Learning In Our Contemporary World, a Natural Scientist's Reflections

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Abstract
In this essay I cast a look upon learning in the contemporary world. Based on my own experience as a natural scientist I reflect upon my own practice, learning and professional development. Alongside thinkers as Aristotle, Dewey, and Polanyi, I take a reflective journey where I elaborate how one, from a humanistic point of view, consider learning to happen. Further, I discuss how we in our contemporary world, governed by some sort of technological logic, have confined how we think about knowledge, the process of learning and human practice, and even how this confinement reduces our own potential horizon of understanding. Hence, in this journey, I also try to describe how we can meet these challenges.

Keywords:
First hand experiences; Reflection; Professionalism; Technological logic; Scientific practice

Making an experience

For a long time, I felt unease in relation to my own development as a natural scientist. Some kind of uneasiness that I increasingly desired to explore. It was like a disharmony or an unbalance deep within, like my center of gravity in a matter was out of position. It was as if I found myself pursuing down a pathway, but rather than being a path that opened up on a new and more open terrain, it felt more as a narrowing pathway, a constraining element, perhaps something like approaching a dead end. In front of me, I saw a clearing, but the chosen path was seemingly not able to take me there. Hence, I had to take some steps back in order redirect the course, and now it feels as if the center of gravity is about to return to the right place. A feeling of harmony is becoming stronger. The plane is about to reach its destination. Only the landing remains. Without being a pilot though, I assume that the landing is the most difficult part of the journey. Nonetheless, I have to get this plane on the ground: I have to finish this experience and make it a complete one.

According to Dewey (1934), a complete experience is characterized by its own movement, from beginning to end, and in its separation from what comes before and what comes after. The different parts, episodes and incidents keep their individuality, but also melt together in a union with its own rhythm and character, which again is what defines the movement (Ibid). Most experiences, however, have a beginning and an ending that occurs without being noticed. One thing replaces the previous in a habitual laxity (Ibid), and these experiences are recognized in a manner covering up the demanding questions. It is a symptom of our hurried and impatient society that our experiences do not seem to penetrate the surface. There is no possibility for completing these experiences, since something else immediately and instantly interrupts them. It is about doing most things within the shortest period of time, "the crowding together of as many impressions as possible is thought to be life" (Ibid, p. 46). Furthermore, another symptom of our society is that we treat any resistance met in our life as an obstruction to be beaten down rather as an invitation to reflection - as a possibility for learning (Ibid).

Faced with a form of resistance, crisis, in life, whatever it might be, we have a choice. We can continue to recognize, or we can begin to perceive, i.e. awaken our consciousness or not (Ibid). Lindseth (2015) describes this as the choice between the broad road and the narrow road. The broad is the easier un-reflected one, and the narrow is the hard one that leads to the possibility of learning. If we are unable to see these crises, or discrepancies, or if we are not open to see them, the broad road becomes the obvious one. To learn and develop, to self-transcend, we thus have to be open to these crises (Ibid): we have to be willing to, and have the impetus for, entering this, perhaps, hard and demanding narrow road. By embracing something difficult, something, which we feel a kind of resistance towards our preconceptions can be tested and made subject to possible nuancing and development (Ibid). This process becomes important for avoiding being stuck in a "shallow, dogmatic or perhaps fanatical pre-understanding" (Ibid, p. 48). It is within these discrepancy-experiences that our critical thinking is awakened; hence, they become a prerequisite for learning, a fundamental necessity for being able to become wiser (Ibid).

First hand experiences

To Dewey (1934), having an experience implies that the human actions applied and its consequences unifies in perception. This is not the same as to act and reflect, or to do and undergo, in alteration: it is the relationship between them, when joined in perception, which gives meaning (Ibid). Nevertheless, when integrating the thoughts of Polanyi (1961, 1965A, 1965B, 1966) and Aristotle (1999), the very starting point of this learning process is, however, our first hand experiences in the world. It is all the doings, in the place we are situated, what we stand in the middle of, at the moment we are there, which is the ultimate starting point for any process of learning. Through a comprehensive and long lasting socialization and cultivation in communities of practice, we, by a kind of imitation, learn how to follow the trails of established practice (Wackerhausen, 2009, Myers, 2002).

Thus, our firsthand bodily experiences form the very basis for every knowledge expansion. When we come to know or to understand anything new this resembles an extension of our bodily knowledge of the world. This even applies, as seen through Polanyi, to the most explicit and objective parts of our knowledge. The tacit dimensions of knowledge are never absent: Any human´s inclusion of new external knowledge is always a self-development. The Cartesian legacy, with a divide-line between body and mind, between mind and matter, is demolished, as stated in Pirsig´s (2004, p. 225) classical *Zen & the art of motorcycle maintenance*: "Without objects there be no subjects – because the objects create the subject´s awareness of himself". New clues that we rely on, or include, correspond exactly with this enrichment or "extension of our bodily existence" (Polanyi, 1961, p. 6). It is an expansion of our horizon of understanding: An expansion of our self into a new dwelling place (Ibid).

When we achieve higher levels of knowledge, it is primarily due to better abilities tacitly to grasp the essence of whatever we need to understand or practically perform. The knower becomes more capable in comprehending complex patterns of information when he does not see the pieces as isolated parts, but as large and meaningful patterns (Myers, 2002). The knower further becomes able to integrate information in new and creative ways and to see new connections within it, something, which again increases the ability to come to new solutions and new discoveries (Ibid). According to Dewey (1934), the aim of all intelligence is to grasp the full range of content and full range of connections in every experience. It is, however, perhaps not possible to arrive to such maturity that all the relations involved are perceived (Ibid). Yet, the act of grasping as many clues, or perspectives, as possible, serve like the ultimate goal to aim for.

Reflection

Our knowledge´s embodied existence becomes visible in our everyday routines, like automatized and well known practical doings that has become so natural, it might not attract our attention anymore (Wackerhausen, 2009). In this regard, Ryle (2000) emphasizes that it can be tempting to claim that this is nothing more than sheer habits. To him, however, there are two kinds of second nature: habits developed by drill, on the one hand, and intelligent capacities developed by training, on the other. Drill may manage well without intelligence; training, however, develops it. They have the execution of repetitions in common, but training surpasses pure drill because it involves criticism of the performer's own judgement, and, furthermore, this criticism also holds a kind of standard for comparison. The performer thus learns and develops while he is thinking and reflecting about what he is doing. Every act performed becomes a new lesson with a consistent aim to perform better (Ibid). Ryle (p. 42) gives a pictorially exemplification of this act with a mountaineer walking over ice-covered rocks:

> He does not move his legs by blind habit – he thinks what he is doing – he makes tests and experiments – in short he walks with some degree of skill and judgement. If he makes a mistake he is inclined not to repeat it and if he finds a new method he will continue to use it and to improve it – he is concomitantly walking and teaching himself to walk. It is of the essence of merely habitual practices that one performance is a replica of its predecessors – it is of the essence of intelligent practices that one performance is modified by its predecessors – the agent is still learning.

To be able to see all the relevant clues in an act of knowing, it is not enough just to think within the box we usually do. Generally, when we think or reflect, we do so within a system of belief, like a framework for our conduct. What and how we think and reflect, or what questions and how we ask them, are however constrained by the system itself: it becomes a reproduction of the system, as it is, which has nothing more than a preserving and confirming effect (Wackerhausen, 2009). This, which Wackerhausen (Ibid) defines as the first order reflection, maybe makes us able to solve many of the problems we face in our practice, but it does not seem capable of finding out how and why we have a problem in the first place. It does not seem capable of getting us further. It is not enough to have the greatest insight in whatever subject matter we deal with, we also need a wider perspective:

we need some distance. We need another, higher, floor on Jørgensen´s (2008) lookout-post[1] from where we can calibrate ourselves towards a greater whole, and it is first when we occupy such a perspective that we really have the potential to free ourselves from our own subjectivity by aiming for universal standards.

Another aspect to consider is that in this fast-changing, increasingly complex, global world it is not enough only to walk the established trails of everyday practice. Wackerhausen and Wackerhausen (1999) describe competent professional practitioners as humans that are able to meet the demands of the profession. As science is strongly anchored to society, e.g. in regards to the fulfillment of social valued goals, being a competent professional thus means to be able to follow these changes. Wackerhausen (2009) thus ask how is it then possible to break the self-confirmatory reflective patterns of our established practice? How do we get to the new, and higher, floor on the lookout-post? How do we engage in reflective activities, not programmed to stabilize the already stabilized, but that have the potential to de-stabilize the stabilized? We have to attain knowledge and become acquainted with concepts, theories and ideas outside our tradition (Wackerhausen, 2009). We need experiences from every aspect of life, and, in particular, we need experiences of an aesthetic character (MacIntyre, 1984, in Nonaka and Toyama, 2007, Nonaka and Toyama, 2007).

These experiences will alter our conceptual background, and thereby change both our patterns and possibilities of thinking and reflection. This kind of critical thinking is hence important to understand what we know and what we can, and it becomes vital for further learning and development. It opens the door, for each individual, to enhance the scope of recognition: it expands our potential horizon of understanding. This second order reflection is however not something that happens on its own, and it is not without risk and without difficulties. Wackerhausen (2009) describes how, when we begin to ask questions that exceed the boundaries of established practice, the immune system of this life-world might strike back. Hence, we might be exposed to preserving forces having exclusionary effects on us. As previously described, to go down such a narrow road thus has to be a choice made by each individual. Further, if we doubt and criticize ourselves, we might become some kind of stranger to ourselves, and this may cause uncertainty in regards to our professional role and perhaps even a professional identity crisis (Wackerhausen, 2009). The stronger the link between the self and the professional identity is, the stronger the feelings of uncertainty and crisis can become (Beijard et al., 2003). Understandingly then, our professional role and our professional identity are not something stable or fixed; on the contrary, they are dynamic and part of a potential life-long learning-process of interpretation and re-interpretation of experiences (Kerby, 1991, in Beijard et al.,2000, Beijard et al., 2003).

Wackerhausen (2009) describes this process of change as doing maintenance and replacements on a boat at sea. If we change too much at a time, we are in trouble: the boat will sink. It is no need for the pace of the process to be too hasty. It is better to consider it as an everlasting process of fixing one thing at the time, while still being able to uphold normal activity. So even though we are learning, taking on new perspectives and expanding our horizon, we have to hold on to what we are. We have to steer away from what *nineteen-hundred*[2] did in *The dance on the golden parquet* when he was led to believe that "the lives and revelations of others were more right and more real than his own" (Jørgensen, 2008, p. 41). He did not settle with the attempt to include, integrate, other humans' perspectives into the vision he already had. On the contrary, he desired for seeing the world as the other did – to adopt their view. It was however a self-defeating and fatal realization, to recognize that his attempt to leave the waters he was most familiar with was absurd, because it was these waters, and his desire for understanding the greater world *out there* that, in fact, had made him all that he was (Ibid).

As emphasized, these reflective abilities are synonymous with the ability to think. This is one of the most essential attributes of humans, emphasized in the work of Dewey, Polanyi and Aristotle. To Dewey (1934, p. 47) the actor that does not think is not "aware of what he is doing and where his work is going". To achieve a completed experience, one must see every part in relation to a whole; and the ability to capture these relations is, according to Dewey (Ibid), one of the most demanding ways of thinking. Furthermore, to him the whole is also present in each phase, not like a sheer end, but more like a continuously fulfilling function. Hence, where the artist "is in process of completing at every stage of his work" and where "he must at each point retain and sum up what has gone before as a whole and with reference to a whole to come" (p. 58). The actor that succeeds in this will also succeed in gaining consistency in his subsequent actions; and, in a manner, all the different parts unify (Ibid). Consequently, each experience upholds some kind of form, or some kind of dynamic organization (Ibid). Dewey here characterizes this (kind of) experience as dynamic, since it takes time to complete, and because there is a growth, and the material is being ingested and digested and related to previous experiences (Ibid).

Our contemporary world

A good learning process is thus not a straightforward procedure. Besides the required willingness, which must be present like a driving force for any self-transcendence, we also have a challenge with respect to how we, in our contemporary world, have structured our society in a manner making learning difficult to nurture. Learning requires some kind of freedom, time and autonomy so that we can act according to what the situations we face truly call for; and this is something we are not necessarily provided. The mistaken idea, or notion, that it is all about doing as much as possible in the shortest possible time, limits humans' leeway, thereby impeding the possibility to go to the frontline and to go below the surface of anything at all. Furthermore, the human acts of comprehending, making judgements and decisions, are something the contemporary world, dominated by technology, directions and guidelines, seems to present us with less unrestricted prospects for exercising (Smith, 1999). Any deliberation about a decision is, in a way, made for us, and not by us, and these deliberations hence stand the risk of becoming superfluous. In all areas of human enterprise, it has become so important to follow standardized procedures that it has deprived us of the possibility to exercise, and further develop, our practical judgmental abilities. Of course, we need the systems, but above all, we need the abilities of the humans operating the systems.

In this mechanical world, the professional, supposedly, has to found his doings on universal and general knowledge and, systematically and structured, apply this on specific events. This points back to the idea of the existence of some kind of perfect knowledge: the existence of absolute and universal explicit, fixed and unambiguous answers that each individual, in principle, can and ought to apply. A negative implication of this notion is that this externalization of knowledge has contributed in disconnecting knowledge from the individual that holds it to the extent that we have stopped believing in our own beliefs – that without this universal knowledge we are only groping in blind. Another worrying aspect of our current situation is that this idea, that it is conceivable to find the absolute rightful answer, has generated a fear of not possessing this answer, a fear of making faults. In many circumstances, it has even developed into a policy of no acceptance for making mistakes. Consequently, one triggering factor for the standardization of any human enterprise is the desire to try to simplify our existence by steering clear of any bumps on the road, and further some kind of human eagerness to categorize, to designate, things as black or white, and to have absolute certainty in relation to whatever subject matter we are dealing with.

Our human world is however, not that simple. It upholds a much higher diversity and complexity in which the adequate response to any problem seldom reduces to an unambiguous answer. This does not imply that we ought not to strive for the best way to respond, it just means that the best action is not necessarily synonymous to an absolute answer, and that we often reach it by uniting different perspectives upon the problem: even by uniting apparent contradictions. Often our abilities to see and synthesize what appears as contradictions are what make us capable of coming to rightful conclusions (Iizuka, 2003, in Nonaka and Toyama, 2007). Martin L. King (1964) said that the truth is never found in a thesis, neither in an antithesis, but in a synthesis. Furthermore, any confusion or contradiction found in the way we organize our social structure, are thought to be overcome by the introduction and bolstering of these technological, mechanical and bureaucratic systems, standards and routines. The confusions and seeming contradictions are, however, not as much obstacles to overcome, as they are, as we have seen, enablers of further development.

It is perhaps not that strange then that the natural scientific conduct itself which I am part of, where these thoughts originated, is governed, to such an extent, by these very thoughts of perfection. The perfect knowledge is for the scientist, with his scientific "systematic protocol and technique" (Burrell and Morgan, 1979, in Cox and Hassard, 2005, p. 114), to find. In a manner, natural science has become reduced to no more than, this conception of The Scientific Method. Science, hence, reduces to some kind of technology-based production, based on rigid standardizations, procedures, rules, and so on, and the scientist´s conduct and the outcome of this production brought together with so much scientific glue that there is no room left for mistakes to occur (Smith, 1999).

With this fear of making mistakes, it has gone so far that we even have removed the human from the picture. We have at least narrowed down the understanding of the human and the human's contribution in whatever function he or she attempts to fulfil. We have reduced him to no more than a calculative machine with the aim of exactly calculating the unambiguous answers, steering away from any difficulties whatsoever. This reveals a major distrust in humans' knowledge, and a lack of understanding, how further to develop it. If we however were to continue down this road, if we were to accept such a reduced and simplified concept as an ideal in the decision making process within any human enterprise, it would be interesting to see what the consequences, ultimately, would look like. In plain situations, where all relevant data and rules being explicit and unambiguously given, computers or statistical models, according to Hogarth (2001), perform better than humans. He explains this as due

to better consistency in the computers, always coming to the same conclusion, based on the same explicit information, something that humans do not.

On the other hand, when the complexity of the situation rises, and the amount of clues to be accounted for is increased, humans seem capable of capturing information which computers or statistical models are not able to recognize (Ibid). Furthermore, our aim, I believe, is not to be stuck in some kind of closed problem-solving circle: we want to bring the world forward. In line with this, the human has the ability to make new connections and seeing new creative patterns and making new solutions become visible (Myers, 2002) in ways that I believe surpass any machine-like function. Another problem with retaining this mechanical belief is that it develops into a self-reinforcing process where more standardization, more rules and, in overall, less autonomy within our professional conduct leads to decreased learning. This again leads to reduced knowledge and reduced skills among the practitioners, which again leads to more (methodical) rigidity, more standards, and procedures being required and so forth (Schwartz and Sharpe, 2006).

The fear of making mistakes has further manifested itself in a control-system, a reporting bureaucracy, beyond reasonableness. Clearly, control-systems, which also hold some kind of standards for how to report, are needed, in a various amount, in most human practices. In my opinion, however, we have let it go too far. One problem is that these standards for control to a high extent take on the same technological-production based expression, which I now have problematized (Raffnsøe-Møller, 2011). Everything done is being controlled and reported based on quantitative measures, which in my opinion are nowhere near being a true reflection of what is actually done. Another problem is that these very control-systems function simultaneously as external reward- and incentive-systems, which motivates for the same kind of performances (Ibid). Hence, the mistaken idea that we have to produce as much as possible, quantitatively as much, that is, so that we can then tick it of on our checklist, is further strengthened. Again, if we turn to the previous description of our hurried and impatient society: it is about doing as much as possible in the shortest amount of time. Of course, it is possible that we are in fact useful, but at the same time, our conduct stands the risk of being no more than some kind of useful idiocy.

Technological logic

One may understand this view, or the mechanical belief it embodies and supports, as some kind of techno-fetishism, rationalism or technological logic, which in a way resembles to some sort of a worldview. Wackerhausen (1991) describes it as some kind of colonialization of, and norm-setting function of our human life world. Nejadmehr (2017, p. 136), who, as many others, terms this view as *neoliberalism*, describes it as having a strong dehumanizing effect. However, if we do not think about it, we may not see it, but it is there, controlling so many parts of our lives, having severe implications regarding how we understand knowledge, skills and the process of learning as well as any human conduct in general. Furthermore, on this view, in the desire for universal objective absolute and explicit knowledge, the perfect truth, the understanding of knowledge in a manner has been reduced to a purely cognitive access to the world (Lindseth, 2015). Scientifically-based knowledge has gained some kind of monopole status (Wackerhausen, 1991), the understanding of human intelligence being reduced to primarily being about the intellectual exercise of theorizing where the aim is detecting and upholding true propositions or facts (Ryle, 2000).

With these thoughts there also arose a notion that "the capacity to attain knowledge of truths was the defining property of a mind" (Ibid, p. 27), and consequently that every other human power where only to be categorized as mental or intelligent, if a connection to the intellectual grasp of true propositions were identified. Ryle (Ibid), however, claims that there are many things that reveal the qualities of a mind that do not necessarily reflect intellectual operations. He further states that intelligent practice is not some kind of stepchild of theory. On the contrary, the act of theorizing should be considered as something, which one can carry out both intelligently and, perhaps, stupidly. To him (p. 27), this is no more than an "intellectualist doctrine which tries to define intelligence in terms of the apprehension of truths, instead of the apprehension of truth in terms of intelligence".

The identification of the failures of the intellectualist doctrine, and its consequence, the technological logic of practice, is something, which can be followed all the way back to Plato, who in the dialogue *Theaetetus* presented the conception, although not as his own, of knowledge as true justified belief (Lindseth, 2015). Even Aristotle placed scientific knowledge (episteme) on a kind of pedestal, and in a way left the human in its full extension out of the picture. He, as the honorable defender of practice and practically oriented knowledge (phronesis), has also contributed to the conception of the inferiority of practical knowledge to episteme or scientific understanding, since he considered the latter as the most esteemed kind of knowledge, because it dealt with the most valuable

objects and the most complete forms of knowledge (Aristotle, 1999). This still prevailing dualism thus has deep roots.

The desire to be able to argue based on clear, rigid and valid statements is associated with a longing to be able to step forward with some kind of authority, or to be some kind of expert capable of executing well-founded disseminations. In the modern world, the scientist became regarded as an *expert par excellence* and science as the *expert system par excellence* (Evetts et al., 2006, p. 106). Science, hence, became a powerful and prestigious authority of great significance (Fuchs, 1992, and Maedows, 1992, in Resnik, 1998), somehow making the scientist the ultimate manifestation of the expert role: the ultimate expression of professionalism. The increased standardization, or professionalization, of science can therefore, to some extent, be understood as a system of "social closure: a group´s attempt to delineate and close from the outside world for more efficiently [to] achieve and preserve privileges for the members of the group" (Laursen, 2004, p. 23).

This system, then, is something that has arisen because it has been advantageous for the scientists' themselves, in their pursuit of professional goals and the acquisition of intellectual authority, as well as in the protection of scientific autonomy and career opportunities (Gieryn, 1983). The question we might ask ourselves now is if we in the fear of losing this status, this facade, this stronghold and this hegemony, have blocked out, distanced ourselves, or somehow, perhaps unconsciously, concealed any uncertainties that might have jeopardized this advantageous social position. Ultimately this then, comes down to some kind of exercise of power (Fossestøl, 2013). To quote MacIntyre (2007, p. 181): one function of human virtue in practice is exactly to "resist the corrupting power of institutions". This emphasizes the urgent need for contemporary natural science to embrace humanity in its fullest and to let the ethical dimensions of our humanity inside.

We can also view this issue from the other side, concerning how society has contributed to, at least to sustain, the problem. The general conception is that clear and rigid statements, presenting final, objective and neutral answers, are how professionalism is expressed (Fossestøl, 2013). Consequently, from the surrounding society, there are expectations that this, ultimate, expert group is capable of emerging with, and expressing, this kind of professionalism (Ibid). In this picture of professionalism, the wider human side of science clearly did not fit in very well. The notion thus occurred that the display of human engagement, interests and values resulted in a loss of professionalism. Hence, the scientist became insecure in how to articulate the connection between his moral and his professional commitments, and the expectations about professionalism, coming from the surrounding world (Ibid). We can now recognize and take another standpoint: that any attempt to get rid of the acting human being in its completeness is comparable to throwing the baby out with the bathwater.[3]

Naturally, this view, as mentioned, affects how we think about the process of learning. Learning from experience, and the reflection upon this experience, what Lindseth (2015) describes as the dialectical method of taking into consideration and critically think through our life, choices and actions, is often neglected. Learning has almost become synonymous with the transfer of theoretical knowledge: scholastic learning. This conception of learning originally gained dominance, and still has some kind of precedence, because those who are arguing for learning from experience, and for the importance of the tacit dimensions of any process of knowing, naturally enough, are not capable of presenting the same level of clarity and validity in their statements, as those who represent the scholastic view (Wackerhausen, 1991). This "academic haughtiness" thus has deep roots (Ibid, p. 87).

Furthermore, I believe it exists some kind of academic naivety concerning the impact educational institutions have on the process of learning, as well as to what needs to be learned. First, because of the notion of this perfect knowledge - these definitive answers - the practice of any profession, assumedly, is based on a set of fixed competencies - competencies to be gained by the practitioner. This again causes neo-liberal imperatives of learning in the educational institutions, making educational courses highly instrumental, targeting the content of the courses to meet these fixed competencies, and with the consequence that the more humanistic aspects of any education are being suppressed (Regmi, 2017). Second, the educational institutions, and those teaching within them, cannot give or transmit theoretical knowledge to anybody. Only the learner can learn. The essential elements for learning to happen are the melting of horizons, the establishment of empathic relations and the awakening of the learners' critical thinking. This is, though, not to say that we should altogether abandon scholastic teaching. However, we need to reorient ourselves about how we can organize and facilitate for the best possible learning to take place. Additionally, we need to begin to acknowledge that the formal and higher educational systems are not the end-product, but rather the very starting point, the enabler, of what to come, where the primary aim is to facilitate for developing the learner´s curiosity, engagement, motivations and willingness for further learning in a lifelong perspective.

What to aim for

The extent to which this intellectualist doctrine influences other aspects of our society is hence of substantial magnitude. It has crawled so deep beneath our skin, and unconsciously it haunts us like a nightmare. In a manner we have become so deeply occupied with finding, and preserving, the absolute truth, and avoiding to disclose anything else, that instead of listening to those who speak otherwise we have shut the door and painted us into the corner. In our satisfaction with what is, we constitute our lives through a kind of mirror, in which we are most concerned with seeing ourselves (King, 1964). With these feelings of our own excellence, we, as it seems, have developed almost a fear of meeting others that feel the same way about themselves. To avoid that this happens, we have thus closed down the water supplies to where we are swimming to such an extent that what is left is nothing more than a motionless pond. Perhaps we are big fishes – yet big fishes in a small pond.

Some of my own desire for mastering the life-world of science is, then, ultimately nothing more than a desire to become this intellectual and professional expert who with academic authority can base my arguments on scientific knowledge: In a way, to become a priest in the church of intellectuality (Pirsig, 2004).[4] Yet, although we may be capable of reaching some kind of knowledge or insight in the subject matters we are working with, the question is if we, due to some kind of narrow-minded stagnation, are not losing the greater entirety. Furthermore, that this restriction also restrains our own scope of opportunities. I believe we cannot allow ourselves to settle down in complacency with these feelings of satisfaction; we cannot be content with swimming in this small pond, although it feels so pleasant. We need to swim in greater waters: We need to open ourselves towards the great oceans. Other big fishes are not a treat to us. On the contrary, we are part of the same world, and we are practically different parts of the same thing: If they grow, I grow. What is remarkable is that although most of us, I believe, would agree on this, it still seems so difficult to break free from this intellectualist doctrine. It seems as though we, when locked up in a tradition, such as this, and in this way, stand the risk of keeping watch over our own chains (Gadamer 2003).

Furthermore, I have come to realize that my initial high confidence in the scientific machinery corresponds to something like a high confidence in the scientific method. I have been so occupied with following this system, mastering this life-world and all the elements within, the standardized methods, the procedures and so on, that I forgot to ask: for what reason? However, my practice does not only consist in how well I practice my skills, but to what end, I do so. In this (scientific) world, where we have become so eager in doing, we have forgotten to attend to where we aim our efforts. According to Smith (1999) (the scientific) practice is reduced to some kind of core technology of what we do, where he refers to the practitioner, as the scientist, as a kind of primitive machine upholding, as described, no more than predefined competencies.

Smith (Ibid) even takes his criticism, of what he describes as a naïve admiration of this logical technicism, further by claiming that it is beginning to parody itself. In a way it even surpasses the competencies or skills the practitioners hold: "the elevation of means above ends"..."the means appear to have kicked free of ends altogether and whirl, beatified, in a technological utopia" (Ibid, p. 329). This technicism also resembles Wittgenstein´s apocalyptical beliefs about humanity, as he meant it would come because we replaced ends with machinery, and that humans had put their faith solely in the scientific progress[5] (Monk, 1990). Furthermore, the means are not only being kicked free from the ends: the natural science in its search for objective truth, freed from the context and the individuals who hold this truth, freed from society, have gained some kind of power of definition about what problems to be pursued. In this vacuum however, science stands the risk of being no more than a *king without a kingdom*[6] (Aarnes, 1996, in Asdal 2005, pp. 254-255).

Smith (1999) also exemplifies the problem of means solely becoming ends in themselves through Dicken´s *Bleak house*. A lawyer´s aim, or external end, in relation to a case, is to win it for a client. To this end, the lawyer needs to have knowledge about the law, and he needs to be convincing, attentive and reasonable. When the lawyer *is absorbed in the ethos of practice*, these elements become internal to him, and for this reason, those observing the practice may not recognize them being there simply to help him in winning the case. However, these elements may also become ends in themselves, and then the connection to the reason why they were there essentially, becomes lost. If the link between the lawyer´s practice and the *"wider ethical values and ideals is severed, the lawyer becomes not a model of practice but a caricature"* – his "professionalism becomes a substitute for his ethical being in the world rather than an expression of it" (Ibid, p. 336).

This professional that I desired to become is thus not enough, when not linked to the ethical and moral life and responsibility (Ibid). I am thus left with a feeling that I, in my desire to become this priest in the church of intellectuality, this professional, have lost something on the way. I neglected these, deeper, attributes of my

human character in the developing process, and not just that, but also, in a manner, forgot that they were there in the first place. Hence, it felt like I lost something of myself: I was so occupied with becoming something that I forgot that I already was.

The noble human on the contrary is the human that is capable of working deliberately *without losing himself* (Letwin, 1982, in Smith, 1999, p. 336). In light of the concept of phronesis, we can see that the guiding virtue of these noble humans is related to the ethics of belief, that it is some kind of discernment required to perceive the world with accuracy (Aristotle, 1999, Smith, 1999). Any human development within this system of thinking hence becomes connected to the idea of truth, because the learning human "attends to the world as it is and not through the distorting mists of self-deception or fantasy" (Smith, 1999, p. 334). It is however a "long and difficult struggle – neither the dramatic leap nor the inevitability of false consciousness – to rid ourselves of characteristic forms of (moral) blindness" (Ibid, p. 334). Any process of knowing or developing hence holds not only an epistemological but also an ethical appeal (Wackerhausen, 1991). I believe it is about time to free ourselves from the intellectualist doctrine, to free ourselves from this ignorance, this blindness, or dead-end, of both knowledge and moral character: To step out of this morass of nihilism (King, 1964). Hence, any struggle for development become a struggle for the fulfilment of our personal responsibilities to universal standards. Our self-transcendence, our lifelong learning, thus has an objective element (Su, 2007), making it possess some kind of common good (Boyadjiva and Ilieva-Trichkova, 2018).

It is about having the power to realize concepts for the common good, and being able to take in consideration, and balance, the viewpoints of others. Like Aristotle's golden mean where we attempt to avoid extremes and to solve contradiction by the appliance of moderation. It is a harmonizing and synthesizing act requiring us to think *both and*, not *either or*. This expands our struggles where we place everything we know and everything we do in a wider context of human meaning. We become humans with a humble attitude towards the world, which enables us to acknowledge and respect other views. This respect would also imply a form of humility towards our natural world – a strive for balance and sustainability as part of a meaningful way of living (Salo and Heikkinen, 2018, pp. 104-105). Nussbaum (1997) describes this as something like the development of good citizenship, a worldly citizenship. To be able to come to a new understanding of whatever subject matters or human beings we attend to, we have to acknowledge it or them for what they are. For this, we need empathic, open-minded and compassionate approaches, we have to try to assume the other perspective, and strive for our horizons to melt together. We need some kind of reflection between differences – between the *acquainted and the unacquainted* (Gustavsson, 2014, pp. 127-128). Such position, however, demands us to cultivate an epistemological awareness (Bath and Smith, 2009), and where we also have to meet any kind of resistance with open arms because that is how we secure that "the world" does not stagnate, but can continue to be developed. By this, we become capable to see beyond, and to overcome, one-sidedness, we build bridges and tear down barriers and we integrate opposites and contradictions. By this development, we are now becoming stronger humans: Humans that are carrying strong contradictions within their character (King, 1964).

Yet again, this requires willingness to self-transcend. We have to be willing to go to the frontline, even in an expanded version. In a manner, the life-world which we recognize and which we desire to master expands. It increases our range of opportunities, our framework for reflection and learning, and accordingly increases our potential horizon of understanding. We are provided with more shoulders of giants upon which to stand.[7] Our life of meaning and engagement can become even more enriching. As already understood though, this does not imply that we ought to engage ourselves in, and attempt to master, all different things and in all different directions. Though it means that we have to do what we do the best we can, and therein lays the fact that we need to consider the things we do as part of a greater entirety. Whatever little thing we now do, we are doing it in a great manner: An attitude corresponding to the very art of life (Næss and Haukeland, 1999).

This, call it, ethical thinking, is, to me, the ultimate integration, a uniting force, of all partial systems affecting my human behavior. It can be understood as given "with the shape of a life – and further what it means for the individual to be embodied within the natural world" (Smith, 1999, p. 332). It opens the door to incorporate the human in its fullest, it embraces the cultivation and formation of the whole human being, it opens the "world's multiplicity and do not close again as the modern science and knowledge doctrine did with its expectations of simplicity, reduction and precision" (Dillern, 2020, p. 584). This ethical view also accepts that the only and ultimate starting point for what to come is ourselves as and where we are at this very moment. Consequently, according to Dillern (Ibid), such view also accepts our own inadequacy and our fragility as something corresponding to the most beautiful of human life and something modern science has tried to deprive us of with its longing for certainty and control. It acknowledges my knowledge of the world as some kind of uncertain, complex and dynamic process of knowing, because it exactly mirrors the complexity and dynamism, and with its even

unknown future manifestations, world itself (Ibid). In a learning perspective knowledge, or competence, thus emerges as a *moving target* (Eraut, 2004), and it appears that in a lifelong perspective a continuity of learning and relearning to follow and respond to everlasting changing circumstances becomes essential (Su, 2007 and Bath and Smith, 2009). Nevertheless, the results of my intellectual, methodical scientific endeavor, if correctly aimed, hence have the potential to become a fusing force between my knowledge, my beliefs and my assumptions, of this reality and reality itself (Dillern, 2020). A force that has the potential to transcend both (Pirsig, 2004).

In the last chapter of the previously mentioned classical book *Zen & The Art of Motorcycle Maintenance* (Ibid, p. 392), the narrator's son asks him if he could have a motorcycle when he grows up. The narrator answers *yes, if you take care of it*. The son then asks if it is hard and the narrator's answer to this is "Not if you have the right attitudes. It's having the right attitudes that's hard".

A completion

Hence, I have finished the experience: the plane is on the ground, the center of gravity is again positioned where it should be. I have reached some kind of completion. Or, it is perhaps not that easy, is it? It feels more like the plane just touches the surface briefly before again accelerating towards an immediate new takeoff. It emphasizes beautifully, and reminds me, that everything we understand and everything we learn is still just a part of a greater dynamic process of knowing and that in this process there is no such thing as a finish line, no such thing as an end. The circulatory motion continues; that is of course if you are willing to follow along with it. For me, well, I am airborne again.

Notes

1. I am however not to say that this "higher floor" was not included in Jørgensen's concept – I just thought it would be a useful metaphor.

2. Based on the text *Novecento* by Alessandro Baricco, 1994.

3. This idiom derives from a German proverb, *das Kind mit dem Bade ausschütten*. The earliest record of this phrase is in 1512, in *Narrenbeschwörung* by Thomas Murner.

4. Pirsig wrote about the church of reason (not intellectuality) and he did not mention any priests either.

5. Wittgenstein's thoughts in this relation was based on the frightening proof of technological power through warfare.

6. Here I borrow, and make a little twist on, Aarnes' metaphor where he originally stated that it was positivism that had become a king without a kingdom.

7. The metaphor is based on the expression "standing on the shoulders of giants", which has been traced to the 12th century and attributed to Bernard of Chartres. However best known today by Isaac Newton's use of it in 1676.

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