Polskie Forum Psychologiczne, 2020, tom 25, numer 2, s. 208–220
DOI: 10.14656/PFP20200204

INNER PICTURE OR INNER DESCRIPTION – IS IT POSSIBLE TO COMBINE COGNITIVE CODES WITH AUTOBIOGRAPHICAL MEMORIES AND WHAT WE EARN FROM IT?

Paweł Błaszczyński[1]

Summary. Actual approach to memory is to treat it as an active tool of the self. A proposition of using cognitive codes, including visualizing, to understand mechanisms of the self is one of the way that contemporary psychology may use. This article shows how visualisation exists in the field of psychology and how theoretical constructs of two main cognitive codes may be combined with a subject of autobiographical memory and the self. This discussion is getting really important for personality psychology so the article shows what have been done and some main areas that need to be further explored in the future.
Key words: visualisation, autobiographical memory, self, imaginary, life story

Introduction

Visualization is simply a way to make something seen. Although many studies of visualization have been published, there are not too many that show a wider, psychological perspective of this term and discuss its history, as well as how visual narrative works in these two aspects of human functioning. The art of visualization has been especially explored in the field of scientific visualization. In this meaning visualization is a widely acknowledged discipline to explore vast numerical data by interactive analysis of their visual representations (Astheimer, 1993).

Visualization is one of these terms that refer to a very vast area of knowledge and practice. It seems to be a very interesting and promising scheme of thinking about human's mind. It is still not explored enough and there is a need for treating visualization as a key word connecting nearly all fields of psychology and culture.

[1] Zespół Psychologów Wojewódzkiego Specjalistycznego Szpitala im. M. Pirogowa w Łodzi (Psychology Unit of the M. Pirogow Regional Specialist Hospital in Lodz), ORCID: 0000-0003-0843-9061.

Adres do korespondencji: Paweł Błaszczyński,
e-mail: bloom22@poczta.onet.pl

If we treat psychotherapy as a thin slice of a human's being *per se* we may find out that visual narratives being used in psychotherapy are really good examples of human functioning in social and cultural life.

It seems very interesting, even for psychologists, how visualization is seen by researchers that are not psychologists. It has really started in territory of mathematics, computer techniques have extremely simplified the visualization process, and visualization has become an invaluable tool in scientific research. Not only visualization help to obtain a better interpretation of plain data, it also serves as a tool in presenting new results to a possibly non-expert audience. Visualization also harnesses the perceptual capabilities of a human to provide visual insight into data.

Visualization as a psychological concept has got a specific character. It is a term strictly connected with imagination (or imagery) and it seems to be extremely hard to say which area of psychology it is connected to. After Descartes's dualism had taken roots in the Western mind, imagination was stripped of its role in disease and wellness (Sheikh, Kunzendorf, Sheikh, 2003). Some of the William James's interests were connected with the area of imagination, but the beginning of behaviorism stopped a debate over imagination for a long time. According to Klinger (1971) from 1920 to 1960 there was a moratorium in North American psychology on the study of inner experience, and not even one book on the topic of mental imagery was published. It was a bit different in European psychology. Carl Gustav Jung indicated his belief in the mind-body unity as a life process and proposed that imagery is a vehicle of perceiving and experiencing this life process. This difference between North America and Europe might have been the effect of different style of thinking: phenomenological and existential in Europe and very pragmatic in America. About the 1970s the situation started changing and since that time the most important findings in the area of imagination have been revealed, mainly by American and British psychologists. At the moment there are not too many researchers and practitioners brave enough to ignore imagination. Two possible ways of psychological thinking of visualization in psychology, cognitive and psychotherapeutic, show very different kinds of using imagination and thinking about this term.

Visualization and psychotherapy

The easiest way of thinking about psychotherapy is thinking about American psychotherapy. A simple reason to do that is the fact American psychotherapy is the most developed and nowhere else it is as popular as there.

Imagery approaches in America can be categorized into the following groups (Astheimer, 1993): (1) based on the Pavlovian and Skinnerian models: they highlight the relationship between images and emotional responses as well as the ability of images to act as powerful stimuli. These procedures include systematic desensitization, implosion therapy, covert conditioning, coping imagery and stress inoculation

(Wulpe, in: Kratochvil, 2005); (2) composed of the procedures advanced by a number of clinicians who believe that mental images effectively give us a clear understanding of our perceptional and affective distortions (Beck, in: Kratochvil, 2005); (3) a number of approaches that consist of imagery rehearsal of physical and psychological health (Achterberg in: Kratochvil, 2005); (4) image therapies with a psychoanalytic orientation; (5) emphasis on healing through "magical" or "irrational" methods as opposed to rational of reflexive techniques (Eidetic psychotherapy); (6) emphasis on greater access to experience, on a variety of states of consciousness, and on increasing realization of potentials (oneirotherapies, autogenic training, Jungian active imagination).

There are plenty of studies confirming strict relation between visualization techniques and a success of psychotherapy process (Paul-Cavalier, 1992; Epstein, 1996; Ellis, 1999; Lazarus, 2000). Research on regulation of affective states by though control efficacy seem very interesting. Evidence shows that individuals who happen to be good visualizers profit more from cognitive enactment than do poor visualizers. Having people visualize themselves executing activities skillfully raises their perceived efficacy that they will be able to perform better. This is true for skills in coping with stressors (Bandura, Adams, 1977) as well as for physical skills (Feltz, Riessinger, 1990).

Staying in the area of psychotherapy there is another way of looking at visualization. This is an aspect that emphasizes its narrative character. As McIntyre (1981) has suggested there is an inevitably need to place the action in a narrative context. Blair, Ma and Lenton (2001) add that mental imagery has many of the same characteristics as a real experience, including concrete details, causal sequences, logical constraints, concomitant emotional arousal, and similar neurological characteristics (Kosslyn, 1994; 1995; Dadds et al., 1997).

The way of looking at life in a narrative context gives a wide perspective of human being, with its time perspective as well as external and internal place of acting, with conscious and unconscious aspect of mind's activity.

Visualization and cognitive psychology

The term 'visualization' in the area of cognitive psychology is strictly connected with one of the biggest events in world's psychology which was Imagery Debate. It was not only psychology that a part of this debate, but also all the branches of knowledge called as cognitive science. The debate was focused on the relationship among perception, representation and mental imagery.

The modern debate about mental imagery has gone through two phases and has just entered the third one. The first phase began in 1973 with the publication of Pylyshyn's paper *What the Mind's Eye Tells the Mind's Brain: A Critique of Mental Imagery* and Anderson and Bower's book *Human Associative Memory*. The trust of the critique of imagery was that a depictive representation does not occur in the brain

when people experience mental images; instead, propositional representations are used for all forms of cognition – including imagery (Kosslyn, 1995).

The second phase of the debate began about eight years after the first. Whereas the proponents of depictive representation claimed that the data reflected the processing of such representations, the propositionalists now focused on possible methodological problems with the experiments. The second phase ended with a fizzle. Most researchers found the arguments about methodology uninteresting and many felt that issue could not be resolved without making many difficult-to-defend assumptions (Kosslyn, 1995).

The third phase of debate came not from the field of cognitive science but from neuroscience. The most critical were three pieces of information (Kosslyn, 1995):

- some visual areas of the brain are topographically organized. Three regions of cortex preserve the spatial structure of the retina; patterns of stimulation of the retina are represented in a functional space that is implemented in physical space in these regions of cortex;
- it has been found that connections between visual areas typically do not simply send information downstream. Rather, these connections usually run in both directions;
- the areas of the brain that store visual memories are not topographically organized.

Those findings made the debate very open for different points of view. Much different was also the way of looking for the answers about imagery: it looks like it change from 'what is different between us' into 'what can we find together'.

A distinction between cognitive codes an aspect of memory is strictly connected to Tulving's suggestion – the first important distinction between aspects of autobiographical memory was his discrimination between semantic and episodic memory (Tulving, Markovitsch, 1998). Episodic memory system is overbuilt on cortical and sub-cortical systems of memory, but it also uses its own systems (Tulving, 2002). Episodic memory emerged when procedural and semantic memory had existed (Tulving, 2002), but some researchers see it the opposite way (see: Conway, 2005; 2009). According to Tulving's view, episodic memory enables mental travels in time, into the past as well as into the future. This kind of memory should also be a base of autonoetic consciousness, subjective feeling of the time and the self. Neuroanatomical data also suggest that a distinction between episodic and semantic memory is justified (see: Desgranges, Baron, Eustache, 1998). There are many similarities between these two systems (Levine et al., 2004; Piolino, Desgranges, Eustache, 2009). The main difference is that semantic memory is a knowledge about words and other verbal symbols, relations between them and rules, formulas and algorithms of manipulating with symbols, relations and terms. Whereas, episodic memory is about events, which a person was engaged in as an originator or a participant. Gardiner (see: Gardiner, Richardson-Klavehn, Ramponi, 1997) claims that the simplest distinction between these two systems is a way people talk about memories („know"

or „remember"). General events' representations are stored independently from specific ones (Handy et al., 2004). Levine and others (2004) suggest, that representations of general events contain not only specific events, but also some normative and prescriptive elements, which come from own experience and social knowledge. At the same time, imaginations built on a base of semantic memory are seen as less vivid and detailed than these, which are based in episodic memory (see: Brewer, Pani, 1996). It also seems possible that simple distinction between „know" and „remember" is not easy for many people (see: Smeets et al., 2005). Scoboria and others (2004) note that having a memory of an event usually brings a belief, that this event really happened and probably was pleasant. Some contemporary theories suggest that continuous presence of the same information brings a change of a degree, in which episodic and semantic memory are engaged in task completion (see: Tulving, 2001; Moscovitch et al., 2005). It is also clear that fluent shifting between a source of information of many memory systems depends on information's repeating and on a level of advance in a task completion (Kompus et al., 2009). Research also suggest a relation between autobiographical thinking and such aspects of personality as an ego growth or personality traits (see: McAdams et al., 2001; Pals, 2006).

Usually two main cognitive codes of memory are distinguished and they play a crucial role in self's information remembering. It is widely known that there is a strong preference for self related information during a coding phase – these information is easily remembered, what has been proved by research on the effect of self-reference information (Klein, Loftus, 1988). Some authors (Klein et al., 2002) bring out the fact that a memory of own, specific events is very specialized – in contrast to the rest of knowledge about the world. An access to specific examples of own behavior is necessary for fast and accurate judgments about oneself. Further, specific information plays a complex role. It shows a range of generalization, brings a context of information, enables forming of conclusions from behavior or traits of these objects, that do not suit generalization. Autobiographic memories represent actual opinion about oneself and one's past too (Neisser, 1994). Personal memories tend to create a very coherent and meaningful unity of experience. There is a kind of selectivity in a process of personal memories' creating, which is suited for personal goals – its consequence is a fulfilling of memory gaps as well as making conclusions about what have just probably happened (Ross, Buehler, 1994). Howe (2000) concentrates on an essence of connections between memory and the self. He claims (Howe, 2000), that early memories do not have to be represented linguistically. What is more, a strong correlation between growing information access and a growth of child's linguistic/narrative skills is probably an artifact. It might arise because of the fact that only linguistic tools are usually used to measure autobiographical memory.

Neuropsychological research suggest that people with limited access to episodic memory still know who they are – so their identities are built on something more than only personal memories (see: Kihlstrom, Schacter, 1995; Klein et al., 2001; Addis, Tippett, 2004). Somebody may have a knowledge about one's traits not remembering

any events from the past (see: Klein et al., 2002). Klein and others (2001; 2002) show, that traits are connected with such episodes within a memory system, which present behaviors contradictory to traits. It may enable to change own beliefs. An actual self-image is a cue to bring back memories – if there are no cues or remembering strategies, a self-image plays a selective role, honoring some memories and blocking the others (Barclay, Subramaniam, 1987). Sanitioso, Kunda and Fong (1990) present similar conclusion after their research on contextually conditioned self-image.

What are cognitive codes and why they may be important?

What is it really to know somebody? Is it to know what is an inner picture of the person or rather a kind of self-description? There is still some concerns and wide variety of approaches available to understand this phenomenon. There is no doubt that cognitive codes play a significant role to etiology of different views on the subject (Paivio, 1986; 1991; Kosslyn, 1994; 2005). Different ways of thinking about oneself has been used by counselling and clinical psychologists for decades, especially as a tool to change past memories' interpretation and emotions connected to them.

What are cognitive codes? Simply, they are different kinds of thinking, engaging different regions of our brains and playing different roles. They are so important because nothing really happens within our perception, thinking or dreaming without them. Two most important of them are certainly visual and verbal ones and these two are mainly being used in counselling and psychotherapy.

A cognitive code is simply the way, in which information is proceeded. A perceptual-imaginative code is the one that represents information in form of image, whereas verbal-propositional is a semantic, amodal and discreetproceeding information way of proceeding information (Chlewiński et al., 1997, p. 63). A distinction between these two main cognitive codes has got a long tradition and is well-grounded (Jagodzińska, 1991; Paivio, 1991; Anderson, 2001; Łukasik, 2008).

Cognitive codes have been of scientific interest for decades, but, surprisingly, systematic research on the relation between these phenomenon and self is still in the beginning. Although no formal research has yet been conducted around the correspondance of cognitive codes and self, there are some presumptions from the field of cognitive, social and personality psychology which suggest, that it is worth to combine thinking about self in terms of an active system of autobiographical memory (Conway, 2005) to different cognitive codes. Systematic research on this relation suggest, that a person can build a different view on one's self when visualising oneself and when giving a propositional kind of one's representation (Jagodzińska, 1991; Winczo, 1994; Niedźwieńska, 2009).

Cognitive codes may enable following dynamics of self system, what is another aspect of discovering how self-knowledge functions. An article is placed in a vast research area between a question of on a self-knowledge construction (Baumeister, 1998), self-knowledge structure (Conway, Pleydell-Pearce, 2000) and functioning of

imaginary in the self system (Gazzaniga, 2000). A distinction between perceptual-imaginative and verbal-propositional modes of thinking has been grounded especially in social psychology, where it is strictly connected to theories of self identity, private/public self or self-control. This differentiation was a base for Kosslyn's theory (1995; 2005), where imaginary pictures were based in the same regions of the brain as visual perception. Similar findings were shown by Paivio (1986).

Can cognitive codes change the self?

Current research on everyday events memory suggest, that autobiographical memory is an active function of mind – that is it does not only serve to remember, but also to create the way we perceive our reality (Conway, 2005; Błaszczyński, 2018). Researchers identify some factors, which influence a capacity and an organisation of autobiographical memory. Knowing the fact, that it seems impossible to remember effectively every simple event of life and that everybody from surrounding may remember it differently, memory must be dependent of one's goals and wishes. It has been proved as well that reconstructing personal events may help to precise own goals, find an identity or better understand oneself (McIntyre, 1981; Trzebiński, 2002a, b).

As some researchers claim (Jagodzińska, 1991; Winczo, 1994) perceptual-imaginative and verbal-propositional codes in some way are complementary (we have a spontanous tendention to verbalize imaginative information and visualize verbal information) but visual information about self tends to be more objective – as ontologically prior form of self it does not have to be positive is more resistant to social judgement (Winczo, 1994). They can be interchangeably used in processes of perception, thinking and remembering – it seems that the most important for effective self is a compromise between the action af these two self operators.

To treat cognitive codes and self together, a close collaboration across and between disciplines of psychology is required. A key challenge for researchers is how to understand phenomenon from different subdisciplines of psychology and analyse it in the same terms. Autobiographical memory, especially meant in terms of active system of the self, is one of this broad psychological terms which allows such experiments. It is because of the fact that past understanding memory in strictly cognitive terms has simply failed and researchers had to connect memory with everyday life and self – without it memory was only a computer-like term, far away from intuitional reasoning (McAdams, 2001).

How to combine modes of thinking with memory?

It is interesting how cognitive codes function in autobiographical memory – there is a lot of scientific evidence demonstrating functioning of the memory (Conway, 2005; Rubin, 2006; Błaszczyński, 2018), but this phenomenon has not been yet

presented in context of cognitive codes. Such combination gives a chance to see how different kind of information work in and for the self. If, as we can identify two distinct cognitive codes (perceptional-imaginative vs verbal-propositional) then we can try to observe how information from these codes play with mechanisms of self, especially these mechanisms which toughen the self or make the self possible to change, accordingly to challenging goals. Simply, it is to observe what we think about us using visualization and what, when we use verbal mode of thinking and giving names to our inner states. First, do people tend to give different answers about oneself corresponding to different cognitive codes? Second, should some strong self-defining and self-defending mechanisms activate when we try to define oneself by information from different data? Third, do both codes give some information which is complementary? Such approach to personality assessment is much more ecological, anchored in one's history of life and gives pretty much more data about inner mechanism – not usual simple subscription in terms of main personality traits.

Funder and Sneed (1993) proved, that some kinds of behavior are behavioral counterparts of specific personality profile (see: McLarney-Vesotski, Bernieri, Rempala, 2006). It means, that personality is a construct heavily grounded in a stream of human behaviors (Ambady, Bernieri, Richeson, 2000). So called thin slices of behavior let infer about emotional states, frauds (Depaulo, Lassiter, Stone, 1982), aims (Richeson, Ambady, 2001) or even all personality. Orom and Cervone (2009) signalize, that human behavior variability's assessment gives not only a personality description with its uniqueness, but also information about inaccuracy of self-description. Using traits as human characteristics seems to be the most popular way (McAdams, 2001) and gives a good sketch of human dispositions. Although McAdams (2001) adds, that a process of assigning people with their traits is exposed on mistakes. A label connected with a person may be differently understood by other people, additionally for some personality traits it is hard to find an adequate behavior. Klein and others (2001; 2004) discovered an adaptive meaning of decisions using traits. They claim, that the evolution has imposed a creation of mechanisms of fast decision making. Episodes of behavior (episodic memories) were to be used only when searching through traits set would fail. Klein and others (Klein, Loftus, 1993; Klein et al., 2001) prove that an activation of episodic memory occurs in a case of such questions about traits, when a participant has only few experiences. Simultaneously, some researchers claim, that using an episode in spite of a present trait representation is possible under some circumstances: 1) a person describes oneself in an area, that is badly known to him/her or self-knowledge is built mainly on observing one's behavior; 2) a person is of a great self-awareness, a strong need of cognition or a low need of cognitive closure; 3) circumstances do not make any time limits, are not intellectually challenging, a person is having important life changes or describe oneself with many details (Sedikides, 1993).

Some research suggest that we can build a picture of the self that is different to a subscription of the self (a perceptional-imaginative code) (Paivio, 1986; 1991;

Kosslyn, 1994; 1995; Conway, 2005). A picture of the self may next be interpreted in terms of actual goals – that means that visualizing oneself in one way we can still have different memories of this visualized picture after time and after a change in current goals set, as well as different interpretation of the picture, but still be the same person. Next assumption, we can create a description of the self that has no imaginary elements (a verbal-propositional code), which consists of a set of words, descriptions, phrase that correspond to who we think we are. The self is a broad and easily accessible structure of knowledge, built of past events as well as their interpretation, with strong inner dynamics of self's elements. Systematic research on the subject is needed and will surely put some light on more detailed aspects of self's dynamics in context of cognitive codes.

Conclusions

Reflection on self in the context of autobiographical memory that is made of two different cognitive perspectives, brings different knowledge of self, different evaluation of self and lights up spectacular dynamics of motives of the self.

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WEWNĘTRZNY OBRAZ CZY WEWNĘTRZNY OPIS – CZY MOŻLIWE JEST POŁĄCZENIE KODÓW POZNAWCZYCH Z PAMIĘCIĄ AUTOBIOGRAFICZNĄ?

Streszczenie. Współczesne podejście do badań nad pamięcią zakłada traktowanie jej jako aktywnego narzędzia w systemie Ja. Pomysł użycia kodów poznawczych, w tym wizualizacji, dla zrozumienia mechanizmów Ja jest jedną z dróg współczesnej psychologii. W artykule ukazano, jak pojęcie wizualizacji funkcjonuje w obszarze psychologii i jak termin dwóch kodów poznawczych może zostać odniesiony do zagadnień pamięci autobiograficznej i Ja. Ta dyskusja staje się ważną dla współczesnej psychologii, w artykule ukazano, co udało się zrobić w tym obszarze oraz jakie pytania domagają się dalszych odpowiedzi.
Słowa kluczowe: wizualizacja, pamięć autobiograficzna, Ja, wyobraźnia, historia życia

Data wpłynięcia: 16.01.2019
Data wpłynięcia po poprawkach: 15.10.2019
Data zatwierdzenia tekstu do druku: 20.10.2019