

# The art of knowing: Epistemological implications for a schooling of the imagination

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**ABSTRACT.** In our contemporary Western culture, efforts to understand nature and the human being are largely undertaken through a mode of consciousness referred to as the “verbal-intellectual” mind. It is this analytical, rational mode that is given pride of place in science, in the socio-political domain, in educational methods and content. The development of this mode of consciousness signified a concurrent specialization and fragmentation between the disciplines of science, art and contemplative practice, formerly seen as intrinsically related in the path of knowledge. Modern consciousness now suffers from a “disease” rooted in a lack of understanding of the extent to which ways of knowing founded in the verbal-intellectual mode determine our self-identity, and impact significantly on our ways of relating to the human and natural worlds. Three perspectives of our contemporary epistemology are presented in order to highlight the challenges faced by a one-sided and dominant influence of analytical ways of knowing in contemporary culture. Out of this study there arises the potential for a complementary, holistic mode of consciousness to be described and developed. This holistic mode of consciousness situates the process of knowing in the cultivation of the imagination and, as exemplified in the work of J. W. Goethe, opens the door to new initiatives in the realms of science, education and human development that can be fruitful for enhancing our learning and living.

**Keywords:** Epistemology, cognitive amnesia, superconscious, imagination, modes of consciousness

**ZUSAMMENFASSUNG.** In unserer zeitgenössischen westlichen Kultur finden die Bemühungen um das Verständnis von Natur und Mensch vorwiegend mit einer Bewusstseinshaltung statt, die man als intellektuellen Verstand bezeichnet. Diese rational-analytisch geprägte Haltung wird in Wissenschaft, Gesellschaftspolitik und Erziehung hofiert. Mit der Entwicklung dieser Bewusstseinshaltung ging eine Spezialisierung und Fragmentierung zwischen den wissenschaftlichen Disziplinen sowie Kunst und kontemplativer Praxis einher, die bis dahin auf dem Weg zur Erkenntnis als aufs Engste miteinander verknüpft galten. So „krankt“ unser modernes Bewusstsein nun an einem mangelnden Verständnis für das Ausmaß, in dem mit dieser Haltung beschrittene Erkenntniswege unser Selbstbild bestimmen und die Auseinandersetzung mit den Themenkreisen Mensch und Natur maßgeblich beeinflussen. Es werden drei Sichtweisen unserer zeitgenössischen Epistemologie vorgestellt. Damit soll hervorgehoben werden, welche Herausforderungen durch einseitige und dominante Einflüsse analytischer Erkenntnisansätze in unserer zeitgenössischen Kultur aufgeworfen werden. Aus dieser Betrachtung erwächst die Möglichkeit der Beschreibung und Entwicklung einer komplementären und holistischen Bewusstseinshaltung, durch die sich der Erkenntnisprozess in der Imagination entfalten kann und die, wie am Werk J.W. Goethes veranschaulicht, neuen Initiativen auf dem Gebiet von Wissenschaft, Erziehung und menschlicher Entwicklung den Weg bereitet, die unser Lernen und Leben befruchten.

**Schlüsselwörter:** Epistemologie, Kognitive Amnesie, Überbewusstsein, Imagination, Modus des Bewusstsein

## Introduction

The field of epistemology, this paper argues, is not solely of significance in the wider field of philosophy and social science. Knowing the world, and our knowledge of the world, arises through epistemological processes that are often hidden to our everyday cognition. This paper engages, firstly, three contributions from thinkers who have reflected deeply on our contemporary ways of knowing. This investigation is followed by a historical study of a way of knowing exemplified in the hermetic “philosopher of nature” who, working before the Enlightenment, saw the path of knowledge as rooted in a dynamic interweaving of artistic, scientific and contemplative disciplines in their “Art”. The study as a whole aims at identifying and articulating capacities that can

be developed – in the sciences, arts, and education for example – which would complement the one-sidedness of much of modern thought which arises from a dominance of intellectual, abstract and analytical ways of knowing.

Epistemology, also known as “theory of knowledge”, is generally regarded as a branch of philosophy, concerned with understanding the act of knowing and the limitations inherent in the act of knowing. Through posing questions such as “how do we know what we know?”, “how is knowledge acquired?” and “what is knowledge?” the epistemological enquiry turns attention to the very activity which lies at the root of all sciences, arts and – in actual fact – at the very foundation of our everyday cognitive activity. Addressing as it does the very nature of how we know the world, and ourselves, the question arises as to whether we are in fact dealing with merely a “branch” of the discipline of philosophy or something of much more far-reaching importance.

## The context for epistemological enquiry

In my personal experience of formal education – representing a not-insignificant sixteen years of my life – epistemology only peripherally factored in importance, it’s formal engagement only featuring in my mid-twenties. Furthermore it was generally the case that all of the literacy, mathematics, history, science, language, arts – all of these were taught in such a way as to seem “free” of epistemological considerations. For much of our early educational career (i.e. throughout childhood and young adulthood) this is clearly essential – as an engagement with epistemology requires a certain maturity of cognitive development and reflective capacity. It is quite remarkable, however, that once the self-reflective learner emerges, epistemology as a subject of study is not engaged along side the sciences, studies in medicine, politics, economics etc. which become shaping influences in all of our lives. The seemingly optional stance taken to epistemological inquiry continues beyond the bounds of formal education to be currency in much of mainstream cultural life. What is the significance of this stance toward epistemological enquiry?

Consider the following statement by the author and educator Parker Palmer (1993): “Every way of knowing becomes a way of living, every epistemology becomes an ethic.”<sup>1</sup> This far-reaching statement strikes me as being poignantly relevant for several reasons. Firstly, we have on any given day access to a number of accounts of events in both the human and natural worlds which reveal threats to the integrity of social and ecological systems.<sup>2</sup> In many instances, concerted efforts are extended to ameliorate, mitigate or diffuse these potential threats. However, the question arises as to how often, in seeking the source or solution to the evident dissonances experienced in our everyday lives, an investigation of our “conventional epistemology” is undertaken. How often do we find a call to investigate and re-evaluate the very epistemological roots that inform our individual and cultural actions? These questions bring me to the second significant aspect of Palmer’s statement, one that I have already alluded to above.

In contemporary western cultural life, the disciplined engagement with philosophy and epistemology has largely become sequestered in university departments, often as specialized branches of the social sciences undertaken by professional academics. This is to say that only very rarely do we explicitly find mention of the “cutting edge” discoveries in the realms of epistemology, or politicians making reference to important philosophical points of view that are being considered in the shaping of policy – of peoples lives.<sup>3</sup> Furthermore, when weight of opinion is given to, for instance, science or medical opinion these disciplines are themselves rooted in epistemological frameworks that are very rarely made explicit and are often unexamined. This has radical implications, and raises the third key element in Palmer’s statement, that ways of knowing are *fundamentally* ethical – even when they claim to be “objective” in the sense that this is sometimes meant, i.e. of being free of moral or ethical considerations. The implication that lies at the heart of Palmer’s statement is that, far from epistemology being an activity that is best left to academic specialities or even, and this perhaps is more challenging, far from being optional, epistemology is everybody’s business and this because it is *essentially* ethical.<sup>4</sup>

If there is truth in Palmer’s statement, epistemology and the epistemological foundation for our way of living – both public and private – requires a much deeper engagement and examination than it is commonly given. In what follows I will describe three perspectives from contemporary thinkers which, in my view, contribute to a penetrating study of epistemology and how ways of knowing arise along with the development of consciousness. The study of the three perspectives articulated below will in turn reveal implications for the development of consciousness and “ways of knowing” in the fields of art, science and the contemplative life. I will conclude with a further look at education as it is in the realm of education that many challenges are arising due to a one-sided engagement and emphasis on a contemporary “epistemology of separation” and, along with these challenges, opportunities for redefining the way we learn, the way we know, the way we live.

1. Quoted by Zajonc (2006, p. 3).

2. It is not the intention to go into these in detail in the body of this paper, we need only consider the many themes that “headline” in our current culture of reporting – pollution, political turmoil, climate change, peak oil and its implications, genetic modification of living beings, hunger etc.

3. It is the authority of science that is called upon in contemporary political discourse or decision making, no longer the authority of the church and certainly not the authority born of self or collective epistemological reflection.

4. The distinction that is being made here is a direct reference to Palmer, i.e. one that contrasts a separation of ethics as an autonomous, specialist discipline or consideration that is optionally brought to bear on our knowing activity with the realization that the activity of knowing, and that which emerges from that activity as action or insight, is essentially ethical in its implications.

## Ways of knowing: three perspectives

### *The demotion of direct experience: Ronald Brady*

Through a personal journey that engaged the natural sciences and encountered problems in the way scientific knowledge is defined, philosopher Ronald Brady arrived at a realization of the need for a thorough investigation of the basis to our cognitive life. In the book *Being on Earth*, written together with Georg Maier and Stephen Edelglass (2006), he traces the historically significant developments in the western mind that have given rise to a “one-eyed colour blind onlooker”<sup>5</sup> approach to science, and the concurrent positivist and empiricist mindset. It was this mindset that Brady met in several professors when he sought to engage in an experiential (sense-based) and qualitative study of natural phenomena. Brady encountered what still lives in much popular reporting and teaching of science, as well as through education generally, in much of our western culture. This is an inherent distrust of our un-mediated sense life as a door to knowledge about “the world”. Brady writes in the chapter titled “Direct Experience”:

One of the difficulties with scientific accounts of the world is their apparent insistence on an “objective” reality that cannot be directly experienced, with the resulting demotion of experience – what our senses make out of the world – to a mere show that differs substantially from “what is really there”. This is something we all know and do not think about very much. (2006, p. 12)

Brady traces a particularly poignant contribution to this development of consciousness and its view of the role of the senses in cognitive life in the work of Galileo.<sup>6</sup> Galileo’s significant act of distinguishing primary and secondary qualities in observed phenomena are often referred to as an essential contribution to the development of modern science, of the modern scientific method. Brady refers to this moment as that of the *demotion* of direct experience, a demotion resulting in the fact that from the time of Galileo the human being “begins to appear for the first time in the history of thought as an irrelevant spectator and insignificant effect of the great mathematical system which is the substance of reality” (Burt, 2003, p. 90). It is this relegation of the subject and his or her unmediated sense experience to a secondary (and either insignificant or potentially inappropriate) role in the acquisition of knowledge and truth that Brady wrestles with in *Being on Earth*.

To a large extent the experience of being a subject separate from a world of objects – many of which seem to not present their essential being to our senses – seems self-evident. It is, as it were, the nature of reality we emerge or mature into as a *given*. This naïve realistic stance to the perceived world lies at the basis of much of modern cultural experience. It is the experience that I have of being a distinct subject who perceives a world of objects separate from myself and external to each other. Furthermore this world seems self-evidently to exist – to be *there* – without my contributing to its manifestation in any way. On the contrary I experience it as manifest and myself as a (on the whole) passive receiver of impressions arising from my encounter with it. There is, however, more to this experience than meets the eye.

### *Cognitive amnesia: Henri Bortoft*

The problems – of knowledge, of philosophy, of science, of living – that derive from the subject/object divide, upon which both our everyday cognition as well as our disciplined scientific research are founded, have been articulated at length by a wide range of authors. It has occupied the human mind from the time when the medieval view of Man as Microcosm of the great Macrocosm began to wane. The earlier unified worldview essentially gave way to the later – and still dominant – dualistic worldview. Though it does a disservice to this vast chapter of human thought and expertise to not go deeper into the various voices who have engaged the significant issues raised regarding the nature of knowing, of consciousness, and of conscience, there is not the space in this paper to do so. Suffice it to say that since the time of Galileo<sup>7</sup> we have struggled with the problem of whether it is either our *thinking* or our *sense activity* that can be relied upon to give us “true” knowledge of our own unique self, and the universe in which we find ourselves.

5. See Lehrs (1985) for a further elaboration of this term. It refers to the resulting mind-set that the scientist adopts if rigidly following the tenets of a science based on the removal of the subject (the subjective) in the attempt to obtain objective, universally applicable knowledge of the world.

6. Galileo’s thinking, and its subsequent influence on modern science is complex. E. A. Burt gives a thorough description of Galileo’s view that “nature is the domain of mathematics” (Burt, 2003) – an essentially epistemological statement. Galileo, in this light, is one of several influential thinkers whose science derives from a philosophical stance we could call mathematism.

7. I think it important to reference Galileo in this manner as rather than to say “since Galileo” I have chosen “since the time of Galileo” to indicate the possibility that Galileo was *one* exponent of a shift in consciousness that was, on all levels – physiologically, psychologically and spiritually – giving the human subject a greater awareness of themselves as separate cognizing beings, centred within their own individual point of view. This idea references the research of Rudolf Steiner and the substantial evidence for the evolution of consciousness articulated in his own work as well as in the work of Ernst Lehrs, Owen Barfield, and others. The choice of wording is such as to indicate that the shift in consciousness is a supra-personal event, Galileo, however, is one of the earliest and clearest proponents of modes of thinking arising from this new experience of self and world – with profound implications. Burt writes: “The form of the primary-secondary doctrine in Galileo is worth a moment’s pause, for its effects in modern thought have been of incalculable importance. It is a fundamental step toward that banishing of man from the great world of nature and his treatment as an effect of what happens in the latter...” (2003, p. 89).

Coupled with this deep-seated problem is that of subjective versus objective knowledge, articulated by Brady so clearly in his work (Maier, Brady, & Edelglass, 2006). In the twentieth century, work undertaken in the history and philosophy of science contributed new light to these thorny issues. Henry Bortoft is one author who has made significant contributions to the problems of knowledge. Setting out to look, from a philosophical point of view, at the way in which J. W. Goethe approached his studies in natural science, Bortoft has shed light on significant aspects of our cognitive life.

Using an ambiguous figure of what appears to be a “random patchwork of black and white areas” in a circular frame, Bortoft (1996, p. 50) presents a very striking experience of the relationship between our *sensory* activity and our *thinking* activity. After a time, and with some intentional activity directed toward the image, a figure emerges from the previously chaotic ground of black and white patches. A giraffe’s head is “seen”.<sup>8</sup> There is much to be gleaned from this experience, as in time the initial effort expended to attempt to see some organization within the seeming chaos of black and white shapes, which gives rise to “seeing the giraffe” – eventually reverses so that a considerable attentional effort is required to *not-see* the giraffe. This becomes a bridge to the realization that whereas much – in fact the majority – of our everyday cognitive life is rooted in the experience that we encounter the world and its objects as if they were just “there”, in actual fact what we are no longer aware of is the organizing activity through which these objects become apparent. The difficulty is that we are no longer aware of that side of the cognitive act which contributes to the “seeing”, as this is no longer reliant on an activity of will. Bortoft refers to this conundrum as “cognitive amnesia” (1996, p. 139) – amnesia because in our cognitive perception as we naively experience it, we no longer are conscious of the fact that we only see or experience anything due to the *organizing idea* that imbues with meaning the otherwise chaotic life of pure sense perception. I quote Bortoft at length in what follows due to the succinctness of his explanation, and the significance that this has for cognitive activity:

All scientific knowledge, then, is a correlation of *what* is seen with the *way* it is seen. When the “way of seeing” is invisible [...] then we live on the empirical level where it seems to be self-evident that discoveries are made directly through the senses. In this “natural attitude” we have no sense of our own participation, and hence we seem to ourselves to be onlookers to a world which is fixed and finished. Forgetfulness of the way of seeing is the origin of empiricism, which is still by far the most popular philosophy of science, in spite of all the discoveries in the history and philosophy of science which show that it is a philosophy of cognitive amnesia. (1996, pp. 138-9)

The realization of the nature of cognition revealed in the above, and developed much further by Bortoft in his book, has massive implications for consciousness – be it scientifically engaged or otherwise. Bortoft’s articulation of the role of the *organizing idea* in cognitive perception – only briefly touched upon above – allows him to come to the striking realization that “we live within a dimension of mind which is as invisible to us as the air we breathe” (1996, p. 141).<sup>9</sup> This realization could profoundly influence the way in which we do science, to the way we teach science (to the way we educate in the broadest sense) and indeed the way in which we engage in everyday life. It allows us to posit the idea that in order to address the issues we encounter in the realms of nature and society that are inimical to health and wellbeing, we would be wise to undertake a concerted investigation into the aforementioned “dimension of mind”. As with Palmer’s statement above it suggests that working to make our epistemology explicit is a crucial step in becoming ethically responsible for our stance in the world.

### *A collective disease: Georg Kühlewind*

Where Brady highlights the origins of the “split”<sup>10</sup> and Henri Bortoft follows at great length and with true virtuosity the epistemological intricacies of the contemporary mind, Georg Kühlewind is, I feel, an essential thinker to mention in the present context due to the way in which he has examined and described the process by which this state of affairs has developed.<sup>11</sup> He does so through a study of both the biographical and historical development of consciousness, as revealed through such diverse phenomena as the development of language and speech, the phenomenology of the processes of thinking and perceiving, and the nature of art. Kühlewind’s conclusion, reminiscent of Bortoft’s *cognitive amnesia*, is that modern consciousness is diseased. This quite striking pronouncement appears and is elaborated at some length in his book *From Normal to Healthy* (1983). Kühlewind describes the diseased consciousness as being a collective disease – and as such it generally goes un-recognized. Having a certain

8. See Bortoft (1996, p. 50).

9. The role of what Bortoft refers to as the organizing idea in cognitive perception has also been revealed through the work of Von Senden, Oliver Sacks and others. These studies, which focussed on the experience of individuals who were blinded from birth but whose sight was eventually restored through medical science are relevant to mention. Annie Dillard makes reference to Von Senden’s research *Space and Sight* when she writes that for the newly sighted vision is “pure sensation unencumbered by meaning” (Dillard, 1974).

10. The term “split” is used here to refer to the separation of perception into primary and secondary qualities, the separation of thinking and perceiving and the development of the subject/object consciousness. “The world is [...] a non-dual world that we split – or is split by our “ego” or “me” consciousness – into subject-object, self-other, friend-enemy, humanity-nature and so on” (Kühlewind, 2008, p.11).

11. Kühlewind’s statement that “People live in the same way they cognize [...] consciously or unconsciously, they always shape their world according to how they know it. Cognition creates reality in this way and, as far as it is creative cognition, it makes morality possible” (1988, p.152) resounds strongly with both Palmer and Bortoft.

resonance with Bortoft's articulation of everyday cognition, i.e. a cognition that no longer experiences the role of thinking in the objects we perceive and therefore mistakes the perceived object as a *given*, Kühlewind attributes the causes of the disease to mistaken experience or mis-identification. His argument is rooted in both historical (cultural) and individual (developmental) observations that differentiate between two levels of consciousness. The superconscious, Kühlewind proposes, is the realm from which all other elements of consciousness arise. The superconscious is the realm of the living activity of the "I" of the human. As the living, dynamic source and seat of consciousness the superconscious is not generally witnessed or included in our account of our experience because of its primacy and the fact that it is the very wellspring of consciousness itself. In trying to illuminate the illusive and difficult task of bringing this aspect of consciousness to experience one encounters such sayings as "you're looking for the ox you're riding on" (Kühlewind, 1988, p. 53). In Zen Buddhism *koans* were used to engage the mind in such a way that that which is not normally experienced was revealed through a type of *metanoia* brought about by the intense contemplation of an illogical story or question. Kühlewind offers something of a *koan* for our modern mind with the phrase "the past *is*, the present *becomes*" (1988), a phrase which seeks to point consciousness toward its source as well as highlighting the challenge of experiencing the superconscious *becoming* of our everyday awareness. The question arises from the above; how then can we say that the superconscious exists if it cannot be experienced directly?

Let us look at how the superconscious may *indirectly* be revealed. Kühlewind (1988, p. 25) points toward such a possibility with the question: "how can a being who neither speaks nor thinks learn words, language and thinking?" This is for linguistic quite a conundrum to this day. The first words that a child speaks must be learned without words or explanations!

Children understand their first words directly, without words, intuitively. Or, to put it another way, they understand through such a deep internal imitation of the speaker that they "imitate" not only the words but the meaning of the intended speech. They identify themselves with the source of speaking, which is the "I" of the speaker. They have no other way of understanding anything: no explanations are possible. (Kühlewind, 1988, p. 25)

Through the above exploration, much abbreviated it must be said, Kühlewind goes on to conclude that:

By observing the child's acquisition of speech and thought, we can see that this process requires the faculties of thinking, feeling and willing in order for the child to develop into a speaking adult. Yet these faculties function quite differently in the child and adult. We might say that they are not yet separated from one another for the child, but form a single faculty [...] it might be called a superconscious ability. (1988, p.28)

From this example of early speech acquisition Kühlewind goes on to follow the development of consciousness whereby these initially superconscious faculties and capacities give rise to formations and habits of thinking, feeling and willing which are no longer form-free but very much individualized and often quite fixed or formed (Bortoft's ambiguous image of the giraffe was designed to illustrate this process). This realm of soul is designated by Kühlewind as the *subconscious*. Everyday consciousness, for the adult at least, is positioned between the two realms of consciousness and – as in the example of cognitive perception given above – everyday experience is generally oriented toward the finished forms of thought and feeling and does not experience that activity by which these contents of experience arise. It is the superconscious from which the everyday contents of consciousness are surveyed and witnessed but as consciousness is conscious of these contents and not of its present awareness, the former has the characteristic of being much more "real". Kühlewind's far-reaching study can be encapsulated in the sentence "Our consciousness is a past consciousness, conscious of its own past" (Kühlewind, 1988, p. 15).

### Summary

Having initiated the above discussion through an enquiry into the potential far-reaching implications of epistemological reflection, and having offered three contributions toward an understanding of contemporary ways of knowing, we find the following situation. In the realm of science (as for our everyday cognition), the "objects" of our awareness are experienced as "given", the process of consciousness that "objectifies" them in the first place is not experienced (Bortoft's *cognitive amnesia*), the self or subject lacks true self-experience due to the "disease of consciousness" (Kühlewind) and comes to doubt its own existence,<sup>12</sup> the superconscious capacities out of which self and object arise are no longer experienced and "reality" becomes ever more displaced into an abstract, quality-less realm accessible only to the dis-embodied mind (Brady). This state of affairs is further complicated by the fact that questions of ethics with regards to our knowing activity, and the manifestations of our knowing in our actions, has also been subject to the great separation – left to the discretion of the individual thinker or relegated to a specialist realm of philosophical enquiry. The implications are striking, for the way we experience the world, the way we do science, the way we educate, in short – the way we live – is informed by this epistemology of separation. Kühlewind sums up the above in the statement that;

12. We refer to the Human *being*, and in earlier times Nature itself was perceived to be populated by *beings*, whose works were the phenomena of nature perceived by our senses. As a result of the quantitative way of seeing (Bortoft) nature is no longer understood to be peopled by beings but is the manifestation of forces and physical processes lying beneath their manifestation to our senses. The Human *being* has also largely disappeared from view and is at best an epiphenomenon of genetics and complex biological processes.

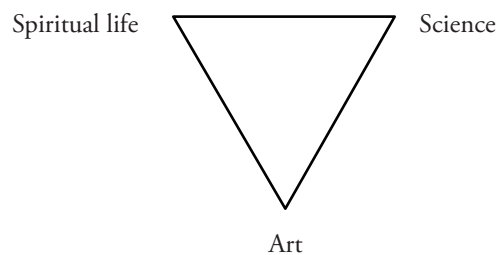
Science has been established on a level of consciousness where it cannot be adequate to the reality of Nature and the human Being. (1993, p. 5).

In view of the path outlined above we could expand on Kühlewind's statement and ask whether, in more general terms, our way of learning, knowing and living is adequate to the reality of Nature and the Human Being? In order to ground this question, and the themes I am pursuing further, I would like to place them in the context of my own experience of education, of seeking to know Nature and of encounters in the social realm. It is through my own experience, and encounters with the issues arising from a dominant epistemology of separation, that the perspectives presented in this paper have revealed their significance.

## Pathways

I am of the opinion, as may be evident in all that I have sketched above, that epistemology is not an option. I arrived through my own life experience to feel the truth in the statement that science, encountered in its popular sense, was inadequate to reveal the reality of Nature and the Human Being. The outworking of the kind of thinking that underlies contemporary science evidently resulted all too often in fragmentation and the degradation of life. I experienced this first hand in many years of travel through Asia, Australia, North America and Europe. The experiences and the dilemmas encountered during these journeys provided the impetus for my own studies and reflections, and the epistemological insights summarized above have played an invaluable role in my being able to identify possible pathways towards more "adequate" ways of knowing.

By the age of eighteen I had developed something of a distrust of *thinking*, which I experienced as the "pale cast of thought"<sup>13</sup> and this type of thinking, as I encountered it, seemed somehow at the root of the very many social and environmental ills that came ever more to the surface of my awareness. As a result, there followed a period in my life where I dove deeply into an experiential exploration of the world, a time rooted largely in the life of the senses, in which I traveled and lived in a number of countries very different from my place of origin. This time was one devoted to the immediacy offered by the rich diversity of sense experience encountered in new cultures and environments. After some years there arose, however, a new tension from this time of travel and, coming across the following passage in my mid-twenties, I can say that the tension was rooted in the very state described therein: "a thoughtless traveler and a scholar living in abstract conceptual systems are equally unable to have rich experience" (Steiner, 1995, p. 101). What I needed, quite personally, was a way to orient myself in relation to my own experiences – still largely fragmented and disjointed – and to a culture deeply rooted in an epistemology of separation. The questions that grew to be very strong in my mind were very much in line with Kühlewind's line of enquiry: what way of knowing is adequate to understand the reality of the Human being and Nature? Has such a way of knowing existed, and been lost or is it the case that such a way of knowing has yet to emerge? How can such a way of knowing, if it can be identified, be cultivated? What would the implications of such a way of knowing be for the various realms in which human consciousness is engaged? The pursuit of these questions led me to a significant encounter, an encounter with a way of knowing articulated in the form of an image.



## Ways of knowing: science, art and the spiritual

Reproduced in Appendix I is an image from the work of Heinrich Khunrath, a physician, hermetic philosopher and alchemist from the 16<sup>th</sup> century. The image encapsulates within the circular frame those elements deemed necessary by Khunrath and alchemists of the time for progress on the path of knowledge. These are depicted in the three primary sections of the emblem (see Appendix I for the caption for this emblem that appears in Alexander Roob's book on *Alchemy and Mysticism*). In brief we find in this emblem a depiction of the tri-unity of *spiritual practice*, the *study of natural phenomena*, and *art*. To see this visually, in a condensed form, we see in the emblem the following:

13. Reference to Shakespeare's *Hamlet* Act 3, sc 1: "And thus the native hue of resolution/Is sicklied o'er with the pale cast of thought,/And enterprises of great pith and moment/With this regard their currents turn awry,/And lose the name of action."

I propose that the emblem can be understood as follows, bearing in mind that images such as this are complex and reveal multiple layers of meaning through repeated study.

It was understood by the natural philosopher of the time that our insights come via “grace”. We can work, strive, question and pursue knowledge of the world though we must at all times be aware that our knowledge arises by grace. Thus a conscious, contemplative attitude is essential, and is in fact the first step in the alchemical process of enquiry.<sup>14</sup> We find this emphasis in contemporary language in Kühlewind’s articulation of the superconscious and its role in the formation of both everyday consciousness and scientific consciousness (both of which function on the same “plane”, though differ in intensity). Insight, from this perspective, arises from the superconscious as grace – a received gift. Working in the laboratory, between the pillars of experience and reason, we investigate the mysteries of nature. Referred to as a whole as the Art, the hermetic methodology included the instruments of expression (depicted as musical instruments in *amphitheatrum*), expression both of insights derived from the Work and of the divine harmonies informing Nature’s creative unfolding – the Harmony of the Spheres. This then is an epistemological process comprised of three mutually interpenetrating activities each with their own “laws”, methods and materials.

In Khunrath’s emblem I suggest that a way of knowing is articulated which embodies an integrity that was subsequently fragmented and lost due to changes in human consciousness (see note 7). This change represents a massive chapter in the history of ideas and has been referred to in several passages above. The approach to science articulated by Brady in *Being on Earth* has, in this light, grown out of the fragmentation of the relationships depicted by Khunrath. The disciplines of the artist and the scientist are still largely viewed as being separate and incongruent in method and intent.<sup>15</sup> To draw Khunrath’s image as a depiction of the relation of these disciplines in the modern sense, we would need to isolate the three elements into quite separate compartments. Fragmented and compartmentalized, science, the spiritual life (including religion) and the arts have been relegated to different quarters, and it has been science that has claimed the authoritative voice in questions of truth and certainty. This science, severed as it has been from the earlier recognition of the necessity of engaging the superconscious through contemplative practice and prayer, has become inimical to these realms.

When I first encountered this image and the methodology it articulated, I felt that here was an epistemology and a method that held within it certain key points of reference. It asked of the individual student of Nature and of the Human being three very important questions; 1) what is your study/research? 2) what is your art? 3) do you cultivate a conscious connection to the spiritual (or superconscious) source of both of these? Through *study*, by which I mean science in its commonly understood sense as well as in the sense of the study of the insights of other researchers, we can develop our thinking and cognitive capacities. I would also emphasize the crucial activity of epistemological self-reflection in this realm, as any act of consciousness is subject to the dynamics that have been explored above through the work of Brady, Bortfot, and Kühlewind. Through the *arts*, we bring to expression both something of our own personal experience and strive to lift this to speak *of/to* that which is universally human. Through the *spiritual life*, I understand this to mean both a contemplative method with regards to our subject matter as well as a conscious attitude of mind and heart that is cultivated when we apply ourselves in either of the aforementioned ways. As Arthur Zajonc has described so clearly in his article *Love and Knowledge* (2006), a contemplative methodology in the sense meant above includes and seeks to cultivate an ethical stance to both ones science and ones art. It is the contemplative method and practice which places our work on an ethical ground and ensures that it doesn’t get caught in the traps of either an objective, impersonal and “value-free” science which becomes antithetical to life,<sup>16</sup> or an artistic practice which merely embellishes the subjective, personal and egoistic life of the individual.

In Heinrich Khunrath’s articulation of the hermetic path of knowledge there lay, it struck me, an indication for a way of knowing which may be adequate to understanding Nature and the Human Being. This way of knowing would engage and honor the disciplines of science, art and contemplative practice in their own right – in isolation as it were – while also recognizing the value, importance even, of finding a synthesis of insight arising from that prior engagement. From the perspective of the 16<sup>th</sup> century alchemist this way of knowing mirrored processes in the laboratory, in living organisms, in the natural world as a whole. They would probably have used the terms *solve et coagula* where we would now use the words analysis and synthesis.

I am not suggesting, however, by introducing Khunrath’s emblem to the question of what may be an epistemology adequate to the reality of the Human being and Nature, that some kind of re-invigoration of medieval thought is in order. Nor, however, do I suggest that the alchemical worldview is merely of historical interest. Rather, I have found that the theory of knowledge being made explicit in the *amphitheatrum* emblem offers a rich reference and provides valuable insight for someone seeking, in a very different period of history, for methods of overcoming the fragmentation so prevalent in much of modern thought and life. It is

14. The alchemical mantra *ora, lege, lege, lege, relege et labora* is often quoted, notably with *ora* preceding either of the other two endeavours.

15. Goethe is a clear example of a scientist/artist who made significant contribution to both fields of human endeavor but who is largely given credit and respected for either his artistic works or his scientific method, but rarely both.

16. “Surely, science has brought enormous advances, but we cannot turn away from the central fact that the modern emphasis on objectification predisposes us to an instrumental and manipulative way of being in the world.” (Zajonc, 2008, p. 3)

essential to note that from the hermetic point of view the *methods* for realizing the complementary processes of *solve* (analysis – separation) and *coagula* (synthesis) were not the same. Overlooking the importance of this fact in relation to the ways in which we gain knowledge of the world is a significant aspect of the “collective disease” of consciousness diagnosed by K uhlewind and Bortoft.

For Khunrath and his contemporaries the path of knowledge was referred to, as a whole, as the Art. This term encompassed the study of natural phenomena – what we might now refer to as “science” – as well as the place of contemplative practice in the pursuit of knowledge. Significantly, the Art also referred to the development, practice and refinement of not only techniques in the laboratory, but in the inner life of the individual who was on the path of knowledge. The Art was the art of human development inseparable from the acquisition of knowledge and experience. I will also return to this theme in what follows.

## Implications

### *Modes of consciousness and implications for education*

It is widely recognized that the separation or distinction between science, art and religion (the spiritual life) is a recent event in the history of culture and consciousness. This separation arose along with the development of rational thinking. Rational, discursive thinking then became the dominant capacity applied to questions of knowledge and claimed for itself a greater authority in being able to arrive at the truth regarding self and world than either the activity of the artist or the practice of spiritual contemplation. It is not at all insignificant that this rise of rationalism brought about a concurrent demise of the hermetic Art, although individuals at the time of transition were often engaged with both ways of knowing (Newton for instance<sup>17</sup>). That the rational, analytical way of knowing has become more and more prevalent as a shaper of both individual and society is not a result of an intrinsic superiority to other ways of knowing, but is due more to the pride of place it is given in our social institutions and activities (Bortoft, 1996, p. 31). It is also, as described by Georg K uhlewind, a product of developments in consciousness that have occurred over time, shaping both individual and collective ways of knowing. Bortoft writes that:

There is now a growing body of evidence to support the view that there are two major modes of human consciousness which are complementary. In our technical-scientific culture we have specialized in the development of only one of these modes, *to which our educational system is geared almost exclusively*. This is the analytical mode of consciousness, which develops in conjunction with our experience of perceiving and manipulating solid bodies. (1996, p. 61)

Bortoft also gives this mode of consciousness the name “the verbal-intellectual mode”, characterised as it is with the development of the intellect and a concurrent focus on reading, writing and the spoken word.

There is, however, a growing concern amongst some scientists, teachers, parents and policy makers about the above-mentioned pride of place given to the analytical mode of consciousness in a wide range of social endeavours. Speaking from an acute awareness of the current issues faced by business, leadership and social innovators globally, Sir Ken Robinson, author of *All Our Futures: Creativity, Culture and Education* (The Robinson Report, 1999) perceives a root of this crisis in the realm of education. He perceives the crisis as arising from a one-sided attention on the cultivation of the intellect; of analytical modes of thinking and from the influence these have not only on the content, but also on the very methods of educationalists and the institutions in which they work. In his hugely popular and widely viewed TED talks, Robinson makes the following statement regarding education:

We have what is essentially an industrial model of education, a manufacturing model, which is based on linearity, and conformity, and batching people... This falls in with a general tendency to focus on critical thinking and outcomes-based learning and to impose standardized testing at an increasingly young age. The computational theory of mind finds no room for the intelligences of the imagination, community, and spirituality. (Robinson, 2006)

Now, I am not proposing an outright critique of the verbal-intellectual mind and method – either in science, education or in other arenas of social activity. This way of knowing and the methods that derive from its development have inarguably contributed to aspects of our knowledge and understanding. What I wish to emphasize is that a critical review of this mode of consciousness – as critiqued by Robinson in the context of education, by Bortoft in the context of science and by K uhlewind in the context of general psychological health and well being – is presented in order to highlight the imbalances that arise if this mode of consciousness does not also find its complement. That such a complementary mode exists in the domain of science, for instance, is explored in some detail in *The Wholeness of Nature*. In this very accessible study, Bortoft presents clear descriptions and arguments for a deeper understanding and engagement with the method of “exact sensorial imagination” that informed so much of J. W. Goethe’s research. In the realm of education, as a consequence of the issues such as those articulated by Robinson in his

17. “It used to be an embarrassment that this person (Newton), who above all others set the seal on the future development of science in the West, in fact spent more of his time on occult researches and alchemy than he ever did on experimental and mathematical physics.” (Bortoft, 1996, p. 30)



talks and publications, new educational initiatives and research groups are taking on the challenge to rethink overall approaches to teaching and learning. For several of these, it is also the *imagination* that is gaining focus and attention.

### *Ways of knowing: towards imagination*

An example of such an initiative is the Imaginative Education Research Group, based in British Columbia, which has held several annual conferences with an international group of contributors and a focus on the role of the imagination in education. Groups such as the Imaginative Education Research Group (IERG)<sup>18</sup> take references to *imagination as a form of intelligence* (Robinson, 2006) very seriously. For the contributors to this research group, “engaging students’ imaginations in learning, and teachers’ imaginations in teaching, seems to us crucial to making knowledge in the curriculum vivid and meaningful to students” (IERG, 2009). Numerous papers given at IERG conferences on the theme of imagination and education are available on their website. The significance of initiatives such as the IERG and the work of Sir Ken Robinson for this present discussion is that by focusing their attention on the role of the *imagination* in education, a direct engagement with a mode of consciousness complementary to the verbal-intellectual mode is cultivated. It is a mode that can allow meaningful synthesis to emerge out of the products of the analytical mind. This new synthesis or perception of meaning is different from that which the verbal-intellectual is able to produce because it arises from a fundamentally different mode of consciousness. It is, as Goethe demonstrated in his work, suited to gaining insight into the realms of *life* and *dynamic relatedness* where the intellect has excelled in revealing the laws of the inorganic. Due to these potentials of this complementary mode of consciousness, Bortoft refers to it as the “holistic mode” and he describes it as follows:

This mode is nonlinear, simultaneous, intuitive instead of verbal-intellectual, and concerned more with relationships than with the discrete elements that are related. It is important to realize that this mode of consciousness is a way of seeing, and as such it can only be experienced in its own terms. In particular, it cannot be understood by the verbal-intellectual mind because this functions in the analytical mode of consciousness, for which it is not possible to appreciate adequately what it means to say that a relationship can be experienced as something real in itself. In the analytical mode of consciousness it is the elements which are related that stand out in experience, compared with which the relationship is but a shadowy abstraction. The experience of relationship as such is only possible through a transformation from a piecemeal way of thought to a simultaneous perception of the whole. Such a transformation amounts to a restructuring of consciousness itself. (1996, p. 63)

Whereas, as previously stated, the separation or distinction between science, art and religion (the spiritual life) arose along with the development of rational thinking, in the cultivation and education of the imagination there presents the potential for a way of knowing whose core mode is synthesis and not analysis. Whereas the verbal-intellectual mind is suited to perceiving and manipulating solid bodies, the holistic mind, through the cultivation of the imagination, can begin to engage the dynamic, meaningful relationships inherent in the realms of life.

## **The art of knowing**

I have given the title “the Art of Knowing” to this paper precisely for the reason of wishing to support the view that knowledge or knowing cannot, without serious implications, be a purely intellectual or analytical activity. When the medieval alchemist referred to their science/art/contemplative work under the one term The Art, they were alluding to this fact. The imagination was central to the hermetic way of knowing, and the tendency to depict both method and findings in often complex and ambiguous images attests to the imaginative nature of the way of knowing cultivated in their work. In time, through the development of rational, analytical thinking and the separation of science, art and the spiritual life the term “Art” no longer applied to a way of knowing which encompassed all three disciplines. Imagination gradually became associated with “fantastical” or “made-up” and personal interpretations of the external world, or was seen as being a product of the strictly subjective consciousness. Because of these connotations, the imagination was not seen as being suited to obtaining true and factual knowledge. That this strict evaluation of the imagination is changing is attested to by recent dialogues opening up between disciplines seen as distinct from the early years of the Scientific Revolution.<sup>19</sup>

Once attention turns to investigate the potential for the imagination as a way of knowing, it can be seen to offer a complement to many of the challenges facing consciousness outlined in the first section of this article. Imaginative cognition can bring into meaningful relation the insights gained from the disciplines of science, art and the contemplative life. This synthetic potential is exemplified by the Romantic poets

18. See <http://www.iERG.net/about> [accessed 2011-03-24].

19. A conference held in Herefordshire in the UK in 2010 titled *Ways of Knowing: Art and Sciences Shared Imagination. Perspectives from the Sciences, Humanities and Creative Arts* attests to this emerging dialogue in the halls of higher education and research.

– Goethe, Novalis, and Coleridge are but a few examples – who saw a “spontaneous, sober observation of the world” (Allison, 2003, p. 14) as essential to their work. These poets were often very deeply engaged in the study of natural phenomena – Novalis in mineralogy, Goethe in botany and color phenomena. This deep investment in the sense life and in phenomena as revealed to the un-mediated senses is a very opposite gesture to the demotion of direct experience articulated by Brady in his encounter with the science of his time. The development of imaginative cognition requires a heightening of perceptive capacity, “plunging into perception” (Bortoft, 1996, p. 64).

Along with the heightening of perception through an investment of attention in our sense life, the development of imagination in the sense proposed above also re-orient awareness toward the superconscious pole of consciousness (Kühlewind, 1988). This for Kühlewind is the basis for the pathway from *normal* consciousness (which he also classes as subject to the collective disease of consciousness – cognitive amnesia) to a *healthy* consciousness. It places the awareness back in touch with the living, dynamic source and seat of consciousness and loosens the rigidity of the subject-object separation, which arises due to the gradual orientation to and identification of consciousness with the products of its activity.

For educators, engaging the intelligence of the imagination with equal consideration to the cultivation of verbal-intellectual intelligence ensures that teachers and learners become skilled in both analytical and holistic ways of knowing. Knowing, in this sense, becomes an Art that honors both the rigor and accuracy demanded by science in the modern sense of this term, while preserving the integrity of individual aesthetic expression championed by the arts. A way of knowing that embraces both the analytical prowess of the intellectual mind with a concurrent cultivation of the dynamic vitality of the imaginative intelligence ensures that our way of knowing stays in touch with the realms of life, and in so doing informs a way of living adequate to Nature and the Human Being.

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## Appendix I: Colored plate from Heinrich Khunrath's *Amphitheatrum sapientiae aeternae*



*“We can awake [...] through constant prayer in the oratorium (left), and through unstinting work in the laboratorium (right), which rests on the two pillars of experience and reason. The oven in the foreground admonishes us to patience, and the gifts on the table remind us that sacred music and harmony are supposed to accompany and define the Work.”* (Roob, 2001, p. 331)