. Insight into the other person's I, however, does not come about in the same way that we become aware of our own self. That is why in a professional situation–physician or therapist with their client–the path to the other's I must be walked calmly and aware, methodically.[23]

Goethean phenomenological research offers a valuable pathway toward intuition. But intuition is itself a new element in the Goethean approach, just as a plant after producing many leaves,

23 The Greek word for "method" is a compound word consisting of "meta" and "hodos." We know "meta" (Gr. μετά) also from words such as meta-physical, in science: meta-analysis, and meta-morphosis in morphology. "Meta" stands for "non-sensory," "changing," "invisibly active," or "invisibly logical" as in meta-analysis: the analysis of the research is carried out on a systematically "higher" level. Hodos' (ὁδός) is the word for every path we walk. Thus "method" stands for the non-sensory, but logically coherent process which leads to results.

including flower leaves, eventually produces a seed: new - and yet fitting to the whole. Personal capabilities that are practiced in the Goethean approach need to be augmented:

- the ability to maintain a quiet awareness, not to miss subtle impressions;
- the ability to allow an inner space in which something can appear authentically, without our sympathy or antipathy interfering;
- the ability to engage in a selfless way. When our will does not just act purely for our own sake, it becomes freer from our personal needs and we can use it as an organ of perception for what wants to become in the other person.

Goethe at 75 years old on intuition

"It is foolish to want people around us to suit us. I have never done that. I always regarded others as individuals in their own right, whom I tried to investigate and get to know in their own nature. I never wanted the other person's sympathy. In this way I learned to deal with every human being (...). Difficult characters especially require that we make an effort to bear with them. Thus our different sides are addressed and mature. (...)" (Goethe, 1958, p. 208ff).

There are two aspects of intuition which evade methodology. First of all *existential engagement* is necessary which is a state of being, not of acting. With this we mean that one feels engaged to one's core with the other or the object. That may occur in the relationship between parent-child, physician-patient, teacher-pupil, or in friendships. It may also arise spontaneously, in regard to people or in nature. We feel called upon, we become warm, a commitment that has nothing to do with a sense of duty: it is free. It is a type of sympathy but not self-centered. The third characteristic of Koksvik has features that match this.

Secondly, we can only *indirectly hold on to* the outcome of intuition, by expressing it in words or perhaps writing it down. But the words are not the intuition itself. Intuition lights up for a moment, is wordless, and does not exist outside the moment - even though the moment may last for some time. Looking at the articulated written word does not automatically bring back the "connection" to the original intuition. Not that this is a problem, especially since the situation could be different at a later moment and would require a new intuition. *Insight from intuitive experience is both*

essential and time-bound.[24] The gift we receive from the momentary connection is that we know how to act in the present.

Summary

Intuition is distinct from cognitive processes that come about through reasoning. Intuition is not a knowing-to-know, but a lightning-quick understanding what we need to do born out of experience, inner activity, and connectivity; it has a moral quality. We can improve our intuitions by practicing.

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24 A way of thinking that places the essential in time, instead of "platonically" in a timeless atmosphere, see G. Kienle, The unwritten philosophy of Jesus (Zutphen, 2009): "Jesus developed his philosophical concept not only on the basis of Plato and Philo, but also of Moses, Isaiah, and Hillel, therefore God appeared as the God of becoming. This is different from Parmenides, Plato, and Aristotle, who understood God as being eternal. (p. 16)

5. *The* 4-step *Approach*

5.1. Introduction

In previous chapters we discussed how we may start in presence of mind and arrive via dynamic holism and Goethean phenomenology at intuition. In this chapter we will discuss the *4-step* approach as we apply it within the Bolk's Companion Group. Methodically the *4-step* approach is a form of Goethean phenomenology and we can use it to investigate the "essence" of our research objects. The *4-step* approach is a qualitative research method with which we, in four distinct steps, starting from "data reality," consciously and empathically search for context, insight, experience, and finally intuition. It is a way to achieve a meaningful deepening of our knowledge and skills and to develop expertise.

> The reason why the *4-step* approach consists of four steps is not a result of a particular principle but primarily based on experience in clinical practice, It finds its evidence in practitioners' expertise.
> An analogous process to the *4-step* approach is the DIKW model for knowledge systems: data - information - knowledge - wisdom (DIKW pyramid, (Rowley, 2007))

Medical practice relies to a considerable extent on clinical craftsmanship and insight. Consciously using the *4-step* approach can add to our academic understanding by giving us additional insight into what might be (qualitatively) needed in the actual life of the patient. This will be illustrated with examples from practice in Chapter 6.

The *4-step* approach is Goethean in character and can therefore help the physician to discover what is "upstream" in the diagnostic phase. As per chapter 3, Goethean phenomenology can be referred to as participatory empiricism: what I perceive before me as a dynamic whole (in casu the patient) also expresses itself in me, and consequently may become comprehensible. I only need to learn to perceive it with conscious awareness.

To achieve this a certain operational structure helps. This structure, in four steps, is explained in this chapter with the help of the example of a plant: the chamomile.

5.2. Preliminary Remarks

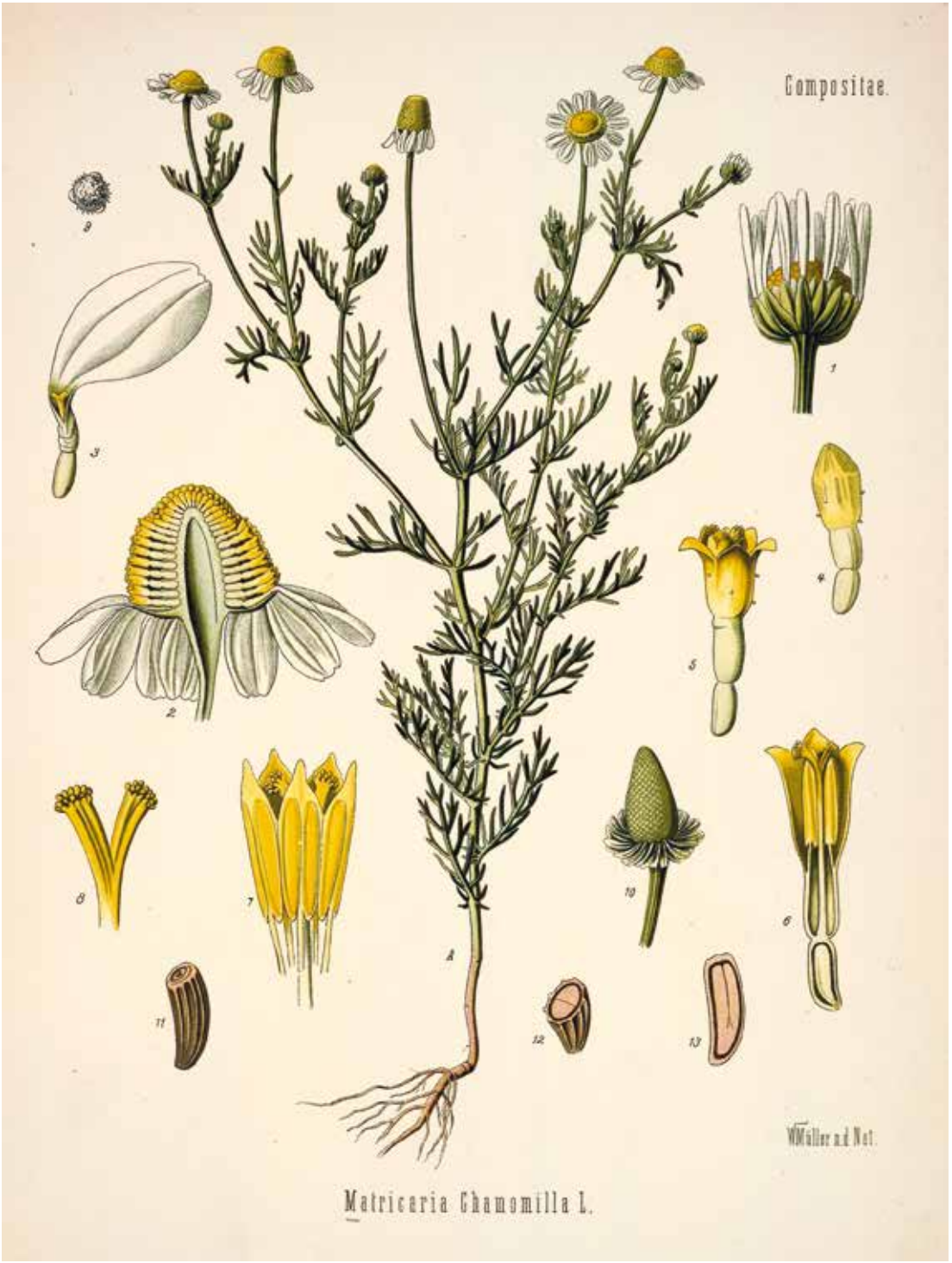
We will describe the *4-step* approach in four separate steps. This requires a preamble. First we want to emphasize that we need presence, or presence of mind to be able to do research with the *4-step* approach, since we will be actively using our cognitive abilities.

Secondly, for convenience's sake we speak of "the" *4-step* approach. It is actually more correct to speak of "a" *4-step* approach since variations and adaptations are constantly made as it is employed (Freeve, 2014; Göschel, 2012; Wiegert, 2018).

Third, although we may experience a strong sense of evidence in step 4 when approximating the essence of our research object, the *4-step* approach is by nature not exact science, but rather an in-depth, qualitative research method in which different cognitive abilities are trained and deployed. Thus there are no absolute "right" or "wrong" outcomes. Practicing the approach together with others may help strengthen intersubjectivity.

Fourth, we want to draw attention to the fact that when we practice the *4-step* approach we may notice that the steps are not always sharply distinguished one from the other. One may find that one has (unintentionally) skipped a step (or actually made it very quickly) or that one's attention tends to move back and forth from one step to another somewhat arbitrarily. This does not necessarily have to be a hindrance to the result. In the learning process it does help to try to return again and again to the structure of the four steps, but that structure must not become a "straitjacket" which may itself obstruct the process of finding connections or the essence.
On one hand, regular practicing will facilitate and improve working with the *4-step* approach. On the other hand it will gradually become easier to learn to distinguish the various phases in oneself. We may discover that some phases are easier for us, and others are more tricky.

Figure 5.1. Botanical drawing of German chamomile


Compositae.
Matricaria Chamomilla L.
W.Müller n.d. Nat.

Finally, with each step we will mention aspects of presence (as described in chapter 1) as well as a specific basic *attitude* or *attitude of mind* that is helpful.

5.3. The Four Steps

5.3.1. The First Step

In **step 1** we start from "data reality." We collect **the facts**, the observations at large, without giving them a meaning, a value, an order, or weighing them: "What do I observe?." We look for aspects of our study object that are observable, measurable, or "tangible" in the physical world. In this step, our focus is on a large variety of details.
In this plain collection of facts, data, sizes, shapes, smells, or also laboratory test results, the first dimension of presence, which is flexible focus, is a prerequisite. Without flexible focus, we will not find enough data to be able to take the next step. By employing flexible focus, we are likely to discover much more than we previously thought possible. Wonder as a dimension of presence can also be helpful.
The attitude that suits best here is that of the **interested observe**r.

We will use *Matricaria chamomilla*, the "true" or "German" chamomile, to practice the *4-step* approach.

Step 1: the Facts

We collect observations, specifically focused on the external appearance of our subject.

> We encounter this annual plant at the roadside and in fields that have not been mowed, often in sandy or loamy land; not the most fertile soils. Chamomile seems to prefer ruderal lands and helps to cultivate them. The pinnate leaf rosette may already have emerged from a small elongated seed and have overwintered in this form. In the spring, the plant shows a rapid, vigorous growth. It blooms from May to August. The tough stem has side branches with

deeply incised leaves that look stem-like, but on closer inspection are not woody, but rather soft and "puffed up" (Berckelaer, 2019). Each side branch ends in a flower; despite this, the stature of the chamomile makes a “transparent” impression. The whole plant in bloom is about forty centimeters tall. Not only the flowers, but the whole plant smells herbaceous and bittersweet. When we pick the flowers to dry them, the scent and an oily substance remain on our fingers for the rest of the day.
The white petals stand like a halo around the yellow, billowing corolla. When we open the core, it turns out to be hollow, filled with air. This hollow is characteristic of the “true” or German chamomile, when compared to other related species.

In the next steps we look for the coordinating momentum, the organizing coherence.

5.3.2. The Second Step

In **step 2** we recall the collected facts as exactly as possible. Next we look for the pattern(s) that organize the separate observations. "How are the observations related?" "What coordinates the facts we collected in step 1?"
What we discern from this may be very diverse, such as "roundness," "agility," "compactness," "vulnerability," "crossing boundaries," "rigidity." Our attention shifts from the details to the patterns and outlines of our research object. We can discover these patterns and their development in time when we make space in ourselves with presence of mind.

The paradigm of dynamic holism provides the methodical basis for this step. We implement the second dimension of being present (Chapter 1): appreciating facts in their context. Also flexible focus is essential.
The attitude that suits step 2 is an **open-minded participation**.

Continuing our observation of chamomile:

Step 2: The pattern(s)

When we look for *patterns*, we envisage the development of this plant. We notice the leaf rosette with the pointed little leaves. We detect the stem emerging from the leaf rosette, side branches, and as the stem grows taller, the newly formed side branches become shorter and the leaves smaller. A bud forms at the end of each branch. As the plant's stem lengthens, at its end the uncovered yellow-green center of the flower bud bulges more strongly and egg-shaped, almost as if the billowing flower base wants to take the growing stem up with it. The white petals are as yet tiny and barely visible.
When the flower bud matures and the petals extend outward we see a warm yellow center adorned by snow white (see figure 5.2.). The scent envelops the plant like a cloud.

Figure 5.2. Growth phase of chamomile

We appreciate contrasts: the long, thin woody main stem and small pointed leaves with a pinnate shape juxtaposed to the succulent softness of the leaf constituents and the silkiness of the flowers. Or the energetic swift "growth gesture" in spring, versus the light and airy transparency that it maintains in summer despite its strong growth.
From a finely branched shallow root system, the straight and almost woody plant erects itself. Then the feathery leaves branch airily, until the plant has an inverted cone shape. In the billowing flower corolla it "surrenders" to its surroundings with its smelling fragrance.

This "diversity-in-wholeness" (Bortoft, 2012, p. 76ff.) is not a model but a living picture of the

plant. If we want to approach the plant as a whole, in context, we may achieve this with the help of an imaginative capacity. In doing so, we remain active. Also note that at this step there is still a distinction between us and the plant, between subject and object.

5.3.3. The Third Step

In **step 3** we look for **insight** into the creative principle, or the theme that expresses itself in and between the patterns. We look for *connecting processes*. In this step our attention shifts from the patterns and forms of step 2 to a creative representation of the origin of the patterns, with which we *move along* inwardly, as it were. "Which inductive creative principle moves and is at work between the patterns. What explains their becoming?" "Can we imitate within ourselves how these patterns came to be?" "Can we consciously inwardly imitate the motions of this becoming and discover its connecting principle?" [25]
Through our activity, we turn from spectators into participants in this process of becoming. We take a step going "upstream." With this step, the subject has absorbed the object into itself. The degree to which it succeeds in internalizing the object is proportional to the degree to which the subject is "represented" in us and "subjective" reactions can be considered to be pure activity *of the object*, and thus contribute to *understanding* it.

In doing so, we are present, have presence of mind, and learn to investigate "upstream." To be able to *wonder* is particularly helpful here. The attitude at this step is **compassionate and empathetic.** It is also good to remember Goethe's mountain pass experience again. This step can only be taken correctly when we succeed in factually being guided by what we had found as phenomena earlier, by what our research object presented us with in previous steps. Distraction, our own subjective associations, or insufficient concentration can be interfering factors. Practicing the *4-step* approach with others may, as mentioned earlier, aid to overcome these idiosyncratic diversions.

Continuing our example: the chamomile

25 Humans (as well as many animal species) are born with the ability to imitate. In children, the "urge" to imitate is an important impulse for learning.

Step 3: Obtaining Insight

As observers, in Step 3 we become engaged in the experience and discover the dynamics at work in the patterns we have found within ourselves. We now go "upstream" (chapter 3) to experience the process of the plant's emergence. We ourselves step into the patterns we found earlier in step 2, and try to "imitate" them inwardly. Again there is the rosette, the fine, pointed, soft leaves, the growth of the stem, the development of the leaves, which gradually become smaller as the stem grows taller. The side branches appear, with a bud at each end. The plant continues to grow, the green hearts turn to color, the white flower petals extend downward at an angle, the fragrance spreads.

What we experience is that compared to other plants, chamomile has little leaf substance. It may seem as if it prefers to invest the strength that other plants invest in leaf development into the flower and the fragrance. In this we experience a powerful vitality that is nevertheless "restrained." The essential oil of this plant does not smell strongly or woody (which one might expect), but herbaceous and bittersweet/mild at the same time. We are aware that the blue oil in tea or ointment has a relaxing and stress releasing effect on body and mind. The softness of the flower's core suits this calming effect. The scent itself, somewhat bitter also fits: it dispels improper urges (such as for a cigarette or candy) and brings us back to a cleaner, purer beginning within ourselves. The image of the yellow flower core in the white halo has something heavenly, something innocent. We are coming to a new insight into the chamomile plant.

We experience its dynamic as strong and vital combined with the ability to restrain these. Not dominating but able to continually create space, thus preserving a transparency for light and air. Not very demanding, pleasant, friendly, soothing, providing security.

5.3.4. The Fourth Step

Finally, in **step 4** we search for an existential dimension: "What is the **essence**?". "What is this situation, this patient asking (of me, at this moment)?" "Where is the kernel, the core, that manifests itself here?" Again, this step requires presence that is more future oriented, yet, all other dimensions of presence are also helpful here.

We identify with what we found in step 3. We do not try to "construct" the essence rationally, but we let the creative principle (of step 3) *speak to us*. This requires a certain *attentive restraint*. We do not "act" ourselves, but create an inner space and at the same time remain fully present. We learn to *intuitively* perceive what is needed. In this step, our attention for the object of our investigation shifts; we perceive it at yet another level. The inner imitation of its dynamic activity in the third step makes way in step 4, for allowing ourselves to be met by what shows itself in its essence. We call this attitude **participatory listening**.

In this step we create the space, after viewing the phenomena and patterns, after appreciating the insight into the active dynamic principle of this plant or other object, to allow its meaning, its significance or essence *to arise in us*. Initially the meaning does not appear in words, but as *experiential (qualitative)* essence, to which we may attribute words or concepts.

In this step it is important that the experience with what meets us as essence can touch and enthuse us; that it evokes a sense of self-evidence, a sense of encounter. This is the step in which we search for intuition (Chapter 4). We have come further upstream, and if at step 1 there was still a separation between subject and object, this distinction has all but vanished from our conscious awareness. We experience the quintessence of the object for what it can accomplish and what it may mean for our (therapeutic) pursuit.

In Chapter 1 (Presence), in section 1.5., we discussed a future aspect of presence:

> "Presence of mind also has an *imminent* aspect. When we are present in our observations, and at the same time let go of our prejudice and expectation, an inspiring image may emerge of *what wants to become*. Presence therefore strengthens our commitment to the future: the image that emerges is warming; we are touched by it. We feel the ambition to help *what wants to evolve*. It appeals to our feeling of responsibility and awakens an intention. After being a spectator we now become a participant in this emergent reality without losing our clarity of thought. We become engaged with the future: we feel the intention to *help what desires to become. The idea becomes ideal."*

The ability to act out of enthusiasm, warm-heartedly,[26] for an ideal, is characteristic for humans. The idea becomes an ideal when we can find the object's essence in presence of mind. The intuition we find is future oriented.

Next we look again at chamomile:

Step 4: The essence

In step 4 we try to comprehend the essence of chamomile, that which it adds to living nature, and also its quality as a medicinal plant. We observe chamomile and experience its solid presence, imbued with softness/air and warmth. "Maternal" or "comforting," could be terms that fit the essence of chamomile.[27]

Experiencing these qualities gives the evident experience that this humble pioneer plant's known ability to cultivate waste lands as well as to aid the digestion of the indigestible is based on these qualities. These qualities support us in finding the peace and relaxation from which we can continue our life's journey. Chamomile seems to want to help cleanse and warm/relax, to help create a pleasant homestead in which we can come to ourselves and realize our intentions.

5.4. Characteristic Aspects of the *4-step* Approach

At each level of the *4-step* approach, at each step, we use different cognitive abilities and have a distinct inner attitude. Figure 5.3. is a schematic summary of its different aspects. As mentioned before in 5.2., the steps are not always strictly separated from each other but may flow one into the other. The diagram should be considered a tool.

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26 "Warmth" may be considered both literally and metaphorically as an element that is the only one of the four elements (earth, water, air and fire/warmth) that can permeate and absorb the other ones. The "warm-heartedness" discussed here allows the observer/researcher, who now has become "participant," to know intuitively which action is in accordance with what has been observed and compassionately experienced. It is therefore sometimes called the "technique of inverted will." When these steps are taken accurately, the therapist's will may, as it were, be "sparked" by the patient's deepest will during the visit. This process matches the patient (or client/pupil), yet the doctor/therapist/teacher realizes it.

27 This is also reflected in the etymology of its Latin name. Matricaria chamomilla is etymologically related to the Latin "mater:" "mother."

Step	Key Quality of Presence	Scientific Quality	Cognitive Ability	Inner Attitude
1	Flexible focus	Extended attentive observation	Observing; Naming	Interested observer
2	Perceiving context	Paradigm of dynamic holism	Pattern recognition	Open-minded participation
3	Wonder	Goethean phenomenology/ keen insight	Compassion/ empathy, imitation	Empathetic, compassionate
4	Idea becomes ideal, future-oriented	Skilled intuitive knowledge	Intention, ability to unbiased encounter	Participative listening

Figure 5.3. Distinguishing aspects of different research steps

At each step our search is focused on a different aspect of life and thus deploys different cognitive abilities. Our relationship to the object changes at each step. And at each succeeding question we work with the information from the previous quest, therefore we may describe four subsequent "steps" one following the other.

5.5. The *4-step* Approach in Practice

5.5.1. The Four Steps

In the diagram below (figure 5.4.) we summarize what we discussed in section 5.3.

Step	Asks for	Type of find	Cognition with the aid of
1	Observations	Shape aspects, morphological anatomy, symptoms, data (facts)	Senses, conceptual cognition ("I see many details")
2	Coherence	Patterns (flow patterns, time patterns, *Gestalt*)	Flowing images ("I see wholes")
3	Dynamic insight, striving	Emerging movement through imitating	Empathy ("I imitate")
4	Significance/meaning, essence, contribution to environment	Approach/perception of the essence, uniqueness, and efficacy	Intent, existential participation ("I become one with the object")

Figuur 5.4. Four steps, four discoveries

In implementing the four steps we may perceive, as mentioned above, that an inner warmth develops. This clues us in that we are on the right track. Goethean understanding does not exist as transferable knowledge, only as *created/generated*[28] knowledge–and its active practice creates warmth.[29] In other words, Goethean phenomenology is living thinking, relational knowledge, and relies on cognitive investment in the relationship with a concrete living being or object.

5.6. Conclusion

In this chapter we discussed the *4-step* approach: an approach which, using Goethean phenomenology, gets us one step further "upstream" in our understanding and skills. We gave an example of how one may use this approach to come to a deeper insight in investigating. Our

28 When we say "generated knowledge" we mean that we ourselves contribute to its creation with inner activity.

29 The Goethean researcher Dick van Romunde (1914-2010) pointed this out tirelessly. For example, in "The Formative Forces in the Plant World" (2000, p. 75)).

example was the "true" German chamomile. Many objects may thus be examined, not just plants, but minerals, animals, humans, or a work of art.
We have seen that conclusions can be diverse, not necessarily always complete, yet give a deeper and coherent insight in the observed. Since it is an extended perspective of Goethean phenomenology, the *4-step* approach may be of help to systematically bring art into science without leaving the field of science itself.

In the next chapter we will take a look how physicians apply the *4-step* approach in practice.

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6. *The* 4-Step *Approach: Examples from Practice*

6.1. Introduction

Most physicians have had what we refer to as a "clinical intuition" at some point in their professional lives. Concepts such as "clinical intuition" and "gut feeling" are recognized phenomena within medicine and have been the object of much scientific research.[30] In practice, however, intuitions mostly occur as random phenomena and as such could be precarious when people allow themselves to be led by arbitrary associations and impulses (Heijmans, 1988). We first want to clarify what we mean by the concept "intuition."

The *4-step* approach as a Goethean research method can teach physicians to *consciously apply* intuition in medical practice (Chapter 5). When employed conscientiously, it aids in gaining a deeper and more personalized understanding of the individual patient's situation and of what is needed in the moment. We will need presence of mind when employing intuition in this sense.

This chapter describes the experiences of some physicians who have used the *4-step* approach in practice. The first case study of Josh, has been discussed in more detail in a previously published Bolk's Companion (Niemeijer & Van Tellingen 2019).

When we regularly apply a *4-step* approach in medical practice, we may find that there are different ways to use it. The answers we find with the *4-step* approach are defined by the questions we ask ourselves and by our perspective. For example, we can simply investigate the (patho)physiology of a disease as it expresses in an individual patient, and/or investigate the patient's psychosocial context and/or biography. We may also research a group of patients with a specific diagnosis with a *4-step* approach so as to acquire more insight into the possible impact of a specific disease in a biographical context or in society at large. The aim of using a *4-step* approach is always to find *additional meaning* and an essence that will aid us in better understanding the needs of

30 For instance in the European research project, "Gut Feelings in General Practice," www.gutfeelings.eu.

our individual patient. This will make our treatment qualitatively richer and more tailored to the individual's need (Van der Bie, 2012; Niemeijer & Van Tellingen 2019).

6.2. Case Study I: Josh's Developmental Problems

by Martin Niemeijer MD

6.2.1. Step 1: Observation: Gathering Data

Josh (8 years old) enters the exam room, holding his father's hand. His hair is blond, and in his blue eyes, a staring gaze. When I stretch my hand out to him, Josh puts his hand in mine and then stands close to me. When I let go of his hand he continues standing next to me. Josh seems tall for his age. His face is somewhat elongated, with a narrow nose, slightly open mouth, and thin lips.

When Josh sits down he sinks down into the chair and supports his head with his hands. When I ask him a question he looks at his parents; he waits for their encouragement before he gives a short answer. His voice has a nasal quality.

History

Josh's parents begin to describe his angry fits. These occur when he experiences an injustice or when he thinks he is being teased. During these fits, he becomes restless, gets red in the face, and begins to yell angrily; at times, he kicks and hits. When the anger subsides, he often starts crying and steals away; it then becomes difficult to comfort him. Josh's parents mention his love of animals. He has a rabbit that he affectionately

cares for. Josh is also fond of the cat but the cat is somewhat afraid of Josh's grasping hands. Josh nods in agreement when his parents mention this.

Physical Exam

Josh's skin is normal temperature. In the bilateral folds of his elbows, he has some signs of atopic eczema. He breathes through his mouth signifying that his nose is not fully permeable. Josh's breathing is shallow and fast. I can hear vesicular breathing over the lungs and exhalation is somewhat prolonged with sporadic wheezing. Heart tones are normal without murmur. The abdomen is somewhat tender with active muscle resistance and normal peristalsis.

Josh does not stand still; rather he wobbles from one leg to the other as he slightly tilts his head. While skipping or walking a line, he loses his balance a few times. When he throws a ball, he makes a little leap and when catching he misses it. He needs help getting dressed.

6.2.2. About Step 1

We collect our observations of the child in this step, which starts with the first impression and welcoming of the child, observing his handshake and eye contact. We listen to the story, the concerns, complaints, and questions of both the child and his parents. We also inquire about the child's strengths, what he enjoys, and about wishes and expectations for the future.

During the visit we pay attention to external phenomena such as how the child sits, moves, and speaks. We observe the build and stature of the child, his face, skin color, and facial expressions. We pay extra attention to phenomena that may be related to the child's complaints and questions. When we have the opportunity to observe the child in other situations, our observations could extend to how the child relates to his environment, how he interacts with others, and how he plays and eats. Even more valuable would be observations about the child's sleep, digestion, and toilet training. In the first step, we gather myriad unorganized observations by using all our senses.

During this process, we attempt to hold back any opinions, interpretations of a diagnostic nature as well as any sympathy and antipathy that may arise. The attitude at this first step is that of the interested observer. It provides us with an exact memory picture of the child (Van der Bie, Wholeness in Science, 2012, p. 27ff.).

6.2.3. Step 2: Pattern Recognition

In the next step, we recall the myriad observations of step 1 (see also 5.3.2.). Then we search for possible patterns in the observations. We may recognize patterns when we look at our memory pictures "crosswise," from another angle. We may ask ourselves: "What organizes the separate facts we found in step 1?" This may have started while doing the first step and may have given direction to our observations. However, since we want to get an exact as possible memory picture of the child, we defer that process until the second step.

Our attitude of *"open-minded participation"* (5.3.2.) aids in searching for the striking phenomena and characteristic patterns in our memory pictures, such as heaviness (in motor skills and/or mood) or hypersensitivity (such as allergies and/or emotional excitability). The discovered patterns become more verifiable when we can identify the phenomena from which they were derived (systematic pattern recognition, Van der Bie, 2012, p. 41 ff.).

6.2.4. Implementing Step 2

> We may recognize a prominent pattern of hypersensitivity and vulnerability in Josh's insecurity as well as in his allergic constitution. He actually seems bothered by his openness to the surroundings, which seem to hold him captive. This was evident, among other things, when he kept standing (too) close to me after greeting. Another pattern becomes evident in the uncontrollable tenseness when his own expectations and those of his environment clash (unexpected situations, his dealings with animals) when he becomes edgy. Leading to a pervasive anxiety, which often leads to an outburst. This also might be the cause of his motor restlessness.

6.2.5. Step 3: Acquiring Insight

In 5.3.3. we wrote about the third step:

> "In step 3 we look for insight into the creative principle, the theme that expresses itself

in and between the patterns. We look for connecting processes. In this step, our attention shifts from the patterns and forms of step 2 to a creative representation of the origin of the patterns, which we follow inwardly. "Which inductive creative principle moves and is at work between the patterns? What explains their becoming?" "Can we imitate within ourselves how these patterns came to be?" "Can we consciously inwardly imitate the motions of this becoming and discover its connecting principle?"

Thus we first bring to mind the striking phenomena and salient patterns we found in step 2 and then investigate them trying to imitate them inwardly. We attempt to get a sense, an insight, into how the patterns came about (we go "upstream" see 3.3.). The patterns may have succeeded each other, or may have occurred simultaneously. They may have the same origin. We try to empathize with what happened to the child, how the patterns arose, and what else may possibly have happened in between the appearance of the patterns and phenomena.
The attitude in this phase is empathic. We try to imitate inwardly, to sense, and to understand how the patterns came about. A picture may emerge that compares our experience to something else: "It's as if..." A specific mood or personal experience may arise; or we may describe a gesture, and/or a specific quality (Van der Bie, 2012, p. 83 ff).

6.2.6. Implementing Step 3

Continued Case Study

We again look at the data and patterns as described above. It appears that Josh's openness (physically recognizable in his eczema and his wide open mouth), combined with his psychological vulnerability cause him to easily lose himself in his environment. This could cause him to become tenser, and experience motor unrest. If this is not handled well by his environment, it can lead to an angry outburst and hurting others. The mood that we discover is one of losing ourselves in our environment in the situations described. Josh tries to find something to hold on to by, literally holding on to the adults around him. When that fails, he becomes vulnerable and reacts aggressively, and later feels remorse. From the description of his constitutional type (Niemeijer & Van Tellingen, 2019) Josh specifically has difficulty with the ability to connect. Josh still struggles to relate in a healthy way to his environment.

> The boundary between him and his environment is too open and permeable. This can be described as an open, centrifugal dynamic. He cannot set boundaries between himself and his environment when necessary. [31]
> Josh lacks sufficient structure in form to control his outbursts for example, or when he slumps down into the chair. We also see an excess of movement as he can hardly sit still. Josh seems not only to be hampered by his one-sidedness, he seems completely stuck in it.[32]

6.2.7. Step 4: Intuition and Attributing Meaning

In this step we attempt to attribute meaning to the results of the research so far. To do this, we need intuition, as described in Chapter 4.

First we look back again to what we did in the third step when we, in order to understand what connects the patterns of the second step, empathized with what took place in the child's life. In the fourth step, we let the insight of step 3 "speak" to us. We connect inwardly to what we found in step 3, then we hold back for a moment, while remaining fully present. Can we sense what the particular situation, the individual patient wants from us? In section 5.3.4. we wrote:
"Initially the meaning does not appear in words, but as experiential (qualitative) essence, to which we may attribute words or concepts."

Does an image appear in our mind of what is needed, without our reasoning constructing it? The *attitude* in this fourth step is *intuitively listening* to what practical new ideas may emerge.

For example, the new acknowledgement may be that we are unexpectedly "aware" that the child's difficult behavior is a protective gesture (against strong impressions or other influences from outside). We may simultaneously feel the moral urge to do something with this, such as helping the child to be better protected, or to explain what we experience to his environment and raise his care givers' understanding of what he needs. This recognition gives meaning to our observations.

31 This behavior is characteristic for toddlers, it is still normal for children of that age group to behave this way.
32 In the Companion "Constitution Pictures" (Niemeijer & Van Tellingen, 2019) the one-sidedness in the constitution of children is described and explained in terms borrowed from the developmental principles of giving form, connecting, and moving. For legibility's sake we only briefly refer to the terminology here.

The new appreciation may also present itself as a (symbolic) image, for example from nature. Such pictures often give a deeper awareness of the essential and developmental needs of the child.

The recognition that these images give, integrate our earlier observations into an *intelligible whole*, which does justice to the child's current developmental potential as much as possible (Van der Bie, 2012, p. 162) and thus becomes future-oriented. The image also contributes to directing the child's treatment.

When the image is shared with the child and his or her parents it is often recognized straight away, which provides us with an extra verification check for being on the right track. On the basis of this and in consultation with the child and his parents as well as other therapists we may work out a treatment strategy.

6.2.8. Implementing Step 4

Continued Case Study

A few days later I think back to my encounter with Josh and how tattered he was, on the verge of always losing himself to his environment, the tension this triggered in him, and how he sought support, clinging to adults for protection. A picture appeared in my mind of an octopus with smooth, soft skin, which uses suction cups on its tentacles to attach itself to everything around it and is continually on guard, ready to move quickly through jet propulsion when needed. A little later, another image comes to mind of a cat that always is always under foot and strokes our legs until we accidentally step on him and it starts to hiss.

These pictures show Josh's need to find his own footing and strengthen his self-confidence. Josh would also benefit from learning to "breathe" better literally and figuratively and manage sympathy and antipathy in his relationships. This goes together with learning to experience his boundaries and how he himself can set them, instead of facing the boundaries imposed on him by his environment, which can sometimes feel stressful.

The results of Josh' constitution test (ICC)[33] confirms that he mainly has problems with the developmental principle of connecting. His open, outflowing dynamic when connecting with others, and his tendency to lose himself in his environment become visible in his vulnerability and anxiety as well as in his rapid, shallow breathing and emotional outbursts.

I discussed the results of the *4-step* approach including the pictures that emerged in step 4 in a conversation with Josh' parents. We spoke of the pain and loneliness that ensures as a result of his being too open, which can cause conflict, which in turn frustrates his parents and creates conflict with other children. This resonates with Josh's parents and they agree to help Josh learn to deal differently with his openness and the anxieties that come from it.
I describe the course of action as offering Josh exercises to find and increase strength and self-confidence in himself, to learn to breathe differently, and to learn to recognize and manage his boundaries differently.

Later during this conversation Josh joins in. I try to explain to him in a way he can understand how he and his parents can contribute to his further development. At first Josh looks angry and irritated, but the octopus metaphor piques his interest and his face lights up. He nods when I mention that his anger outbursts and arguing with other children are not fun for him. Josh' mother puts an arm around him and together they listen to the suggestions that may help them as a family.

33 ICC stands for Instrument for assessing Children's Constitution: a standardized survey to determine constitution characteristics. For the ICC see the Companion "From Special Needs to Realizing Your Full Potential" (Niemeijer & Van Tellingen, 2019). A link to the test can be found at https://www.bolkscompanions.com/instrument-childrens-constitution.

6.3. Case Studies II: Survey of Autoimmune Disease

by Guus van der Bie MD

6.3.1. Introduction

In the following example from medical practice, we turn to a specific disease rather than a patient case to improve our understanding in this case, of rheumatoid arthritis (RA). We do this by highlighting several patients with this diagnosis, employing the *4-step* approach.

The actual reality in which I worked and gained experience as a physician was in the daily practice of office and home visits. I had found that medical diagnostics and practice are consistent with the steps that are described in this Companion. However, in everyday practice these steps are often not taken systematically. Evidence Based Medicine, Experience Based Medicine, and Practice Based Evidence tend to amalgamate in the consulting room. Thus, in reality, the physician may become aware of any of the four different types of "finds" from the diagram in section 5.5.1. at any stage of the doctor-patient contact. This unstructured method of dealing with patients is a normal phenomenon in the work of physicians. In my opinion, the same applies to pedagogues, therapists, and other health care workers. When I describe the four steps in the case histories below, I can only do so in retrospect. Since structuring a patient visit and recognizing distinct steps is instructive, I make an attempt to indicate the steps in the case histories. The details were collected during office or home visits, reflected upon and assessed over time. They also stem from a time when RA was not yet treated with DMARDs (disease modifying anti rheumatic drugs) such as the biologicals.

6.3.2. Step 1: Collecting Observations

Case 1

A seventy-year-old man has been struggling with chronic progressive RA for many years. All of the smaller joints in his hands and feet have the characteristic RA deformations, which greatly limits his range of motion. Larger joints in his arms and legs are also affected by

the disease. The patient can only "walk" a little with the help of two canes. He shuffles through the space like a rigid, frozen person. He cannot move freely. Even picking up a coffee cup is difficult. He has a dwarf-like appearance as he is small in stature to begin with. Because of the medications he has taken over many years that have caused osteoporosis and spinal deformities, he has become even shorter. In addition to the limitations to his mobility, pain is a particularly significant presenting symptom. Inflammatory signs are ever-present on his lumpy deformed hands, sometimes more acute, sometimes more dormant. The array of anti-inflammatory medications has only a mild effect on his symptoms.

By character, this patient is good-natured, always friendly, and obliging. He avoids conflicts whenever possible. When there is a threat of conflict he tries to calm things down and above all to de-escalate. It strikes me that he does not seem to have reactions such as indignation or anger to truly hurtful events.

For a number of years the patient lived in the former Dutch East Indies, a time that he and his wife remember with fondness until the Second World War caused them to end up in "Japanese camps." Among other atrocities, such internment greatly impacted this man's ability to stand up to the outside world through the systematic oppression.

The patient is married. His wife is an irritable woman who is rather critical. She usually expresses herself clearly and sometimes vehemently. Our patient immediately tries to appease these situations. Among acquaintances and friends he has the reputation of being "infinitely" mild and understanding.

Case 2

A sixty-five-year-old married woman has had slowly worsening rheumatoid arthritis for ten years. She has a husband who for many years has had an affair. This "third person" in the relationship has the same profession as the patient and they occasionally meet. Her husband regularly announces that he is going to see his girlfriend. He then leaves and the patient waits to see if and when he will return home. This has been going on for many years. The patient does not argue with her husband about it.

This patient is a rather critical woman who is quick to make comments. However, a direct confrontation rarely or never occurs. She will often air her criticism indirectly in an unmistakable manner with insinuations or a facial expression that leaves nothing to be desired in terms of clarity. Towards her husband, however, she avoids conflicts.

Case 3

A forty-five-year-old woman who has been in an enmeshed relationship with her demanding mother for years has been suffering from rheumatoid arthritis for ten years. She has not been able to separate herself from her mother because the latter has not tolerated it. So she still lives at home, even though she says she does not want to. She arranges her own life according to the demands of her mother, for whom she no longer feels any love. From her perspective, only reproachful and aggressive thoughts towards her mother determine their relationship. As a result, she cannot develop her own life independently and lives an unfree life.

6.3.3. Step 2: Patterns

At this step, we recall the three patients, and look for patterns. "How do our observations in these patients correlate?"

What stands out is the painful physical immobility, which was at that time (before DMARDs) hard to alter with medications. Additionally, a characteristic of being dominated by others in life is prevalent. In stark contrast to this stands the apparent structural unwillingness to enter into a confrontation, even if one would logically expect these patients to.

At the same time, each of these patients cultivates negative and aggressive thoughts and feelings towards the dominating other or, as in the second case, towards another partner. However, these are not expressed directly or adequately. The patients persist in maintaining a relationship that is damaging them, seem to prefer to swallow their anger and aggression, and are apparently unable to secure a certain independence in life. Unspoken emotions abound, a pretend harmony is created, and relationships become unbalanced, to the detriment of the patients.

6.3.4. Step 3: Gaining Insight

This is the step where we look for the connecting processes. "What expresses itself in these patterns?" "Which inner process emerges from between these patterns?"
When I empathize, and inwardly try to move along to experience the identifiable patterns of these patients, I perceive the following dynamic: it is *as if* that which should have been brought out by the patients in a reaction reverses itself, it is "swallowed." The swallowed reaction is aggressive in character and seems to become "auto-aggressive," even towards the patients' physical organism, where a devastating autoimmune inflammatory process results in pain and progressive debility.

6.3.5. Step 4: Intuition and Meaning

Immediately after we have empathized with the previous step, we become "silent" for a moment and try to become aware of the essence of these experiences.

What repeatedly came to me as essence in these patients' illness is an image of autoimmune disease as the manifestation of the individual's aborted (self) expression. This invited me to further investigate this image and try to support the patients in their further individual development (future aspects).
The human immune system is the organ system with which we defend ourselves physiologically against impact from the outside world. Biologically speaking this would apply to viruses, bacteria, and other "foreign" proteins and tissues such as (non-native) blood or transplanted organs. – When in balance, the immune system reacts with an effective inflammatory response with which

it separates “self” from “not-self” at the physical level. In autoimmune disease, this breakdown activity is "reversed" and directed toward the individual’s own tissues, which are no longer recognized as "self." The very process that should have aided the person to physiologically stand up to the outside world is now directed against the own organism. To me this picture invokes the image of autoimmune disease as the manifestation of an aborted and subsequently self-directed expression of aggression by the individual in question. It called on me to further explore how to aid these patients deal differently with their self-image and the emotions connected to it.

6.4. Diagnostic Case Studies III: From Phenomenon to Treatment

by Arie Bos MD

6.4.1. A New Disease

This sample study illustrates how the *4-step* approach, in slightly modified form, can also prove useful when encountering a new, as yet unknown disease. The insights gained from the first patient, despite the lack of a clear diagnosis and treatment, subsequently proved useful for other patients with similar symptoms

6.4.2. Step 1 Collecting Observations

> In 1981, a young homosexual man came to see me in my Amsterdam practice. On meeting him, I was immediately impressed because he spoke twenty-one languages. I can still see him in my mind: a blond, handsome, well-built man of average height. He complained of a non-productive cough and was worried. On auscultation, I did not hear anything out of the ordinary and sought to reassure him. After a month, he returned: the cough had not gone away. "Could it be the new gay people cancer that has popped up in the US?," he asked me. I happened to just have heard about it, but as yet it had not been described in the Netherlands, not in medical journals nor in any other media. The findings were the same as at the previous visit, and again I reassured him. After another month he was back.

His clothes were a little too loose, and I noticed that he seemed to have aged. I sent him to the internist, who couldn't find anything abnormal either. He came back again and now was really worried, as was I, especially when he told me, "I am monogamous. But my partner is not. He has had American lovers, but nothing is wrong with him." His clothes were increasingly loose and flapping around him as he walked. He had sunken cheeks, deep-set eyes, and a dry aging skin. He walked stiffly and awkwardly. He had a purple spot on his forearm that closely resembled a similar spot I had seen on the woman in my practice with whom I had just celebrated her 100th birthday, which had turned out to be a Kaposi sarcoma, a relatively harmless skin tumor that only occurs in old people. I again referred him to the internist, who eventually decided on an immune disorder. The patient did not live long after that, which was a great shock. Only later did it become clear that he had suffered from a new disease that had recently emerged: AIDS (then capitalized).

6.4.3. Step 2: Patterns

From that moment on, there were up to three or four people in the waiting room every week with sunken cheeks, hollow eyes, and sometimes gray hair before their time. I immediately recognized them as "aids patients." A term that was later banned. "People with aids," they were to be called. Officially, the focus was the virus-triggered immune disorder, which caused a loss of T4 lymphocytes now referred to as CD4 cells.

6.4.4. Step 3: Gaining Insight

I myself mainly saw the rapid aging process that was taking place before my eyes. I realized that in normal aging, the number of CD4 cells also decreases. At that time, there was no therapy. The causative hiv-virus had not yet been isolated. The combination of aging and immune problems and the lack of regular medical therapy led me to an anthroposophic treatment option.

6.4.5. Step 4: Intuition and Meaning

I looked for a way to reverse the trend of aging and immune deterioration. A child after birth must gradually conquer its body and progress from using it clumsily initially to becoming a master at managing its physical organism. In old age we see a reverse process. From anthroposophic medicine I knew a treatment that is used in cancer to regain "grip" on the organism. In research, it also appears to increase the number of T4 (CD4) cells: a preparation of mistletoe or *Viscum album* (Rentea, Lyon, & Hunter, 1981; Bloksma, Van Dijk, Korst, & Willers, 1979; Bloksma, Schmiermann, De Reuver, & Van Dijk, 1982). In my practice it appeared to add years of good life for the patients with the hollow cheeks, provided it was not started too late, such that a number of them have been able to benefit from the arrival of further regular medical therapy and are still alive today.[34]

The difference with a regular approach is that a phenomenon, in this case of accelerated aging, helped me on my way to a, admittedly not definitive, therapy. Whereas mainstream treatment concentrated on control of the hiv-virus, a result obtained by causal analysis of the data. This treatment was developed only much later and unfortunately is also not definitive.

6.5. Reflection

In medical practice, the *4-step* approach as a form of research based on Goethean phenomenology may be a way for physicians to structurally develop clinical intuition. Additionally, it may also provide a complementary and more personalized insight into the individual patient's situation

34 We are writing 2021.

and needs, or into a specific diagnosis. In this sense, it is a tool which, in addition to the usual methodical and categorizing diagnostics, may aid to tune in and contribute to insight into the disease's meaning as symptom of a disturbance within a larger whole. This can be useful to a further individualization of treatment.

The *4-step* approach can be effectively practiced and implemented by a group of people together such as in multidisciplinary (team) conferences (Göschel, 2012; Seydel, 2009).
Ultimately, whether the knowledge we have found with the *4-step* approach is *relevant* (section 2.2.), must become clear in practice. Preferably these modalities complement and supplement continued medical testing (depending on the kind of findings). By the nature of these tools, this is not always possible with the insights found with the *4-step* approach since we are working within a different paradigm! In that case, clinical practice itself will suffice to illuminate how valuable our insight is.[35]

And sometimes the insight does not yield much. The picture that emerged of the rheumatoid arthritis (RA) patients stirred the hope that if they are willing to explore their anger, their immune system may respond and in turn their RA might remit. However, none of these patients were open to even discussing the question of their emotions. The doctor's question was apparently–unfortunately!–different from the patients' at the time.

It remains important, therefore, to carry on judicious observations with presence of mind and continually check whether or not we are on the right track. This starts with formulating our question, the way we apply the method (think of Goethe's mountain path), and it remains necessary as long as we treat the patient and plan therapies. Does the newly created insight broaden our treatment options? Does the approach contribute to our patient's well-being, self-insight, autonomy, and/or recovery?

These are the things we value as physicians after all (section 2.2.). With the *4-step* approach, we want to bring these questions into the broadest possible perspective. In doing so, data reality, context, insight, experience, and clinical intuition each have their own place.

35 The authors' experience is that when this approach leads to a new picture of the patient in step 4 and they immediately recognize themselves in it, then there is a good chance that a workable treatment direction has been found.

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7. Conclusion

Practicing medicine calls upon the human being as a whole,
because it concerns the whole human being

Goethe[36]

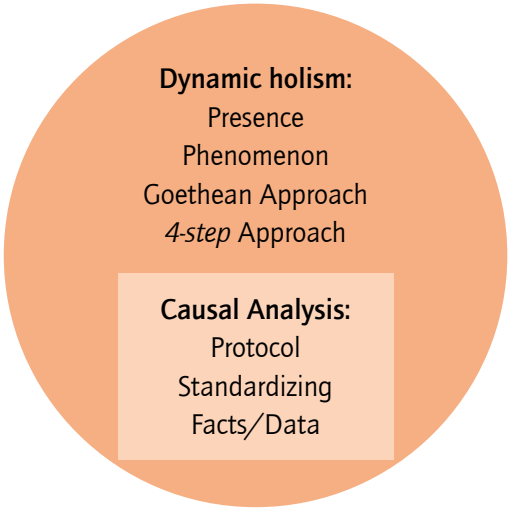
Clinical work with patients cannot be done without a certain amount of intuition, even if we would rather not admit it. In this Companion we specify *in what ways* and *in what sense* intuition can be trained. This may enhance the quality of intuition.
The added value of presence is apparent to everyone. Yet presence is hard to come by in our modern lives. That means that presence deserves keen attention. In medicine, this ties in with two trends: we give more attention to the context of the patient's life in medicine in order to customize therapy to their individual needs. Additionally, we are rehabilitating the physician's experience-based intuition.

The physician's craftsmanship requires *presence*, "presence of mind," or attentive engagement. Presence is characterized by a flexible focus, the opportunity to detect connections and to wonder at "what wants to become." Presence also contributes to the quality of medical practice, including its moral aspects, and helps refine our expertise.
Presence bestows enhanced professional experience and intuition. Experience, augmented by actively applying presence, provides insight into the individual situation, including the context of the patient's life, and thus insight into how to act wisely as a clinician. It is a complement to (and not in contradiction with) the scientific knowledge considered as objective, which provides general knowledge.

We may also use presence to become aware of the structures of our thinking. Such structures are usually taught to us at a younger age and to that extent they are self-evident and we do not normally pay attention to them. Still, presence alerts us to them. Thinking structures in science are called paradigms. Paradigms determine what is researched and how research is conducted. When we become present in our thinking we become aware of the influence of the causal-analytic paradigm in medicine. This paradigm has by its very nature too narrow a perspective to investigate

36 Nager, 1994, p. 136

context and intuition.
In contrast, the broader paradigm of *dynamic holism* provides access to learning about dynamic wholes, such as the organism and the biographical context of the patient. This paradigm includes the methods and questions of causal-analytic thinking to gather data. Within dynamic holism, the regular diagnosis is not an isolated fact, but part of a larger complex of forces. The context within which the disease occurs, alongside the mainstream diagnosis, becomes an important starting point for treatment. As a result, we find individualized treatment directions.



Figuur 7.1. Conceptual coherence of paradigms

Goethean phenomenology is a scientific approach within dynamic holism. We may employ it to understand data and phenomena before they disappear from view through data reality. In this way, the creative forces in the phenomena become visible, in addition to their actual effects. The phenomenon can be understood in its process of emergence.
Goethean phenomenology may be the source for *intuition*. Intuition is distinct from knowledge that comes about through reasoning. It is a lightning-quick recognition of what is being asked of us, born of experience, inner activity, and adherence. It has a moral quality.
The *4-step* approach of this Companion employs presence, the paradigm of dynamic holism, and the Goethean approach, to come to *skilled clinical intuition*. It does not have a fixed structure in the moment we are applying it, but in retrospect shows the following four phases:

Step	Key quality of presence	Scientific quality	Cognitive ability	Inner attitude
1	Flexible focus	Extended, attentive observation	Extended, attentive observation	Interested observer
2	Perception of coherence	Dynamic holism	Pattern recognition	Open-minded participation
3	Wonder	Goethean phenomenology	Empathy/Imitation	Empathetic
4	Idea becomes ideal; future-oriented	Skilled intuitive knowledge/unbiased discovering new insights	Intention, authentic encounter	Committed/ Participative listening

Figuur 7.2. The *4-step* approach

Our starting point was in presence of mind and not without reason. We want to emphasize that *presence* offers the reader the opportunity to better perceive the coherence and quality of their own deeds. Such observation, in combination with the willingness to help, give the results of *4-step* approach a strong sense of evidence. It is this sense of self-evidence-and not dogma- that codifies the *4-step* approach.

The physician as a "whole person" (Goethe's motto) is committed in these four steps, gaining deeper insight into the patient as a whole person.

The *4-step* approach is most effective when used in multidisciplinary settings.

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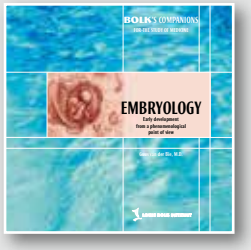

Embryology
Early Development from a Phenomenological Point of View

Guus van der Bie MD
Publicationnumber GVO 01

Can we give a scientific basis to our feeling that humans have unique human features? Are the human mind and the human organism 'nothing but' another variation of animal life? Can we find answers for the questions that satisfy both head and heart?
How these questions are answered depends on the scientific method we use: the current scientific method to learn about biological facts, the 4-step approach to understand more about the meaning of these facts , or a combination.
Early embryological development can teach us about the unique and characteristic qualities of the human being.
The result is, for example, a possibility to understand the relation between consciousness, psychology, and behavior and the shape of the body.

Biochemistry
Metabolism from a Phenomenological Point of View

Christina van Tellingen MD
Publicationnumber GVO 02

Biochemistry offers insight into the continuous changes within the human organism. But can we maintain awareness of the coherence of the (changing) organism as we study the details? How can the many processes be understood as prototypical aspects of a unique organism?
The scope of the answers to these questions can be enhanced by using a combination of the current scientific method and the 4-step approach developed specifically to research the coherence of processes within living organisms. The current scientific method is used to discover biological facts. The 4-step approach helps us in finding the meaning of the facts.
What emerges is a new grasp of the interrelations between biological processes, consciousness, psychology, and behavior.

Anatomy
Morphological Anatomy from a Phenomenological Point-of View

Guus van der Bie MD
Publicationnumber GVO 03

Can we give a scientific basis to our feeling that the human being has unique human features? Are the human mind and the human body 'nothing but' another variation of animal life? Can we find answers for these questions that satisfy both our head and our heart?
How these questions are answered depends on the scientific method we use. In this publication two methods are used: the current scientific method to learn about anatomical facts and the *4-step* approach to understand the meaning of these facts.
Human morphology can then be understood as an expression of the unique and characteristic qualities of the human being.
This results in new possibilities for understanding the relation between consciousness, psychology, behavior, and morphological aspects of the body.

Physiology
Organphysiology from a Phenomenological Point of View

Christina van Tellingen MD
Publicationnumber GVO 04

Can physiology give more insight into the living human organism than the mere facts reveal at first? Is the level of activity the same for all organs? Are the vital qualities at work in organs unique for organisms and limited to biological activity? Can we find a scientific basis to research the coherence between organ systems?
By enhancing the current scientific method with the *4-step* approach, we can find meaning in the facts and understand them as an expression of life itself. The *4-step* approach makes the relationship between organs visible and comprehensible. It approaches scientific facts from the point of view of their coherence and can give totally new insights this way.
What emerges is a grasp of the interrelations between biological processes, consciousness, and nature.

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Immunology
Self and Non-self from a Phenomenological Point of View

Guus van der Bie MD
Publicationnumber GVO 05

Why write this new booklet on immunology when there are already so many excellent texts on the subject? This Companion is about questions such as: why is it that the immune system functions as one organ? What coordinates the immunological functions?
Here, an attempt is made to develop a viewpoint to answer these questions. By using the *4-step* approach, the factual knowledge obtained through reductionism is placed in a larger perspective.
The concept that is presented in this Companion is derived from the functioning of organisms, observed in the way that was introduced by Goethe in his phenomenological method. This also includes the acquisition of insight into the holistic concept behind the immune system. Moreover, the organism as a whole can then be seen as an expression of the same concept.

Pharmacology
Selected Topics from a Phenomenological Point of View

Christina van Tellingen MD
Publicationnumber GVO 06

Pharmacology gives us insight into the way organic processes change when foreign compounds are introduced into the organism. Pharmacology is a changeable subject, depending on the needs and knowledge of the time. Can we find an inner coherence in the manifold ways compounds influence organisms? What should such a framework be based on? How can we understand the effect on human consciousness that most compounds have?
We can enhance the scope of the answers to these questions by using a combination of the current scientific method and the 4-step approach. It illuminates the known facts about the activity of compounds in organisms, and provides the means to find their significance.

The Healing Process
Organ of Repair

Guus van der Bie MD
Tom Scheffers MD
Christina van Tellingen MD
Publicationnumber GVO 07

After finalizing the series BOLK'S Companions for the Study of Medicine for the moment, this module on The Healing Process introduces a new series of BOLK'S Companions that studies the Practice of Medicine. In it, we research the healing process itself. There proved to be an enormous volume of scientific literature on the subject. It is easy to lose oneself in the countless details included in the descriptions of this process.
The *4-step* approach in systems biology makes it possible to examine physiological and pathological processes in terms of the processes themselves. This results in a characterization of the various phases of the wound healing process. Out of this, new insights into the origin of health and disease emerge that also offer possible leads for medical practice.

Respiratory System Disorders and Therapy
From a New, Dynamic Viewpoint

Christina van Tellingen MD
Guus van der Bie MD (Eds.)
Publicationnumber GVO 08

In this Companion, the experience of three of our own patients with asthma and pneumonia is used as backdrop for the study of airway disorders. Nearly all of us have had some experience with respiratory disease, given that colds, flus, sinusitis, and bronchitis are so common. Most physicians and therapists know people with asthma and pneumonia from own experience and will readily recognize the descriptions we provide.
The experience with these patients leads us through a study of airway disease which opens up to a wider view with new insights and innovative avenues of individualized treatment for respiratory disorders in general.
Our research has alerted us to the part rhythm plays in the healthy respiratory tract and in the treatment of its disease. Rhythmic processes, consequently, are the subject of the final paragraphs of this Companion.

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Other publication in the series:

Depressive Disorders
An Integral Psychiatric Approach

Marko van Gerven MD
Christina van Tellingen MD
Publicationnumber GVO 09

The treatment of depressive disorders is increasingly under scrutiny. We classified the risk factors of depressive disorders according to the scientific method applied in systems biology and phenomenology. The ordering in four biological levels that resulted from this, helps clarify the causes of the disorder. Together with the developmental history, it can lead to an individualized treatment of the patient, tailored to his or her specific situation. The treatment aims at restoring the deficient forces of self-healing.
This Companion presents a working model based on this methodological approach, as well as a variety of case histories to illustrate how applying this model can aid diagnosis and treatment in practice. Tables are added ordering well-researched regular and integral treatment methods according to the four biological levels.

Depressieve stoornissen
Een integraal psychiatrisch antwoord

Marko van Gerven MD
Christina van Tellingen MD
Bestelnummer GVO 11

"Dit boek beschrijft op heldere wijze hoe een systematische aanpak de basis kan vormen voor een meer individuele benadering in de behandeling van depressie." Prof.dr. Jan van der Greef, hoogleraar analytische biowetenschappen Universiteit Leiden en wetenschappelijk directeur systeembiologische research bij TNO.

Deze uitgave richt zich op psychiaters, psychotherapeuten, psychologen, orthopedagogen, paramedici werkzaam in de geestelijke gezondheidszorg en studenten in deze richtingen.

Dementie en ik

Marko van Gerven MD
Christina van Tellingen MD (red.)
Bestelnummer GVO 12

"*Een inspirerend boek voor de lezer die behoefte heeft aan meer dan één manier van kijken naar dementie. Prachtige verhalen die tot de kern doordringen worden afgewisseld met eerste stappen om dementie ontwikkelingsgericht te benaderen.*" Tom van der Meulen, directeur Ideon, dementie-professionals

Een bijzonder boek waarin beschreven wordt, dat ondanks beschadigingen in de hersenen zoals bij dementie, ontwikkelingsmogelijkheden blijven." Mw. S. de Ruiter, familielid dementerende

"*Dit boek draagt bij aan een integrale benadering van dementie en de dementerende mens, die niet de ogen sluit voor de verschrikkingen van de ziekte, maar desondanks nieuwe perspectieven biedt om het proces van het terugtrekken van het ik met moed en vertrouwen aan te gaan.*" Wouter Endel, huisarts

Dementia and I

Marko van Gerven MD
Christina van Tellingen MD (Eds.)
Publicationnumber GVO 14

"*This Companion contributes to an integral approach of dementia. It does not close its eyes to the horrors of the disease, but rather provides new perspectives to meet the process of withdrawing of the mind with courage and confidence.*" Wouter Endel MD, Amsterdam

"*An inspiring book for the reader who searches for more than one way of looking at dementia, with an approach to dementia from a developmental perspective. The special attention to spiritual issues at the end of life is meritorious. The book combines the practice of working with the demented individual with theoretical concepts.*" Tom van der Meulen, director Ideon, dementia professionals

"*A special book which describes that despite brain damage, development opportunities continue to exist in dementia.*" Mrs. S. de Ruiter, family member

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Endocrinology

Guus van der Bie MD, Ricardo Ghelman MD PhD, Loes van den Heuvel MD, Kore Luske MD
Majella van Maaren MD (Ed.)
Publicationnumber GVO 15

How can we conceptualize seemingly random psychological and physical symptoms of endocrine disease in a holistic way? How can we understand signs and symptoms of disease including the anatomical and physiological changes in the involved organs in relation to the bio-psycho-social functioning of the individual? The authors of Endocrinology - A methodological approach towards integrative understanding strive to elucidate the methodology of the 4-step approach, which they have long employed in their own medical practices. It is the authors' hope that sharing this approach facilitates a deeper, more integrated understanding of common endocrine disease as well as offers tools for discovering the commonalities and coherence in seemingly unrelated bio-psycho-social phenomena. The ultimate goal of this exploration is to further individualize conventional medicine.

Van beperking naar ontwikkeling
Werken met constitutiebeelden

Martin Niemeijer MD
Christina van Tellingen MD (red.)
Majella van Maaren MD (eindred.)
Bestelnummer GVO 16

Het leven van een kind met een ontwikkelingsstoornis is een bijzondere opgave voor het kind zelf, en voor de ouders en andere gezinsleden. Lag in het verleden veelal de nadruk op de stoornis zelf, nu wordt de vraag welke ontwikkelingsmogelijkheden een kind heeft steeds belangrijker. Kunnen we samenhang vinden in, en betekenis geven aan, waarnemingen aan uiterlijk en gedrag? Wat kan hiervan de meerwaarde zijn? Deze Companion gaat in op een constitutietypologie, die al decennialang in instellingen over de hele wereld wordt gebruikt. Het kan als aanvullende methode dienen om naar een kind te kijken en zorgvragen te beantwoorden. Deze wijze van het beschrijven van een kind sluit aan bij de behoefte om handvatten te vinden hoe het ontwikkelingspotentieel van het kind optimaal te realiseren.

From Special Needs to Realizing Your Full Potential
Working with Constitutional Pictures

Martin Niemeijer MD
Christina van Tellingen MD (Ed.)
Majella van Maaren MD (Exec Ed.)
Publicationnumber GVO 17

How can we look at children using "constitution typology?" The life of children with a disability presents special challenges for the child, parents, and family members. In the past, health care used to focus on their disabilities; today the developmental potential of these special children has become the focus. The "constitution typology" described in this Companion contributes to this aim and has been used in institutions around the world for decades. In this Companion we show how to look for coherence in and give meaning to the children's appearance and behavioral characteristics. The qualitative approach described in this Companion and a newly developed assessment tool will give parents, doctors, and other care providers an additional approach with which to value the child and its developmental potential in context.

Wholeness in Science
A methodology for pattern recognition and clinical intuition

Guus van der Bie MD
Publicationnumber GVO 10

How do you develop clinical intuition? How do physicians gain practical knowledge about disease?
Diseases do not merely concern a partial defect, they recreate the life of the patient. The author shows that experienced physicians conceive of diseases as integrated concepts, which they can apply to the individual situation of the patient. Clinical intuition is a form of pattern recognition that supports the ability to recognize an integrated 'whole.' This Companion presents practical exercises that allow readers to train and expand their ability of pattern recognition through Goethe's methodology. Questions and introspection aid to become aware of what you did. This makes obvious that clinical intuition, as experiential knowledge, can become a skill that is actively developed.

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Developing Clinical Intuition

A philosophy of science for medical practice

We give more attention to the context of the patient's life in medicine. Additionally, we are rehabilitating the physician's experience-based intuition. We can even refer to a new "moral age" in medicine and healthcare. Standards and treatment protocols may be at odds with the need for a more individualized approach.

Clinical work with patients cannot be done without a certain amount of intuition, even if we would rather not admit it. The approach of this Companion is to specify in what ways and in what sense intuition can be trained in medical practice and how this can contribute to individualization of treatment. We can use the *4-step* approach to seek a deeper, intuitive understanding of the coherence of medical facts and associated phenomena. The framework for a philosophy of science for such an approach is described, and how this relates to causal analysis.