Recently, the relationship between visual art and brain function and disease has raised considerable interest among neurologists, neuroscientists, and artists themselves. Visual art production involves multiple processes including basic motor skills, such as the coordination of movements, visual-spatial processing, emotional output, a socio-cultural context, as well as obviously creativity. Thus, the relationship between artistic output and brain diseases is particularly complex, and brain disorders may lead to an impairment of artistic production in multiple domains. Understanding the nature of aphasia, which leads to significant changes in human life in the physical, psychological, social and professional sphere, makes us aware of the importance of the individual (objective and subjective) and the social (collective and cultural) self system in the process of creation, especially in artists. Observing the works of artists with aphasia, we notice that each of them perceives the surrounding world differently. One wonders what makes them present reality in one way and not in another. It is true that all works of art show reality in thousands of different ways, and only an unoriginal artist will employ someone else’s vision - one already used in a work. It should not be forgotten, however, that the work of artists with aphasia often takes on features resulting from the nature of the problems they face and is initially unoriginal, as they have to overcome fundamental technical difficulties and problems of technique. In this article, we present the possibilities for rehabilitation, of strengthening artists with aphasia, in order for them to find the self lost as a result of illness.

Key words: stroke, emotions, therapy, drawing, painting
INTRODUCTION

The problems of artists after brain damage are discussed against a background of differences in the mode of information processing by the left and right hemispheres, here taking into consideration reports on artistic productions following brain lesions. It is also suggested that apart from the left-right dichotomy we should take into account the differences in functioning of the anterior and posterior brain areas (Pachalska 1986; 1999; Kaczmarek 1991; Piechowski-Jozwiak, Bogousslavsky 2013; Zaidel 2013).

The majority of authors emphasize that in right-handed persons the left hemisphere is believed to work in a sequential analytical way, while the right is supposed to operate on holistic spatially organized material (Luria 1976; Kolb & Whishaw 2003). Differences in the functioning of the right and left hemispheres of the brain within the self system are illustrated in Fig. 1.

It can be seen that the dominant hemisphere of the brain (usually the left in right-handed persons) is closely related to language functions. Therefore, it provides for logical coherence possibly thanks to linguistic images, which includes language models, grammar and vocabulary, as well as internal narration and dialogue (Pąchalska, MacQueen, Cielebak 2018). An important role is also played by the ability for linguistic expression, which is enabled by efficiently func-

![Fig. 1. Differences in the functioning of the right and left hemispheres of the brain within the self system
Source: Pachalska 2019](image-url)
tioning articulatory organs and limbs (writing and signaling language statements). Based on this, language texts are created, among which a special role is played by any narrative and external dialogue that enables contact with other people. Patterns of neural network connections that evoke thoughts (and thus behaviors) that promote the well-being of the body are permanently encoded, while useless ones disappear (Carter 1999; Pachalska, Kaczmarek, Kropotov 2014).

The subdominant hemisphere of the brain is closely related to nonlinguistic functions (generally the right in right-handed persons). Thus, it provides spatial coherence based on nonlinguistic images: image models and “body grammar,” i.e., images evoked by facial expressions, gestures and a sequence of movements (pantomime). This enables, through the use of facial expressions, phonic organs (vocalization), limbs (gestures) and the whole body (pantomime, “body language”) expression that is nonlinguistic in nature. This creates nonlinguistic messages: acoustic (voice, sound) and visual (drawing, gesture).

People with brain damage exhibit disturbances in logical or spatial coherence depending on the location of the damage (structures and neural connections) in the right or left hemisphere of the brain. Linguistic representations are more or less disintegrated, which makes creating language constructions more difficult, as a result of which the process of creating ideas about oneself and the world is disturbed, which is why the image of oneself and, as a result, the whole system of the self is disintegrated. Damage to the subcortical structures and connections is also not without significance; however, the picture of disorders is different, something which is described in more detail in another work (Pačalska, Kaczmarek, Kropotov 2014). The above observations have given rise to various therapeutic programs which aim at the use of the spared right hemisphere in the rehabilitation of aphasic persons utilizing the ability to discriminate non-linguistic communication (Rao & Horner 1978; Rao & Horner 1980; Helm-Estabrooks 1981; Helm-Estabrooks, Fitzpatrick, Baressi 1982; Morgan & Helm-Estabrooks 1987; Lyon & Sims 1989; Ramsberger & Helm-Estabrooks, 1989; Pačalska 1991).

In his thorough overview of hemisphere specialization, Bradshaw (1989) points out that the differences observed depend to a large degree upon the type of tasks given to the examined patients. Accordingly, the patients display a left-field superiority if they are required to take into account the holistic pattern of spatial relationships, while a need to discriminate the same stimuli on the basis of feature shapes often results in a right-field superiority. However, all the above activities pertain to communication which means the coding and decoding of appropriate symbols. It also means that art, which is our main concern here, is not only an entertainment but requires cognitive processes at the same time. In other words, we have to learn to ‘read’ works of art in order to be able to appreciate them (Piechowski-Jozwiak, Boller, Bogousslavsky 2017). This is most evident in the case of modern art (Kaczmarek 1991).

It was observed long ago that graphic abilities are often preserved despite left-hemisphere injury (Bonvicini 1926, Alajouanine 1948, Leichner and Pendzia-
lek-Langer 1974) or right hemisphere in left-handed persons (Pachalska 2003) followed by aphasia. Hence, drawing and painting pictures is used in the aphasia therapy program at the Cracow Rehabilitation Centre (Pachalska 1986). Some differences between drawings done by patients with left- and right-hemisphere lesions as well as between the drawings performed with the left and right hand are noted (Knapik, 1991). In general the drawings of right-hemisphere-damaged patients are rich in details but their overall form is distorted. Such patients also tend to neglect the left side when drawing pictures. On the other hand pictures produced by patients suffering from left-hemisphere damage are correct as far as their external configuration is concerned but they are lacking in details. It is worth noting that a tendency to leave out the features characteristic of a given object is particularly expressed in patients with anomic disorders. Moreover, this tendency corresponds with a severity of naming (Kaczmarek and Bak 1986). It points to the relationship between language and feature analysis.

**APHASIA AND ARTISTS**

Aphasia in artists is defined in the same way as in people who perform other professions: therefore, it means linguistic communication disorders that concern different language modalities (Ardila 2014). Because each person has a specific non-linguistic and linguistic interpreter of the world (Gazzaniga 2011), that’s why you should agree with Taylor-Sarno (1981) that there is different aphasia for different people. Gardner and Winner (1981) in their review of artistic abilities in aphasic persons state that the left hemisphere seems to play a much less significant role in drawing or playing music in professional painters or musicians than it does in artistically naive patients. This would suggest that artists might be more right-hemisphere lateralized which may also provide for their often observed tendency to show emotions. This, furthermore, would explain why artistic skills are as a rule spared in spite of the loss of linguistic abilities. In this context I have frequently observed that an artist who has suffered a stroke of the right hemisphere might produce drawings in which lateral neglect appears (cf. Fig. 2 A), while an artist following a stroke of the right hemisphere might produce drawings lacking in details (cf. Fig. 2 B).

This fact is partly explained by neuroimaging studies carried out on patient No. 2 in the first week of art therapy. It revealed abnormalities in facial perception. In Fig. 3. we presented the ERPs calculated from the record obtained from the T5 electrode separately for GO /NO GO stimuli, i.e., clicking the mouse button in response to the appearance on the monitor screen of the images of two animals displayed one after the other with an interval of 10 milliseconds. In healthy persons, we have two negative components at delays of about 170 and 250 ms in ERPs, these being considered indicators of face and object recognition (Kropotov 2016). A comparison of ERPs obtained in a patient with the average ERPs obtained in healthy people from the Human Brain Index shows that in the
occipital-temporal region of their brain there are components N170 and N250 positive instead of negative. This fact may reflect the increased reactivity of neurons in this area, which are stimulated by the disappearance of collateral neuronal inhibition in the damaged area. As a consequence, the subject could not recognize faces and other objects, which may be a significant cause of naming disorders, as well as difficulties in imagining facial elements and giving meaning.

Fig. 2. Drawing of the artists A) Artist No. 1 suffering from a left hemisphere stroke and severe aphasia; B) Artist No. 2 having had a right hemisphere stroke, mild anomia and prosopagnosia

Fig. 3. Lack of negative components N170 and N250 ms in ERPs, which is an indicator of facial and object recognition disorders
Source: Pachalska 2020
to facial expressions (about which the patient complained when interviewed) (see Pąchalska 2020).

However, explaining the type and the intensity of the emotions that an artist feels is only possible with a closer look at their biography. For example, artist #1 in one of his drawings presented recollections from concentration camp experiences (cf. Fig. 2a). He drew himself in a striped clothing (camp outfit) along with the right half of the main gate of the Auschwitz-Birkenau concentration camp (see Figure 2.B). The drawing with the inscription in German: *macht frei*\(^1\) directly refers to the tragedy that happened to him in the darkest moments of his life, because his fiancée was executed in the camp in front of his very eyes.

Understanding the nature of aphasia, which leads to significant changes in human life in the physical, psychological, social and professional sphere, also makes us aware of the importance of the individual (objective and subjective) and the social (collective and cultural) self system in the process of creation, especially in artists.

**SELF SYSTEM: THE MIROGENETIC APPROACH**

The formation of the self system, including the sense of the self, in relation to full consciousness and meta-consciousness in microgenesis is illustrated in Fig. 4. Three main types of self can be distinguished here, after Pąchalska (2003a):

1. **biological self** (primary, biological being, organism), which integrally connects with the structure and operation of the whole organism and its part (including the structure and neuronal connections of the brain) and consists in the fact that the subject feels and satisfies the drives and needs which are literally egocentric. At this level there is no (and cannot exist) a so-called theory of mind, because it is not necessary for any activities essential for survival (Brown 2003; 2005; 2017);

2. **The emotional self** (feeling itself and the environment), which exists on the next, limbic level, connecting with the operation of the emotional system and manifests itself in emotional reactions. At this level, identity is associated with the subjectivity of a person experiencing pleasant or unpleasant emotions. Only then does the I-You relationship become possible, and hence, the beginning of the theory of mind. At the same level, the perception of the stimulus is also separated from the body’s response to this stimulus. In other words, there is a separation of perception from action, with perception becoming the subject of the posterior parts of the brain, and action – the more frontal lobes. This is due to complex cortico-cortical and cortico-subcortical connections (Pąchalska, Kaczmarek and Kropotov 2014). The feeling, experiencing the self of the limbic system becomes the central object of cognition in a world of

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\(^1\) Obviously the patient did not exactly recreate the infamous motto that hangs above the gate to the Auschwitz-Birkenau concentration camp, and which in its entirety reads: *Arbeit macht frei*, this failing to reproduce being connected with aphasia.
objects that are analyzed according to specific, multimodal sensual and cognitive domains. Perceptual processes, in parallel with the processes of action, tend towards an increasingly precise distinguishing of the component of reality surrounding a given man (Kaczmarek and Markiewicz 2009; Kaczmarek 2012a).

3. The cognitive self (recognizing and being recognized) being the subject of one’s perception and action, connects with self-awareness and knowledge about oneself, self-sense, i.e., a subjective representation of oneself. Here, the identity is synthesized, thanks to which a person is born with a sense of identity, i.e., certainty that “I am myself” as both the object (being the recognized Self) and the subject (the recognizing Self) of perception (Brown 2017). The self system – which is formed in the process of microgenesis – creates mutual relations and bonds between the biological self (primary, biological being, organism), the emotional self (feeling oneself and the environment), the cognitive self (known and knowing) as well as self-awareness.

This system is consistent and its description is based on many years of experience and clinical experiments conducted by the present author (Pachalska 2002; 2007a; 2019). However, there is still a difficulty in determining how the self system described above and the highly dynamic associated process of its emergence and continuation over time can provide a sense of identity continuity, i.e., certainty that ‘I am the same person I was from birth and will be until my death’ (Pąchalska 2007c).
Answering this question requires a discussion of the emergence of a single mental state within a microgenetic approach to matters.

**THE MIND AND SELF SYSTEM**

The mind is frequently defined as a result of the brain activity involving all cognitive processes as well as consciousness, subconsciousness, and self-awareness (Wygotski, Cole 1980). Some rudimentary manifestations of the mind can be also observed in primates and possibly even in animals quite far down the evolutionary scale. At some level of primitive mind, for example that of a bat or an octopus, the relation of mind to brain is not a vexing problem, even if particular behaviors cannot be correlated with specific brain areas or processes (Brown 2015), since the self, consciousness, language, intentionality and other features of human mentation are not present in them. Hence, the inner life of an animal, if there is any, is inaccessible to us. In such animals the identification of the mind with the brain or nervous system is justified, even if the correlates of neural networks with behavior are not specified (Pąchalska 2019).

As mentality increases in complexity, its correlation with brain structures and their discrete functions becomes more elusive, while in the human mind, except for a rough approximation, it is largely opaque. A significant – not to say leading – role in the works of the mind is fulfilled by language, which finds its confirmation in clinical findings.

Hence, speaking makes use of oral movement and vocalization, while any perception of utterances is possible due to the level of development of auditory and visual perception in humans. The use of shorter neural connections allows for a faster response time to stimuli and the creation of patterns of these connections enabling further specification of individual brain processes. At the same time, long neural connections ensure communication between distant areas and also between both hemispheres, making possible polymodal information processing. This organization of brain work underlies the formation of all the mental processes entailed in the creation of one’s own self (Pąchalska 2019).

The conditions for the mind are present in elementary entities, proto-psychic features that together with physical features evolve to a primitive mentality. One can ask if a semblance of mind is present in every atom or cell in the body or brain? Is the mind generated by the brain as a whole or are only certain portions involved? Large areas of the brain can be removed with little or no demonstrable effect on mentation, while some very local portions can be damaged with profound effects on specific cognitive functions. The conclusion is that what counts is less the brain region than the pattern of brain activity that makes consciousness and attendant capacities possible (Herzyk 2011). Since the pattern is common to all brain systems, individual systems or components can be sacrificed and mentality goes on. The mind does not ordinarily regress to an animal or childhood function; rather, basic attributes – consciousness, duration, a present moment, intentional thought, dream and the unconscious, aesthetic preferences
and so on – are largely spared, even with a severe compromise of language, action or perception (Kaczmarek 2017; Brown 2015).

Language may be responsible for the unique character of the human mind but, except for verbal thought, many attributes of mind persist when language is lost. More precisely, the actualization of each component of mentality suffices to sustain the human psyche, even when there is disruption within a given component. In animals lacking the specialization of the human brain, this commonality of pattern - category/item transition - survives multiple ablations. This has suggested mass action or equipotentiality (Lashley 1929), holographic organization (Pribram 1984) or even the function of the brain and mind not only in space and time but also in a pulsating state in hyperspace, which is presented in the authorial synchronous memory model (cf. Fig. 5).

The spatial arrangement of the model makes it possible to present on the x and y axes the relationship between the general structure of attention and memory systems (in terms of the number, content and complexity of processed elements) and the period of time necessary to process them. It can be seen that the attention system buffers data transfers to the working memory system. This system, according to the latest data obtained in neurophysiological studies, processes the smallest number of elements in the shortest possible time: seconds or even milliseconds (Kropotov 2009; Pąchalska and Kropotov 2019). As the number of elements of information processed and / or the duration of the processing exceeds a certain threshold, we gradually move from the attention system (several stimuli, several milliseconds) to the working memory system (several to several dozen stimuli, several milliseconds to several seconds and /
or minutes) depending on the capacity of the working memory buffer (see also Kropotov 2016).

In a similar way, there is a transition from the working memory system to the long-term memory system. The boundary of the transition is difficult to determine precisely and most likely it is actually not very sharp. In the human brain, a continuous process takes place, lasting from milliseconds to entire years when information is remembered, stored, reproduced and forgotten. Also semantic and episodic memory is associated with the number, time as well as the content and complexity of the processed data (see Pąchalska 2007a, 2008). The differences between these types of memory mainly concern the content of information. Of course, the longest storage time is characteristic of long-term memory, which is why it has been placed at the base of the presented model. It is closely related to the organization of one’s self in time.

As I have already pointed out, episodes stored in human memory are subject to the process of “melting” gradually: over time, we forget more and more details, but often we can remember the most important elements of a remembered event. This explains why we assume the existence of qualitative differences between the memory of near and distant events:

1. **Events near in time** are those events that have taken place in the last minutes, hours or days (sometimes longer periods) and thus create a sense of the present.

2. **Events distant in time** are, in turn, those that we recall from the past, so it is something that happened a long time ago.

The presented description concerns the mechanisms of memory action in a healthy person. However, in clinical practice we often observe selective memory impairment of near and distant events. This phenomenon is characteristic of dementive diseases (cf. Pąchalska, Bidzan and Bidzan 2015), but it also occurs following brain trauma and post-traumatic dementia. This includes, for example, subsequent oblivion in post-traumatic amnesia. For this reason, we placed oblivion and amnesia next to the memory buffer on the border of the memory model. It is important that the extraction of information from oblivion requires a significant allocation of brain resources. This phenomenon explains so often the occurrence of memory disorders in people with various brain dysfunctions in whom these resources have been significantly reduced (see Pąchalska 2007a; 2008).

These conditions underlie the formation of all mental processes underlying the creation of one’s own self.

In the process of realizing one’s own self, the development of the mental state in time plays an important role.

As shown by the latest clinical and neurophysiological research (Pąchalska, Kaczmarek and Kropotov 2014; Pąchalska, Góral-Pótrola, Kropotov et al. 2017) allowing for a modification of microgenetic theory, the mental state developing from the unconscious to consciousness pulsates during individual intellectual operations (Pąchalska, Kaczmarek and Kropotov 2014). The path of development of the mental state follows the serial order, which means that this state occurs:
1. *in the space of brain structures*, where it can develop from covert processes to the level of the threshold of consciousness (the ascending mental state) and disappear (the disappearance of the mental state) or exceed this threshold (the development of the mental state) and rise even higher to the appearance of full consciousness and conscious cognition (the culmination of the mental state);

2. *in time*, in the form of pulsating individual mental states, which ensures the renewal of these states. This allows you to become more aware of reality. The time it takes to become aware of this reality may last for a relatively short time in the case of healthy people with a properly functioning brain, while for those with brain damage due to the destabilization of neural networks this may be more or less slow or even accelerate, which in each case leads to disorders within cognitive and emotional processes (Pąchalska 2007a,b,c; Pąchalska, Góral-Półrola, Brown et al. 2015).

This approach to the essence of the mental state makes it possible to understand the phenomenon of developing (T1) and renewing (T2) this state in time (cf. Fig. 7) and the birth of the minimal working self, which will be described in more detail later in this chapter (Pąchalska, Kaczmarek, Kropotov 2014; Pąchalska, Bednarek, Kaczmarek 2020).

In working memory, images are reproduced in subsequent mental states in the order of memory, i.e., in relation to their resemblance to the coming state, and thus to the possibility of renewing the mental state. In the current state of mind, there are images closer to the perception that takes place, i.e., images from the working memory buffer that have almost reached the character of renewed perception. The brain-mind state in T1 is replaced by the overlapping state T2 before T1 ends in time, i.e., before the next phase occurs. This explains the reoccurrence of the early phases in T1, related to the condition of the body (body and brain), individuality of the person, i.e., Self, character, disposition, the capacity of working memory buffers, long-term memory resources and experience, and the durability of basic beliefs, values and personality. Later phases

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![Fig. 6. Developing (T1) and renewing (T2) mental state in time: the birth of the minimal (working) self](Image)

Source: Pąchalska, MacQueen and Brown (2012b), modified
disappear when the whole process of realizing reality is completed to make room for new perceptions. The activity of earlier phases of the mental state in the process of the overlapping of individual phases explains the sense of self continuity in time. It should be emphasized that the early stages of mental state development are components that incorporate later states that are more susceptible to environmental influences. At the same time, the repetition of earlier phases is closely connected with the feeling of a reality that exists (Pąchalska, MacQueen and Brown 2012a).

This means that in the process of creating consciousness, one state of mind is replaced by another in a split second, which makes the apparent change replace the previous states of mind by successive states. This overlap of individual states creates a sense of continuity, while their mutual substitution creates a sense of change. It is worth emphasizing that the process of becoming aware of reality may vary depending on the needs, attitude, emotional state and cognitive processes of a person (Kolańczyk 1999), as well as the criterion features of objects with which a given person interacts, and environmental conditions (Pąchalska, Kaczmarek and Kropotov 2014).

Mental states do not constitute a cumulative whole created as a result of separate processes occurring on three levels of microgeny (drives and needs, emotional and cognitive processes), but recreate the course of object (perception) formation in the mind (cf. Pąchalska, Kaczmarek, Kropotov 2014). And it is the process of creating an object representation that organizes the process of self formation within microgenesis (Pąchalska, MacQueen, Brown 2012b).

INTEGRATED SELF SYSTEM

At the Polish school of process neuropsychology, we have been highlighting for years the need to rebuild the self-system in the therapy process, including art therapy (Pąchalska 1986; 1987a and b; 1988, 1991, 1993a 1993b). It should be pointed out that the relationship between the self-system and creativity is not the subject of frequent research within the neurosciences. Neuroscientists focus mainly on the characteristics of the work of people with brain damage, including aphasia (see Piechowski-Jozwiak, Bogousslavsky 2020). Few authors have pointed to the need to introduce art therapy for patients with aphasia, and here aimed at a reintegration of the self’s system, motivating these actions by becoming acquainted with the needs of these patients through clinical work and scientific research (Pąchalska 1988; 1991; 1999; 2008, 2020; Feinberg & Keenan 2005).

An integrated self system includes the individual (objective and subjective) and social (collective and cultural) self (Pachalska 2019). This concept, however should include the minimal (working) and longitudinal (autobiographical) self, which is the basis for the formation of the self system. Therefore, I have developed a modified model of the self system, which requires the nesting of the minimal (working) and longitudinal (autobiographical) self and a change in understanding of the concepts of individual and social self in terms of the thought process (cf. Fig. 7). Therefore:
1. The individual self includes:
   
   A) The objective self, understood as the organism, i.e., in Goldstein’s (1995) approach, constitutes the body together with its states and the processes occurring in it. The subject self has consciousness, but it lacks self-awareness and meta-consciousness (awareness of mental operations on its own subject). The subject does not express their own thoughts but acts according to ready-made schemes: he/she is not the author of the selves. As soon as you realize the existence of the outside world, your subject self also becomes the object of perception. This process enables the subjective self to be formed;

   B) The subjective (cognitive) self, having consciousness, self-awareness and meta-consciousness, enabling one to know oneself and act in accordance with one’s own needs and values as well as the requirements of the environment. He/she has a sense of separateness, autonomy, insight (introspection), the possibility of self-assessment and self-control and creativity (Pachalska 2008). The subjective self conditions the appearance of individual identity.
2. The social self, includes:
   A) the relational self, understood as an image and description of the I-You (interactions), from an individual and social perspective taking into account relationships with other important people and social groups around which, according to Richard Brown (1987), social identity develops.
   B) the cultural self, understood as an image and description of the I-We from an individual and social perspective including a nesting in the culture or subculture of a given social group around which cultural identity develops.

The microgenetic approach to the self-system takes into account the concept of the nesting of the minimal (working) and longitudinal (autobiographical) self in the individual and social self in the processual approach, and creates the basis for the development of the self system. It also allows for a better explanation of the disruption or disintegration of this system in people with various kinds of brain damage, especially persons with aphasia. It also allows for more effective rehabilitation interactions to be offered to these persons.

People with brain damage exhibit disturbances in logical or spatial coherence depending on the location of the damage (structures and neural connections) in the right or left hemisphere of the brain. Linguistic representations are more or less disintegrated, which makes creating language constructions more difficult, as a result of which the process of creating ideas about oneself and the world is disturbed, which is why the image of oneself and, as a result, the whole system of the self is disintegrated. Damage to the subcortical structures and connections is also not without significance; however, the picture of disorders is different, something which is described in more detail in another work (Pachalska, Kaczmarek, Kropotov 2014).

In this context it should be stressed that among the numerous disorders following brain damage, those widely described in the neuropsychological literature, and with a particular emphasis on aphasia (see Ardila 2014), the most devastating for the patient is the disintegration of the self’s system (Pachalska 1999). This causes unimaginable suffering of the patient not only related to the inability to organize their own world, but also the breakdown of family and social ties. Attempts to define oneself in these new conditions of the lost self are usually ineffective and the patient’s isolation and social dependence deepens.

The great doctors of Polish medicine and rehabilitation Professor Julian Aleksandrowicz and Professor Adam Pąchalski and their students, from amongst whom I also arose, introduced art therapy oriented to the self system as early as at the end of the 1970s (Pąchalski and Pąchalska 1977; 1980; Aleksandrowicz 1982). Initially it was employed in psychiatry, as a form of activity to allow for the disclosure of experiences and interpretations of the world by mentally ill people. It is worth adding that in the spectrum of schizophrenia, the self, especially the body self, is the central topic of interest and experience of the patient. It fills the void of life related to the patient’s social isolation, and therefore it is worth encouraging the patient to illustrate these experiences through artistic creation (Madejska 1975).
A few years later, art therapy was introduced to rehabilitate patients with brain damage, including those with aphasia (Pąchalska 1977). It was quickly noticed that the use of visual art is extremely useful in rebuilding lost communication skills and in integrating the patient’s destabilized self and social self. It was also observed that the drawings and images created by patients with aphasia become a carrier of information because they illustrate their thoughts and emotional states. Patients with aphasia are granted an opportunity to show their own experiences: ones they cannot describe in words. Their works speak a kind of surrogate language. The content of the message, which results from the subject, as well as the form, shape and color of the image, is an act of communication between the author of the work and the person watching it, including the therapist.

The many years of clinical experience of the Krakow School of Rehabilitation, concerning great artists (including writers, actors, musicians and composers, painters and sculptors, I have been privileged to rehabilitate myself over a long time), allows one to recognize visual art therapy as one of the important methods that can contribute to regaining the ability to communicate with others, which proves to be very important for the self-esteem and enables them to restore previously broken social bonds, and therefore to improve their quality of life (Pachalski and Pąchalska 1977; 1980, Pachalska 1977, 1986, 2007, 2008, 2020; Pachalska, Knapik, Rogowski et al. 1988; Pachalska, Knapik, Kozłowska et al. 1991; Kaczmarek 1991; Knapik 1991; 1992;1996; MacQueen 1999).

**PROGRAM OF ART THERAPY OFFERED TO ARTISTS WITH APHASIA**

The first structured Program of Art Therapy (PART) offered to artists with aphasia was described in detail in the monograph Pąchalska (1986). The theoretical assumptions of this program are, among others, the microgenetic theory of symptom (Brown and Pąchalska 2003) taking into account the impact on the form of the neuropsychological symptom, defining the essence of aphasia in accordance with WHO criteria (2001) and the founding of the Polish School of Process Neuropsychology, with particular emphasis on the need to rebuild the self-system (Pachalska 1986). Conducted equally was a lot of research into the effectiveness of such a program; here comparing the results of patients including artists with aphasia treated and untreated as a result of the program. The results obtained were astounding in the way they showed what may be obtained through the application of art therapy. (cf. Pąchalska 1986; 1991, 1993; 1999; 2003a, 2003b, 2007, 2008, Pachalska, Grochmal-Bach, Wilk et al. 2008; Pachalska M., Knapik H., Rogowski et al. 1988; Pachalska M., Grochmal-Bach B., MacQueen et al.

2 Of course we were perfectly aware of the differences between the aphasias of our various artists, and their individual needs for art therapy, but as Alajouanine (1972, 1984) has repeatedly emphasized, has man ever seen two exactly identical aphasias? I believe, myself, that everyone’s language and creativity, regardless of the lesion in the brain, is the expression of a particular artist as a person. And that this goes beyond language as such, and expresses individuality itself. Anyway, aphasia was different in those 21 studied artists, and art therapy should be individualized to the needs of the particular person and the goals to be achieved (Pachalska 2020).
WHAT ARE THE MAIN GOALS FOR ART THERAPY

Various rehabilitation programs for aphasia have different goals (Ardila 2014), however the main goals for art therapy can be summarized in the following points:

- **to keep patient verbally active**: the artist with communication disorders often struggle with social isolation and do not want to talk to other people. Meanwhile, the family try to meet the needs of facial expressions and gestures in communication. If the aphasic artist is not intensively exposed to language, and it is not required to practice it in a continuous way, recovery will be limited. Art therapy (independently of speech therapy) plays a crucial role in this regard;

- **to re-learn language**: art therapy I directed, to a significant extent, at a re-learning language. Regardless of age and the brain condition, the patient may at least learn some skills. This re-learning process has to follow a principle: from the simpler to the more complex. There is a gradual sequence to re-learn vocabulary (in which art therapy may provide lot of words) or grammar. The simple part needs to be re-learned first;

- **to provide strategies to improve language**: linguistic abilities can improve if certain strategies are used (i.e., there is an organization of the functional system). These strategies depend on the particular type of aphasia and the specific conditions of the patient. For instance Melodic Intonation Therapy (Albert et al. 1973; Norton et al. 2009) is very effective for Broca’s aphasia, but not particularly effective when it comes to Wernicke’s aphasia; while Visual Action Therapy (Ramsberger and Helm-Estabrooks 1991) is effective for bucco-facial apraxia, but not that effective for aphasia. However, CADL therapy (Holland 1980) is effective for communication in daily living at a basic level and not for re-learning language (Pachalska 2020);

- **to provide psychological and social support**: there are many techniques that are aimed at reducing the social isolation of patients with aphasia. One of the best therapeutic approaches is the “Academy of Life” program (Pachalska 2020). This is a goal-oriented strategic approach, with the long term, specific goal and step-by-step intermediate goals being negotiated with the patient and then implemented in the process of neuropsychological therapy. The most important specific goal in the field of reintegration of the patient with aphasia is to restore lost language skills, and step-by-step goals might be to achieve success in the activity for which they are being trained, e.g., the ability to communicate with yes / no answers. The “Academy of Life” solves various internal and external conflicts (those of the patient with aphasia and/or of their family).

- **to provide strategies to improve lost self in aphasia**: the patient’s questions and doubts regarding here-and-now and what they can expect in the future
should be resolved. There are also approaches directed toward a reintegration with society, including a return to work (professional activities). Therapy of emotional disorders (anxiety, depression, PTSD) is carried out through standard techniques and the application of new neurotechnologies (neurofeedback, tDCS);

- to teach the family to improve communication: The family plays an important role in the reconstruction of communication in different social context, particularly for an individual with some limitations. One of the major functions of the speech/language therapist is to explain to the family how to maximize the effectiveness of communication with the patient. Some, simple and easy to use strategies, can be considered:
  - to avoid interference, especially, but not only verbal interference
  - to keep the conversational topic
  - to use redundant information
  - to speak slowly but not too slowly
  - to use prosody and other paralinguistic information
  - to be aware that a patient's communication ability fluctuates
  - to be aware that the use of language is specially effort- and attention-demanding for a patient with aphasia

THE STRUCTURE OF THE PROGRAM OF ART THERAPY (ART)

The program of Art Therapy (ART) course lasted for 16 weeks, 5 days a week, with a contact time of 90 minutes daily. In the beginning art therapy is focused on learning about the mechanical aspects of the plastic arts, including especially the following:

- basic parameters, such as color, two-and three-dimensional forms, directions, perspective;
- forms of artistic creation, including tracing, copying, drawing from a model and from memory, creating from a model, creating from one's imagination.
- particular techniques of artistic creation: drawing, modeling, painting, graphics (especially monotype), sculpture, etc.
- semantics of color and spatial forms.

After this material had been presented, the patient began active work, under the direct supervision of an art therapist (with the requisite skills and training in the plastic arts), in consultation with a speech therapist or neuropsychologist familiar with the patient. The art therapist was responsible for initiating and maintaining dialogue regarding the choice of tools for artistic creation, the forms and colors used in the work, the subject matter of the pictures, and analysis of the finished work, with particular emphasis on helping the patient title the completed work. The speech therapist or neuropsychologist, in addition to consulting and monitoring the progress of individual cases, also participated in prompting the patient to speak, including stimulating conversation amongst the patients in the
group therapy, and took advantage of problems that arose in the course of artistic creation to exercise the patients' communicative competence in social discourse. Emphasis was given to naming the objects, tools, and processes involved, and to discussing the artistic process and the artist-patient emotional reaction to their own work as it unfolded. The goal was to evoke in the patient the necessary mental state, one characterized by openness, a sense of play, and a desire for self-expression, with the expectation that any gains in art therapy would be transferable beyond the therapeutic context.

A characteristic feature of the ART program is that treatment was concluded with a display of the artistic works completed (paintings, drawings, sculptures), to which the general public was invited. Comments were welcomed, and actively solicited, from those who came to view. This form of contact with society at large in a supportive and positive atmosphere provided the patient with a sense of satisfaction in their own accomplishments, ones which had proven capable of attracting the interest and approval of a wider society. Therapeutic milieu introduced in accordance with the principle of the Polish School of Rehabilitation has the task of both support and evaluation before returning to work of the particular artist (Pachalska 1977; 1999; 2008; Pachalski & Pachalska 1977; 1980).

Classes are organized in the form of individual therapy and group settings. The first sessions were conducted on an individual basis, but as therapy progressed the artist participated in small-group sessions twice a week. It includes artistic experiments e.g. painting one picture by a group of patients (this method requires communication interactions, mutual arrangements regarding the choice of subject matter, selected colors and interpretation of the work in turn by all participants of the group). The last sessions are mainly conducted in the form of field trips. An important point of therapy is organizing exhibitions of works and auctions of works of artists.

THE ARTIST AFTER A STROKE OF THE RIGHT HEMISPHERE WITH PROSOPAGNOSIA AND ANOMIC APHASIA

The problems discussed in this chapter can be more easily understood by the reader when they learn about the artist's fate after a stroke of the right hemisphere with prosopagnosia and anomic aphasia. It is worth adding that the co-existence of these disorders is rare in clinical practice yet relatively frequent in artists, as was previously pointed out by Gardner and Winner (1981). Krystyna Habura-Dymek (1928-1994) a world-famous Polish painter and sculptor born in Warsaw. In 1962 she graduated from the Academy of Fine Arts in Krakow. After graduating, she quickly earned a reputation as a brilliant artist in both painting and sculpture. Her resume contains an impressive list of individual and group exhibitions, in Poland and abroad including Krakow, Warsaw, Lublin, Torun, Tarnow, Hamburg, Stockholm, Uppsala, Copenhagen, Roskilde, Aarhus, Køge,
Chicago, London, Milan, New York, San Francisco, Toronto, Vienna. She was awarded a number of national and international awards, including First Prize at an International Exhibition in New York in 1972 (cf. Fig. 8) for her painting *The Last Supper*.

Habura’s painting was characterized by unusual expression, vivid colors and the combination of abstraction with figurative art. She showed the greatest interest in portrait subjects, painting the images of famous characters, including Albert Einstein, Tadeusz Kantor, Czesław Niemen. Her works were purchased by museums, among others, in Warsaw, Krakow, Torun, Chicago and Toronto. The artist thought she was left-handed, although she was forced to use both hands, which was important in the creative process and her artistic style, because she was able to paint with both hands: the outline of the shape of figures or objects was painted with her right hand, while the details were completed with the left. As a child, she tried to write with her left hand, but at school she was forced to write with her right hand.

At a specific stage “Flaming art” was to make a unique contribution in the development of the artistic means of Habura’s work. The works created in this trend were three-dimensional. Candles that burnt during the presentation were integrated into the picture painted on wood. The artist claimed that art constitutes a good foundation and may even become a background for dying, a memento mori of sorts. At the Chicago art exhibition to mark the end of World War II, Habura exhibited an interesting installation: 45 figurines were carved out of candles and these were lit at the exhibition, burning as a sign of protest against war.

![Fig. 8. Krystyna Habura, The Last Supper (1972), oil on canvas, 90x120](source: Pąchalska 2003b, with the permission of Medsportpress Publishing)

3 The picture “The Last Supper (1972), oil on canvas, 90x120, is presented in Virtual Art Gallery of the Polish Society of Neuropsychology in honor of Professor Maria Pąchalska. http://galeriasztukiptneur.pl/
She constantly searched for new means of artistic expression, experimenting with new techniques and forms. However, she most often painted portraits, from realistic images of the persons portrayed to surreal stylizations (Fig. 9).

The artist created her works in adverse conditions: she slept little, smoked heavily and drank. This lifestyle led to a deterioration in her health, the development of grade III hypertension, which is known to constitute a high risk of stroke. In 1990, at the age of 61, the artist suffered an ischemic stroke of the right hemisphere (at the point supplied by the middle cerebral artery). In brain neuroimaging with the CT method, changes were found in the frontal, temporal, parietal lobes and in the insula. As a result of this stroke, she suffered left-sided hemiparesis, prosopagnosia combined with periodic metamorphopsia, mild spatial-visual orientation disturbances, crossed anomic aphasia (with word finding problems), a significant slowing in speech, similar to prosody disorders, and mild dysgraphia, which was visible, for example, in her signature (cf. Fig. 10). She also lost her ability to paint completely, not only in the technical level but also in the creative level. In other words, she lost sensory (picture-based) and conceptual (sign-based) representation of the world.

She was treated at the Rehabilitation Center in Witkowice, and then at the Krakow Rehabilitation Center for Persons with Aphasia “Afa-Klub”, where the Art Therapy Program created and implemented by Maria Pąchalska and conducted...
by the art therapist Zbigniew Perzanowski. It was a period of hard work and a great fight with a disease that had a huge impact on her artist’s self system, and especially on her cultural self. From the very beginning of therapy, she tried to show her suffering in her drawings. This was no simple task and required a lot of effort on the part of the artist and therapists. She did not want to paint with her right (healthy) hand, she protested, repeating that she was left-handed and that she had to use this hand in painting. It was necessary to prepare special aids for painting (e.g., thick sponge caps for chalk, pencils or brushes). Initially, she trained her left (paresis) hand, supporting herself with her right (healthy) hand. Whenever she could, she mainly used her left hand, which intensified the difficulty in imagining objects, especially faces. During this time, she suffered from prosopagnosia and metamorphopsia disorders.

She emphasized many times that she suffers from “creative aphasia”. When she sat in front of the canvas, a feeling of a “hole in the brain”, a kind of emptiness and darkness appeared in her head. She despaired that this “hole in the brain” meant she could not imagine anything, especially the human face, and that she had completely lost her ability to paint. She also claimed that her world had disintegrated into a thousand small pieces. She could see distorted human faces that waved and seemed to be ghosts. These disorders revealed themselves in her first drawings following the stroke, ones devoid of much detail, formally poor and reflecting the artist’s mental state.

In the drawing entitled “A Trampled Toad” depicting an art therapy session in which she herself participates (the first person on the left with the cane), it can be seen that the artist only marked the contours of the figures, and the therapist’s head does not even have a fragment of a face (cf. Fig. 11). This could indicate left-sided neglect, which, however, was insignificant, but was also evident in other works from this period and in the patient’s behavior. For example, she would leave food on the left side of her plate. All people in this drawing are absent of any facial elements.4

4 Such a drawing is typical for people with damage to the left hemisphere of the brain.
After a year of therapy, the artist can already draw and paint, but still has trouble imagining details in portraits (e.g., eyes, lips, nose). She then complains:

When I draw two elements, I can manage it, but if there are three or four elements, it is too much for me.

She writes about this unimaginable suffering in the so-called painted letters sent to therapists. Once, she sent a work to her therapist, which she called a “painted letter”. She claimed that this was the first such letter in the world produced by a person following a stroke. She depicted him, her therapist, standing over an open book, on which she had drawn clasped hands. One of these hands, the left, has paresis, just like the artist had (cf. Fig. 12). This letter contained a clear message-question to the therapist, one significant for the problems the artist faced: the text on the open book reads: “Aphasia is curable. Is creative aphasia curable, too?“

The suffering related to the disease was the subject of many of Krystyna Habura’s drawings, sketches and paintings. It is worth noting that she compared her suffering to historical figures or used the symbolism of the Cross, as in the paintings entitled: “Magdalena under the Cross“ (Fig. 13). Sporadically, there was a specific inhibition associated with brain damage and the development of frontal syndrome in these works. In the art therapy program, however, this syndrome was successfully treated.

After two years of therapy, the artist continued to express her frustration at having difficulty painting facial details. Therefore, a variant of the art therapy program was developed for her. Neurolinguistic image reprogramming (Pąchalska 1999) focused on the differentiation of facial elements and on giving emotional meaning to facial expressions. So she began working hard on the technique of painting portraits: from drawings (e.g., painted letters), through portraits of famous people (e.g., family members, friends and therapists), and finally portraits of figures from public life. For stimulation, photos and images from albums were
Fig. 12. Painted letter by Krystyna Habura. The text on the open book reads, “Aphasia is curable. Is creative aphasia curable, too?”
Source: Virtual Art Gallery of the Polish Society of Neuropsychology in honor of Professor Maria Pąchalska.
http://www.galeriasztukiptneur.pl/

Fig. 13. Krystyna Habura, Symbolic self-portraits of the artist Magdalena under the Cross, produced in the Art Therapy program: chalk on the left (after a year of therapy), tempera on the right (after three years of therapy).
Source: Virtual Art Gallery of the Polish Society of Neuropsychology in honor of Professor Maria Pąchalska.
http://www.galeriasztukiptneur.pl/
used, from which the artist chose a character to draw or paint. She did not use live models.

She often repeated the phrase: “The artist cures art”, which motivated her to continue working. As the rehabilitation process progressed, she gradually returned to the style of creation practiced before the stroke, but clear differences were visible. Her style became more sketchy, and the paintings featured logically unrelated elements (Fig. 14). The drawing lines have become less expressive and reliable. She also often placed inscriptions on the paintings, which is typical for most patients after a right hemisphere stroke. These inscriptions were sometimes extremely witty and full of humor. On the one hand, this can be associated with additional elements of the therapy the artist received. On the other hand, they may have been associated with the uninhibited and were to be pronounced differently, sometimes even vulgarly, again as so often observed in patients with brain damage.

To find out what has been disturbed, what has been preserved, and what has been rebuilt spontaneously, in the process of art therapy, it is always necessary to get to know the patient better. As repeated by the artist, like a destructive mantra, the slogan “I have a hole in the brain”, on the one hand was a complaint about the inability to create, and on the other hand a way to protect herself against unfavorable criticism and extend the recovery time following the stroke.

Fig. 14. Krystyna Habura, “Grey Hawk, Chief of the Witkowice Tribe” oil portrait of the Head of the Department of Medical Rehabilitation at the Cracow Rehabilitation Center, made by Habura during art therapy, and signed "Sick Habura" Oil on canvas, 140x78 cm, 1991
Private collection: A. Pachalski
In the artist’s active imagination, the medical fact that she had brain damage was translated into frightening images of dark, empty space in the head.

These symptoms made her thoughts revolve around the space in such a way that it was almost impossible for her to think of anything else. At the same time, the slogan “hole in my brain” served as a useful explanation to lengthen and justify the periods of inactivity she was experiencing between periods of intense creation. In fact, this temporary inability to create was not something new in the artist’s life. The only difference was that this “dry spell” lasted for many years - instead of weeks - and showed no tendency to disappear without therapeutic intervention. This is demonstrated not only by the results of neuropsychological research (Pąchalska et al. 2008a), but also by persistent disorders of the individual self, with particular emphasis on the emotional self. Dorota Habura Larsen, the artist’s daughter, in one of the interviews given to the author (see Pąchalska and Knapik 1994), stated:

Mom cannot accept this disease. There is in her two persons, the one who paints, who is normal when she is painting, and the other one who is lost, and who does not stick to social life. Even her left hand that seem strange to her, she is not notice when she is painting. When showing this picture to her doctors, she talks about her “birth” and overcoming all her difficulties again, in disability and suffering.

And this metaphorical “birth” that Krystyna spoke about took place during the process of rebuilding herself. This was due to an attempt to merge the minimal self with the longitudinal self in time and thanks to the reconstruction of the emotional self, in which sadness and suffering dominated.

Krystyna Habura achieved success in the rehabilitation process, not only thanks to the heuristic approach to exercises, one taking into account the goals set by the patient herself, but also thanks to her own strength of spirit and the help of her daughters and loving grandchildren (Pąchalska 1999). However, the theme of the pictures was to change the most (cf. Fig. 15), which now only focus, as was the case in the early period following the stroke, on illness and suffering.

Her own view of the rehabilitation process after the stroke was that she claimed that she had generally become “better”, more “human,” and that the disease she had had a relevance to her creativity. She rebuilt her own social self, creating warm ties with others. She started to be socially active, painted for other patients, conducted group classes for them, during which she taught them how to paint.

The works she produced after her stroke were to bring her worldwide fame and arouse a great deal of interest in her work amongst neuroscientists (cf. Lebrun 1990; Piechowski-Jozwiak, Bogousslavsky 2013). In the final stage of rehabilitation, she overcame that “black hole”, darkness and emptiness. Initially, Krystyna Habura’s work was to be viewed at art exhibitions organized by the Polish Neuropsychological Society. Then she took part in other exhibitions and auctions. The money obtained from the sale of her works was entirely devoted to painting.

Krystyna Habura also organized several exhibitions at home and abroad. She has developed projects postcards, 40,000 of which were sold in Denmark, and designed covers for the books of her therapist Aphasia and Neuropsychological Rehabilitation (cf. Fig. 16 A, B). The works on the covers are characterized by...
Fig. 15. Krystyna Habura: A surrealist portrait of Maria Pačhalska made after a year of rehabilitation within an art therapy program, awarded the first prize at the international exhibition Disability Arts International in Adelaide, Australia (1994), oil on canvas, 80x110
Private collection: M. Pačhalska

Fig. 16. Krystyna Habura, Book cover designs: A) Afazjologia, B) Neuropsychological rehabilitation, in which the artist used copies of works painted after a stroke
Private collection: M. Pačhalska
a style typical for the artist – in a modern composition – she combines abstract and figurative art.

THE BIRTH OF A NEW STYLE OR FINDING YOUR OWN SELF?

Information about the state of the brain/mind at the time of creation allows us to diagnose disorders (Knapik 1991), interpret the works of artists with various brain injuries, describe the symptoms that are characteristic of individual damages (Piecikowski-Jozwiak, Bogousslavsky 2013) and check the effectiveness of art therapy programs (Pąchalska 1986; Kaczmarek 1991). However, the self of the artist with aphasia does not emerge from these. A better understanding of the patient is possible only an in-depth analysis of the individual case: long-term observation of the creation process during art therapy allows one to notice how the works created initially reveal the lost or destabilized self, a self which is to be gradually recovered as rehabilitation progresses. One is able to observe how symbolic, new, original (Kaczmarek 1991) and even precursory works are born (Pachalska, Kaczmarek & Kropotov 2020).

A picture has been preserved that has the characteristics of a work of art, although it was made on the basis of a photograph of an earlier painting (cf. Fig. 17). Only a closer look at the biography and at the artist’s works created before the disease allows us to conclude that we are dealing here with reproductive work. Painting this picture, however, became for the artist a kind of breakthrough and liberation, because with this work she showed a return to technical excellence; a technique which was to provide her with satisfaction and allow her to ultimately find herself. These feelings were reinforced by the expressions of in-

![Fig. 17. Krystyna Habura, Magdalena with Elfik (1994). A copy of the work made from a photograph of a picture painted previously.](image)

Private collection: M. Pachalska
terest and recognition of those who claimed that this was undoubtedly a work of real art. This is proof that we are constantly learning something new, surprising, destroying existing theories and hypotheses.

Finding her own, post morbid self allowed the artist to return to painting her favorite portraits. The main features of this creativity were characterized by novelty, originality and precursor. The last portrait, painted a month before the second stroke and the artist’s death is a portrait of Albert Einstein (Fig. 18 B). She was very proud of this portrait, and she said that it was more interesting than the one she had painted before the disease (Fig 18B), for not only had she managed to put on it the symbol of light associated with the theory of relativity, but also a bean, which in her opinion constitutes new life. Art critics and outstanding painters, lecturers from the Academy of Fine Arts in Krakow, have even talked about the birth of a new style (Zinn 1994).

This stage in her life was to bring about a final liberation for the artist; a liberation reflected in her new life maxim. She would often quote a sentence from a fantasy novel entitled *A Wizard of Earthsea* written by the American author Ursula K. Le Guin

> Light can overcome darkness ... only light.
> And for me this light is creation.

The story of the artist’s illness and recovery herein briefly presented shows that art therapy improved her motor skills (and in particular the technique of painting with the use of left hemiparetic hand in cooperation with the right healthy hand), her language in its outward expression (naming, evaluation, comparison,
discussion or realization), as well as symptoms of the stroke (especially prosopagnosia and metamorphopsia). She returned to the painting of portraits in a proper form and coloration, when necessary. It was a large step in her recovery: she found her own self and her individual, social and cultural identity (see Pąchalska et al., 2008a). And this ultimately is what the therapy of an aphasic artist is all about.

A creative brain, mind and self is the greatest of man’s achievements. A person with a break-up of their self caused by various diseases or injuries experiences a dramatic feeling that they have suddenly been deprived of their own humanity and that they have found themselves alone outside of social relations. The life of such a person has lost its former quality, the world has disintegrated or even broken up into small unrelated pieces and they are not able to merge it together. This is particularly dramatic in visual artists who have suffered brain damage and have a variety of disorders, especially prosopagnosia and aphasia. Losing the ability to create means social death for them (Trystula 2017; Pąchalska, Kaczmarek, Kropotov 2020). However, they retain the opportunity to speak in the language of the art they have hitherto practiced, even if that language has been significantly reduced. It is therefore important to create the conditions to arouse the possibilities of presenting yourself and your problems, as well as the ability to communicate with others using the available expressions. As we know from many neuroplasticity studies, it becomes possible then to create new connection patterns. Then the working brain changes and with it the self system (see Gazzaniga 2011).

Observing the works of artists with aphasia, we notice that each of them perceives the surrounding world differently (Piechowski-Jozwiak, Bogousslavsky 2013, 2020). One wonders what makes them present reality in one way and not another way. It is true that all works of art show reality in thousands of different ways, and only an unoriginal artist will use someone else’s vision – one that has already been used in a work? It should not be forgotten, however, that the work of artists with aphasia often takes on features resulting from the nature of the problems they face and is initially unoriginal, as they must overcome fundamental technical difficulties and problems of technique. A reality that for some artists glitters with human faces distorted, unfinished or devoid of basic elements (e.g., an eye or the mouth); ones that seem so terrible, and which to some can appear as a mutilated figure, yet to others as a conglomerate of gray-black spots, without clearly distinguishing shapes. This is probably a phenomenon associated with the loss of the previously rich, and at the same time integrated with memory, imagination, a specific breakdown of cognitive processes, including that of language (Pąchalska, MacQueen, Brown 2012a).

It is puzzling how the presentation of yourself and the world changes in the process of recovery and rehabilitation. This is reflected in works of art, which become a specific window that allows you to gain insight into the minds of their creators (Pąchalska, Kaczmarek, Kropotov 2020). These works can still be strongly dependent on emotions, physical and mental health and events that the artist
experiences at a given moment. However, their content and form depend on whether the artist is still struggling with the loss of their own identity or whether as a result of therapy again the artist has regained the self that once was.

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REFERENCES

Aleksandrowicz, J. (1982), Nie ma nieuleczalnie chorych. Warszawa: Państwowe Wydawnictwo ISKRY.
gular Publishing Group.
land, M.M. Forbes (red.), Aphasia treatment. World perspectives (145-174). San Diego, Kali-
fornia: Singular Publishing Group, Inc.,
psychologica, 1(1), 56–86.
Lublin: Wydawnictwo UMCS.
chologica, 18(2), 349-392.
Pachalska, M., Bednarek, S., Kaczmarek B.L.J. (2020). Mózg, umysł i Ja kulturowe. Kraków: Ofi-
cyna Wydawnicza IMPULS.
sia Today (pp. 119-126). Florence.
Pachalska, M., Kropotov, J.D. (2019). Functional neurophysiology. New approaches in neuropsy-

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Pąchalska et al., Visual art in aphasia therapy