Why is Reflective Thinking Uncommon?

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ABSTRACT *This paper presents some thoughts about the use of the word 'reflection' and the provocative statement that reflection seems not to be a spontaneous everyday activity in our professions or everyday life. The discussion focuses on the cognitive aspects of reflection. As reflection is regarded as a conscious activity the hypothesis of a conscious 'I' and an unconscious 'me' is discussed in the light of information theory and their suggested functions in understanding and grasping the world. It is suggested that as a consequence of short-term memory and our flashlight-like consciousness scanning our perceptive world, it is difficult to keep our consciousness focused on one thing for longer times. This is suggested to be of evolutionary survival value with the consequence that focused reflection needs active effort and energy, and thus is not a spontaneous activity. It is also suggested that the conscious 'I' and its capacity to reflect is of evolutionary and historic recent origin, arising in the dawn of modern society in association with the development of a free will. The reflective capacity is thus epigenetic and has to be learned and encouraged.*

Background

Reflection is a key element in the action research process (Reason & Bradbury, 2001) and a main element in the theory of experiential learning (Kolb, 1984) as well as in the practice of teaching and learning (Cruickshank, 1987; Glimmett & Erickson, 1988; Henderson, 1992, Polland & Tann, 1987; Posner, 1985; Ross *et al.*, 1993; Russell & Munby, 1992; Schön, 1987). Notwithstanding the huge literature on reflection, I have found a general unspecified use and broad meaning of the word among many teachers (Gelter, 2003). Despite its power to improve learning and practice, reflection does not seem to be a spontaneous activity in our professions or everyday life as we need to actively dedicate time and effort to make reflections. We also have to request students to reflect in their learning. The clear identification in literature of the urge and the strong recommendations to reflect on practice, especially in teaching and nursing (Ghaye & Lillyman 2000), indicate that reflection is not an everyday professional behaviour. The only spontaneous reflection we do is when something has gone wrong, when we fear failure or after a major life crisis. Here I will propose cognitive causes that make reflection an uncommon activity.

FIG 1. Reflection as a learned selection tool to keep the mind focused on one problem under reflection.

Reflection and Thinking

As is commonly understood, reflection is a conscious, active process of focused and structured thinking which is distinct from free floating thoughts, as in general thinking or day-dreaming. How our thoughts are generated is still an important research question in cognitive science. During reflection the relevant thoughts may be generated *per se* by the reflective process or reflection may be a process of selecting relevant thoughts that are spontaneously generated (see Fig. 1).

The first possibility implies a genetic predisposition for reflection in the brain that facilitates the generating of relevant thoughts for reflection. As the growth of neurons is largely epigenetic (Damasio, 1994) it is more plausible that reflection is a learned process of an unconscious selecting of spontaneously generated thoughts that are metaphorically 'bent' back into the conscious focus while non-relevant thoughts are left to fade away. The first possibility implies that reflection is an evolutionary old cognitive feature while a learned selection process can be of more recent origin.

The concept of consciousness is important in understanding reflection. There are currently at least 12 schools of thought with different approaches to consciousness (Wilber, 1997). One hypothesis with interesting implications for reflection is the distinction between the conscious 'I' and the unconscious 'me' (Nørretranders, 1996). In this view the notation 'I' includes all the physical actions and psychological processes that are initiated by the conscious mind and the 'me' notation those that are not. The 'I' is the conscious actor while the 'me' is the rest of my person. This corresponds to their linguistic use as in 'I stopped me'. Thus we can regard conscious reflective learning as the learning of the 'I' while unconscious learning is

learning through the 'me'. While the brain with 100 billion neurons has a bandwidth capacity of handling 100 billion bits per second the conscious mind only has a bandwidth of about 50 bits per second (Küpfmüller, 1971; Nørretranders, 1996; Zimmerman, 1989). This means that the 'I' has an information handling capacity of only 1:100,000,000,000 to the 'me'.

Grasping the World

There are two modes of grasping the world according to Kolb (1984). These correspond to the two dimensions in the learning process as the concrete experiencing of events and the abstract conceptualisation of it. The first is called apprehension and is a way of summarising our sensations. The second is called comprehension and is a way of introducing order in such sensations and making them communicable. The former uses phenomenal language, referring to felt qualities of experience, the latter uses physical language referring to descriptive symbols. Through feelings we become acquainted with things but by our thoughts we know about them. In communicating our conceptualisation of the world we need to transfer our feelings about the world to our internal cognitive language 'mentalese' (Fodor, 1975) or make it explicit orally or written through a language. Thus our broadband perception and internal conception of the external world has to be reduced 1,000,000:1 to our cognitive conscious mind with an information carrying capacity of about 50 bits per second to be expressed in a language (Nørretranders, 1996; Trinker, 1966).

This dual-knowledge epistemology has gained compelling support from Roger Sperry's 'split-brain' studies indicating a functional specialisation of the two hemispheres of the neocortex (Sperry *et al.*, 1969) into a left-mode comprehension function and a right-mode apprehension mode (Edwards, 1979). This theory of two distinct, coequal and dialectically opposed ways of understanding the world also has support from psychology where Zajonc (1980) showed that feeling and thinking are separate processes where feeling and affective judgement occurs before cognitive analysis, a conclusion also made by neurobiology (Damasio, 1994). This suggests a basis for the process called 'intuition', that intuitive behaviours are guided by a broadbanded affective judgement in the apprehension process not available to the conscious mind. This view of an affective apprehension mode as the primary way to knowing about the world is supported by human evolution where non-verbal communication based on expressed feelings precedes verbal language communication based on logical and analytical conceptualisations. This emotional way of acting towards the environment predates humans and is an adaptive feature in most animals. Neurobiology has found that feelings regulate our attentions and influence our logical reasoning and this might be a consequence of feelings being an ancient survival mechanism (Damasio, 1994). Our awakened brain investigates and constantly probes our internal and external environment to determine what is important for our survival. Our awareness mechanisms support our neural network such as it can be focused on important things in our internal or external environment while monitoring or ignoring unimportant things. Feelings and attention are quick and

strong adaptations for a quick general judgement about the situation on the basis of our basic needs and values (to survive, eat, mate, social care) and action on threats in the environment. The slower narrow-bandwidth cognitive logical comprehension of the situation would not be adequate in dangerous situations. It is better to escape many times based on imprecise feelings and intuition than stay once to obtain more detailed analysis and die well informed (Sylwester, 1995).

Our awareness system has a short-term memory buffer that lets us keep only a few information bits in our conscious mind at any time, 'Millers magic number 7' (Miller, 1956), while we decide to go on to analyse other features in our environment or keep the information in our long-term memory to use in future similar encounters with the environment. The benefit with this limited conscious capacity of our awareness is that it forces us to focus on a limited area of a huge sensational field. Thus feelings regulate our awareness that regulates learning and memory. Memory has the evolutionary task of preparing us for similar situations or lets our experience guide us in new situations. Our conscious mind is like a flashlight constantly flickering around our perceptive world and we need to put in energy and effort when trying to keep our conscious flashlight in one spot (see Fig. 2).

This may partly explain why keeping a focus on reflection is not an easy and natural everyday activity. Keeping our consciousness too focused on one thing for a long period could be dangerous for survival in a hazardous environment. Our flickering awareness has thus an evolutionary survival value.

An further important finding is that all our actions start unconsciously—the execution of our consciously determined actions are always initiated by unconscious brain activity that starts 0.5 seconds before the action (Libert *et al.*, 1983). This delay in the conscious 'I' means that our conscious cannot initiate actions, but only choose to execute them! Our consciousness 'I' is a result of our brain activity where a thousand billion nerve cells reduces in a half second 11 million bits of sensory information to 50 bits of consciousness and erase the traces of all that information not used so that those 50 bits can be used to consciously understand the world (Senjowski *et al.*, 1988). With such limited information, the 'I' cannot react to the world, it must be done by the 'me' based on the total information at hand guided by our primary survival mechanisms expressed as our feelings. Our brain is thus an enormous information reduction device (Fig. 2) enabling the brain to focus on what is important for survival. If the primary analysis by our feelings and intuition is not enough, the conscious 'I' can do a more careful analysis, which is the process of reflection—which, however, takes time. A football player does not have the time to be conscious of what he is doing. He does think while playing but he is not consciously deciding what and why he is doing things (such as, go right or left). When something has to be done very quickly the 'I' cannot be involved. Only the 'me' has the capability to react. The consequences are that I have a free will, but it is not my conscious 'I' that has it, it is my unconscious 'me'. The 'I' is thus a user illusion of myself, and due to the half second of delay the 'I' cannot have control of my actions and decisions. Only when time permits does the 'I' have control, that is only when we can reflect, actively think about what we are doing, can we have conscious control of our actions, like when we learn to drive a car. The conscious

FIG. 2. The conscious mind as a narrow bandwidth flash exploring the perceived world.

is delayed half a second because the brain has to create a suitable picture of the world. In our experience of the world sensations from all our senses are compiled to an internal picture or 'feeling' of the world that is experienced by our consciousness (Fig. 2). If the brain did not have a half second to reduce the information content and synchronise the different impressions from our sensations of the world we would get a shaky or jittery picture of the world (Nørretranders, 1996). Thus, the 'I' experiences the world half a second after the 'me' has compiled it and already made

decisions of how to react to it. This is a pure survival mechanism—if the conscious ‘I’ ruled, both the information at hand to make decisions (50 bits per second) and the slow information handling (sequential linguistic thinking) would result in a low survival value in the complex world.

The Evolutionarily Recent ‘I’

Another finding (Jaynes, 1976) is that before 3000 years ago people had no consciousness of ‘I’ but only a ‘me’. People reacted automatically according to their feelings and what the Gods told them. Jaynes proposed that a person’s soul had two sides that corresponded to the right and left brain hemisphere. The non-linguistic activities such as intuition in the right hemisphere were communicated to the left hemisphere through internal voices that ‘talked’ in the head of a person. These voices were interpreted as the voices of the Gods inside them and from these voices they got to know what to do. Once the capability of having a picture of the world was obtained, this could be reflected over. Through reflection you can imagine yourself in this world and see yourself from the outside and thus think into situations and wonder how you should react. The ‘I’ concept is the capability to have a map of the world which one is part of and to be able to reflect consciously about what to do in this world. This gives the ‘I’ a free will. During the ‘me’ period people were controlled by the Gods (intuitive voices) and guided by more basic survival values through their feelings. When the ‘I’ appeared its function was to control the person’s actions based on feelings through reflection and free will according to an external value system, the personal and cultural ethics. The concept of a free will seems to first appear in the dawn of our civilisation and became incompatible with the existence of Gods that acted through commanding voices. This led to the Gods becoming external and more a part of mythology than to be commanded from. The ‘I’ became a value system for the actions of the ‘me’, to reflect over what the ‘me’ has done or should do. The new monotheistic concept of God became the rescue for the ‘I’ when it was confronted with features of the ‘me’ (happiness, love, hate, evil) that it could not explain or control. The ‘I’ had to confess that there is something that is bigger than itself, the ‘me’ which the ‘I’ is not normally conscious of, a kind of divine essence within. Prayers, meditation and ceremonies are ways of contacting this inner divinity. The ‘God inside’ is the part of the human that the conscious ‘I’ cannot explain (Nørretranders, 1996).

Conclusion

I suggest that the conscious capability to reflect appears not to be an evolutionary old feature and genetically determined capability of the mind, but rather a historically recent learned feature, which could explain why reflection has not yet become a natural everyday activity in our life. This recent logical conscious thinking based on the left hemispheric capability appears to have its historical origin in the dawn of Western society and the development of a free will in society while the original intuitive emotional way of interacting with the world has to some extent been lost.

I see the capability of reflection and act according to its conclusion as an important part of a free soul and a culture based on democracy. Reflection is thus more than just a learning tool. It is an important ethical tool to take control of your own life, letting the conscious 'I' use social and personal values to guide your actions rather than simple survival values determined by the 'me', which can easily be controlled by others. To know the existence of the 'I' and 'me' with their information handling limitations and to see the benefits of reflection for my everyday actions and values could lead to a more balanced view and understanding of myself and my interactions with the world.

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