

# FROM KNOWLEDGE MANAGEMENT TO COGNITION MANAGEMENT: A MULTI-POTENTIAL VIEW OF COGNITION

Viktor Dörfler<sup>1</sup> and Jaszmina Szendrey  
Department of Management Science  
University of Strathclyde

## Abstract

We have defined knowledge as a capacity or potential to act for a long time; this was a useful metaphor as puts emphasis on the process-nature and fluidity of knowledge and on the purpose for which it is used. However, when considering the idea of autopoietic systems, according to which all living systems are cognitive systems we realised that knowledge is a cognitive potential but not the only cognitive potential. In this paper we developed a conceptual framework that extends the conception of cognition to three further potentials beyond knowledge, the instincts, the emotions, and the transcendence.

---

<sup>1</sup> Corresponding author:  
Viktor Dörfler  
Department of Management Science  
University of Strathclyde  
Graham Hills Building 862/B  
40 George Street  
Glasgow, G1 1QE  
United Kingdom

## INTRODUCTION

The idea of autopoietic systems (Maturana & Varela, 1979) regards all living systems as cognitive systems. If we accept Neisser's (1967: 4) definition that:

*"... the term «cognition» refers to all the processes by which the sensory input is transformed, reduced, elaborated, stored, recovered, and used. It is concerned with these processes even when they operate in the absence of relevant stimulation, as in images and hallucinations. Such terms as sensation, perception, imagery, retention, recall, problem-solving, and thinking, among many others, refer to hypothetical stages or aspects of cognition."*

We realised that the conception of autopoiesis, if cognition is identified with knowledge, lacks internal consistency, i.e. bacteria for instance, which are considered the simplest forms of life (e.g. Margulis, 1999) do not possess knowledge, only instincts. However, the conception of autopoiesis is compelling otherwise, so we decided to see whether we can extend the notion of cognition beyond knowledge – this is the model we offer in this paper.

As it is necessary to pull together knowledge from diverse areas, we do not build our model step by step but rather we start from the resulting model and then explain its structure and how it functions. Where there is no sufficient conceptual knowledge available or when it is very common, we explain the model through examples, our evidence being anecdotal rather than systematic.

### 1. FOUR COGNITIVE POTENTIALS

Similarly to Drucker (1993: 42), Tsoukas (2005: 5) and Sveiby (1997: 37), we regard knowledge for a long time as potential that is utilized in processes of knowing, such as learning, thinking, or applying knowledge, just to mention a few. The process of knowing transforms the knowledge potential into actual performance. The essence of this can be easily grasped using an analogy from mechanics: if a crystal glass is at 130 cm height it has potential energy, which may, in the act of motion (e.g. freefall), be transformed into mechanical work by breaking the glass into pieces. Then we realised, that if we want to address the conception of cognition, knowledge is not the *only* such potential. We have identified 3 other potentials that need to be included into the conception of cognition.

#### 1.1. Instincts

Instincts are fixed patterns of behaviour that characterise all members of a species, are triggered by events in the environment, and cannot be overridden. At least, this is how they are defined in the animal world. The role of instinct in humans is for long time a point of controversy in psychological research. (See e.g. Birney & Teevan, 1961; Fletcher, 1968) Regarding humans two extremist approaches are possible, one is to regard all repetitive behaviour as instinct and the other would mean denying the existence of instinct in humans altogether (as we are actually able to override them). There are, of course, plethora of approaches in-between the two extremes. Based on the evolutionary approaches of Lamarck and Darwin, the psychologist and philosopher

Benedek (1987: 51) defines instincts as “*biological drives that become manifest in psychological or analogue behaviour*”; this is the approach adopted in this paper as it is sufficiently general and also in line with our beliefs.

The root causes of instincts are the needs. Not all needs induce instincts; the needs belonging here are what Maslow (1968) called deficiency needs (D-needs), as they work only when unsatisfied, once gratified they are virtually nonexistent. In contrast the being needs (B-needs) cannot be gratified, they are constant drives, we want more and more of them – the B-needs are out of scope of this section. Comparing the D-needs to Maslow’s (1943, 1987) other model, the famous hierarchy of needs, the physiological and safety needs clearly belong here as well as part of love and esteem needs, part of the need to know and understand and part of aesthetic needs. It probably requires additional explanation why the latter three may belong to D-needs: lack of love may make people sick exactly the same way as lack of vitamins; we may need certain knowledge in order to be safe (e.g. knowing to swim); and there is clinical evidence that at least some people get sick from ugliness and get cured by beautiful surroundings.

For the purposes of this paper it is sufficient to understand that we humans have instincts that are closely related to some basic needs and that are apparently hardwired in us. This means that we do not need to learn the behaviours that result from instincts but we seem to be born knowing them therefore we assume that instincts are inherited. We experience these instincts in form of feelings;<sup>2</sup> e.g. we feel hunger, thirst, desire for sex, fear of death, longing for company of other people, etc. According to Szondi’s (1954) theory of fate, the quality of the human life is fundamentally determined by the extent to which our instincts control us. Fromm (1942) goes even further asserting that we cannot speak of human existence until we are free of the compelling force of our instincts. According to Maslow (1943, 1987) the lower needs have to be satisfied to some extent before being able to concentrate on higher needs – i.e. to gain control over our instincts. We must emphasize that Maslow had never said that a higher need would not appear before the lower one was satisfied; on the contrary, he spoke of “*hierarchy of prepotency*” and the “*degree of relative satisfaction*”. In the earliest presentation of his model (Maslow, 1943: 388) he stated explicitly:

*“In actual fact, most members of our society who are normal are partially satisfied in all their basic needs and partially unsatisfied in all basic needs at the same time.”*

Some interesting questions come to mind regarding this: Did Mozart write opera when hungry? Could Michelangelo engrave his repressed sexual energies into his statues? According to the Maslow-model we have to respond: NO. Perhaps many artists were starving, did not have where to live, wore rags but at the moment of creation they had their D-needs more or less satisfied. This does not mean, however, that they could not starve to death during the process of creation as in the state of flow (Csíkszentmihályi, 1997, 2002) they did not note the warning messages of their organisms.

We need to accept that the instincts need to be gratified. We cannot trick them and compensate with something else because they will take revenge. We need to find the appropriate way of gratifying our instincts and then we can concentrate on more interesting matters. The notion of appropriateness, that is when, where, and how we satisfy our instincts, takes us to the area of knowledge.

---

<sup>2</sup> These feelings are quite distinct from emotions that we will address later.

## 1.2. Knowledge

In the Western societies we praise our mental faculty more than anything else. This conception of knowledge is somehow related to the ideas of rationality and logic; by rationality we usually vaguely mean that everything can be explained and logic is considered to be general principles of correct reasoning (Russell, 1946: 379) regardless of the subject matter. This, however, also causes a problem, as *“the word «knowledge» in English has some tendency to approach the meaning of «truth»”*. (Boulding, 1966) Still, the superiority of knowledge seems to be justified as there are so many beautiful things in the world that we can understand thanks to knowledge and it enables us creating so many useful technologies. In this paper we regard knowledge as a mental content, without regard whether something outside the mind corresponds to it.

We want to question whether knowledge is enough – and the answer is no. An illuminating example would be Pentagon’s Millennium Challenge war-game. (Gladwell, 2005) The Blue Army had more intellectual resources than any army in the history could ever have; including a decision support system containing all the possible information about the enemy, they had access to all information of all intelligence agencies, from all US offices, and unlimited resources. Everything in terms of knowledge was made available to see through the deranged complexity. The Red Army was short of all these resources but they had an unusual commander. Most of the things the Red Army did were unreasonable according to the calculations of the Blue Army. The super-equipped Blue Army suffered catastrophic defeat. More information, more knowledge at disposal does not necessarily result in better performance.

Why do we adhere to this sort of fully logical knowledge so much? Why is this the only sort of knowledge we teach in schools? The answer is controllability. What happens if the teacher in the primary or secondary schools asks the pupils to show Timbuktu on the map? Most people will raise their hands; everyone will get to the same result: it is a city in a country called Mali on the African continent (actually there is another Timbuktu in Oregon but the required answer is Mali). What would happen if the same teachers asks about Eldorado? Significantly fewer hands in the air. Some will try to place it somewhere in South-America based on Voltaire’s *Candid*. If the third question is which is the most beautiful place in the world, there may be more hand in the air again but there will certainly be no agreement about the answer – although many may come up with a convincing argument. How much simpler it is when we know the only correct answer!  $1+1$  always equals 2. Or is it not? How about adding one cloud to another cloud? It will still be one cloud... Actually it may be even two. Or three...

We have no intention neglecting the importance of knowledge. We have really achieved a lot by means of knowledge and particularly using the above illustrated fully logical subset of knowledge (although we could only say that this is how we publish/publicise our achievements, it is not necessarily, as we will show later, how we arrive at them). What we would like to do is only to put knowledge into its rightful place and we believe that this way we can make even better use of knowledge.

If we put knowledge in relation to the instincts describe above, we can say that using knowledge we can compare our various instincts, we can change the way of gratifying them, we can even repress some of them, at least temporarily. We can decide when, where and how to satisfy our needs. For instance, if we need to go to toilette during a conference presentation, we can decide to wait, as we know that it should be over in a

few minutes, and then we go to an appropriate place. If we are not particularly hungry, we can decide to eat as we will spend the following few hours on a road and we will have no time to eat. However, knowledge is not the only way of overriding or controlling our instincts. If we are in a company of someone we love, or even if we are in love and the loved one is not present, we may forget about our hunger – so there are emotions, that may play in some respect similar role to knowledge in cognition. There are obviously tremendous differences as well, that is why there was no agreement in the example above which is the most beautiful place in the world. Knowledge is not sufficient handling such very important questions as where to work, or who to live with.

### 1.3. Emotions

We all experience that, apart from knowledge, there is another phenomenon, frequently illogical, irrational, and altogether insensible from the viewpoint of knowledge: our emotions. Emotions are not something to decide about, they just happen. (Atkinson et al., 2000: 388 ff) There emerges a belief, a conviction that something good (or bad) is going to happen; it is accompanied with bodily effects based on the vegetative nervous system, such as a change of the facial expression. As we are experiencing our own emotions, we gradually learn that certain actions, phenomena, or people invoke certain emotions in us. According to Goleman (1996: 4) our emotions “*guide us in facing predicaments and tasks too important to leave to intellect alone – danger, painful loss, persisting toward a goal despite frustrations, bonding with a mate, building family.*” He relates emotions to actions; however, these actions, contrary to the instincts, are culturally influenced – in one culture we mourn for our dead ones in some cultures they celebrate the deceased getting at a better place.

Apart from experiencing our own emotions we are also able to recognise emotions of others; sensing someone else’s sadness is an act of understanding the same way as understanding the meaning of a printed word. This is part of what Goleman (1996, 1999) identifies as emotional intelligence. Based on previous work of Salovey and Mayer (1990) we can identify the areas of emotional intelligence in recognising and understanding of emotions in oneself and others, regulating emotions in oneself and others as well as utilising emotions e.g. in self-motivation, motivation, directing attention, etc.

A major problem with emotions is that not only that it is hard to interpret particular emotions but the consequences do not allow a single right prediction. Let’s assume that a top executive of a company realised that the top executive of his principal competitor fall in love. Say that the realisation is correct – so what are the consequences? Will the competitor’s CEO now spend all his time on his new love and not pay attention to his company or will he be inspired and therefore more dangerous than ever? The two possible interpretations would require two very different courses of action – but which one is right? We cannot know – only our emotional intelligence may help, we can have an emotional sensation on the effect of this particular love on that particular CEO. This is why emotional is so important for leaders. (Goleman, 1998, 2000)

The peak of the emotional intelligence is achieving the state of flow (Csíkszentmihályi, 2002), in which one may far exceed one’s own normal performance, when there is no disturbance, nothing to sort out, nothing to fear – the whole attention is solely directed to what one is doing. Importantly, in flow one is also not paying attention to the outcome of one’s activity, only to the activity itself. In flow we have a full support of

our emotions in what we are doing but emotions may also take full control of our actions. This may be good or bad; e.g. Goleman (1996) lists a number of examples when the knowledge potential would have been far too slow to initiate timely and proper action and emotions, being much faster than knowledge, took control; e.g. a person jumping into the water to save someone life. Later we may think it through and perhaps conclude that it was a crazy idea. Of course, it would be quite mistaken to yield the whole domain to emotions; they could then completely paralyse our knowledge potential. This is why, as Erasmus of Rotterdam (1515) puts it, Jupiter “*has confined reason to a narrow corner of the brain and left all the rest of the body to our passions*”.

So we may make great use of our emotions but also suffer from them. Therefore, based on previous work of Mayer and Stevens (1994) Goleman (op cit) puts us into three groups: Self-aware people are aware of their emotions as they are having them, they are sure about their boundaries, they are autonomous, usually good at changing their emotions; they are in charge. Engulfed people often feel swamped by their emotions, which they cannot escape, over which they have no control; they are typically lost in their own emotions. Accepting people, although they mostly recognise their emotions, cannot change them; they consider their emotions externally determined. But probably even suffering and enduring emotions is better than having none; as Damasio’s (1994: 34-51) patient, Elliot, had no emotions and, in spite of having full command of his mental faculty, he became incapable of working or even living together with other people.

We have seen so far that there are three potentials that are all necessary for the proper functioning of human beings and they can, to some extent, override each other in some particular cases. The fourth potential, the transcendence is a somewhat different and somewhat tricky to spot.

#### **1.4. Transcendence**

By transcendence here we do not refer to something mystical, it only means transcending something, that is, going beyond something. However, some mystical phenomena can actually be explained based on our view of transcendence and the cognitive system as we describe it. Transcendence is e.g. if seeing a bird we realise something about all living beings. But transcendence is not always from smaller to bigger, it may go the other way around too, for instance Michelangelo wandering in the mountains of Carrara looking for marble for his sculpture could see that the sculpture is already in the marble, only the superfluous bits need to be removed. Transcendence is also if one can go beyond oneself and give up some pleasure for the benefit of a group, family, society, or humanity. Using and especially creating symbols or metaphors is also transcendence. In all cases of transcendence we have something that stands in place of (so symbolises) something else. For instance, when the metaphor of apple fell on Newton’s head, he realised the law of gravity. (cf Grey, 2000) If it was only the apple, so without transcendence, Newton would not get his illumination. And then, it does not even matter whether the real apple fell on his head or not.

Maslow is well-known as the father of dynamic psychology but it is less known that he, with Stanislav Grof, is one of the founders of transpersonal psychology. Maslow (1971: 259-269) lists 35 meanings of transcendence and his investigation shows that it appears in self-actualizing people; this highest level of the hierarchy of needs seems somehow to be born from the need of self-actualisation. The individual in these cases feels the urge

to transcend her/his own boundaries in space and time. The consequences include the loss of spatial sense; when transcending culture one may put universal human values above national values; death, illness, evil can be transcended as these necessities do not apply in the highs of Olympus. Even time-travel is possible, as we can learn from Maslow's own letter conveyed by his disciple Geiger (1971: xxi):

*"I'm still vulnerable to my idiotic memory. Once it frightened me - I had some of the characteristics of brain tumor, but finally I thought I'd accepted it. ... I live so much in my private world of Platonic essences, having all sorts of conversations with Plato & Socrates and trying to convince Spinoza and Bergson of things, & getting mad at Lock and Hobbs, that I only appear to others to be living in the world. I've had so much trouble... because I seem to mimic being conscious & interpersonal, I even carry on conversations and look intellectual. But then there is absolute and complete amnesia - and then I'm in trouble with my family!"*

And he Geiger concludes:

*"No one can say that these dialogues were «unreal». They bore too many fruits."*

Now we have the four potential described, we have to be careful to avoid two possible misunderstandings: Firstly, we do not want to suggest that these potentials are somehow static. The whole cognition is primarily a process and the four potentials are very fluid, changing all the time. One could argue that they do not even exist as they only become manifest through the processes in which we use them. However, we find it useful for the purpose of modelling to define the potential as entities, even if they may not remain the same in two consecutive moments. Secondly, the four potentials may appear as separate entities and we can see in reality that they constantly operate together; this is actually exactly what we aim to address in this paper. In order to do this, in the section we are going to introduce the two processes by means of which the four cognitive potentials operate.

## **2. TWO COGNITIVE PROCESSES**

In the present section we introduce to types of cognitive processes, the slow process and the instantaneous process. This means that we can identify altogether eight processes, as each potential can operate via slow or instantaneous process. These processes may operate upon the external world and upon each other. When they operate upon the external world, that we can speak of cognition of that world; and when they operate upon each other, we have a meta-cognition which is very different from the present model of knowledge about knowledge.

### **2.1. The Slow Processes**

The slow processes may be more or less slow; we have chosen the name only to distinguish them from the other type of processes, which are instantaneous. We will name the four slow processes by the potentials that operate through them; so we will talk about feeling in the case of instincts, about knowing in the case of knowledge, emoting in the case of emotions (it is important to distinguish them from the feelings that we related to instincts), and transcending in the case of transcendental potential.

Our feelings are giving us signals about the state of our body. We gradually get hungry, thirsty, sleepy, etc. These feelings are operating upon the external world, more precisely upon our relation to the external world – we will look out there for food, drink, a place to sleep, someone to sleep with, etc. However, we can also have feelings operating upon the other three cognitive potentials, e.g. if we are listening to something we already know then, unless it is particularly interesting (in which case there would still be some new knowledge in it), or we find the speaker particularly attractive (in which case we are feeding our instincts and/or emotions), we get bored and, due to our feelings operating upon our knowledge, we get sleepy. Or we can feel butterflies in our stomach when we meet the loved one. Similarly, if applied to transcendence, we can e.g. feel some emptiness (or even a sickness) when we see a symbol, when we swim out to the open sea and realise how large it is and associate it with the universe, etc.

Knowing directed towards the external world is simply anything we learn, know about, etc. for instance we know that there are four apples on the table. Knowing about the other potentials would include knowing that we are hungry, angry, in love, etc. The same way as the various potentials can operate upon each other they can also be applied to themselves. This would be the typical knowing about knowledge. Thinking is also a type of knowing; only it is directed towards mental objects; it is also enabled by knowing about knowledge. Knowing about transcendence we can think of working out step-by-step explanation of a new research result, explaining why a humanity-value should be more important than a national value, etc.

Emoting directed to the external world is when we love someone (or something) when we hate someone (or something), etc. But we can also love the mild fear when jumping into water from a several feet height, we can hate a theory, etc. If applied onto itself, emoting about emotions could mean to love being in love. Similarly we can love some value that goes beyond a previous value and we can even love the feeling of going beyond – this is now a third-level of applying the potentials on each other, a meta-meta-cognition. Of course, we can easily create infinite regression, and that way, infinite levels of cognition. We can easily experience this if we start thinking of our emotions and realise that we will over-emphasise the positive feelings about the signs that appear, thus we will try to discount those feelings and then, in turn we will know that we perhaps discounted them too much and so forth.

Transcending applied to external world may be when we can imagine what something is like seeing only a small part or a symbol of it. When applied to instincts, the transcendence would be means of adaptation and this way we can clarify some details about evolution (which means that our model may contribute to solving some conceptual problems of evolution as well); transcending applied to knowledge would be gradually working out some new knowledge, some sort of step-by-step research; when applied to emotions it would be gradually developing affection for someone or getting attached to our old car. Transcending the transcendence is rather difficult to envisage and perhaps leads to the area of mysticism or, at least, to the area of altered consciousness as in Stanislav Grof's LSD experiments or his breathing exercises.

We have given examples in this section to all the slow processes applied to the external world, each other, and themselves. This was sensible as we all know the basic slow processes very well. We shall follow a somewhat different scenario about the instantaneous processes, as we will call them in the next section intuitions; as more conceptual explanation is required we will provide fewer examples but they can easily



be constructed as we did it here. But first we need to explain why we identify intuition with the instantaneous processes.

## 2.2. The Instantaneous Processes

The importance of intuition is generally accepted in the (knowledge) management literature (Barnard, 1938; Simon, 1997; Davenport & Prusak, 2000) but there is little agreement on what intuition really is. (See Osbeck, 1999 for a historical overview.) It is important to distinguish between the *intuitive processes* and the *outcomes* of such processes. (Osbeck, 2001; Dane & Pratt, 2007) In this section we are interested in intuitive processes; following Dane and Pratt for these we use the term *intuiting* and we leave the term *intuition* for the outcome of intuitive processes. Intuiting is an instantaneous, or at least very-very fast process, which happens spontaneously (no effort is needed at the moment when it happens), it is tacit (we cannot articulate the steps of the process, and perhaps there are no steps in it), alogical (meaning that it is neither logical or illogical, simply operates outside the area of logic), and it is Gestalt (so it is about a whole rather than about the details). (cf Sadler-Smith, 2008: 10 ff) Another very important characteristic is that the intuitives are confident about their intuition; as a quotation usually attributed to Agor puts it beautifully:

*“Intuition is when you know for sure without knowing for certain.”*

Gerard (cited by Vaughan, 1979: 66-80) distinguished four levels of intuitive awareness: the physical, the emotional, the mental, and the spiritual. If we compare the explanation of the four levels of intuitive awareness to the four cognitive potentials we will see that they are a match.

What makes intuiting very complicated (from ‘user point of view’) is that it is very similar in its appearance to hopes and fears. So, how can we distinguish between being intuitively aware of something bad that is going to happen and our fear that that bad thing will happen? How can we distinguish between intuiting a happy outcome and our hope for the happy ending? One thing we can do is to try developing our capacity of intuiting and recognising intuition; this will involve introspection, practicing and comparing intuition to the outcomes in the real world. (See e.g. Agor, 1989) These are related to the above mentioned feeling of confidence mentioned above. The other thing we can do is based on an important observation in the area of intuitive knowledge (mental intuition); namely that intuition only appears on high levels of expertise (see e.g. Simon, 1987; Prietula & Simon, 1989; Klein & Weick, 2000) – we can generalise this observation and say that for intuiting maturity at the corresponding cognitive potential is required. This means that on high level of expertise one may become good at mental intuiting, an emotionally mature person will probably be good at emotional intuiting, etc.

Based on reports from intuitive executives (e.g. Agor, 1986; Hayashi, 2001), scientists (e.g. Hadamard, 1954), and artists (e.g. Goldberg, 1983) we can see that the experience of intuiting is not of a pure type; meaning that there are e.g. physical or emotional effects accompanying the creation of a knowledge. This can be represented in our model by applying the four cognitive potentials onto each other and themselves in the process of intuiting, the same way as in the case of slow processes.

On the one hand, the creation of a new knowledge in a flash of the genius means that the transcendental intuiting is operating upon knowledge and, at the same time, a physical or bodily intuiting is operating upon the transcendence which gives us a funny feeling in our stomach or e.g. a rush of love. For instance, when James Clerk Maxwell had put together his famous four equations describing the nature of the electromagnetic fields, he used all his conceptual knowledge and observations; but then, he has chosen to modify the equations by adding another component that could not have been justified at that time saying that it is needed so that the equations would be beautiful. Of course, research results many years later justified adding that component.

On the other hand, we will normally not use a single cognitive potential but a blend in each cognitive process; so at the same time we can e.g. gradually develop affection towards someone while also knowing in a flash that that person will be important for our future and also having an unreasonable sense of fear or joy resulting from physical intuiting. However, to explain how we are blending the various cognitive potentials in the two processes, we need one last component that controls this blending. This last component will be the freedom but to talk about it we also need very briefly to address the question of memory.

### **3. EXPLAINING COGNITION**

In order to understand how the four potentials work, we need to understand where these potential are and how they are stored. We are not going into the neuropsychology of cognition; we only aim at conceptual model. We do not examine the brain, only the mind. As we see it at the moment, the place where the cognitive potentials reside is the memory. In the case of knowledge, it is widely accepted that it is stored in the long-term memory (LTM). (Schacter, 1996, 2003) It is also mostly accepted (ibid) that memories also have emotional dimension. We can also experience this quite easily: if we recall a memory in case of which we had strong emotions it was recorded, we will relive a mild version of that emotion. Instincts are considered to be genetically coded (e.g. Lorenz, 1937) but we can also have a similar experience as in the case of emotions: when we remember a dish that we particularly enjoyed, we will suddenly feel unreasonable hunger, as in Pavlov's (1927) experiments. Some will use this example to distinguish between instincts and reflexes. Anyway, the genes can be regarded as some sort of memory of the species – even if this notion of memory is somewhat different than the individual memories. The most difficult situation we find once we try to locate the transcendental potential. For now we think about transcendence as rearrangement of memories but maybe we will have a better model later. In this paper the cognitive potentials are considered to be in the memory. The last remaining element of our model is the freedom, which governs the blending of the various cognitive potentials.

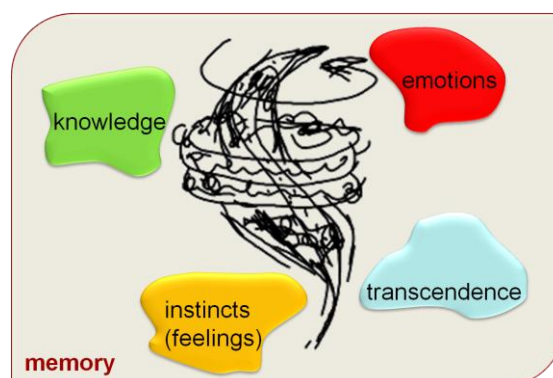
#### **3.1. Freedom: Governing Cognition**

Fromm (1942: 26) distinguishes two kinds of freedom: the negative, or "*freedom from*" and the positive or "*freedom to*". We are free from the bonds of the pre-individualistic society; but we are also left without the safety it guaranteed; we are left in isolation. There are two answers for this situation; either we seek new dependences and submissions or we advance to realisation of positive freedom based on uniqueness and individuality. The answer is provided by Szondi's (1954) fate-analysis.

According to Szondi we have several possible fates for ourselves. These are determined by our genome and instincts (ontogenetic and phylogenetic heritage) on the one hand and by the socio-cultural environment we are in throughout our lives on the other hand. Nobody can choose a fate that (s)he has not seen and/or is not built into her/him. However, the (positively) free person can choose from the available ones, while the others live a constraint-fate. The first are the “*self-strong*” people, the second the “*self-weak*” or “*fate-ill*” people. Szondi claims that only people who can choose their destiny can be happy. This shows, from a different perspective, that freedom is necessary to make our own choices. And who can be free? According to Szondi the answer lies in the children’s room. The children’s room is not necessarily a separate room but a place where the child can realize herself/himself. Where it is not compulsory to have the grandmother’s picture on the wall but (s)he can hang on her/his favourite band or movie star or whatever sort of idol. Of course, the children’s room is partly symbolic; it refers to the difference between being brought up to obedience or to freedom.

We are not directly blending our cognitive potentials just for fun but rather we are trying to achieve something and we choose, if we can, a blend that fits with what we want to achieve. We intentionally avoid using terms such as ‘goals’ and ‘objectives’ as they would distort our message. What we want to achieve may be a goal but it also may be a value. We may do something in order to achieve a goal or because we think that is the right thing to do. This is the difference between the goal-rational and the value-rational approach, which, in turn, results in difference between the consequence-ethics and intention-ethics. (Baracscai, 1997; Baracscai & Velencei, 2004) Why are we including ethics now? It is the price of freedom. Freedom implies responsibility and responsible people cannot avoid dealing with moral questions. The moral dimension includes determining the scope of what we want to achieve, examining who are affected and considered – so who are the stakeholders. Achieving a goal or a value in cognition is achieving a meaning. The notion of meaning is usually restricted to the conceptualisation of knowledge, the same way as cognition. However, we need to extend the notion of meaning to the other three potential as well. And the “*the achievement of meaning cannot properly be divorced from intellectual freedom*”. (Polanyi & Prosch, 1977: 3)

To summarise, we envisage the four cognitive potentials located in the memory, the freedom as a vortex storms in the middle blending the four potentials in order to achieve a meaning. (Figure 1) If one is free in Szondi’s sense, the vortex is great and blends the four potential according to the freely chosen meaning. If one is fate-ill, the meaning is pre-determined and the same blend is used all the time, whenever the same situation occurs. Of course, one is not necessarily conscious of not being free, as Spinoza’s (1677: 168) stone was thinking that it is falling as it likes to do so.



**Figure 1: The system of cognition**

## CONCLUSION

In the present paper we pulled together knowledge from the wide variety of fields in order to build a new conceptual model of cognition, which provides rich explanation for a wide range of phenomena. We believe that this aim has been achieved; our model provides richer explanation than previously available on various aspects of cognition and meta-cognition, on some part of the idea of evolution and is also in harmony with the conception of autopoiesis.

## REFERENCES

- Agor, W.H. (1986) 'The Intuitive Ability of Executives: Findings from Field Research', Agor, W.H. (ed. *Intuition in Organizations: Leading and Managing Productively*, Sage Publications, Newbury Park, CA, pp. 145-156.
- Agor, W.H. (Ed.) (1989) *Intuition in Organizations: Leading and Managing Productively*, Sage Publications, Newbury Park, CA.
- Atkinson, R.L., Atkinson, R.C., Smith, E.E., Bem, D.J. and Nolen-Hoeksema, S. (2000) *Hilgard's Introduction to Psychology* (13<sup>th</sup> edition), Harcourt College Publishers, Orlando, FL.
- Baracscai, Z. (1997) *Profí döntések (Master of Decision Making)*, "Szabolcs-Szatmár-Bereg megyei Könyvtárak" Egyesülés, Nyíregyháza, Hungary. [Published in Hungarian]
- Baracscai, Z. and Velencei, J. (2004)... *i u e-doba odlučuje čovjek (Decision Taking in the e-Age)*, Sinergija, Zagreb, Croatia. [Published in Croatian]
- Barnard, C.I. (1938/1968) *The Functions of the Executive*, Harvard University Press, Cambridge, MA.
- Benedek, I. (1987) *Az ösztönök világa (The World of Instincts)* (2<sup>nd</sup> edition), Minerva, Budapest, Hungary. [Published in Hungarian]
- Birney, R.C. and Teevan, R.C. (Eds.) (1961) *Instinct: An Enduring Problem in Psychology*, Van Nostrand Reinhold, Princeton, NJ.
- Boulding, K.E. (1966) "The Economics of Knowledge and the Knowledge of Economics", *The American Economic Review*, vol. 56 no. 1/2, pp. 1-13. Electronic version: <http://links.jstor.org/sici?sici=0002-8282%28196603%2956%3A1%2F2%3C1%3ATEOKAT%3E2.0.CO%3B2-6>
- Csikszentmihályi, M. (1997) *Creativity: Flow and the Psychology of Discovery and Invention*, HarperCollins, New York, NY.
- Csikszentmihályi, M. (2002) *Flow: The Psychology of Optimal Experience* (2<sup>nd</sup> edition), Rider, London.
- Damasio, A.R. (1994/2005) *Descartes' Error: Emotion, Reason, and the Human Brain*, Penguin Books, New York, NY.
- Dane, E. and Pratt, M.G. (2007) "Exploring Intuition and its Role in Managerial Decision Making", *Academy of Management Review*, vol. 32 no. 1, pp. 33-54. Electronic version: <http://search.ebscohost.com/login.aspx?direct=true&db=vfh&AN=23463682&site=ehost-live>
- Davenport, T.H. and Prusak, L. (2000) *Working Knowledge: How Organizations Manage What They Know* (paperback edition), Harvard Business School Press, Boston, MA.
- Drucker, P.F. (1993) *Post-Capitalist Society*, Harper Business, New York, NY.

- Erasmus of Rotterdam, D. (1515/2005) *Praise of Folly*, Penguin Books, London.  
Electronic version: <http://www.gutenberg.org/dirs/etext05/7efly10.txt> (accessed 31/03/2008)
- Fletcher, R. (1968) *Instinct in Man: In the Light of Recent Work in Comparative Psychology* (2<sup>nd</sup> edition), Unwin University Books, London.
- Fromm, E. (1942) *The Fear of Freedom*, Routledge, London.
- Geiger, H. (1971) 'Introduction: A. H. Maslow', Maslow, A.H. (ed. *The Farther Reaches of Human Nature*, Penguin Compass, London, pp. xv-xxi.
- Gladwell, M. (2005) *Blink: The Power of Thinking without Thinking*, Penguin Books, London.
- Goldberg, P. (1983) 'The Intuitive Experience', Agor, W.H. (ed. *Intuition in Organizations: Leading and Managing Productively*, Sage Publications, Newbury Park, CA, pp. 173-194.
- Goleman, D. (1996) *Emotional Intelligence: Why It Can Matter More Than IQ*, Bloomsbury, London.
- Goleman, D. (1998) "What Makes a Leader?", *Harvard Business Review*, vol. 76 no. November-December, pp. 93-102.
- Goleman, D. (1999) *Working with Emotional Intelligence*, Bloomsbury, London.
- Goleman, D. (2000) "Leadership that Gets Results", *Harvard Business Review*, vol. 78 no. March-April, pp. 78-90.
- Grey, W. (2000) "Metaphor and Meaning", *Minerva - An Internet Journal of Philosophy*, vol. 4. Electronic version: <http://www.ul.ie/~philos/vol4/metaphor.html> (accessed 10/01/2007)
- Hadamard, J. (1954) *The Psychology of Invention in the Mathematical Field*, Dover Publications, New York, NY.
- Hayashi, A.M. (2001) "When to Trust Your Gut", *Harvard Business Review*, vol. 79 no. February, pp. 59-65.
- Klein, G. and Weick, K.E. (2000) "Decisions: Making the right ones. Learning from the wrong ones", *Across the Board*, vol. 37 no. 6, pp. 16-22. Electronic version: <http://vnweb.hwwilsonweb.com/hww/jumpstart.jhtml?recid=0bc05f7a67b1790e029d610c70c618e1e7a103d48ec260a1a3df682a36eecbc3e9af955d99580d96&fnt=H>
- Lorenz, K.Z. (1937) 'Imprinting', Birney, R.C. & Teevan, R.C. (eds.) *Instinct: An Enduring Problem in Psychology*, Van Nostrand Reinhold, Princeton, NJ, pp. 52-64. Originally published in *The Auk*, 54: 245-273.
- Margulis, L. (1999) *The Symbiotic Planet: A New Look at Evolution*, Phoenix, London.
- Maslow, A.H. (1943) "A Theory of Human Motivation", *Psychological Review*, vol. 50 no. 4, pp. 370-396. Electronic version: <http://psychclassics.yorku.ca/Maslow/motivation.htm> (accessed 17/09/2006)
- Maslow, A.H. (1968) *Toward a Psychology of Being* (2<sup>nd</sup> edition), Van Nostrand Reinhold, New York, NY.
- Maslow, A.H. (1971/1993) *The Farther Reaches of Human Nature*, Penguin Compass, London.
- Maslow, A.H. (1987) *Motivation and Personality* (3<sup>rd</sup> edition), Addison Wesley Longman, New York, NY.
- Maturana, H.R. and Varela, F.J. (1979) *Autopoiesis and Cognition: The Realization of the Living*, Kluwer Academic Publishers, Dordrecht, Netherlands.
- Mayer, J.D. and Stevens, A.A. (1994) "An Emerging Understanding of the Reflective (Meta-) Experience of Mood", *Journal of Research in Personality*, vol. 28 no. 3, pp. 351-373. Electronic version: <http://www.sciencedirect.com/science/article/B6WM0-45P0FKD-W/2/1185052f3263fe4f501c335f02a90be0>

- Neisser, U. (1967) *Cognitive Psychology*, Meredith Publishing, New York, NY.
- Osbeck, L.M. (1999) "Conceptual Problems in the Development of a Psychological Notion of "Intuition"", *Journal for the Theory of Social Behaviour*, vol. 29 no. 3, pp. 229-249. Electronic version: <http://www.blackwell-synergy.com/doi/abs/10.1111/1468-5914.00100>
- Osbeck, L.M. (2001) "Direct Apprehension and Social Construction: Revisiting the Concept of Intuition", *Journal of Theoretical and Philosophical Psychology*, vol. 21 no. 2, pp. 118-131. Electronic version: <http://soe.indstate.edu/div24/JTPP%20Articles/21-2/the202.pdf>
- Pavlov, I.P. (1927) *Conditioned Reflexes: An Investigation of the Physiological Activity of the Cerebral Cortex*, Routledge and Kegan Paul, London. Electronic version: <http://psychclassics.yorku.ca/Pavlov/>
- Polanyi, M. and Prosch, H. (1977) *Meaning*, The University of Chicago Press, Chicago, IL.
- Prietula, M.J. and Simon, H.A. (1989) "The Experts in Your Midst", *Harvard Business Review*, vol. 67 no. January-February, pp. 120-124.
- Russell, B.A. (1946/2004) *History of Western Philosophy*, Routledge, London.
- Sadler-Smith, E. (2008) *Inside Intuition*, Routledge, London.
- Salovey, P. and Mayer, J.D. (1990) "Emotional intelligence", *Imagination, Cognition, and Personality*, vol. 9 no. 3, pp. 185-211. Electronic version: <http://baywood.metapress.com/link.asp?id=duggp24e52wk6cdg>
- Schacter, D.L. (1996) *Searching for Memory: the Brain, the Mind, and the Past*, Basic Books, New York, NY.
- Schacter, D.L. (2003) *How the Mind Forgets and Remembers: The Seven Sins of Memory*, Souvenir Press, London.
- Simon, H.A. (1987) "Making Management Decisions: the Role of Intuition and Emotion", *Academy of Management Executive*, vol. 1 no. 1, pp. 57-64.
- Simon, H.A. (1997) *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization* (4<sup>th</sup> edition), The Free Press, New York, NY.
- Spinoza, B. (1677/2000) *Ethics: Demonstrated in Geometrical Order*, Oxford University Press, New York, NY.
- Sveiby, K.-E. (1997) *The New Organizational Wealth: Managing & Measuring Knowledge-Based Assets*, Berrett-Koehler Publishers, San Francisco, CA.
- Szondi, L. (1954/1996) *Ember és sors: Három tanulmány (Man and Fate: Three Studies)*, Kossuth Könyvkiadó, Budapest, Hungary. [Published in Hungarian]
- Tsoukas, H. (2005) *Complex Knowledge: Studies in Organizational Epistemology*, Oxford University Press, Oxford.
- Vaughan, F.E. (1979) *Awakening Intuition*, Anchor Books, New York, NY.