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The role of the balancing phenomenon in the artistic process
in case of creative artists

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The inspiration to my research roots in linguistics and literature since I graduated in the following majors; English Language and Literature and German Language and Literature. At college, I was primarily interested in comparative linguistics but later, at university I switched my attention to literature, to be more precise, British literature. That's how the idea came to conduct a research in psychology connected to arts and the artistic creative process. Since I was mostly interested in these topics as the interaction of conscious vs. unconscious processes, the two additional elements became the impacts of mental illnesses and the use of psychoactive substances.

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I Introduction

Scientists have been interested in conscious and unconscious processes and their relationship to each other for a long time. However, the terms referring to these two phenomena have changed throughout the times and are continuously developing in different psychological schools. Besides, the curiosity of humanity resulted that individuals tend to use different methods to alter the normal function of consciousness. These methods vary depending on the era and culture but it seems that a common phenomenon is that humanity searches for techniques to reach certain desired effects which sometimes become undesired. Arts and the artistic activity in itself might have such a mind altering function. Besides, mentally liberated states can be achieved by using psychoactive substances with diverse effects or mental illnesses cause similar conditions, too.

The aim of my dissertation is to examine the above mentioned interactions in depth. The concept stems from the notion that individuals dealing with artistic activity might possess greater sensitivity than the normal population; their chance to the appearance of mental disorders is much higher. Another element is that both psychoactive substances and certain periods of mental illnesses may influence creativity – along with this, the artistic creative process. Psychoactive substance use and mental illnesses are very popular topics; they are subjects of many researches. In my dissertation, I primarily focus on the effects of psychoactive substances on the artistic creative process and creativity, but I also deal with enhanced sensitivity and mental illnesses. These, altogether three topics are very complex in nature even in themselves. That's why not all psychoactive substances are present – e.g. the group of stimulants is missing. Besides, the field of mental illnesses is only touched. Whereas, during my PhD years new topics emerged, e.g. other techniques for altering the normal functioning of the mind that are also shortly described.

Researches examining the artistic creative process are limited in number; the reasons for this are diverse. Although, the concept 'creative process' was defined almost 90 years ago, a few theoretical considerations have been invented ever since. In addition, this is an area that can be studied empirically in a very difficult way; it is not surprising that only a few empirical findings are present in the literature. The so far existing researches leave several questions open. I do not define here the creative process but it is the detailed subject of the theoretical background. The literature of 'creativity' in a general sense is so extensive that it is beyond the limits of this dissertation to examine it. Therefore, the viewpoint of artistic creativity and the belonging personality factors were added in both the theoretical and empirical parts.

Besides reviewing previous researches, the aim of my dissertation is to enrich the field with further researches and try to explore connections that have been hidden till now. In the review of the literature, I introduce those theoretical considerations, observations and research results that can be considered as the basis of my theoretical viewpoint which consists of the artistic creative process, conscious and unconscious processes – containing altered states of consciousness, psychoactive substance use, and mental disorders. Further, from the branch, positive psychology I shortly review the topic of self-fulfilling individual in itself and connected to the artistic creative process. To sum up theoretical findings, the artistic creative process can be described as the dynamic interaction of conscious and unconscious processes. It can be also viewed as an altered state of consciousness. Further, the antecedents confirm that the choice of psychoactive substances is not an accident. Connected to this, I introduce the self-medication hypothesis that is described by Khantzian (2003). In this respect, artists can be viewed as an especially vulnerable group because of their enhanced emotional sensitivity. Although, not only psychoactive substances might serve as a ‘protector’ when facing with special emotional states but e.g. art or creativity itself, or there are other tools which are used to reach this goal. Extreme emotional states that are difficult to handle are necessary elements of the creative work that is why the occurrence of mental disorders is much higher than in the normal population. It follows that artists tend to use substances as self-medication tools more frequently. From the side of positive psychology, creativity and the creative process are described as ways of self-actualization, self-knowledge and self-consciousness.

The empirical part of my dissertation wishes to examine the above introduced complex issues from different points of views, with different methodologies in several steps. Foremost, two case studies are described. The first one studied the link between bipolar disorder and the artistic creative process. The connection between psychoactive substance use and the artistic creative process is the topic of the second one. Then a systematic review is presented which collects the researches in the topic; psychoactive substance use and artistic creativity so far. This review points out that there have only been conducted a few researches both in the case of legal and illegal substances. The next study compares art students’ and university students’ substance using habits and mental disturbances. Finally, semi-structured interviews have been conducted with professional artists. The obtained data have been subject of two investigations. On the one hand, the role of psychedelic substances to artists’ verbal behavior have been studied with the help of three word categories; *creativity*, *consciousness* and *spirituality*. On the other, the effects of alcohol and cannabis have been examined related to

the word categories *tension control* and *creativity*. The dissertation ends with the discussion of these studies and the suggestion of further possible researches.

II Theoretical background

II.1 Theories of the artistic creative process

Considering the artistic creative process, a few theoretical considerations can be found. These concepts are of diverse nature but a common feature of the following theories is that it is characterized by fluctuation of conscious and unconscious patterns.

II.1.1 The first concept of the artistic process

The first theoretical approach of the creative process was formulated by the social psychologist, Graham Wallas in 1926. His model is the ground of many researches even today, which consists of four stages; (1) *preparation* stage; it is a conscious process during which ideas are formed with ego functions, like attention, or planning. The *incubation* phase (2) is more of an unconscious part, no or little conscious intention is used. Artists either work on the solution of another problem or they just have rest. The *illumination* stage (3) is described as the sudden appearance of the solution that is not surely the right one; the solution comes through chains of associations. In the *verification* stage (4), the evaluation happens by conscious effort. The product stemming from unconsciousness reaches its' final, organized form. During the four stages, both conscious and unconscious thought processes are used and the stages are in interaction with each other (Wallas, 1949).

II.1.2 Psychodynamic perspectives

In psychoanalytic relations, the creative process was first studied by Sigmund Freud (1955) who emphasized that art and childish play are similar in the sense that both allow artists and children to create reality. Each playing child behaves like an artist; he puts the things of the world to such an order that he likes. Both the child and the artist take the created world seriously; a lot of emotions are connected to it. Playing and art are defined as the opposition of reality and not seriousness. Artists create a fantasy world, fill it with a wide range of emotions and separate it sharply from reality. Further, Freud (1908) states that artwork is born by the artists' experiences. Their childhood happenings play an important

role. The emphasis is laid on childhood memories; the creative act replaces the childish play in adulthood. Freud (1924) states that the creative mental process is generated by repressed wishes that live in the individual from childhood. From another viewpoint, the artwork is the simplified presentation of the artists' fantasies. This aesthetic pleasure gives the audience enjoyment that derives from the liberation of tensions; through the artwork, the audience is freely allowed to enjoy its' day-dreams (Freud, 1908).

Carl Gustav Jung (1971) approached this phenomenon from a different perspective; the creative power appears very strongly from unconsciousness. The artwork lives in the person as a natural power that comes to the surface and does not care about the person who carries it. This process is considered to be an autonomous action that lives in the person independently from consciousness. Depending on the energetic charge, it might appear either as a disturbing element of conscious processes or as an entity above the ego, which is capable of dominating it. The association that breaks this way into consciousness can be interpreted not as assimilation, but as perception. It cannot be consciously controlled or intentionally reproduced. That is why the complex seems to be autonomous, and whether it appears as a form of art or simply disappears depends on the inner tendencies. According to Jung, the personal unconscious is partly a source of artwork, but if too much information comes from it, the result might be symptomatic. The collective unconscious is also a source of art where the common material of humanity can be found. It is not able to communicate with consciousness; it is not repressed or forgotten. Collective unconscious is described as a possibility where ancient pictures – archetypes - can be found. The creative process is the reviving of archetypal unconscious. Archetypes are defined as the presence of pictures and emotions at the same time.

Two moods of artistic creation are distinguished (Jung, 1971). One is called *psychological*; the content of artwork derives from the scope of consciousness, like life experiences. In the *visionary* mood, such materials or experiences serve as the basis of works that are unknown and strange for the artist. These are ancient, not personal experiences against that human nature is weak, uncomprehending. By the psychological mood, the question does not arise; what is the essence of the product, by the visionary mood, it does. Visions are described as real ancient experiences. This kind of creation is specific to the works of prophets and clairvoyants. In visions, the pictures of collective unconscious appear. This is the specific structure of the psyche that is the matrix of consciousness. When consciousness functions less, such mental contents might arise that are the essences of

primitive nature. These can happen insomuch that the individual may think that these are fragments of secret ancient doctrines. Jung emphasized that the problem of creative power and person are of transcendental nature. Psychology can only describe it, an answer cannot be provided.

In *Über das Phänomen des Geistes in Kunst und Wissenschaft* (1971), two kinds of artwork and creative processes connected to these are defined; the introverted and extraverted attitudes. The artwork is purely born due to the artist's will in case of the introverted attitude. The artist wants to reach a certain effect; the work of art is created with intentional forming. He is the artwork itself and is in that with all of his knowledge. Besides, the goals of the subject are maintained against the claims of the object. In the extraverted attitude, the artwork comes more or less ready to the artist. He has to face the fact that the material comes from him. The artist is not equal with the creative work; the subject is subordinated by the claims of the object.

Besides Freud and Jung, Ernst Kris dealt with the artistic creative process from a psychodynamic point of view. He (1962) distinguished two phases of the creative work; the first is the "*inspirational*" phase; the artist is passively present in the process. This phase shows many similarities with regressive processes in terms of such impulses and drives that are otherwise difficult to achieve. It gives the content of the artwork dominated by unconscious and preconscious functioning. The subjective feeling is described as thoughts and pictures are emerging from somewhere. The artist feels to be driven; there is a strong sense of passivity (Kris, 1939). In the second, "*elaborational*" phase, such ego functions are used as the analysis of reality. This phase requires skills like concentration, purposive planning, and problem solving. The content of the first phase is reconstructed in the second one and made understandable to others. The two phases can follow each other linearly, or they can alternate or combine.

Art always serves the goal of communication. Another aspect of differentiating the two phases is that in the first one, the id communicates with the ego. During the second, the same psychic processes are subordinated to other processes. They are described as shifts occur in the psychic levels. It means that there is a "fluctuation of functional regression and control" (254.o.) (Kris, 1962). If there is too much regression, the symbols become incomprehensible to the audience. But if the control is too much, the artwork might be rigid and uninspired.

Not all work comes from inspiration but if art reaches a certain level, inspiration appears. The audience is also important; if an artist works, at a certain point of the process, he

might imagine himself or others as the audience, an observer. Inspiration is described as a regressive, ecstatic state however it is not a permanent condition. Consciousness is lost partially and usually uncoordinated motor activities are present. Speech will be automatic; the voice of unconscious speaks instead of the person. The message is communicated by him to others; this way, the unconscious is supreme (Kris, 1939). That part of unconscious is externalized in words, pictures, and daydreams which have appropriate emotional charge (Kris, 1962).

Kubie (1966) introduces the idea that creative learning and thinking are preconscious; our conscious symbolic processes serve primarily to sample, communicate and test. Kubie (1954) hypothesizes that preconscious processes are necessary for creative individuals to work freely. This way, their mental processes are not blocked because of unconscious conflicts. In any kind of creative process, unconscious conflicts disturb conscious and preconscious functions.

II.1.3 Further theories of the artistic creative process

Ehrenzweig (1970) defined the creative process as having three stages. In the initial '*schizoid*' stage, fragmented parts of the self are projected into the artwork. These unconscious projections are accidental, or alien to the artist. In the second '*manic*' stage, unconscious scanning is activated; creative dedifferentiation starts to cease. An accompanying element is that the differentiation between the ego and superego might be reduced. This stage gives the basis of the artwork, fragments are ordered into a unity. During the next stage *re-introjection* happens, higher mental processes are used, the ego is strengthened. What happened during the second stage in an unconscious level appears suddenly in consciousness – like undifferentiation which was so far believed to be chaotic. Consciousness analyzes the substructure of the artwork with a lot of difficulties; unconscious elements become part of the conscious structure. This stage is often of great anxiety, it might be a very depressive part of work. After the completion, the artist views and criticizes his product as an observer.

Remaining by the same author, I would like to present another viewpoint. The creative work is described as a continuous process during which conscious and unconscious tendencies are working at the same time. Impulses emerge from both the environment and from the artist. Thus, stimulation is transferred to unconscious fantasies which are fully

flexible; creativity connects the inside and the outside. Ehrenzweig (1970) adds that the same process is responsible for ordering together the inner and outer reality during creation. Unconscious symbolism functions as it does not make a difference between contrasts and neglects in the continuums of time and space. The term 'Unconscious scanning' (p. 21) is introduced. It aligns both the artwork and the artist's personality but till this happens, he has to bear chaos. Unconscious scanning comes into existence with undifferentiated visions that are seen as chaotic in normal conscious state. Chaotic material is created by the primary processes that have to be organized by the secondary processes of the ego. Primary processes are tools for unconscious scanning that are beyond the function of logic and reason. The reality of our perception is heavily influenced by unconscious fantasies.

Further, he states that an essential element of creativity is making a choice without having all the information which is needed to make the decision. There is a point in the creative act when the artist has to let the details go, concentrate to the whole and compare it to other potential structures. He does it without the security of knowing the outcome (Ehrenzweig, 1970). In an inspirative state, reality seems to be more plastic than in normal conscious state. The artist might understand contents with undifferentiated perception much more than with conscious perception. The structure of unconscious vision is powerful; it can be understood through scanning powers. One has to pay attention to a lot of possible choices which are far away from consciousness. That's why creativity is close to primary processes. We can see the material chaotic or as a high creative order; it depends on the capacity of our rational abilities.

Dobkin de Rios & Janiger (2003) interpret inspiration as a special state over that the person cannot consciously take control; the best expression is *strangeness*. Further, artists have frequently the experience of depersonalization. They live as balancing between their consciousness and unconsciousness. This state can produce both the feeling of fear or shock and gratification at an extreme level.

Torrance (1993) interprets creativity in a wider sense. Creative thinking is described as a natural process. It develops if the person feels that something is lacking, tension is enhanced. Artists start the creative work to ease this tension, and this focus remains through the whole process.

Rogers (1961) writes that the artwork is the result of the relationship of the creative person's interactions with his experiences. The process itself is the same by any kind of creative activity. It is defined as growing from the unique needs of the individual and his

experiences with the surrounding – people, situations, life events. His definition is completed; the result of the creative process has to be accepted by some groups of people.

II.1.4 Theories of artistic creativity and the role of the individual in it

After focusing on the process of artistic creativity, this notion can be approached from other viewpoints. The literature of creativity is so rich that the introduction of it is beyond the limits of the dissertation. In this section, the roles of the individual and personality factors are only discussed. Feist (1998) compared the difference between scientific and artistic creativity. He is on the opinion that both scientists and artists use creative power but a scientist can survive without being exceptionally creative. In contrast, art cannot survive without it; this is the essence of artistic activity.

Csikszentmihályi (1998) thinks that creativity consists of three factors; *creative person*, *domain* and *field*. Artistic and scientific creativity is not distinguished, only the degree of creativity – as everyday or exceptional. He defines creativity as a product that changes a domain or modifies it into a new one. The creative person is described as someone whose thoughts or acts change a domain or create a new one. He writes about the power of symbols which are of extra-somatic nature. Culture derives from this extra-somatic information. Knowledge by symbols forms domains, like mathematics, or music. Each domain extends the individual's personality and enhances his sensitivity. The creative individual chooses a domain, because he feels a strong vocation. The activity itself is of reward value, he does it purely because of the pleasure of the activity.

Further, he sees creativity as a system where the individual is only one element. *Complexity* is the key component in the differentiation between highly creative and less creative people. Creative individuals make associations among such thoughts and behaviors that are not connected by others. Depending on the situation, they are able to fluctuate between extremes. 10 dimensions of complexity are listed which are present at the same time; 1. having a lot of physical energy, but being able to relax and sit in one position; 2. being clever and naive; 3. playfulness and discipline is specific or with other words, responsibility and irresponsibility; 4. the presence of imagination and phantasy for creation and at the same time, they are connected to reality; 5. both introverted and extraverted attitudes are

characteristic; 6. tending to be modest and proud, specific is self-reproach and shyness. 7. masculine and feminine traits are strongly present ; they might come out of their gender roles. 8. tending to be conservative and rebellious; 9. loving their work passionately and seeing it in an objective way; 10. fluctuating between two extreme emotional conditions, like pain/suffering and joy. It is a state of grace that they do their work for the sake of the activity.

Barkóczy (2012) states about insight that is not necessarily a lonely activity, it can also happen in groups. The duration of incubation might be reduced. However, this technique is mostly used in scientific circles and by artists who tend to work together, or ask for help. Csíkszentmihályi (1998) states that in the unconscious, intention does not work and the system of symbols plays an important role. Knowledge, learnt by consciousness is used by the unconscious. He writes about the ‘aha’ experience as being in the state of flow during creation which might result an inner freedom. The creative personality is described as having strong intrinsic motivation. This helps him to work much more than others because he feels it as a game not an obligation (Barkóczy, 2012). According to Csíkszentmihályi (1998), one of the most important personality characteristics of creative individuals is that they are able to see patterns where others see chaos. They are more prone to follow their dreams and intuition. In Dobkin de Rios & Janiger’s (2003) opinion, the creative individual has to keep purity in his perception. It is compared to the childlike view of the world which is rarely observed by other adults. However, an artist has the disadvantage of having self-defined views; he has ideas that cannot be manipulated. They are often rather alone. A further characteristic is having a strong intrinsic motivation and living very close to unconsciousness.

Simonton (2010) discusses Campbell’s BVSR model of creativity. This model consists of two stages, *blind variation* and *selective retention*. Creativity is defined as a process which ends in a product that is both novel and useful. If one of these criteria is not true, creativity does not develop. Creativity can be divided into ordinary vs. exceptional ones; Simonton connects the BVSR theory to exceptional creativity. The two concepts - creativity and the BVSR – are closely linked, because the creative process can be seen as first, the originality of an idea is supported by blind variation. After, its usefulness is decided by selective retention. Simonton further (2010) thinks that creativity might be enhanced when stimuli are irregular, or strange. Each stimulus means an ideational variant. Considering their outcome, these variants are blind; most of them do not have any outcome at all. Thus, incubation can sometimes take for a long time, particularly if the gap between the problem and the solution is very big.

Fromm et al. (1970) think that an individual is creative if he is open, sensitive, awake and empty (in the Zen Buddhist sense). One has to feel and react to him, the environment and everything that exists. This allows the development of mental health. Rogers (1961) lists three criteria as the creative person's characteristics. The first is openness to experiences; all impulses flow freely in the individual, there is no defensiveness - the real perception of the present moment is described. The second one is an evaluative inner system. Because the creative individual primarily creates for satisfying his own needs, he needs a system judging the product. The third one is the ability to play with ideas, concepts. He has to deal with new ideas freely, behave spontaneously in new situations, shape wild concepts, explore.

Examining artists' vs. non-artists' personality characteristics, Feist (1998) used four types of measurement, the FFM (Five-Factor Model), the CPI (California Psychological Inventory), the 16PF (Sixteen Personality Factor Questionnaire) and the EPQ (Eysenck Personality Questionnaire). The results of the four scales overlap, the creative individual's common characteristics are listed as the following: "more autonomous, introverted, open to new experiences, norm-doubting, self-confident, self-accepting, driven, ambitious, dominant, hostile and impulsive" (Feist, 1998, p. 299).

II.1.5 The creative person as a self-fulfilling individual

From the previous chapters, creativity can be seen as a protective factor for maintaining health. This section provides a more extensive description of this notion. For Rogers (1961), the primary goal of creation is the individual's self-fulfilling nature. Creativity is essential for living a full life. Further, Maslow (2011) discusses the phenomenon; self-fulfilling individual. Their actions are mainly determined by themselves, they do not allow much influence from the environment - this is called psychological freedom. They are able to perceive things in another way than most people do. Their perception is desireless; they are able to see the intrinsic nature of objects easier that allows a clearer vision about the percept. Experiencing the real nature of objects needs deceptiveness, the person must allow his perception not to be judging. This kind of perception can also be found in the Taoist view. Two separate phenomena are divided if we see the surrounding as our projection of the world or see it as it really is. Moreover, they are able to put together opposites easily; they are selfish and unselfish, rational and irrational. Here comes the analogy with Csíkszentmihályi (1998) who

writes the same about highly creative people when he defines *complexity* which is described above.

Self-actualization might have the effect that the person will be freer from unreal problems, like the problem of youth or neurosis. But at the same time, other kinds of problems appear, like philosophical problems of humanity. This change in the point of view does not mean that there will be no problems, it is only a shift of attention. As a concomitant, personality development might occur. Personal growth happens only when the next step is more satisfying for the person as the previous one. Spontaneous, creative experiences can result without goal, expectations. But, the creative process has to be for its own sake, it cannot be used for a purpose. The question of growth is highly in contrast with security which is a basic human dilemma according to Maslow (2011). That's why growth means a continuous flow of free choices. The lack of curiosity is the sign of anxiety and fear. It follows that knowledge and action accompany each other.

Peak-experiences are defined as the “moments of highest happiness and fulfillment” that can affect as therapeutic tools (p. 69. Maslow, 2011). Time and space disorientation are specific to peak-experiences. B-cognition is defined as the perception when the object is perceived as a synonym for the universe. With other words, it is synonymous with the above mentioned desireless or objective perception. There is a big possibility of B-cognition during peak-experiences. The repetition of B-cognition can make perception more colorful; with it, an egoless perception might be achieved. B-cognition is described as being rather passive than active, like desireless awareness. Here, he compares again with the Taoist theory of awareness. A greater and purer cognition can be achieved in a healthier moment of the individual through greater sensitivity. His theory is summarized as “a fusion of ego, super-ego, ego-ideal, of conscious and unconscious, of primary and secondary processes, a synthesizing of pleasure principle with reality principle, a regression without fear in the service of the greatest maturity, a true integration of the person at all levels” (p. 91, Maslow, 2011).

Further, the relationship between self-actualization and creativity is discussed. The phenomenon “*self-actualizing (SA) creativeness*” is a kind of creativity that appears in every field of life, e.g. humor. These individuals do everything in a creative way which can be connected to a special kind of perception. They live more in the world of nature than in the verbalized world of concepts or stereotypes. They are able to express their views freely, they are easily spontaneous. As a result, their behavior is also more spontaneous. They lack the fear of unknown both inside and outside; more self-acceptance is specific. Primary and

secondary creativity are distinguished depending on which (primary or secondary) processes are used to creation. If both are used, integrative creativity emerges (Maslow, 2011).

Gardner (1997) studied the development of exceptional personalities. Three components are distinguished which are the bases of being exceptional; *personality, objects* and *symbolic entities*. The person's development is a dynamic interaction between the surroundings and the individual. Gardner agrees with the view that exceptional individuals enjoy their activity very much. The drawbacks of being exceptional are also described; they are always in the danger of pain and solitude. A lot of critiques appear in their life which they have to bear and stay by their original view in order to develop. The factors determining achievement are the following; reflection, which is the conscious deliberation of people's actions. They have to exam their work systematically and their goal with it. The other factor is a pulling force by which people are able to study what their weaknesses are. By totally ignoring these, they are able to deal with the utilization of their strengths. The third factor is the ability of ordering, the capacity of learning from one's mistakes and going on with fresh energy; i.e. using experiences in an appropriate way. Critics are very important elements in achievement - people have to integrate failures.

The experience of freedom is described by Rogers & Stevens (1972) as the allowance to let the feelings be as they are and integrate them into the self. This means a freer communication within the individual. If the person is aware of his uniqueness, he finds strengths in this relief. This is a more individual, responsible and creative way of being. Freedom is the achievement of the order of life controlled by destiny for Rogers and Stevens. Further, it means the capacity and dare to change and move to the direction where the natural human organism works. Using another approach, "The death of the ego is the birth of everything else" (p. 232, Rogers & Stevens, 1972).

Rogers (1969) further adds that commitment is a natural accompanying element of this developing process. It is a function being present in the individual's development who is reaching his own inner capacities to utilize. So, it is not a decision, but an achievement. Besides, it is a necessary element to live fully. The experience of feelings is strongly connected to the fully functioning individual. If a person could accept his feelings and live in harmony with them, he lives in the present. By the trust of the individual's ability, he can function as a creative person. If he was not happy, he would continue to work with full energy satisfying his deepest needs. Rogers (1961) complements the formers; if the individual

became more aware of his feelings and inner tendencies, he is more aware of reality. He is able to perceive it not as preconceptions, but as it really is; the world will not be taken into an earlier formed pattern. If the person lives a full life by accepting himself, consciousness will no longer function as a defender against the impulses which shades the light from the person. Its role will be the whole of thoughts, ideas and feelings which can be used very effectively. Fromm et al. (1970) think that being mentally healthy means that one is in harmony with human nature.

II.2 Artists' enhanced sensitivity and mental disorders

II.2.1 Theoretical considerations

The artistic process is a creative act during which both conscious and unconscious processes are used, suggesting that artists possess heightened sensitivity (Knafo, 2008). This implies a greater ability to react to emotions and higher tolerance of extreme emotional conditions. Further, Knafo writes that both (hypo)manic and depressive states can enhance creative activity. In a (hypo)manic period, thoughts and images are more fluid and more frequent. Concentration and focus might be more sharpened than in normal mental states. The other side of the coin, depression influences creativity by its sensitive states and by contemplation. Depression is essential for better self-awareness; it is a much slower condition than mania.

In the followings, I compare the courses of healthy and pathological artistic creation. During the artistic creative process, the ego controls primary processes, while in psychotic episodes primary processes overload the capacity of the ego (Kris, 1962). Furthermore, the *cathexis* is described as the process of investment of mental or emotional energy; the invested libidinal energy (Freud, 1907). In Freud's (1914) opinion, the cathexis of the ego might lead to the loss of reality. The difference between the 'normal' artistic creative process and the insane lies in the difference of the extent of the cathexis - it is minimized by insane creation. In early episodes of a psychotic state, the inner power increases and the artwork might be born as understandable to others. While, if there was a heavier psychotic state, the meaning of artwork can be lost, because of the endless variations of one theme. This might mean nothing for the audience. Thus, the artist tries to change the surroundings, it is no longer about having an effect to the audience; it is no more called art, but attempting magic (Kris, 1962).

Kubie (1954) emphasizes the role of symbolic processes and distinguishes creative and neurotic processes along them. Symbolic processes used in the creative act work with the dominant role of preconscious and conscious forces. In neurotic states, the major role of unconscious processes is described. So, symbolic processes might be the cause of the greatest creative achievements but at the same time, with the distortion of them, neurosis may develop.

Further, Freud (1955) writes that fantasy is an important element in an artist's work, through it, an imaginary world is created. It replaces the childish play in adulthood; the same mechanisms are in process as described above. Freud thinks if daydreaming became too powerful, neurosis or psychosis tend to occur. Imaginary contents are near subjects of the soul that are mentioned by patients; it is a wide path to pathology.

Ehrenzweig (1970) thinks that in both cases, material rises from unconsciousness. In mental illnesses, these contents disturb the process of conscious thinking; chaos overwhelms the individual's intellect. In contrast, during the creative process, the individual is able to control the material emerging from unconsciousness and conscious thinking. This way, what seemed to be chaotic in unconsciousness becomes an order. He does not precisely speak about parts of the creative process but according to Ehrenzweig (1970), after these conflicts in the unconscious are solved, the task of the ego is to use unconscious drives for the creative work. The chaotic unconscious is described as being as delusive as outer reality.

The above described 'autonomous complex' is typical to ill mental processes (Jung, 1971). The artist's manic state is connected to illnesses but it is not the same with it; the analogue comes from the presence of the autonomous complex. The same is characteristic to instincts. So, the autonomous complex is not pathological in itself, only if it appears accumulated and disturbing. Jung emphasizes that in visionary creation, the material has such characteristics which can be observed in mentally ill people's fantasies. The contrary is also true; i.e. such immanent difficulties can be observed in the interpretation in the works of psychotics which can also be observed by geniuses. Hereby, the artist appears as a collective person and goes beyond his personal experiences, feelings, experiencing a certain amount of relief. The creative person has a duality in his life. On the one hand, he has a personal life, on the other; he is an impersonal, creative being. Because of these two powers, his life is full of struggles (Jung, 1971).

Ehrenzweig (1970) writes about the differentiation between the creative individual and the psychotic one; the creative person feels symbol formation incomplete and this drives him to repeat the creative process and build new symbols. The psychotic person is unable to symbol formation and he is aware of the fact that there will always be such contents which will be repressed. This gives him the feeling of fear of self-destruction. Neurotics communicate with their unconscious because they still have the ability of repression. They are able to integrate the re-introjected material into their unconsciousness, thereby creating new symbols. The psychotic individuals are no more able to accomplish this process; they respond

to interpretations as they were such re-introjections that threaten them. Simonton (2010) sees the common link between creative people and psychopaths that both tend to have a smaller capacity in choosing unwanted stimuli. Artistic creativity is more closely connected to psychopathological symptoms compared to scientific creativity which is also empirically proven. Moreover, both creativity and psychopathology are partly of genetic nature. Eysenck (1993) found a common trait in psychotics and creative individuals; they are characterized by wide associational horizons.

Winnicott (1989) states that for a healthy life, creative existence is essential. People's healthy mechanism is a creative one. This way, the person is able to function as a whole. Without creativity, people are obedient which the basis of mental illnesses is in psychiatric terms. Artists observe such things that people who are less sensitive do not. Highly sensitive individuals have greater chance to develop mental illnesses. Conversely, psychotic individuals or people suffering from other mental disorders are often experienced to have greater creativity compared to the healthy ones. The author draws a parallel between creative people and schizophrenic patients; both choose stimuli from a wider range than less creative individuals. Besides, the thought processes of both groups show greater unusualness. They express impulses freer compared to less creative healthy individuals (Hunter, 1971). Kubie (1954) adds that most of the valuable work is created by sick individuals. If an artist created something valuable and useful which is accompanied by neurotic mechanisms, we do not count it a real neurosis. However, the person and his surroundings pay a high price for the creative work. Kohut (1971) agrees with this view. John Keats is an example who became one with the subject of observation even if it was an object. This could be seen pathologic, if he hadn't had the ability to express these observations full of emotions in a very professional manner.

II.2.2 Case studies and empirical findings

The fact, that mental disorders are common features in artists' life, is present in the literature very heavily. Far more case studies have been conducted and only a few empirical results can support this phenomenon. Andreasen (1987) reports a surprising number of suicides committed by writers, e.g. in the 20th century, Sylvia Plath, John Berryman, or Virginia Woolf.

Rihmer et al. (2006) describe that in Robert Schumann's family, affective disorder could be observed by a lot of relatives; both his parents had depressive periods, two of his close relatives committed suicide. As an adult, he had several manic and depressive phases and he tried to commit suicide twice, unsuccessfully. The incidence of bipolar disorder is more frequent in writers and their relatives than in any other population (Gardner, 1997). Jeste, Palmer & Jeste (2004) wrote a case study about Tennessee Williams's mental disorder, substance use and creativity. He was born in a family, in which the incidence rate of serious mental diseases was high. He suffered from a lifelong bipolar disorder, although he remained productive. He drank alcohol heavily and took sleeping pills from the age of 25. Besides, he frequently used stimulants for work. Later, in his 50s', a physician described him amphetamines – which he got addicted to - and barbiturates.

Staying by case studies, Wolf (2005) wrote a paper about famous individuals having mental illnesses, for example, Michelangelo Buonarroti. He suffered from bipolar disorder which is represented in his works. Van Gogh's possible mental illness is discussed, too; researchers try to make a diagnosis posthumously, including schizophrenia, or manic-depressive disorder.

In Ernest Hemingway's family, five suicides were committed within four generations (Roy, Rylander & Sarchiapone, 1997). Rihmer et al. (2006) adds that Hemingway had manic-depressive illness. One of Edgar Allan Poe's mental disorders was depression (Patterson, 1992). Freud (1928) writes about Dostoyevsky's hysterical symptoms and masochism, he also had epileptic seizures. Moreover, he was a pathological gambler; he played for the sake of playing, until he lost everything. Freud thinks that gambling meant self-punishment for Dostoyevsky.

Related to empirical findings, a study was conducted with 10 paranoid schizophrenics, 10 non-paranoid schizophrenics, 10 nonpsychotic psychiatric patients and 10 controls having no mental disturbances. Among the three creativity tests, significant difference was only found by the Alternate Uses Task, i.e. non-paranoid schizophrenics scored significantly higher compared to the control group. They tend to be more creative than the other groups. The authors suggest that this might mean that the thought processes of schizophrenic and creative people are similar to each other. The creative act and schizophrenic thoughts may be equivalent cognitive processes (Keefe, & Magaro, 1980).

In Preti & Vellante's (2007) study, 160 Italian individuals were studied. 80 artists by profession and the control group also consisted of 80 people. Artists were found to report more unusual delusion-like experiences compared to the control group, scoring higher on Peters et al. Delusions Inventory. This might support the connection between schizotypy scores and creativity. However, the authors add that artists' higher rate of substance use might explain the higher scores on PDI.

Andreasen (1987) conducted a research where 30 creative writers were compared to 30 controls. Structured interviews were used to investigate the connection between creativity and mental illness. The notion that creativity is strongly connected to schizophrenia was refuted and a strong bond between creativity and affective disorders was found. Eighty percent of the writers had had a period with affective illness(es) in their lives, while only thirty percent was found by controls. Affective disorders are usually episodic; writers were able to work in normal periods, but not in the periods of highs or lows.

II.3 Introduction to substance use connected to artists

In Ten Berge's (2002) theory, we can read that artists who use psychoactive substances to creation have two kinds of opinions. On the one hand, some think that substances alter their work in a positive way; but others only found distortion by substances.

II.3.1 Possible reasons for artists using substances

If there is such a close connection between creativity and addiction/heavy substance use - Knafo poses the question – do substances help or inhibit the creative act? Knafo (2008) identified possible reasons for artists' substance use while investigating experiences of *depersonalization* and *derealization*. These phenomena are observable by psychotic individuals. However, people intentionally search these experiences, too, like practicing meditation or mindfulness. Substance users search experiences that can help loosen personality and reality experiences and achieve special, altered perceptual states. Another possible reason can be that artists would like to see the world through fresher, different glasses. Knafo (2008) identified this intention as the regressive reliving of earlier self-states and object relations and the wish to provoke unusual modes of cognition. Isolation and insecurity are necessary elements of a lot of artists' life. These are useful because artists avoid the stress of social situations. Besides, artists tend to work alone which is difficult to tolerate. Considering these circumstances, substances might mean a support. Feist (1998) agrees that highly creative people need solitude for creation. Creativity involves uniqueness and originality – beside usefulness; individual perspectives can be constructed more easily when being alone. Kohut (1971) is on the opinion that the feeling of isolation is both inspiring and threatening.

Ehrenzweig (1970) named "the hidden order of art" the ability that most adults lack but many artists retain because of their oversensitivity. The state is presented in which knowledge, feelings, and cognitive and affective processes are not yet differentiated as childlike and regressive. If artists feel that this ability might be lost, they may use chemical substances to facilitate the desired regressive state, though, many artists have the fundamental ability to reach this state.

In relation with Freud's (1955) above described theory about childish play and the creative act, it is understandable that the borderline personality disorder is (Kernberg & Michels, 2009) also strongly connected with both substance use (Trull, Sher, Minks-Brown, Durbin, & Burr, 2000; Verheul, 2001) and creative work. A possible reason can be that borderline functioning might be able to facilitate the creative work with impulsivity, emotional instability, and the relationship with reality, which is slackened temporarily. At the same time, we may be faced with an increased appearance of drug use in connection with the balancing of the instability. In Kris's (1962) inspirational phase, substances may help disinhibit the blockades and complexes and occasionally give a childlike way of thinking to the artist. When using substances, the artist may be able to contact his deeper levels of psyche more easily. Substances may, on the contrary, reduce emerging anxiety and distress because of the work with the unconscious, even if the artist does not use substances for creative work at all. In this respect, the role of psychoactive substances, such as alcohol, benzodiazepines, and opiates, which can have depressant effects, can be emphasized. Another reason for the artists' substance use, in addition to regression seeking, might be to reduce the anxiety, which can be experienced as the result of regression. The reader is reminded that it is necessary to distinguish between a psychoactive substance's complex pharmacological actions, which are an outcome of a range of multidimensional conditions and processes, and a user's "drug experience". The latter is the outcome of the interactions between the "drug's" actions, the user, and the setting from a micro to macro level (Zinberg, 1984). If the artist wanted to reach the freedom of expression, he has to get into the state of "passive sensibility". During the acceptance of such emotional submissions, the artist sustains the possibility of losing his ego, reality, control, and contingent reactivation of traumas. Working with the unconscious hides risks; the artist may face emotions and impulses that are difficult to handle. Jung (1984) also emphasized that during artistic creation, the shrinking of consciousness may mean a great psychic suffering. Everything that connected the artist to reality seems to be lost, and the superiority of unconsciousness appears in contrast to conscious experiencing. The creative voice may become excruciating, leaving the artist lying defenseless, at the mercy of unconscious processes. Dobkin de Rios and Janiger (2003) agree that artists tend to alter their state of consciousness in order to facilitate their creativity. Beside psychoactive substances, it can be achieved by the change of inner or outer environment, but these can also happen spontaneously. Further, a cause of using substances might be to redirect the libido and to affect personality through reordering the soul's powers. This might mean both the broadening and narrowing their consciousness.

Preti & Vellante (2007) report that in their study with 80 professional artists and 80 controls, significantly more substances were used by artists. In the case of legal substances, hardly any difference was found, but artists use illegal drugs significantly more ($p=0.001$) compared to the control group.

II.3.2 Various hypotheses of substance use

Khantzian (2003) states that the psychodynamic perspective of substance-use disorders (SUDs) developed through four stages. First, it was seen as a special type of adaptation. Then as a self-medication phenomenon which serves as a tool for changing intolerable affects. From this evolved the third view that SUDs are problems of self-regulation. Finally, the standpoint emerged that the individual's personality predisposes the development and remaining of addictive behavior in the long run. The use of substances can help to cope with feelings that are difficult to handle. People with SUDs experience extreme emotional conditions, they are either flooded with painful emotions or they feel that they are cut off from them. Another reason can be the lack of adaptation or wrong adaptation skills to the environment. In the short run, substances might have a role in a special adaptation involving problems of emotions, or relationships. In the long run, substance abuse in itself becomes a problem. Self-medication helps when individuals are in trouble with their emotional life. Substances are used to manipulate their affects but substance use means more suffering than it was originally experienced.

Khantzian (2003) states that substance use represents self-medication; users try to regulate their emotions, behavior and interpersonal relationships. Being sober causes trouble in their emotional life, and behavior. Two aspects of the self-medication hypothesis (SMH) are stressed. One view is that the choice of the substance is not a coincidence, it depends on the user's psychological needs. On the contrary, if the drug of choice is not available, the user tends to search for another substance(s) (Wieder and Kaplan, 1969). The emphasis of psychodynamic view of SUDs has changed. Nowadays, more emphasis is laid on emotional life, the development of ego and the self and interpersonal relationships. While earlier, mainly drives and the unconscious have been in the main focus. Kun and Demetrovics (2010) state that the connection between psychoactive substance use and emotional intelligence shows that the various types of addictive behaviors might have a role in emotional, impulse regulation.

If we consider substance abuse as a self-regulation disorder, Khantzian (2003) named the contributing factors that are essential to be differentiated, as the following:

”Disordered self-esteem—Contributory
Disordered relationships—Contributory
Disordered emotions—Essential
Disordered self-care—Essential” (Khantzian, 2003, p. 13.).

The unsatisfactory relationship with the mother in early childhood is responsible for self-defeating attachments in adulthood. This might be the ground of the dependent individuals’ isolative behavior (Greenberg and Mitchell, 1983). In Khantzian’s (2003) theory, SUDs develop because of the disordered sense of self and interpersonal relationships. The reappearance of persistent substance use happens because the former is combined with disordered emotions and self-care. Further, Khantzian (1978) explains the failures of defense with problems of *internalization* which is a process being present in infant- and childhood. During it, the child acquires qualities and functions from the parents. As a result, the child is going to be able to care for himself. Under the term self-care, the author lists such ego functions as reality-testing, judgment and control. When the disturbance of self-care appears, such defenses are present as denial, justification or projection. Moreover, Kohut (1971) connected internalization to narcissistic disturbances which are the basis of addictive behaviour. He supposed a failure in the child’s psychological development; the relationship with the mother was not satisfying. Either the lack of empathy was experienced or the mother did not represent adequate stimulus for the child. These persons might turn to substance use to replace – because they are unable to cope with distresses and disappointments as adults. Wieder & Kaplan (1969) and Wurmser (1974) also come to the same conclusion in the individuals’ defect in emotional defense.

Zinberg (1984) emphasizes three main factors when dealing with drug use: the *set* (personality), the *setting* (context) and the *drug* itself. Earlier, the personality had an overemphasized role. Nowadays, there is a shift to the emphasis of both personality and environmental factors. The use of drugs derives from an early childhood trauma – the loss of one or both parents, or the collapse of family structure. Another reason may be the strong feeling of the absence of love. The desire for love and acceptance creates a lot of anger and self-abandonment over which no defense could have been developed.

Based on Kohut’s (1971) narcissist theory, substance use is one of the problems of functions of self-system. With substance use, the narcissistic person tries to avoid directly the

desire that he wants to be united with the idealized self-object. He tries to prevent the reactivation of the possibility of traumatic rejection. At the peak, he is able to behave as the desired self-object. When the effects are over, intoxication gets another role in the self-structure; it represents the rejected self. Users tend to return to intoxication because the search for union with the idealized self was originally generated by the rejection of the self.

Two psychoanalytic phenomena; the relative ego autonomy (REA) and the average expectable environment (AEE) are introduced by Rapaport (1951). In connection with the REA, the effects of the environment are distinguished to living and lifeless objects. By lifeless objects, the results of interactions are statistically predictable, which is not true to living objects. If we want to understand how the ego preserves its autonomy and how it copes with the environment and the instinctive urges, we have to take into consideration all of these elements and their interactions. Instinctive urges ensure the ego the energy by which the person remains more than an instinctual machine. On the other hand, there is a strong need of stimuli from the environment. It can ease these instincts by strengthening the primary ego-structure, like motor skills, memory, perception, logical thinking. Rapaport (1951) states that the environment we perceive is only an ego function. It feeds the secondary ego-structure, containing the cognitive structure, values and ideals. So, the ego is in a mutual dependent connection because of the relative autonomy of the id and the environment. If the two powers are in balance, the ego is relatively independent. If the balance is lost, the functional capacity of the ego is in danger. While, AEE has also an important role. Coherent mental functioning can only be present if a systematic relationship between the person and the environment was found. Theoreticians, who deal with metaphysical level, like Rapaport, state that the mind has five capacities, i.e. adaptive, dynamic, economical, developing and structured.

An example for the self-medication hypothesis is Tennessee Williams whose case is described above. His severe substance use is described by Jeste et al. (2004); he had four major depressive periods. Heavy substance use is suggested to be responsible for the last two periods, at the ages of 46 and 52. However, the two in his younger age were not induced by substances. He went to psychotherapy in his older age and got antidepressants but he was characterized by 'self-medication'. For this purpose, alcohol, stimulants and sedatives were used.

Khantzian's self-medication hypothesis (SMH) was tested using the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) with substance users and a control group (N=402) by Jesse et al. (2008). The goal of the study was to explore the psychological

mechanisms related to SMH. Three regression models were used to predict the ‘drug-of-choice’ groups of alcohol, cocaine and heroin. Among the predicting variables were scales, like repression, psychomotor acceleration, depression, posttraumatic stress disorder or cynicism. The results showed that belonging to the alcohol group could be predicted by the repression and depression scales. Only the psychomotor acceleration was significant predictor of the cocaine group. In the heroin group, cynicism was a predictor. Further, the probability of getting into the alcohol group was increased by the inclination of repressing emotions. The cocaine group contained individuals who had a strong desire for euphoria and restlessness. Finally, the probability of abusing heroin increased if the individual felt strong anger and had highly negative affects toward him and others. An interesting result was that the seriousness of trauma symptoms did not predict the heroin group.

II.3.3 Psychological mechanisms of substances and their effects on creativity

II.3.3.1 Depressants

II.3.3.1.1 The effects of opiates

Opiates are psychoactive substances with depressant effects. Opium reduces the sensation of anxiety and pain, physical and psychical suffering, and impulsivity. Further, it is very effective in muting anger (Khantzian, 2003). Wurmser (1974) thinks that they can relieve pain, narcissistic rage, loneliness and shame. He adds that the main cause of opiate dependence is the problem of handling aggression. Both its pharmacological actions and the “drug experience” can relax the person and his systems. It can result in the experience of perfect joy and tranquility, liberating the user from aggressive, sexual, or other impulses (Parrott, Morinan, Moss, & Scholey, 2004). The actions of opium can reduce and control drives as well as compensate the disorganizing effects of threatening pressures and affects. In contrast, stimulant actions increase activity and make the experiences of emotions more intensive (Khantzian, 1999). In addition, Hayter (1968) pointed out that the use of opium has been associated with harms such as the impairment of abilities to recognize losses, self-criticism, and judgment. The reader is referred to Hill’s criteria for causation, which were

developed in order to help assist researchers and clinicians determine if risk factors were causes of a particular disease or outcomes or merely associated (Hill, 1965).

II.3.3.1.2 Opiates connected to artists

In the 19th century, many artists, among them the most important figures of the Romantic Era used opium, e.g., Samuel Taylor Coleridge, George Byron, Percy Bysshe Shelley, and John Keats (Kornetsky, 2007). Thomas de Quincey published the *Confessions of an English Opium Eater* (1821), which may be the best-known description of opium use. He reports both the beauties and agonies of it. He used it to relieve pain, he was addicted from the age of 19 till his death. With opium, he studied the mechanisms of memory and subconscious, it had a role in his spiritual life (Wolf, 2005).

Opiates were popular not only in literary circles, but also in music; especially heroin was widely used among jazz musicians in the period 1940-1960. Among others, Billie Holiday and Charlie Parker were jazz musicians who were able to create a very strong emotional power while performing. But beside music, their emotional problems could only be ruled with psychoactive substances. These jazz musicians were reported to have troubles with their health and the legal system. However, their creativity flourished for a long time, if they could have lived for long, e.g., Charlie Parker died at the age of 35 (Tolson & Cujyet, 2007).

Rauch and Hons (2000) presented the so-called “poet syndrome” phenomenon, referring to the concept of self-medication. Under this term, those people are understood whose sensitivity is formulated through artistic creation. The syndrome comes into existence if creative self-expression does not give appropriate defense to the hypersensitive person against the over-stimulating effect of the environment, especially if it is possessed by alienation or trauma. For the person, reality might mean a chaos. Travelling to the edge of it may be an exciting and inspiring journey for some. For others, it may mean psychoses or heavy substance use. The state caused by substances may protect the person from reality and the fears connected to it.

The disadvantage of the use of and dependence on opiates among artists is that these drugs can serve to repress emotions and “cause” such state where the power of observation is separated from the ability to feel empathy with the subject of observation. This may be the death of creative work. Writers addicted to opium have reported emotions such as extreme anxiety, violence, or insanity (Hayter, 1968). These feelings can be characteristic especially during periods of abstinence or withdrawal. The use of opium can increase the connection with some special states (e.g., pain, death, or the process of dying); however, the ability to feel empathy with these states can decrease or totally cease. Opiate users have reported

feelings isolated and estranged from physical world. Identities are unstable, separated, and often mixed.

Overall, artists may use opiates for both increasing and decreasing their sensitivity. In this respect, they can serve as an external regulatory agent by reducing tension. A similar regulatory effort of emotional fluctuation can also be seen among non-artist opiate users (Demetrovics, 2010). This regulatory effort might lead to disintegration and disorganization, especially because it contributes to the weakening of the person's internal regulation and control.

The use of opiates can have a visible effect in artworks. Hayter (1968) distinguishes three groups of literary pictures, which may refer to opium use. Pictures reflecting the first group refer to opium as a concrete substance, e.g., poppy, temptress, or honeydew. The second group contains pictures related to physical symptoms of substance use, dosage, or withdrawal, e.g., the ice-cold, quicksand, or floating lovers. The third group may contain the signs of emotional and perceptual changes appearing in course of opium dependence, mainly expressing the experiences of isolation and suspicion, such as the image of watching eyes.

II.3.3.1.3 The effects of alcohol

Alcohol is a psychoactive substance that has a depressant effect. It reduces inhibitions and eases anxiety. In case of social drinking, alcohol is mainly an anxiolytic. Its long-term anxiogenic character develops because problematic drinking might cause shame and guilt, therefore anxiety may enhance. Personality changes might occur with cognitive deficit and the narrowing of social connections. These may lead to enhanced anxiety and mood fluctuation. Consequently, emotional life becomes poor, judgment weakens; there is a strong psycho-social come-down. Further, Demetrovics (2007) writes that alcohol can be used as an antidepressant but controversially, it can cause depression, too. Khantzian (1999) states that alcohol softens the individual's defenses allowing him to relieve the constricted emotions. Related to heavy alcohol use, Knafo (2008) introduces the phenomenon of *dissociation* meaning that the person has several self-states but he is only aware of one at once. The partial memory loss of alcoholics is a typical example of dissociation.

Knox (1995) writes that the beginning of heavy use of alcohol can be understood as a defense against unconscious processes. Although it has a harming effect to the brain (problems of remembering, concentration, etc.), it is more important that unconscious

processes are heavily influenced by alcoholism. Further, the process of individuation is harmed. The cause is the brain damage by that learning new information and handle new situations are going to be more difficult; reintegration is hindered. Dulling consciousness is characteristic to alcohol. Normal emotional inhibitions do not work and all the before suppressed emotions, fantasies are present and also expressed. It damages short-term memory so conscious awareness is going to be made more difficult.

II.3.3.1.4 The connection between alcohol and the artistic process

Alcohol is widely used in artistic circles; alcoholism is frequently associated with writers. Many American Nobel Prize winners in literature are reported to have problems with alcoholism, e.g. William Faulkner or Ernest Hemingway (Knafo, 2008). Tolson & Cuyjet (2007) state that heavy alcohol use is very common among jazz musicians, e.g. Charlie Parker or Billie Holiday. The results of the above described study of Andreasen (1987) also includes that alcoholism is higher among creative writers (30%) compared to control subjects (7%).

Belli (2009) wrote a case study about the musician, Brian Wilson and found that alcohol – among other substances, like cocaine – meant a tool of self-medication. The goal of the intense use of alcohol was not the desire of enhancing creativity or productivity but to modify the normal way of functioning. Brian Wilson is found to have auditory hallucinations, paranoid beliefs and delusions; he was diagnosed as a paranoid schizophrenic. He used cannabis for recreational purposes, which could have an effect to his psychosis.

Sher (2006) and Koski-Jännes (1985) agree that characteristic to the use of alcohol are anxiety, depression, suicidal thoughts, psychological distress or emotional instability. Koski-Jännes (1985) studied the effect of alcohol on the artistic creative process by writers on the basis of the above described Wallas's theory of four stages. She analyzed the interviews of 60 Finnish writers (m: 40; f: 20), although the sample was not representative. Writers were found to regulate their alcohol use according to their working process. In the *preparation* stage, the goal of substance use is the dissociation from everyday reality, the sharpening of senses and seeing things in a new light; social drinking is emphasized here. In the *incubation* stage, the material is unconsciously developing, alcohol is used to bear stress. During the *illumination* stage, artists have a sudden insight. A moderate quantity of alcohol can be useful to find new associations and originality but it can also have a negative effect to the quality of the artwork. The greater possibility of new ideas is reported after heavy drinking. The *verification* stage is the actual writing. This is the most stressful stage; writers use both unconscious and conscious

energies. Mostly negative effects of alcohol are described; writers get tired, disorganized; the least amount is drunk in this stage. Working might serve a kind of self-therapy for the writers. Further, Koski-Jännes adds a fifth stage to Wallas's model, the *restitution* one. In this stage, one creative cycle ends and another starts at the same time. Some writers use this period to reach a ritualistic death and rebirth. In her opinion, the use of alcohol depends on the writer's personality in this stage and she connects drinking to aspiration; both can be connected to a passionate character in writing and life, generally. Summing up, the causes of alcohol use are the dissociation from reality, reaching special experiences and for enhancing the use of mental energies to self-exploitation.

Regarding the effect of alcohol to creativity, Plucker (2009) states that moderate alcohol use affects creativity unremarkably, while heavy drinking is associated with negative outcome. He examined tobacco, alcohol and cannabis use related to creative personality traits. 431 persons (m: 104; f: 327) completed the Adjective Check List (ACL) questionnaire to measure creative personality traits. Besides, the Core Alcohol and Drug Survey was used for measuring substance use at a university - no significant result was found related to the three substances.

Jarosz et al. (2012) conducted an empirical study about the connection between creative problem solving and alcohol intoxication. Creative problem solving is described as divergent, associational. Moderate alcohol intoxication was induced. The Remote Associates Test (RAT) was used to measure differences among intoxicated and normal states of consciousness. 40 male social drinkers were subjects of observation; 20 were in the intoxicated group, the other 20 belonged to the control one. The results showed that moderate alcohol intoxication had a positive impact on the RAT; the intoxicated group not only improved in RAT but they were also quicker.

Kerr et al. (1991) compared the substance use of different groups of artists (writers, painters and musicians) with a control group (N=86). No significant difference was found related to substance use either among the three groups or compared to the control group. Only cocaine was found to be used by musicians significantly more than by the other groups. However, no difference was found related to narcotics, psychedelics or tranquillizers.

Lowe (1995) studied the effects of psychoactive substances – especially alcohol – to creativity. 619 (m: 160; f: 459) individuals' reports were analyzed by eight independent raters. Those subjects were rated higher on the creativity scale who were heavier substance users. Although this result is not significant, just a trend, a causal relationship cannot be proven. The

connection might stem from that both creativity and at least partly, the frequency of substance use are influenced by risk-taking.

II.3.3.2 Characteristics of cannabis

No clear agreement can be found about the effects of cannabis use because of the diverse population of the users (it is very widely used) and it is often used together with other substances. A lot of controversial statements can be found, represented below. The psychoactive nature of cannabis is characterized along the dosage. When used in a normal dose, it is euphoric and relaxant; thinking and the logical functions change (Demetrovics, 2007). Using it in a large dose results in hallucinations or panic attack; mental functions become slower.

There is a debate about the long-term effects, whether there is a change in cognitive capacities or not. It alters thoughts, but the change depends on several conditions, like the environment, mood, etc. Soft changes in thinking and emotion are described; there are various states from euphoria to mental suffering. The phenomenon of '*synesthesia*' is reported which is characteristic rather to psychedelic substances. Several critics are drawn up related to the methodology of the researches conducted in connection with cannabis. There are diverse sampling procedures. Most of the researches do not demonstrate that long-term use causes changes in the intellect essentially. By complex tasks, some smaller defects can be detected (Earleywine, 2002).

Mood changes are reported to be pleasurable mostly, but sometimes anxiety, depression and paranoia might occur (Farthing, 1992). In Tart's study, users' feelings were observed; positive feelings occur more frequently than emotions before intoxication being strengthened. Strengthened emotions occur more frequently than negative emotions. Emotions, in general, are felt stronger in an intoxicated mood than in normal conscious state (Tart, 1971).

The effects of cannabis were studied by Farthing (1992) from social, physiological viewpoints; here we focus only on medical use; it calms the nerves, helps sleeping. In the 19th century, it was recommended for the easement of neuralgia, depression, migraine headache, among others. The subjective effects include the splitting of consciousness. It means that the user experiences being an external observer of his intoxication; this experience is described as having a 'double' consciousness.

In Victor et al.'s study (1973) the relation between the use of cannabis and personality traits were measured. 871 male and female high-school students were studied. As the use of cannabis increased, significant increase was found in creativity, novelty seeking and adventuresomeness. Besides, cannabis users tend to be more impulsive than non-users; they are less authoritarian. Further, an only cannabis user group and a group using diverse substances were compared along the variables discussed above and no significant difference was found. The diverse drug group scored in novelty seeking somewhat higher. The authors' conclusion is that cannabis users are more open to experiences.

II.3.3.2.1 Cannabis and art

Cannabis became popular in Europe first in Paris where the 'Hashish Club' was created to explore the effects of hashish by artists. Members were famous characters, like Victor Hugo, Alexandre Dumas or Charles Baudelaire who wrote his experiences in *Artificial Paradises* (1860).

Regarding the connection between creativity and cannabis use, only few researches are and have been presented and the results are mostly controversial. A study was conducted by Tinklenberg et al. (1978) where the connection between divergent thinking and cannabis use was measured. According to the results, cannabis has no effect on divergent thinking. The placebo group had a bit better scores, but no statistically significant difference was found. Being high does not mean greater creativity, the users only have the feeling of being more creative when intoxicated. However, this belief might have an effect on creativity. One cause of cannabis use can be the altered understanding of ordinary things and have more combinations of ideas.

However, Jacquette (2010) neither thinks that being high results in bigger capacity for solving philosophical problems, nor that a mind-opening road could be opened. Many artists use it to develop another point of view; ideas coming in intoxicated state can be exploited in the creative process. With cannabis, more combinations of ideas can be reached. Jacquette (2010) names '*creative inner space*' the feeling of creative power during cannabis intoxication – whether it is real or not. Such associations and connections can be felt as they were totally new. Imagination gets unusual kinds of understanding which are characteristic to the drug-induced state; it frees the persons from inhibition that may hinder creativity. The author further states that there is no need for scientific evidence in the topic of '*creative inner space*'.

Farthing (1992) also writes about the frequently occurring phenomenon when individuals tend to feel enhanced creativity while intoxicated. After the effects are over, they realize that the artworks are trivial and inexplicable. He concludes that cannabis sometimes enhances the frequency or weirdness of ideas, but this does not mean the increase of creativity.

Roth et al. (1976) conducted a study where the Thematic Apperception Test (TAT) was used. Raters were blind whether the works have been written sober or not. Under the influence of cannabis, works were more novel, with more contradictions in the stories and more timeless elements have been included. Schafer et al. (2012) examined 160 cannabis users, divided into two groups – a highly creative and a low creative one; collected by snowball technique. In a day, participants have been in an intoxicated state, another day, they had to be sober. Psychotomimetic symptoms were measured, like delusory thinking, or mania. A verbal and a semantic fluency task have been conducted and besides, the Remote Associates Task (RAT), inter alia. The main finding of this study was the significant increase of verbal fluency when intoxicated in the low creative group. In the high creative group, no difference was found in the two states of consciousness. These results were found because of disinhibition that already existed in the high creative group; that's why their performance did not significantly change. The opposite is true for the low creative group; their results became better by disinhibition. In the RAT; the high creative group scored somewhat higher than the low one.

II.3.3.3 Psychedelic substances

II.3.3.3.1 Characteristics of psychedelic experiences

Psychedelic substances might cause altered state of consciousness and mystical experiences. The alterations are temporary and the subject's behavioral mechanisms might be 'reprogrammed' (McCabe, 1974, p. 2). McCabe claimed that the experience may have a long-term effect on behavior change. It depends on the type of substance, the set, and the setting (Zinberg, 1984). Further, the use of psychedelic substances can change the person's life philosophy and personality change might occur in the long run. Zinberg (1984) described the common characteristics of psychedelics; they are not addictive, their effects are strong and tolerance evolves fast.

The psychedelic peak experience is a state in which sacredness and feeling of ineffability are present. The experienced reality may be perceived more real than the one in normal conscious state (McCabe, 1974). LSD type of experiences can be dangerous to people who do not have strong ego system, because they can experience very powerful panic. They might feel that they are not themselves or can have doubts about the certitude of the surroundings (Janiger, 2003).

From an empirical viewpoint, Dobkin de Rios and Janiger (2003) found that 24% of the 667 volunteers (m:409; f:259) taking LSD reported mystical or spiritual experiences during the state of 'high'. LSD might enhance the users' creativity and awareness. Doblin et al. (1999) performed a forty-year follow-up study to assess the long-term effects of LSD among 45 subjects (m:34, f:11) with average age of 70.3. All but one subjects reported that the LSD experience had long-term benefits on their lives. Most of them think about it as a transformative, spiritual event. The subjective experience of psychedelic substances is characterized by feelings of openness and spirituality - holistic learning takes place. The volunteers reported an enhanced experience of emotions. One volunteer in Janiger's study felt that she lost herself; she was experiencing the line between normal and psychotic state. LSD has an effect on the right hemisphere; perception is uninfluenced by analytic thinking.

Several examples can be found among artists who used psychedelic substance(s). Masters and Houston (1968) introduced the term '*psychedelic artist*' which formed the basis of ten Berge's (2002) '*mediumistic art*' conception that refers to paintings and drawings, inspired by psychedelic substances. It is represented by, for example, Jan Kervezee, a Dutch painter who took LSD before work every day for fourteen years, or Henri Michaux, a French painter. Artists are surprised about the result of their work. Specific is the repetition of simple shapes with rhythmic quality which result in patterns. A well-known representative of contemporary painting is Alex Grey, a visionary artist. Another contemporary figure, Robert Crumb, is a '*psychedelic comic artist*' who was the subject of Jones's (2007) case study. Jones examined Crumb's works created prior to, during the drug using period and after it. Content analysis was used to evaluate 308 pages of comic art. The BVSR model was taken as a basis by the rating of works. The results showed that the style of his artworks significantly changed during substance use. Besides, long after he stopped using substances, enhanced access of the fluidity of consciousness can be observed. This allowed a wider scope for blind variation and selective retention. In the literary field, Aldous Huxley is the most famous

example; his narrative *'The doors of perception'* (1954), reviews his first mescaline experience. Allen Ginsberg is another literary example (Knafo, 2008).

II.3.3.3.2 Psychedelic substances and creativity

During the 1950s, 1960s, and 1970s, few scientific studies examined the relationship between creativity and psychedelic substances (Sessa, 2008), several of which were theoretical in nature. The psychedelic experience is a useful tool for facilitating and enhancing creativity. Artists can communicate with their unconscious easier, their thought processes are flexible and fluent, and their attention span is increased (Masters & Houston, 2000).

Baggott (1996-97) concludes that creativity can be enhanced by psychedelic substances by making distant mental associations more available. This might mean the broadening of consciousness. Although the subjects can reach associations easier, their reactions are slower. Janiger (2003) defined the constants of LSD experience related to creativity “artistic and creative insight and appreciation” (p. 33) is mentioned. An important core trait of the experience is idiosyncrasy. Synesthesia is often experienced during which the senses are mixed; e.g. sounds seem to become colors (Dobkin de Rios & Janiger, 2003). Krippner (1977) is on the opinion that LSD-type substances cannot enhance creativity; just by individuals who were originally talented. Fischer et al. (1972) developed a similar approach, stating that various forms of altered states of consciousness might be experienced as creative states, although it is not certain that they lead to creative efficiency. Empirical evidence shows that psychedelic substance use might influence creativity.

Dobkin de Rios and Janiger (2003) studied the effects of LSD on creativity among 60 professional artists, who were asked to draw a kachina doll prior to and during LSD ingestion. Although the styles of the artists were very heterogeneous, the same patterns appeared in the artworks created during intoxication; they became more intricate and oscillating. These works represented a greater level of originality and their aesthetic value was superior to that of the non-LSD-inspired ones. Fischer & Scheib (1971) have the same conclusion. Only existing personality traits can be enhanced by psychedelic drugs. 21 college students were studied prior to, during and at termination of altered states of consciousness produced by psilocybin. The aesthetical value of the works was found to be greater at the peak experience. Krippner’s (1977) results are consistent with this; artworks created under the effect of psychedelics tend to be of greater aesthetical value.

II.3.3.3.3 The link between psychedelic substances and consciousness

Grinspoon and Bakalar (1979) share the opinion that these substances can be promising tools to understand consciousness. LSD is known for its association with experiencing death and rebirth and consequently, a transformation of the self. Moro et al. (2011) agree that a deeper introspection may be reached as a part of self-knowledge by the conscious use of psychedelics. In Farthing's (1992) concept, the term 'interpretative introspection' emerges. It deals with the premises of a person's feelings, thoughts, and behavior. Grof (2000) suggests that the quality of consciousness changes deeply and essentially in holotropic states produced by LSD, which allows to sense two realities. The thinking procedures are influenced by holotropic states, and while the intellect is not damaged, its mechanisms are very different from the usual ones.

Krippner (1977) states that enhanced arousal causes that the retrieval of information is easier than in normal conscious state. When arousal is increased even more, the information might seem to stem from out of the body. Farthing (1992) described conceptual thoughts of abstraction and interference. Subjects under the influence of LSD are able to categorize and generalize concepts to find the similarities and differences among them. However, as their connection to the conventional associations gets looser, they find unconventional links between concepts.

II.3.3.3.4 Psychedelic substances and their relation to spirituality

The theory of the connection between psychedelics and spirituality is rooted in ancient traditions. Some of these substances have a sacred potential to mediate the communication with God, or the universe. An example is the use of Ayahuasca in ceremonies of the Santo Daime religious movement in ritual setting (MacRae, 2004).

In Grof's (2000) holotropic states, the spiritual dimensions of the world can be experienced easier. These experiences are usually connected to nature, the cosmos, and archetypes. Emotions become more intense and their nature changes compared to those of conscious state. The most interesting recognitions (or revelations) stem from philosophical, metaphysical and spiritual topics. The experience of death and rebirth of the soul, or the feeling of unity can potentially be facilitated. Spirituality is defined by Dobkin de Rios & Janiger (2003) based on the term 'unity' as 'The direct perception of connectedness or oneness' (p. 116). Besides, opposites disappear and things tend to direct to an undifferentiated

oneness; individuals perceive reality as one. After this state, people do not think that it was just an altered state of consciousness; they are on the opinion that this is the 'real' reality. A deeper spiritual connection and the feeling of unity can be reached; it is called 'cosmic consciousness' by Janiger (2003, p. 176).

II.3.4 Characteristics of altered states of consciousness

Ludwig (1966) collected the ten characteristics of altered state of consciousness. Summarizing, alterations in thinking, perception, reality feeling and control, changes in body perception and depersonalization might develop. Besides, changes in the significance of life occur with insights, the sense of ineffability. Specific is the feeling of hope, rebirth and people are highly suggestible in these states.

Farthing (1992) defined altered state of consciousness as a periodic change in the pattern of the individual's subjective experience. In the individual's opinion, his overall mental functioning is different from the usual one. Some comments are added to the definition; the content of consciousness can change, but it is not sure that it will. Rather, the individual recognizes a change in his mental functioning which is in the pattern – and not one aspect - of subjective experiences. These reversible, short term alterations are sometimes recognized only afterwards. If the changes are long-term and constant, we speak about psychopathology. It is necessary to compare with the individual's normal waking conscious state. The subjective experience is decisive and not the behavior or physiological responses. Krippner (1968) concluded that the altered state of consciousness and the artistic creative act are similar in the sense that both provide an easier access to unconsciousness and intuition. The detachment from everyday reality, including cultural aspects is another feature caused by psychedelics; culturally independent artworks may be created. Rauch & Hons (2005) describe the creative process as an altered state of consciousness. The dimensions, time and space are distorted, and the shifting of awareness is specific.

II.3.5 The artistic creative process as the way of self-knowledge and self-consciousness

Jung (1984) writes that the modern person does not believe in anything, that's why chaos and schizophrenia appeared worldwide. People lose their goals of life, moral

deterioration is characteristic. Jung thinks that faith does not exclude thinking. Earlier, people could fit in the instinctual material which appeared from unconsciousness, but they have lost this capability. They have lost the unconscious oneness with natural phenomena. With this loss, the energetic charge which derives from this connection is also lost. Jung further adds, as people became more civilized, their consciousness lost connection with unconscious material. If one can assimilate and integrate hidden materials, it can result in personality change. Symbols are useful, because oppositions in the psyche might be reunited by them. Marie-Louise von Franz is on the opinion that the role of the ego is not the fulfillment of its will. It has to help keep psychical structure together. The whole psychical structure can be conscious and therefore recognizable by it. If somebody has artistic powers, but does not know about it, it is, as if it did not exist. Only if the ego knows about it, the person is able to realize this power. The goal of individuation is the realization of the person's uniqueness. This process happens partly in the unconscious but it is only real if it breaks into consciousness. This way, the person is consciously involved into the process of his own development. This co-operation is part of individuation; its subjective experience is like a supernatural power. This kind of creating power of the psyche is only available if the ego tries to reach the deeper parts of being. "The ego must be able to listen attentively and to give itself, without any further design or purpose, to that inner urge toward growth." (p. 161, Jung, 1984). Inner development may only be reached by ceasing conscious planning. The person must indulge himself consciously to the unconscious, he just listens and allow the inner wholeness speaking. The impulses coming this way do not derive from the ego but the totality of the psyche. The process of individuation usually begins with the damaging of the ego and therefore suffering which is a warning. This happens, because the ego is inhibited and it is projected into the surroundings. Facing with these troubles results in development.

Creativity can be a protective factor; it might mean self-therapy, as it can be seen in Jeste et al.'s (2004) study about Tennessee Williams. Further, the creative work might serve as a coping tool when one has to face with tragedies. Rauch & Hons (2000) state that creativity and spirituality are self-expressive tools. Creativity can preserve the artist's life. It is a communication channel through which emotional chaos can be expressed; it builds self-esteem. Gallagher & Zahavi (2012) write about reflection as the precondition of self-criticism. By reflection, one has to step back from his present mental processes. This means estrangement on the one hand and observation on the other.

III Research questions and the structure of empirical studies

In the following chapters, I present six studies. Their structure follows the above described considerations included in the theoretical background. The focus is on two phenomena. First, artists possess enhanced sensitivity which can be observed from the high rate of mental disorders. Second, the artistic creative process is described as an activity where conscious and unconscious processes are in strong interrelationship with each other. Working a lot with unconscious material may cause emotional fluctuations that are difficult to handle. These might mean both states of special excitement and calmness. The interactions of these two notions strengthen each other. In this respect, the frequent appearance of psychoactive substances in case of artists is highly probable.

We studied these interactions in depth. In one of our studies (Iszáj & Demetrovics, 2011), the balancing phenomenon was introduced. It is the totality of those techniques that are used to find equilibrium between the enhancements of sensitization required to the creative work and the relief after this intensified emotional state. The aims of the below presented studies were to examine in details how the different states of consciousness are related to the artistic creative process and artistic creativity. These states can be induced in many ways, e.g. by chemical substances or they can be the result of mental disorders.

Two case studies were written to capture this notion. The first case study is about the relationship between Virginia Woolf's bipolar disorder and her life and artistic work (Iszáj & Demetrovics, 2011a). Literature served as a protective factor, a kind of self-medication in her case (Iszáj & Demetrovics, 2010). The second case study reviewed the effects of Edgar Allan Poe's and Samuel Taylor Coleridge's opium use to their lives and artistic creativity, i.e. their literary work (Iszáj, & Demetrovics, 2011b). The balancing role of opium was emphasized in the artist population (Iszáj & Demetrovics, 2011c). Furthermore, we have systematically reviewed the literature of psychoactive substances related to the artistic creative process/artistic creativity (Study 3) (Iszáj, Griffiths & Demetrovics. Creativity and psychoactive substance use: a systematic review. 2014; manuscript in preparation). We were also curious whether artists' more frequent substance(s) use and bigger possibility of mental disturbances could be strengthened. That's why art students' and other university students' data were collected and analyzed (Study 4) (Iszáj et al. 2014; manuscript in preparation). As a

further step, the long-term effects of psychoactive substance use were studied. The two qualitative studies examined the long-term effects of psychoactive substance use in depths. We recorded interviews with 120 artists; this material was used as the basis of analyses. First, psychedelic substances were examined in case of 60 artists' verbal behavior (Study 5). Three word categories *creativity*, *consciousness* and *spirituality* were generated (Iszáj, Ehmann & Demetrovics, 2012a). The changes found in verbal behaviour related to substance use were presented (Iszáj, Ehmann & Demetrovics, 2012b). The other qualitative study explored the effects of cannabis and alcohol to the verbal behavior of 72 artists (Study 6) (Iszáj, Ehmann & Demetrovics, 2014; manuscript in preparation). Here, the word category *creativity* remained from the previous study and another was generated; *tension control*. Besides the long-term effects, a further aim was to catch the balancing phenomenon with the newly created word category.

IV Empirical studies

IV.1 Study 1: Writing as a balancing phenomenon in Virginia Woolf's mental illness

IV.1.1 Goal of the study

On the basis of the above described theoretical considerations relation to creativity and mental disorders – especially bipolar disorder, the aim of this study was to reveal this relationship through the detailed examination of Virginia Woolf's life, work, and disease.¹

IV.1.2 Method

First, Virginia Woolf's life, and artistic importance is analyzed. Then, the effects of her lifelong bipolar disorder are described in relation to her life and literary works.

IV.1.3 Results

Virginia Woolf's life

Virginia Woolf was born as Virginia Stephen in 1882 in London. Her mother was called Julia Jackson and her father Sir Leslie Stephen and for both, this was their second marriage (Dally, 1990). She was descended from a family with great literary traditions, as a number of her relatives were artists. Her father was a critic, a man of letters. Her great-grandfather, grandfather, uncle, and cousin were also writers. Her mother had a published book and her sister Vanessa became a famous painter. Her brother Adrian was a psychoanalyst, writer, and editor. Her godfather was the great American poet J. R. Lowell (Bond, 1985). She had five siblings, sister Vanessa, brothers Thoby and Adrian, and half-sisters Stella and Laura.

¹ This chapter is based on the following work: Iszaj, F., Demetrovics, Zs. (2011a) "Unborn selves"--literature as self-therapy in Virginia Woolf's work. *Psychiatria Hungarica* 26:(1) pp. 26-35.

She started her career as a critic in her twenties and later began to write books. She was a member of the Bloomsbury group, which consisted of well-known, young intellectuals and artists. In 1912, she got married to Leonard Woolf. Together they founded the Hogarth Press, publishing, in addition to significant literary works, the English translations of Freud's writings in 24 volumes (Dalsimer, 2004). From 1924, the Hogarth Press became Freud's official English publisher (Wolf & Wolf, 1979). Woolf lived mostly in London. In 1915, she and her family moved to Richmond, to the so-called Hogarth House. She lived an active social life, besides this, she spent most of her time writing. After several suicide attempts, she took her own life on 28 March 1941.

Virginia Woolf's work

Virginia Woolf is one of the most salient figures of the 20th century. She wrote mostly novels. Mrs. Dalloway, published in 1925, can be mentioned as one of her main writings, (Woolf, 1996). It describes one day in the life of a housewife in London who is preparing for giving a party. The famous film, The Hours, was partly based on this book. Her experimental novels, including To the Lighthouse published in 1927 (Woolf, 2004), and a prose-poem novel The Waves published in 1931 (Woolf, 1931), are of great importance.

Beside her novels, it is important to mention her journal-entries, which were written between 1915 and her death. Some of her last notes were written four days before her suicide. Though she did not write to her diary every day, we can observe her creative path of life continuously throughout 27 years (Woolf, 1982).

In all her life, she carried on correspondence with several people. She wrote her biographies, essays, and studies before and after writing books as having a rest. In these, she also gives an account of her readings. We can emphasize "The death of the moth" (Woolf, 1980), one of her essay-volumes. It was published posthumously and contains the writer's thoughts about different topics, like the social and literary life of her era, fictional critics, and studies. Besides, she became one of the creators of the so-called psychological novel and one of the most salient figures of the 20th century English prose.

The course of her illness

According to Bond (1985), in Virginia Woolf's family history, several psychiatric disorders can be identified. Her half-sister Laura was diagnosed with schizophrenia; she spent most of her life in mental institutions. Her father, Sir Leslie Stephen, had depressive periods, first as almost a child in 1848. Her cousin, James Stephen, had a manic-depressive illness and

committed suicide at the age of 33. Vanessa, her sister, had three children, suffering postnatal depression after all her childbirths (Dally, 1990).

Based on the detailed description of syndromes, Virginia Woolf suffered from bipolar II disorder (APA, 2000). The ambivalence that is characteristic of this illness followed Virginia throughout her life; we can find examples of this both in her books and in her diary. She had an ambivalent relation with her environment, life events, illness, with the people surrounding her as well as with herself. She had to face the tragedies at an early age. She lost her mother at the age of 13 and her father when she was 22 years old. Soon after her mother's death, her half-sister Stella died because of an unsuccessful operation. This may be why Virginia lost her trust in doctors. Her brother Thoby died from typhus in 1906 when Virginia was 24 years old (Dally, 1990).

Beside genetic traits, childhood events could play a role in her manic-depressive states. She was reported in her younger years as being energetic like the others and having a rich imagination. However, it is true that her anxiety was evident already in her childhood. She did not get appropriate love and care from both of her parents. In Bond's opinion, her mother Julia was not suitable for the mother role. Having a narcissistic personality, she was not able to fill the needs of a growing child (Bond, 1985). Dally (1990) points out that Julia kept a tight control on both herself and her environment. She was not able to get close to anybody unless she was in the role of the nurse (Dally, 1990). Thus, no wonder that Virginia had a strong desire to see someone in the role of the mother. She found the mother figure in several women; for two years, she kept up a love affair with Vita Sackville-West who had a homosexual husband.

Melancholy was an integral part of her mother, and Virginia experienced many of Julia's personality traits. She was filled with distress when her environment seemed to be surreal for her and felt that the world was strange. At such times, she perceived time and space distorted; this sense of isolation ended in panic. For example, the first instance of this occurred, when her parents were talking about a neighbour's suicide on St. Ives, which was the family's summer resort. Later, as Virginia was walking in the moonlight, she believed to have seen the horror of suicide, the man's despair on an apple tree. She was standing numb in front of the tree, staring at how the parts of the tree form strange shapes while her panic increased. Later, this feeling appeared spontaneously, for instance, when she was not able to step over a puddle because her feeling of the world was so unreal. On these occasions, she became aware of her own weaknesses and fears that strengthened her depression (Dally, 1990).

According to Rieger (1994), Woolf's illness was partly genetically inherited but stressful situations activated her symptoms. In these states, she experienced some but not full-blown symptoms of psychosis, e.g. when Virginia was ill for months after her mother's death. She lived detached from the world and depression and anxiety almost paralyzed her. Although she was unable to write or read, she stayed in touch with her environment. Smaller cyclothymic periods emerged around the age of 17, but then, she was mostly well balanced. In reference to this, it is worthy to mention that the cyclothymia has a high risk of developing into bipolar II disorder (Rihmer et al.2010).

In Virginia's life, milder forms (hypo)manic and depressive periods alternated (Dally, 1990). When her father became ill, Virginia needed somebody to talk to about her loss. Violet Dickinson, who was interested in Virginia's character, took on the role of the caring mother, prepared for providing maternal care. This was a very close connection between them. It can be characterized as a mother-daughter relationship rather than an erotic one. Her father died in 1904. Virginia, who was 22 years old that time, became depressed and turned her accumulated anger against Vanessa. Two days after their return from Italy, Virginia became manic and when she attacked Vanessa, she could be held back only with nurses. After this, she hallucinated for three months and heard birds singing in Greek. The manic period was followed again by depression. Then, she had sense of guilt because of her behaviour.

Several examples demonstrate her emerging high sensitivity in stress situations and especially following the losses in Virginia's life. After Thoby's death, she became touchy and tense, struggled with sleeping difficulties and medication intolerance. Another instance causing tension was that she had a good relationship with Clive, Vanessa's husband. Clive, being an excellent critic, examined Virginia's works. Virginia was very grateful but Clive misunderstood Virginia's reactions. Because of this, Virginia felt such a great guilt that her cyclothymic episodes worsened. In the late winter of 1907 and in the early spring of the next year, intense periods of depression emerged and in the summer, she had hypomanic outbreaks (Dally, 1990).

In 1913, both Leonard and Vanessa thought that she was restless because she worried about her book titled „The Voyage Out.” She was hospitalized, but her depressive thoughts returned as there seemed to be no remission of symptoms. Leonard took her to a pub, where they had been on their honeymoon. Virginia's condition suddenly changed for the worse and signs of paranoia emerged. She thought of being watched by people who conspired against her. She felt threatened everywhere and could not sleep only with the help of medication. After they returned home, she committed her first suicide attempt when she was left alone for

a short time. She stole Veronal from the usually closed drawer and took a large dose of it. She became unconscious, and it took 36 hours to wake her up (Dally, 1990).

Virginia suffered serious depression in the following period. In 1915, on Leonard's solicitation, they moved to Richmond to the Hogarth house. In February, while having breakfast with Leonard, Virginia became unexpectedly excited. She said that her mother is in the room and she started to talk to her. The outburst caught Leonard unprepared, although there were smaller signs of the forthcoming indisposition from the end of January. Virginia's headaches returned, she slept badly and became paranoid. A week after her mother appeared, manic symptoms emerged. She was hospitalized again and later joined Leonard at the Hogarth house. However, nurses had to be called as she was difficult to tame and was constantly mumbling, mostly incoherently. She was hardly sleeping, eating, or drinking, and she refused all kind of feeding or cleaning violently, gradually losing contact with the outside world. Though her condition improved on some days, depression alternated with euphoria in the following two months (Dally, 1990).

She committed her second suicide attempt in 1928, after she had a quarrel with Vita Sackville-West. On the way home, she took a large dose of Somnifen, putting her into a semi-coma state; Leonard was barely able to wake her up. The next breakdown occurred in 1936 when the symptoms of depression emerged at the beginning of the year. Virginia concentrated all her power on writing "The Years," but she could not get on with it, her depression took over. Headaches emerged; she was able to work only for a short time. She kept waking up at night anxiously, feeling frightened about the end of civilization and about losing her common sense. In April, she finished the book but suddenly became very nervous; she could not even look at the imprints. She suffered headaches and sleeping disorders when she finally collapsed. She was taken to a mental institution, Rodmell, for four weeks. Then she returned to London in June, but the change did not seem to be long lasting. She returned to Rodmell in three days. Each morning she woke up in agony, with headaches, and with the feeling of despair and failure. She was not able to work for more than half an hour. Her condition improved enough to be able to deal with the imprints for the autumn.

The main reason for her breakdown in 1936 was that she did not agree with Leonard's ideas. He supported the war, which Virginia unambiguously rejected. Her depression and anxiety increased. However, her environment thought that she became ill because of "The Years," perhaps it was the result rather than the cause of her illness (Dally, 1990).

The third or perhaps the fourth collapse, depending on the sources, which led to her suicide and death, can be clearly tied to the war that broke out in September. During the

following 18 months, Virginia's condition changed three times. From September 1939 to April 1940, she was anxious, though she tried to hide it. In February 1940, she came down with headache, insomnia, and continuous temperature fluctuations, this condition lasted until the beginning of April.

At that time, many of their friends, including Leonard, had a pessimistic opinion about the war, they talked about the possibility of suicide. In summer, Virginia felt an over-excitement; she was wavering on the verge of hypomania. From October on, her hypomanic symptoms lessened, but winter depression immediately emerged. Because of the country life, Virginia began to feel claustrophobic. Leonard did not observe it because the war kept him busy too much. During this time, Virginia became pessimistic regarding the future. She was very thin and because she lost weight to such a frightening extent, Leonard asked for medical help. It has to be emphasized that insomnia and weight may increase the risk of suicide in depressed individuals (McGirr et al. 2007). Virginia's last doctor was Octavia Wilberforce, with whom she did not get along. The question of suicide did not come up between them. Virginia had paranoid delusions. She was not able to keep her thoughts under control, and by this time, she heard voices again, which in all probability plunged her into suicide (Dally, 1990). In the course of the winter, her depression worsened. She committed suicide on March 28, 1941. She walked into the Ouse River with stones in her pocket.

Various interpretations of her illness

Rieger (1994) writes that Woolf had at least four breakdowns and two suicide attempts, while other sources mention only three main seizures (Dally, 1990). Her first significant collapse occurred after her mother's death in 1904, although she did not become psychotic then. The second one happened after her marriage in 1913, because Virginia did not have affection for Leonard, as in general for other men. Their relationship lacked sexuality. In the last stage of their honeymoon, in Venice, Virginia turned ill, she had a splitting headache, denied food, and experienced exhaustion. Therefore, Leonard took on the role of the mother instead of the husband. The course of the 1913 breakdown was slower than the one in 1904, but the pattern was similar.

All of her main indispositions intensified due to her depression in the late winter-early spring, leading to intense emotional conflict. She hardly ate and could not sleep for more than one or two hours at a time. Headaches were usually present during her depressed periods, supporting the previously mentioned bipolar II disorder diagnosis (Oedegaard, & Fasmer, 2005). However, when her depression deepened and was threatening with decompensation –

headache was replaced by numb perception. Hallucinations appeared during the last stages (Dally, 1990).

Bond (1985) thinks that the separation of the mother presented a problem, she had to repress her anger towards her, which she then reversed against herself and because of this, she was unable to relief the aggression built up inside. The anger was dormant through the years but led to her manic seizures. At least two problems occurred relevant to Virginia's psychological improvement that involved the development of the superego. The one is the deficit in the establishment of the superego as a control system, the other one is the lack of ability in controlling the self-estimation.

McGlashan (1977) distinguishes two kinds of personalities according to how people are able to elaborate the experiences of the psychotic states in the non-psychotic periods. In the case of the *integrative* functioning, continuity can be observed in the patient's mental life before, during, and after the psychotic state. The integrators possess appropriate coping strategies through which they can face their psychotic states and integrate the experiences, hereby developing. In contrast to this, people of the *sealing-over* type are isolated from their illness; they are not able to accept that as a part of their personality. Here, the psychotic experiences and the non-psychotic mental activities are fully separated. Virginia Woolf belonged to the integrating type because she tried to use the experiences she went through in the psychotic period in her art. Accordingly, for instance, after three years of serious illness (1913-1915), Virginia wanted to make use of the experiences during that time, becoming aware of her big creative energies hidden in the depth of her mind. Above all, because the creative work is partly a conscious process, if an artist is never fully conscious, he/she is not able to create anything. Geniuses need the unconscious but working with the unconscious becomes impossible without the corresponding intellect (Dally, 1990).

In the case of the bipolar patients, patterns of thinking and behaviour characteristic in the depressive and in the normal mental state are mixed. The old sphere of thoughts is lost and "a kind of mental vacuum exists" (p.193, Dally, 1990). In contrast, in the manic period, such ideas are whirling in the mind that may seem strange to the patient in the normal mental state. Sometimes, these can replace or merge with the original thoughts (Dally, 1990). "A way of thinking is changed and a solution to a seemingly impossible problem follows." (p. 193). Further, Dally (1990) states that Virginia's mental health was always in danger. Not only when she experienced big tension stemming from her repressed emotions but also in case of little or no tension. Partly, this lack of tension led to boredom and finally depression. It seems as if her nervous system had required increased stimulation to be able to function normally.

At the same time, the difference between the optimal and minimal level needed for the healthy functioning was insignificant.

Conscious and unconscious self-reflections

Virginia Woolf was highly interested in the question of the self. She did not comprehend personality in its entirety but as the collection of different parts (Gardner, 1997). We can find numerous examples in "The Waves" (Woolf, 1931) of how she searches for the answer to the nature of personality and presents different elements of personalities.

"What am I? I ask. This? No, I am that. ... They do not understand that I have to effect different transitions; have to cover the entrances and exits of several different man who alternately act their parts as Bernard." (p. 76).

"which of these people am I? It depends so much upon the room. When I say to myself, 'Bernard', who comes? A faithful, sardonic man, disillusioned, but not embittered. A man of no particular age or calling. Myself, merely." (p. 81).

In this case, we can see the self as a part of something and not as a whole. This topic is present through the entire book, "With their addition, I am Bernard; I am Byron; I am this, that and the other. ... For I am more selves than Neville thinks." (p. 89).

Towards the end of the book, we can observe in Bernard's monologue Woolf's doubts regarding her and her friends' personalities as she examines the boundaries between her and others' selves: "And now I ask, 'Who am I?' I have been talking of Bernard, Neville, Jinny, Susan, Rhoda and Louis. Am I all of them? Am I one and distinct? I do not know. We sat here together. But now Percival is dead, and Rhoda is dead; we are divided; we are not here. Yet I cannot find any obstacle separating us. There is no division between me and them. As I talked I felt, 'I am you.' This difference we make so much of, this identity we so feverishly cherish, was overcome." (p. 288-289).

We can read several times that Bernard speaks to his self as if it were a separate entity: "But you understand, you, my self, who always comes at a call... you understand that I am only superficially represented by what I was saying tonight. Underneath, and, at the moment when I am most disparate, I am also integrated." (p. 77).

Bernard sees one of his selves entirely outwardly in the following lines: "This self now as I leant over the gate looking down over fields rolling in waves of colour beneath me made no answer. He threw up no opposition. He attempted no phrase. His fist did not form. I waited. I listened. Nothing came, nothing." (p. 284).

The writer is haunted by past remembrances, missed opportunities, possibly failed self-formations, "shadows of people one might have been; unborn selves." (p. 289).

According to Gardner (1997), the experiences and feelings concerned primarily Virginia Woolf. She observed both herself and others continuously, the way she and her environment experience the events. She wrote these observations down, expressing her inner life and that of the others. She is similar to Freud who found a method by means of which he helped others to look inside them. Woolf did the same. She externalized her inner world in her writings, helping herself and others. From her work, we can observe the way she demonstrated the personality without becoming subjective.

Creating as the tool of self-therapy

From Woolf's diary (Woolf, 1982), it becomes obvious how deeply she suffered from sadness and how vitally important she believes writing is, "And so I pitched into my great lake of melancholy. Lord how deep it is! What a born melancholic I am! The only way I keep afloat is by working." (p. 140).

Self-analysis is part of the creation, as seen in the next quotation. She expressed a feeling of total isolation from the outside world, "I believe these illnesses are in my case –how shall I express it? - Partly mystical. Something happens in my mind. It refuses to go on registering impressions. It shuts itself up. It becomes chrysalis." (p. 150). She also mentioned her headaches in her diary, trying to ease the inner tension, "I began the year with three entirely submerged days, headache, head bursting, head so full, racing with ideas." (p. 254). She described her deep preoccupation with creation, losing her footing trying to find the ground in the everyday life, "I must very nearly verge on insanity I think, I get so deep in this book I don't know what I'm doing." (p. 258).

Translating illness into art

Woolf searched to find a philosophy that could revive the feeling of unity. She thought that there is a pattern behind everything. If she understood this pattern, the events would become whole and intelligible. Through words, she tried to make order in chaos. As she wrote in her diary (Dally, 1990), "It is only by putting it into words that I make it whole; this wholeness means that it has lost its power to hurt me, it gives me, perhaps because by doing so I take away the pain, a great delight to put the severed parts together. Perhaps this is the strongest pleasure known to me. It is the rapture I get when, in writing, I seem to be discovering what belongs to what." (p. 37). For Virginia, this feeling always emerged in the early stages of writing books. She moved on without breaks, anxieties, controlling the happenings.

Woolf's hallucinations proved to be a fertile ground for the writing of her books. In "The Waves," we find instances for how she begins to lose the security of the consensus reality (Woolf, 1931). "I begin now to forget; I begin to doubt the fixity of tables, the reality of here and now, to tap my knuckles smartly upon the edges of apparently solid objects and say, 'Are you hard?'" (p. 288).

In her novels, we can also read about the dissection of the question of death. Bernard, for instance, associates the haircut with mortality, "So we are cut and laid in swathes, I said; so we lie side by side on the damp meadows, withered branches and flowering. We have no more to expose ourselves on the bare hedges to the wind and snow; no more to carry ourselves erect when the gale sweeps, to bear our burden upheld; or stay, unmurmuring, on those pallid noondays when the bird creeps close to the bough and the damp whitens the leaf. We are cut, we are fallen." (p. 280). Death is not presented as a bitter event full of fears but as a desire in that we "do not have to" be any more.

This appears also in her novel "Mrs. Dalloway," since here emerge the above-mentioned questions, which are emphasized in "The Waves." When Clarissa receives news of a young man who committed suicide, we do not see pity but desire (Woolf, 1996), "She felt somehow very like him-the young man who had killed himself. She felt glad that he had done it; thrown it away while they went on living." (p. 204). She approaches the question of death through bipolarity. "Did it matter then, she asked herself, walking towards Bond Street, did it matter that she must inevitably cease completely; all this must go on without her; did she resent it; or did it not become consoling to believe that death ended absolutely?" (p. 11).

Woolf represents the idea of death and the psychotic episodes through Septimus, "Now we will kill ourselves," when they were standing by the river, and he looked at it with a look which she had seen in his eyes when a train went by, or an omnibus-a look as if something fascinated him; and she felt he was going from her and she caught him by the arm." (p. 74).

On several occasions, the integration of her hallucinations can be observed. We can read in Dally's book (Dally, 1990) that the birds were singing Greek to Virginia, experienced by Septimus in "Mrs. Dalloway" (Woolf, 1996). This is partly how her illness manifests itself in her artistic work, "He waited. He listened. A sparrow perched on the railing opposite chirped Septimus, Septimus, four or five times over and went on, drawing its notes out, to sing freshly and piercingly in Greek words how there is no crime and, joined by another sparrow, they sang in voices..." (p. 28).

We can observe Septimus' and Virginia's misconceptions, "...and saw faces laughing at him, calling him horrible disgusting names, from the walls and hands pointing round the screen. Yet they were quite alone. But he began to talk aloud, answering people, arguing, laughing, crying, getting very excited and making her write things down." (p. 74-75).

"It was turning into a man! He could not watch it happen! It was horrible, terrible to see a dog become a man! At once, the dog trotted away." (p. 76)

"For God's sake don't come!" Septimus cried out. For he could not look upon the dead." (p. 78).

IV.1.4 Discussion

For Woolf, writing was an essential tool for elaborating her feelings, experiences, and conflicts. She never underwent psychoanalysis, at the same time, writing served as a tool for exposing her inner conflicts and their transformation in her consciousness. Although the above quoted parts of her diary indicate Woolf's creativity regarding the introspection and transformation, her writing was not an unconscious process. She built in her inner conflicts; therefore writing became both a tool and a result for her. Accordingly, creation was at least partly a conscious process. She strongly and markedly evaluated her internal occurrences and

transferred them into her works of art. In "To the Lighthouse," she unambiguously shaped Mr. and Mrs. Ramsay's figures, basing them on her parents. In the book, Mrs. Ramsay has a narcissistic personality. A good example of Woolf's self-therapy is the writing of "To the Lighthouse" because her mother's remembrance haunted her until the age of 44. As soon as she finished the novel, her obsession, and the hallucinations disappeared. It seems as though she elaborated her feelings towards and rough conflicts with her mother in her works rather than on the psychoanalytic couch. Virginia Woolf's technique of writing down her inner life is similar to the psychoanalytic method of putting the inner life into words, to the ideation (Wolf & Wolf, 1979).

We could see above how Woolf tried to express the nature of her illness in her writings. As a further example, "Mrs. Dalloway" can be mentioned in which Clarissa was originally intended to commit suicide. Finally she put into the book the psychotic Septimus whose misconceptions can be seen above. She attempted to give voice to her inner world by dividing the parts of her illness among her characters. She represents Peter as the man who always deals with himself, Septimus as the psychotic person, and Clarissa in her euthymic states as the mixture of these two (Caramagno, 1992).

In her manic periods, which were usually present during the beginning of book writing, her mind moved at full speed, with ease, and she wrote her books in great excitement. After such state, she later had to pay with depression, which she often suffered while finishing her books. She was afraid of what will be their welcome (Gardner, 1997). Depression that emerged when finishing her novels never posed a real danger for her. Many of her ideas came in the depressed period while lying in the bed. She could make use of these later when writing her works (Dally, 1990).

In "The waves," six voices are speaking. The book is a net of internal monologues. According to Charles (2004), in "The waves," the voices can be heard as the fractions of the personality. We must understand the parts in order to understand the whole. Sometimes it is ambiguous whose voice is heard, thus the reader is initiated in the discovery. We can see Virginia's thoughts reflected in Septimus in "Mrs. Dalloway," where she tried to maintain a relation to her own illness. In Caramagno's opinion, through Septimus, Woolf emphasized the structure of perception so that it was seen no more as an outer process but as a message. They understood thinking as an external procedure, as a voice that sounds in the head. Septimus' character demonstrates how Woolf fell into a vicious circle, "He feels he must die because he is depressed, but he thinks he is depressed because the world is murderously insane and wants him to die" (Woolf, 1996, p. 223). In "Mrs. Dalloway," the reader can experience how it is to

suffer from manic-depressive illness. Three characters are presented by means of one person. In reference to Septimus, he writes that because the feelings became stronger than did the self which feels them, their control is no more possible. "Mrs. Dalloway" is an example of how Virginia used writing as self-healing. She tried to strengthen her self-image. Clarissa binds herself to the good sides of reality, which suggests, in fact, the modern methods of cognitive psychotherapy (Caramagno, 1992).

IV.2 Study 2: The balancing role of opium in the life and art of Edgar Allan Poe and Samuel Taylor Coleridge

IV.2.1 Goal of the study

Psychoactive substances can serve double function in the case of artists. On the one hand, chemical substances may enhance the artists' sensitivity. On the other hand, they can help moderate the hypersensitivity and repress extreme emotions and burdensome contents of consciousness. The study focuses on how the use of opiates could have influenced the life and creative work of Edgar Allan Poe and Samuel Taylor Coleridge.²

IV.2.2 Methods

First, the two artists' life and artistic activities were overviewed. Then, their substance using habits were added to the description.

IV.2.3 Results

IV.2.3.1 The two writers' life and artistic work

SAMUEL TAYLOR COLERIDGE

Samuel Taylor Coleridge was born in Devonshire in 1772 as the youngest child out of 12 siblings (Allan & Smith, 2001). His father was a priest and after his early death, Samuel was sent to London to study at the age of 10. He excelled with his rhetoric abilities, exceeding the abilities of his counterparts. He attended the University of Cambridge but did not finish

² This chapter is based on the following work: Iszáj, F. & Demetrovics, Zs. (2011b). Balancing between sensitization and repression: The role of opium in the life and art of Edgar Allan Poe and Samuel Taylor Coleridge. *Substance Use & Misuse*. Vol. 46 (13), pp. 1613-1618

his studies. He was married in 1795 but divorced soon because of his health problems and growing opium dependence. In 1797, he met William Wordsworth, with whom they are considered the founders of English Romanticism. Coleridge's most important literary works, such as *Kubla Khan* (1798) and *Rime of the Ancient Mariner* (1798), reflected that period. However, his opium addiction seemed to intensify that time. He quarreled with Wordsworth in 1810, and they started to go their own way. He lived in England for the remainder of his life where he lived in isolation but gave lectures to his friends until his death. He died at the age of 61, in 1834, supposedly because of complications from his opium addiction (Largo, 2008).

Coleridge was a colorful author from the literature's point of view (Allan & Smith, 2001). Although he created only few literary works, together with Wordsworth they wrote *Lyrical Ballads* (1798), the publication of which marks the Romantic Era in English literature. In addition to these works, he translated to German very well, wrote newspaper articles, literary criticisms, and essays on the topics of philosophy, politics, and religion. He was considered the best rhetorician of his age.

We find reference in many places that Coleridge wrote his works under the effect of opium (Sampson, 1961; Stephen, 2000). In this respect, his most important works of art are *Kubla Khan* and *Rime of the Ancient Mariner*. *Kubla Khan* is one of the most important lyrical works in English literature (Benzon, 2003). Originally, it contained an unfinished prologue about an opium vision. Coleridge wrote *Kubla Khan's* palace in a kind of dreamlike state caused by two grains of opium (Wolf, 2005). Several features of the *Rime of the Ancient Mariner*, such as the sensitivity of sounds, the complexity of light and colors, visual images, the feeling of solitude, the evil topic of the central act, and the persecution because of the vision, can also be the effects of opium experience (Booth, 1999). However, the effect of opium use is raised in other works of art also, e.g., *Dejection: an Ode* (1802) or *Christabel* (1797).

EDGAR ALLAN POE

Edgar Poe was born on July 19, 1809, in Boston. His parents, David Poe and Eliza Arnold, were actors. In his father's family, alcoholism was frequent, which could take part when David Poe left the family when Edgar was two and a half years old. In a few months, his father died and 3 days later, his mother died of tuberculosis. John and Frances Allan, a childless wealthy couple, adopted Poe. His younger sister Rosalie was mentally retarded and

his older brother William died at a young age because of alcohol dependence, so dependence was originally present in the family history.

Their Irish nurse gave them regularly bread soaked in gin and laudanum to calm them down. They moved to England because of his foster father's business affairs. Both in elementary and in high school, he excelled in theoretical and athletic subjects. He enrolled to the University of Virginia in 1826, but his foster father, John Allan did not patronize him (Martine, 1988). Still, in the same year, he was expelled from the university because he had gambling debts, and he owed a large sum of money to an innkeeper. After a few months, he decided to enlist in the army. He obtained good results but because of a missed muster, he had to leave the soldiery in March 1831. He moved to his aunt and her daughter, Virginia, whom he married at the age of 13 in 1836. He entered editorial employment in Baltimore, but lost his job because of his alcoholism. As a brilliant critic, he worked for several journals. His wife suffered tuberculosis and died an early death in 1847. Poe's alcohol and laudanum use worsened this time, but he remained productive. He wanted to be married again in 1849 and promised to remain sober; however, unsuccessfully. After returning from Baltimore to New York, he was found unconscious and was carried to hospital, although he only had one drink. After a short period of abstinence, he complained about headaches, anxiousness, and hallucinations. In a short time, he lapsed into coma and died. The exact cause of his death is unclear; encephalitis, delirium tremens, pneumonia, hydrophobia, and diabetic coma are likely the causes (Bazil, 1999).

Concerning his work, Poe created significant both lyrics and prose works. Considering lyrics works, he wrote only about 50 poems, of which *The Raven* (1845) is the best-known and most important work of art, bringing him immediate success. His two-volume work, the *Tales of the Grotesque and Arabesque*, published in 1839 contains his short stories collected into book form. His prose writings consist mainly of short stories and tales. Breaking the traditions of Gothic literature, the heart of his works of art does not emphasize general elements, such as haunted castle, hungry vampires, or ridden heroes. Poe stressed the psychological aspect of the dark chambers of the mind. He is a pioneer in the genre of science fiction; apart from this, he is considered the forerunner of the modern detective fiction (Meyers, 1992).

In Poe's works, the signs of opium use are easy to find. Several of his works are believed to reveal opium visions, such as the tale *Ligeia* (1838) in which an opium-dependent narrator appears (Patterson, 1992). In this tale, the line between reality and fantasy is so narrow that the narrator sees his wife's body as constantly changing, which means in this case

that her body comes into life, repeatedly relapses into death-like state, and finally changes to his first wife's body before the narrator's face. In his opiated works, he described a sort of trans state characterized by the distortion of senses. Such an example is *Dreamland* (1844) in which the sense of being out of time and space appears. Fisher (2002) pointed out that psychological states controlled by dreams underlie Poe's Gothic novels. With respect to creating psychological prose, the author mentioned that not only the buildings, but also the single rooms found in the stories symbolize the human mind. Poe's characters move frequently, which symbolizes confusion. His narrators report hallucinations, the essence of which is the emotional charge rather than physical stimuli, such as a work *The Fall of the House of Usher* (1839) (Fisher, 2002).

IV.2.3.2 The importance of opium in Coleridge and Poe's life

Coleridge used laudanum for the first time in November 1796 because of neuralgia (Wagner, 1938). At the same time, Booth (1999) pointed out that the artist was first given opium as a child at the age of 8 because of fever. However, Largo (2008) wrote that Coleridge used opium for the first time at the age of 23 and created the above mentioned literary works during the first period of substance use. Coleridge developed the dependence early on, which disturbed him. Moreover, Coleridge began to use laudanum in adulthood in order to reorganize experiences and stimuli (Booth, 1999). His oversensitivity and the unfortunate life events, such as his father's early death or his early divorce, could also have an impact on the development of his addiction.

In Poe's case, it is likely that his nurse tried to handle Poe's unrest with bread soaked in gin and with laudanum in his childhood (Hughes, 2005). His alcohol use in adulthood presumably began at the age of 17 after having been disappointed in love. Periods of intensive alcohol use were frequently broken off by depressive phases. It seems that he started using substances in adulthood, at the age of 23 (Hughes, 2005). In his case, addiction could have a more complex meaning, although the given sensitivity factor and tragic life events might also have taken part in the deepening of addictions. But we can see that he also used alcohol to try to balance his unstable emotional conditions. He needed both alcohol and laudanum to reach this effect.

IV.2.3.3 Self-medication and the balancing effect of the substances

Opium-dependent persons frequently come from extreme environments where they lived in rude treatment or neglect. In many cases, early childhood trauma can have an intense effect on person's life, making him/her susceptible to dependences (Khantzian, 1999). Khantzian pointed out that psychoactive substance use is never a coincidence. It evolves according to the person's emotional and passion needs along with the interaction of personality factors and psychoactive effects of a given substance. This interaction gives the self-medical character of drugs. Namely, the trauma of early childhood often leads to emotional conditioning defects where the person is not able to handle the stress adequately (Demetrovics, 2000). This emotional unconditioning and the lack of inner capacities lead to an outer conditioning. This means that certain factors, such as chemical substances, are able to attenuate his/her emotions acutely (Demetrovics, 2010). This mechanism seems to appear in both Poe's and Coleridge's life.

The above-written effects of opium appear in both artists' case, suggesting that both authors used substances to enhance their sensitivity, although we have to emphasize here that the given substances did not help to enhance creativity, they were rather used to reach the balancing effect. As we could see, an important element of the two artists' creative process is working with unconscious material, or rather searching for and integrating unconventional, new experiences essentially related to opium use. On the other hand, the tranquilizing, relaxing effect of opium is also present in their lives. In their case, opium had a role not only in relieving outer stressors but also in easing inner tensions, allowing for intensified states to come forward during work and for oversensitized states caused by the creative process to be relieved.

IV.2.4 Discussion

It seems as if the balancing effect of opium emerged more specifically in the case of these two artists compared with other opiate users. The opiate user searches for pleasure and special experiences, namely, he/she endeavors the sensitization of experiences; however, because of early traumas, he/she has originally problems with emotional conditioning. This way, he/she finally discovers the relaxing nature of self-medical effect of opiates (Demetrovics, 2000; Dodes, 1990; Khantzian, 1999). Opiates fill a sort of balancing role

(Demetrovics, 2010), which may dominate in case of artists even more because of their enhanced sensitivity. An everyday element of artistic creation involves balancing between the enhancements of sensitization required of the creative process and the relief after this intensified state. The regulation of this process is very demanding, requiring serious inner power. This way, the “appeal” of chemical substances may mean a significant temptation. Of course, other alternative explanations might emerge that cannot be excluded in point of the connection between substance use and the creative process. In addition, we must mention here that the compensatory, regulatory element of other addictive behaviours can also be observed (Demetrovics and Kun, 2007; Demetrovics and Kun, 2010). A suitable example is exercise-addiction; it might have a regulatory effect in emotional life (Berczik et al., 2012; Demetrovics Zs. & Kurimay T. (2008).

In conclusion, in Poe and Coleridge’s case, the balancing effect can be easily observed during the creative process, which consists of working with both conscious and unconscious materials. At the same time, we could see that opiates cannot really fill in this equilibrant role. In Poe’s life, we could find an important role of alcohol too, supposedly compared with laudanum it had also the role of balancing. In this regard, both Coleridge’s personality change at his older age and his isolation represent that opium had a negative effect on his life and condition. Therefore, even if the authors’ opiate use could add to the representation of experiences of certain works, we can see that in the end, opium influenced the two writers’ life very unfavorably. The opium use might have played a role in Poe’s early death and Coleridge’s isolation in the late period of his life.

IV.3 Study 3: The connection between psychoactive substance use and creativity: a systematic review

IV.3.1 Goal of the study

The goal of our present study was to review the current knowledge available on the relationship between creativity/artistic creative process and the use of psychoactive substances.

IV.3.2 Methods

IV.3.2.1 Search strategy

All studies were considered for inclusion that provided empirical data on the relationship between psychoactive substance use and creativity/artistic creative process and had been published in English in peer-reviewed journals or scientific books. For the review of the literature we searched the following databases: PsycINFO, MEDLINE, PubMed, Science Direct, Web of Science, EBSCO. The search was carried out on March 19, 2014. The electronic search was executed for two groups of keyword combinations. For substance use we used the following keywords: drug*, psychoactive substance use, psychedel*, psychotrop*, hallucinogen*, lsd, magic mushroom, mescaline, peyote, and psilocybin, while for creativity we applied the following keywords: creativ* and art*. The electronic search was supplemented by a manual search. This meant that we had reviewed the reference list of each study found as result of the electronic search and thus we were able to complement our database with those further studies that had not been shown up by the electronic search.

IV.3.2.2 Exclusions

During the electronic search, as a result of the combination of the two keyword clusters, 327 studies were identified and the overview of the references resulted in one further study. In the case of 179 papers, the keyword art* referred to other meanings than artistic procedure (e.g. artery, arthritis, artificial); these articles were excluded from analysis. Further, 96 papers dealt with other aspects than the focus of our study (e.g., art therapy). In the following step we excluded the book reviews (2 hits), one doctoral dissertation and the non-English language studies (6 hits). 22 studies were excluded because they did not contain any original empirical results but reviewed the literature, these served as theoretical analyses. Those studies that dealt with the effects of alcohol use have also been excluded (2 hits). Altogether, 20 studies got into the collection of our focus of which 14 were empirical, while another six were case studies.

IV.3.3 Results

IV.3.3.1 Publication date and place of the studies

Six of the twenty studies (4 empirical papers and 2 case reports) have been published during the 1960s and 1970s. However, after the psychedelic peek of these decades in the next twenty years only three papers (all of them are empirical papers) have been published. From 2003 on, however, a new interest could be recognized toward this topic as in the past ten years seven empirical papers and another four case studies were published. The majority (60%) of the studies was published in the USA. This dominance is especially true for the early studies as six of the seven empirical papers and both case studies that have been published before mid 90s were written by US researchers. However, in the past fourteen years, this tendency has been changed. The seven empirical papers published after 2000 are shared between six different countries (USA, UK, Italy, Wales, Hungary and Austria), and the four case studies of this period also coming from three countries (USA, UK, and Germany). (Table 1.).

Study	Country	Psychoactive substance examined	Sample characteristics	Sample size	Sampling method	Assessment of creativity	Statistical analysis	The psychoactive substance's effect on creativity
1. Komgold, 1963	USA	LSD	patients in psychotherapy and volunteers	not specified (40 >)	no data	Based on the subjects' reports	no	+
2. Hannan et al., 1966	USA	mescaline, LSD	non-clinical sample of adults	27 healthy males with an occupation involving creativity	convenience	Purdue Creativity Test, Miller Object Visualization Test, Witkin Embedded Figures Test	Chi Square Test	+
3. Fischer & Scheib, 1971	USA	psilocybin	non-clinical sample of adults	6 out of 21 volunteer college students who already had experience with psilocybin	convenience	subjects' drawings were analyzed	descriptives	-
4. Steffenhagen et al., 1976	USA	no data	non-clinical sample of adults	100 male non-clinical substance users and 100 male non-substance user university students	convenience	Barron-Welsh Art Scale, Allport-Vernon-Lindzey Study of Values, Fromm-Macoby Life Orientation Test	Mann-Whitney Test, Chi Square Test, multiple regression analysis	+
5. Kerr et al., 1991	USA	various substances	professional artists	22 writers, 12 musicians, 27 painters and 25 controls	convenience	being professional artists	MANOVA, Chi Square Test	Cocaine and cannabis were used by musicians significantly more compared to the other three groups +/-
6. Edwards, 1993	USA	various substances	adolescents, clinical sample	15 clinical substance dependent adolescents and 15 nondependent adolescents	convenience	Figural Form A of TTCT	T-test	-
7. Lowe, 1995	UK	various substances	non-clinical sample of adults	459 female and 160 male individuals from general population	convenience	Analysis of the Mass-Observation Archive by independent raters	Pearson Correlation	+
8. Dobkin de Rios & Janiger, 2003	USA	LSD	non-clinical sample of adults	20 artists	convenience	56 drawings and paintings	no	+
9. Preti & Velante, 2007	Italy	various substances	non-clinical sample of adults	80 professional artists (30 musicians, 25 painters, 25 writers) and 80 matched controls	systematic	being professional artists	no	+
10. Jones et al., 2009	Wales	ecstasy, cannabis	university students	15 abstinent ecstasy users, 15 abstinent cannabis users, 15 non substance user controls	snowball technique	Consequences Test of Creativity, self-rated Creativity Scale, ADCL	ANOVA, correlation	only in case of cannabis +/-
11. Pucker et al., 2009	USA	various substances	non-clinical sample of adults	431 university students	convenience	ACL	T-test, correlation	-
12. Schäfer et al., 2012	UK	cannabis	cannabis user adults	160 subjects; 43 low creative individuals and 47 highly creative subjects were selected for analysis	snowball sampling	Verbal Fluency Task, Category Fluency Task RAT, CAQ	ANOVA, Bonferroni's Test	+
13. Frececa et al., 2012	Hungary	ayahuasca	non-clinical sample of adults	40 volunteers of general population and 21 international university students and staff members	convenience	figural components of TTCT	Bonferroni's Test	+
14. Fink et al., 2012	Austria	various substances	inpatients and non-clinical adult sample	17 actors, 13 alcohol dependent patients, 18 poly-substance dependent patients and 21 university students as controls	convenience	subtest of the TTCT Verbal Imagination subscales of the Berthner Intelligenz Struktur Test, Picture Completion	ANOVA, correlation	+

IV.3.3.2 Types of the substances

Every second studies (seven empirical papers and two case studies) dealt with the relationship between various psychoactive substances and the artistic creation/creativity. Among those studies which have examined a specific substance, six (three empirical papers and three case studies) focused on the effects of either LSD or psilocybin. One empirical study focused on cannabis, another one on ayahuasca, and one case study on amphetamine.

IV.3.3.3 Methods of the studies

IV.3.3.3.1 Samples

With the exception of one study (Edwards, 1993) where the sample consisted of adolescents, all the studies focused on adults. More non-clinical samples can be found than clinical ones (4 studies). Out of the clinical ones, Edwards's study (1993) was conducted in a private psychiatric hospital among chemically dependent adolescents. In Korngold's study (1963), psychiatric patients were compared to a volunteer control group. Four groups were the subject of Fink et al.'s paper (2012), both clinical and non-clinical; actors, alcohol and polydrug dependent patients and a university control group. Finally, Richards and Berendes's (1977) case study focused on a creative writer with depressive symptoms.

IV.3.3.3.2 Methodological approaches

Three different methodological approaches could be identified. Considering the empirical studies, seven applied questionnaires. The most frequently used measure was the Torrance Test of Creative Thinking (TTCT) (Torrance, 1974) in three cases (Edwards, 1993; Frecska et al., 2012; Fink et al., 2012). Additionally, Fink et al. (2012) studied verbal creativity with the use of the Verbal Imagination scale of the German Berliner Intelligenz Struktur Test (Jäger, Süß & Beauducel, 1997). The remaining four studies used diverse tests. In Steffenhagen et al.'s (1976) study, the Art Scale (Barron & Welsh, 1987), the Study of Values by Allport, Vernon & Lindzey (1931) and the Fromm-Maccoby 'Life Orientation Test' (Scheier & Carver, 1985) were used. Three measures of creativity were present in Jones et al.'s study (2009); the Consequences behavioral test of creativity (Christensen, Memfield,

& Guilford, 1958), the self-assessed performance on the Consequences test, and the Gough's Creative Adjective Checklist (Gough, 1979). In Harman et al.'s study (1966), creativity was measured with the Purdue Creativity Test (Lawshe & Harris, 1960), the Object Visualization Test (Miller, 1955) and the Embedded Figures Test (Witkin, 1950). The modified version of Adjective Check List was used in Lowe's study (1995). The effects of cannabis to creativity were detected with the Remote Association Test (RAT) by Mednick & Mednick in 1967 (Schäfer et al., 2012).

Analyzing artworks was another method. Within these, in Dobkin de Rios & Janiger's study (2003), the participants' drawings were analyzed in normal and altered conscious states. In Landon & Fischer' study (1970), two participants' writings created during intoxication by psilocybin were compared to Walt Whitman's writings. In Fischer & Scheib's study (1970), both handwritings and drawings were analyzed. Finally, reports from the Mass-Observation (M-O) Archive were analyzed to detect the link between creativity and psychoactive substance use (Lowe, 1995).

The subjects' normal and altered states of consciousness caused by LSD were compared in Dobkin de Rios & Janiger's (2003) and in Korngold's (1963) study. Landon & Fischer (1970) and Fischer & Scheib (1970) examined the effects of psilocybin. In Harman et al.'s (1966) study, mescaline was used. Also in one case (Frecka et al., 2012), ayahuasca was used. In Schafer et al.'s study (2012), the altered state was caused by cannabis.

IV.3.4 Results of the empirical studies

According to the types of substances, we can identify three groups. The first group contained five hits studying psychedelic substances. One study was about the effects of cannabis. The remaining seven papers did not make a distinction; diverse substances were in their focus. No exact determination of substances was found in one study.

IV.3.4.1 Psychedelic substances

Psychedelic substances as one phenomenon (a group) was only present in Harman et al.'s study (1966). Creative problem solving ability was examined. 27 male participants were recruited with three criteria: 1. In their profession there was a strong need for problem-solving, 2. They had to be psychologically healthy, 3. They should have been motivated to

discover. Three creativity tests were administered prior to and during the influence of mescaline or LSD (Purdue Creativity Test, Miller Object Visualization Test and Witkin Embedded Figures Test). The results suggested that the substances enhanced creative problem-solving, especially during ingestion. Although the study included only a two-week follow-up, participants reported significant changes in their problem-solving mode. Higher level of creative achievement remained at least some weeks after the session.

Two studies examined the effects of LSD. One of them is Janiger's huge human subject LSD experiment carried out in the 1960s (N=930) (Dobkin de Rios & Janiger, 2003). It focuses directly on the artistic part of the experiment where creative artworks were analyzed. As the experimental task, professional artists had to draw a Deer Kachina doll prior to, and at the peak of LSD ingestion. From the 250 drawings and paintings – which were created during 7 years - 65 items were selected for analysis by 20 artists. These items were formally evaluated by a professor of art history who used 8 categories, like Compositional, Color or Value Characteristics. The most important changes were found in dominant style, color, linear and textural characteristics. Janiger states that alteration and fragmentation were the most changing elements and artists tend to focus on parts rather than the whole work. Colors became more intense and lines altered to curvilinear. Regarding the alterations of perceptions, Janiger's subjects reported that a greater freedom from 'prescribed mental sets' was available, there were far more associations, images or synesthesia. The follow-up showed that artists evaluated their works created under the influence of LSD to be aesthetically superior. Korngold's paper (1963) dealt specifically with the aspects of esthetic experience and creative originality. It was written from a qualitative point of view, quotations were presented about the LSD experience regarding to the two above written phenomena. Some methodological problems could be identified however, e.g. the number of the subjects' was not identified.

One study examining psilocybin has been published in the early 1970s (Fischer & Scheib, 1971). 21 college volunteers took psilocybin in a controlled setting. Their drawings and writings were analyzed prior to, at the peak of and after the drug induced state. Psilocybin aroused the creative performance. Besides, it could only strengthen such characteristics that were originally present in the person, so the results depended on individual differences.

Ayahuasca was the subject of Frecka et al.'s paper (2012). 40 subjects (17 males) participated on series of ceremonies using ayahuasca. After a chain of ayahuasca sessions, the originality measured by the Torrance Test of Creative Thinking (TTCT) was found to be significantly higher compared with the control group that consisted of university students

(N=21; 10 males). Besides, in the visual part of the TTCT, the ‘posphenic’ activity was found to be greater.

IV.3.4.2 Cannabis

The effects of cannabis on divergent thinking were studied by Schäfer et al. (2012). 160 cannabis users were tested on a non-intoxicated day and on another, intoxicated. From the edges of the sample, two groups were formed; a low creative (N=47) and a high creative group (N=43). The results showed that the performance of the high creative group did not change on the two days. However, in the verbal fluency task, the low creative group improved significantly on the intoxicated day, suggesting the improvement of divergent thinking. On the sober day, the high creative group matched significantly higher scores compared with those having lower creativity. The authors concluded that cannabis might enhance some aspects of creativity.

IV.3.4.3 Various substances

Seven papers studied the relationship between diverse substances and creativity/the artistic creative process. Lowe (1995) and Plucker et al. (2009) conducted studies with normal samples. In Lowe’s study (1995), 619 average persons’ (459 females and 160 males) texts were analyzed by eight independent raters. A low, but significantly positive correlation was found between creativity and substance use. Lowe concluded that a causal relationship between creativity and substance use could not be linked suggesting ‘risk-taking’ as a common ground. Plucker et al. (2009) studied creative personality characteristics and the tobacco, alcohol and cannabis use and alcohol-related beliefs of 431 university students. The authors were interested in the question whether the creative personality can be connected to psychoactive substance use or not. Neither a significant correlation between personality characteristics and the use of the three substances, nor personality scores and self-reported beliefs regarding to alcohol use were found to be in relationship.

Substance user subjects were examined by Edwards (1993) and by Jones et al (2009). In Edwards’s study (1993), the sample consisted of 15 substance abusing hospitalized and 15 non-substance abusing adolescents. Flexibility and overall creativity were measured with the Figural A Form of the Torrance Test of Creative Thinking (TTCT) administered together with

an IQ test. His hypothesis was proven i.e. subjects in the substance-user group had significantly lower scores in both flexibility and overall creativity scales of the TTCT. Jones et al. (2009) published a paper on the possible effects of ecstasy and cannabis. Three groups were created; the first group consisted of 15 abstinent cannabis users; the second 15 abstinent ecstasy/MDMA users; the control group of 15 non-substance using subjects. The results showed that chronic cannabis users gave significantly more 'rare-creative' responses than the control group, although no significant difference was found in the case of ecstasy/MDMA users.

80 artists' substance use was compared to a control group (N=80) in Preti & Vellante's paper published in Italy (2007). Creative subjects scored higher on the Peters et al. Delusions Inventory (DPI) and they used more of any kinds of substances. The authors suggested that artists' enhanced substance use might be responsible for the high score on the schizoid scale.

Kerr et al. (1991) were interested in the connection between substance use and the special genres of art. 4 groups were created, 3 artist groups (writers, musicians and painters) and a control one (N=86). No significant differences related to the specialties of the art were found. Only musicians used significantly more cannabis and cocaine compared with the other three groups. No difference in the use of narcotics, psychedelics and tranquilizers could be demonstrated among all the groups.

In a recent study, Fink et al. (2012) compared artists to substance user subjects studying the relationship between creativity, personality traits, latent inhibition and psychopathology. The sample (N=69) consisted of four groups; actors were compared with two clinical populations of alcohol and polydrug dependent individuals and to a control one. The polydrug dependent group and the actors showed higher originality regarding to creativity and possessed decreased latent inhibition compared with the other two groups.

One study did not state clearly the type of the substance(s) examined. Steffenhagen et al. (1966) reported data on 100 male non-clinical substance users compared to 100 male non-users. The authors were interested in how useful the Masculinity-Femininity (MF) scale of the MMPI test can be for measuring creativity and psychoactive substance use. A strong correlation was found between creativity tests and the MFscale. Besides, drug users scored higher on both tests than non-users.

IV.3.5 Results of the case studies

Similarly to the empirical studies, three groups of substances were examined in the six case studies. Psychedelics were the subject of three studies, one paper dealt with cannabis, and in two analyses the effects of various substances were examined.

IV.3.5.1 Psychedelic substances

Richards and Berendes (1977) report about a female writer's LSD-assisted psychotherapy that was to cease her depression because of what she was unable to work. After 3 months of psychotherapy, her emotional blocks were reported to be solved and she could work again. Jones (2007) presents the case of a contemporary cartoon drawer, Robert Crumb. His works prior to, under the influence and at the termination of LSD ingestion were content analyzed. Jones's results showed that Crumb's psychedelic drug use significantly changed the stylistic approach of his works not only in the drug user period, but also a long time after. In an early work of Landon and Fischer (1970), psilocybin was administered to two comparative linguists, whose writings were compared to Walt Whitman's. Their texts were analyzed on a semantic, syntactic and rhetoric level. The research question was what possible differences in word use can be demonstrated under the influence of psilocybin. The higher the awareness was, the more concrete the semantic orientation was going to be; syntactical units became shorter and simpler; the rhetorical structure modified.

IV.3.5.2 Amphetamine

Only one paper studied the effects of stimulants. Press's (2005) paper analyzed Paul Taylor on the ground of his autobiography. Press was interested in the question; can creativity and psychotherapy raise help for the amphetamine addict choreographer? The result was that both creativity and his relationship with the dancers helped him return to creative work.

IV.3.5.3 Various substances

Musicians were the subjects of two case studies. Belli (2009) wrote a psycho-biographical report about Brian Douglas Wilson. The relationship between his mental

disorder and creativity and the effects of substance use on his creativity were studied. Wilson used various substances from tobacco and alcohol to amphetamines or LSD. Cannabis and LSD are unambiguously reported to influence Wilson's creativity; he smoked cannabis because of its auditory alteration. LSD changed his perception, having an indirect effect to his creative work. Cocaine and amphetamines helped him against depressive symptoms, but these substances were not influential to his creativity.

Jim Morrison's substance use related to his creativity was the topic of Holm-Hadulla and Bertolino's study, published in 2014. Morrison had a lot of troubles because of his alcohol abuse throughout his life. Besides, he smoked tobacco and cannabis and took various kinds of drugs; mainly LSD, but also mescaline, cocaine and heroin. Substances were reported to be used for pleasure and coping stress not enhance creativity. He was not able to write anything intoxicated. The heavier alcohol and drug intake hindered his and the band's work and his relationships, too.

IV.3.6 Discussion

In the course of our systematic review, 14 empirical studies and 6 case studies were identified that were about the connection between creativity/artistic creative process and psychoactive substance use. Our first observation was that the results of these studies converged only poorly. The main reason was that the aims, methodologies, samples, used methods and the types of psychoactive substances of the few studies showed huge heterogeneity. Due to all this, an unambiguous conclusion is hard to draw.

The link between creativity and the use of psychoactive substances is somehow strengthened by most of the studies; we can state this for sure. However, the nature of this connection is not obvious. The often emerging viewpoint that psychoactive substances enhance creativity/the creative performance could not be proven. At the same time, we can see that (i) the occurrence of psychoactive substance use in highly creative individuals is more characteristic than in other populations (Prete & Vellante, 2007; Jones et al, 2009) and (ii) this connection is probably based on the interaction of the two phenomena. Presumably, psychoactive substances do not have direct impact on artists' creativity. Rather, psychoactive substances are supposed to have indirect effect on the artistic creative process by the alteration of experiences, the enhancement of sensitization, and the relaxation of conscious processes. So, not the artists' creativity changes, but the quality of the artworks (Dobkin de

Rios & Janiger, 2003). Landon & Fischer's (1970) study refers to this, too. On the other hand, psychoactive substances might play a role in the case of artists in trying to stabilize and compensate primarily unstable mechanisms. This can also appear in connection with certain mental disturbances (Fink et al, 2012; Press, 2005; Holm-Hadulla & Bertolino, 2014).

Additionally, we can state that (iii) certain functions connected to creativity might modify and/or improve to the effect of psychoactive substances. Nevertheless, it has to be emphasized that these studies dealt with only certain aspects of creativity that is a complex phenomenon. According to these researches, psychoactive substances might add to the change of aesthetic experience (Korngold, 1963), or enhanced creative problem-solving (Harman et. al, 1966). Further, Jones's (2007) result showed that LSD changed a cartoon drawer's style. Similarly, in Belli's (2009) case study, the modification of musical style was reported connected to substance use. However, these in themselves will not result creative production. Further, (iv) in certain cases, substances might strengthen only already existing personality traits (Fischer & Scheib, 1971).

Related to the above described, we must not forget that researches focused on two different fields of the creative process. Some studies examined the actual effects of a substance or substances in a controlled setting, while others examined the common link between chronic substance user individuals. These two focuses differ essentially. While the former might give answer to the acute change of certain functions, the latter can study the link between chronic substance use and the artistic creative process.

It has to be also mentioned that the studies showed great heterogeneity not only in their aims and methodology, but also in quality. In case of some studies, basic methodological problems could be identified. Besides, these altogether 14 empirical studies in themselves are very low number. At the same time, the topic is highly relevant both in understanding the high incidence of substance use in artists' case and in clarifying the experienced connection by public opinion. In future researches, the emphasis of clear methodology and straight aims have to be stressed.

IV.4 Study 4: Comparison of substance using characteristics of art students and non-art university students

IV.4.1 Introduction and aims of the study

The goal of conducting the study was to determine whether the above described theoretical considerations about artists' more frequent psychoactive substance use and mental disturbances can be proven, or not. A significant difference was supposed related to the two notions in the case of art students and other university students.

IV.4.2 Method

IV.4.2.1 Sample

Artist sample. The artist sample comprised of students in higher education in the field of arts. We collected data from three Hungarian universities of fine arts and design. Altogether, 130 art students were involved into the study. The sample comprised 26.2% of males. The mean age was 22.06 years (SD=2.09 years).

Non-artist sample. As a comparison group we involved 698 university students of non-art studies. It contained 42.4% males. The mean age was 23.8 years (SD=1.33 years).

All subject provided informed consent. Anonymity was assured in all cases. Respondents completed the questionnaires individually and returned them to the interviewers in sealed envelopes. Interviewers were trained psychology students. The study was approved by the Institutional Review Board of the Eötvös Loránd University.

IV.4.2.2 Measures

To measure the participants' psychoactive substance use, a structured questionnaire was used. The questionnaire contained items regarding the use of several legal and illegal substances, including tobacco, alcohol, cannabis, ecstasy (MDMA), amphetamines,

cocaine/crack, heroin and other opiates, LSD, psychoactive mushrooms, GHB, solvents, combination of alcohol benzodiazepines, and benzodiazepine use without prescription. The age of the first use was also assessed. In the case of tobacco both the age of the first experimenting and the starting age of regular smoking was assessed. Similarly, in the case of alcohol both the first age of alcohol use and getting drunk was asked. Additionally, the frequency of past month and past year alcohol and cannabis use was also assessed.

The Hungarian version of the Brief Symptom Inventory (BSI) containing 53 items was completed by the participants (Urbán et al., 2014), which is one of the most widely used self-report tests for measuring psychological problems. Participants rated each item on a 5-point scale ranging from 0 (not at all) to 4 (extremely) measuring psychological distress in the past seven days. The Global Severity Index (GSI) was also counted (Derogatis, L. & Melisaratos, N., 1983).

IV.4.2.3 Statistical analysis

Since the groups of artists and non-artists significantly differed in both age ($t = -12.35$, $p < 0.001$) and gender distribution ($\chi^2 = 12.08$, $p < 0.01$), we controlled these potentially confounding variables as we used age and gender (1= male, 2=female) as covariates in a series of regression models in which the exogenous variable was the grouping variable of being an artist (value of 0) or non-artist (value of 1), and endogenous (dependent) variables were the number of the types of substances ever used, the age of the first use of cannabis, the age of the first drunkenness, BSI factors, Global Severity Index (GSI) and past month frequency of alcohol and cannabis use. Models were analyzed using Mplus 6.0 software (Muthén and Muthén, 1998-2007).

The internal consistency of the nine symptom scales were counted in SPSS 17.: Somatization (SOM) Chronbach's $\alpha = 0.79$; Obsessive-Compulsive (O-C) Chronbach's $\alpha = 0.73$.; Interpersonal Sensitivity (I-S) Chronbach's $\alpha = 0.71$; Depression (DEP) Chronbach's $\alpha = 0.83$; Anxiety (ANX) Chronbach's $\alpha = 0.73$; Hostility (HOS) Chronbach's $\alpha = 0.76$; Phobic Anxiety (PHOB) Chronbach's $\alpha = 0.67$; Paranoid Ideation (PAR) Chronbach's $\alpha = 0.68$; Psychoticism (PSY) Chronbach's $\alpha = 0.66$.

Past year's and past month frequencies of cannabis and alcohol use among artists and non-artists were compared by using chi-square test.

Finally, a path analysis was conducted using Mplus software in order to explore whether the grouping variable (artist vs. non-artist) on past month frequency of alcohol and cannabis use is mediated by the severity of psychiatric symptoms (GSI). An MLR estimation (maximum likelihood estimation with robust standard errors) was used in all of these models. Acceptability of the models was based on goodness of fit indices. A model is acceptable if root mean square error of approximation (RMSEA) <0.08 , comparative fit index (CFI) >0.95 , non-normed fit index or Tucker-Lewis index (TLI) >0.95 . However, all of our models were saturated ones without degrees of freedom, thus fit indices had no relevance in these cases (RMSEA=0.000; CFI=1; TLI=1).

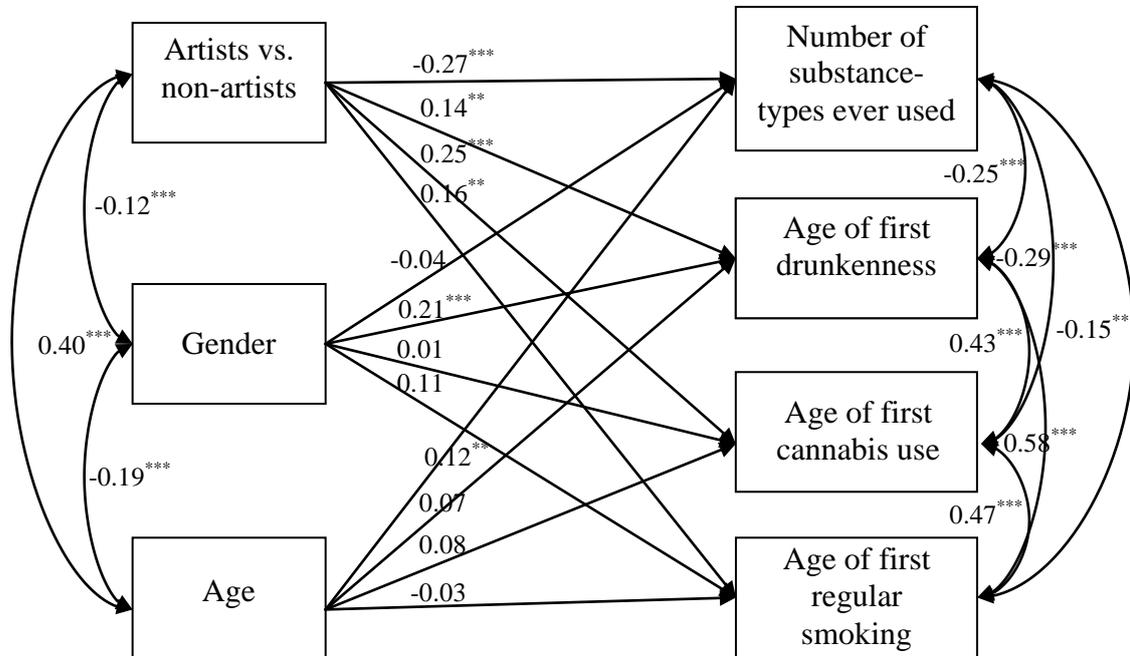
IV.4.3 Results

In our first regression model the number of types of substances ever used and the age of the first substance use regarding the listed substances were endogenous variables, the grouping variable of artists vs. non-artists was the exogenous variable and age and gender were covariates (Figure 1.). Out of the listed substances we used only the age of the first cannabis use, the age of the first drunkenness and the age of first regular smoking in our model, since we found significant difference only in these cases (age of first cannabis use: $t = -5.81$, $p < 0.001$; age of first drunkenness: $t = -3.78$, $p < 0.001$; age of first regular smoking: $t = -2.31$, $p < 0.05$) between artists (age of the first cannabis use: 16.70, $SD = 2.12$; age of first drunkenness: 15.56, $SD = 2.03$; age of first regular smoking: 16.96, $SD = 2.15$) and non-artists (age of the first cannabis use: 18.36, $SD = 2.13$; age of first drunkenness: 16.48, $SD = 2.25$; age of first regular smoking: 17.77, $SD = 2.27$).

The grouping variable of being an artist or non-artist had a significant predictive value on all the dependent variables, the number of types of substances ever used ($\beta = -0.27$, $p < 0.001$), the age of the first drunkenness ($\beta = 0.14$, $p < 0.01$), the age of the first cannabis use ($\beta = 0.25$, $p < 0.001$) and the age of first regular smoking ($\beta = 0.16$, $p < 0.01$). Regarding the covariates in the model, age had a significant predictive value on the number of types of substances ever used ($\beta = 0.12$, $p < 0.01$), but neither on the age of the first drunkenness ($\beta = 0.07$, $p > 0.05$), nor on the age of the first cannabis use ($\beta = 0.08$, $p > 0.05$) or on the age of first regular smoking ($\beta = -0.03$, $p > 0.05$). Gender as the other covariate had a significant predictive value on the age of the first drunkenness ($\beta = 0.21$, $p < 0.001$), but neither on the number of

types of substances ever used ($\beta = -0.04, p > 0.05$), nor on the age of the first cannabis use ($\beta = 0.01, p > 0.05$) or on the onset of regular smoking ($\beta = 0.11, p > 0.05$).

Figure 1.



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Analyzing the past year and past month frequency of alcohol and cannabis use, significant changes has been found. In order to meet the assumption of expected cell count (5 or more in all cells) regarding chi-square test, we merged the five response categories of past year and past month cannabis and alcohol use into 3 categories in cases of past year frequency of cannabis and alcohol use and past month frequency of alcohol use, whereas in case of past month frequency of cannabis use we used only two categories. While 29.0% of artists used cannabis on a weekly basis in the past year and 19.0% stated the same for the past month, this was only true for 10.7% and 7.4% of the controls. Similarly, while 8.5% of the artist drank alcohol more than 20 times during the past month this was only true for 3.7% of the comparison group (Table 2.).

Table 2. Differences in the past month prevalence of alcohol use and the past month and past year prevalence of cannabis use among the two groups

Cannabis		Artists	Non-artists	χ^2
Last year prevalence N (%)	0 times	19 (30.6%)	30 (18.9%)	18.79***
	Monthly	25 (40.3%)	112 (70.4%)	
	Weekly or more	18 (29.0%)	17 (10.7%)	
Last month prevalence N (%)	<3 times	51 (81.0%)	150 (92.6%)	6.45*
	Weekly or more	12 (19.0%)	12 (7.4%)	
Alcohol		Artists	Non-artists	χ^2
Last year prevalence N (%)	Monthly or less often	40 (31.0%)	264 (37.9%)	5.62 ^{n.s.}
	2-4 times a month	53 (41.1%)	299 (43.0%)	
	Weekly twice or more often	36 (27.9%)	133 (19.1%)	
Last month prevalence N (%)	<3 times	64 (49.6%)	410 (58.9%)	7.79*
	4-19 times	54 (41.9%)	260 (37.4%)	
	>20 times	11 (8.5%)	26 (3.7%)	

With regard to the psychiatric symptoms (BSI) the grouping variable of artists vs. non-artists was a significant predictor of higher mean scale score in cases of three of the nine BSI scales: Psychoticism ($\beta = -0.10$, $p < 0.05$); Hostility ($\beta = -0.11$, $p < 0.05$) and Phobic Anxiety ($\beta = -0.18$, $p < 0.001$). Gender as a covariate had a significant predictive value on the mean scale score of Somatization ($\beta = 0.12$, $p < 0.01$), Obsessive-Compulsive ($\beta = 0.08$, $p < 0.05$) and Anxiety ($\beta = 0.11$, $p < 0.01$). Age as the other covariate had no significant predictive value on any of the BSI scales' mean scale score.

When we used Global Severity Index (GSI) as the endogenous variable, we found that only the grouping variable (artists vs. non-artists) had a significant predictive value on GSI score ($\beta = -0.08$, $p < 0.05$), the covariates, age ($\beta = -0.01$, $p > 0.05$) and gender ($\beta = 0.06$, $p > 0.05$) did not.

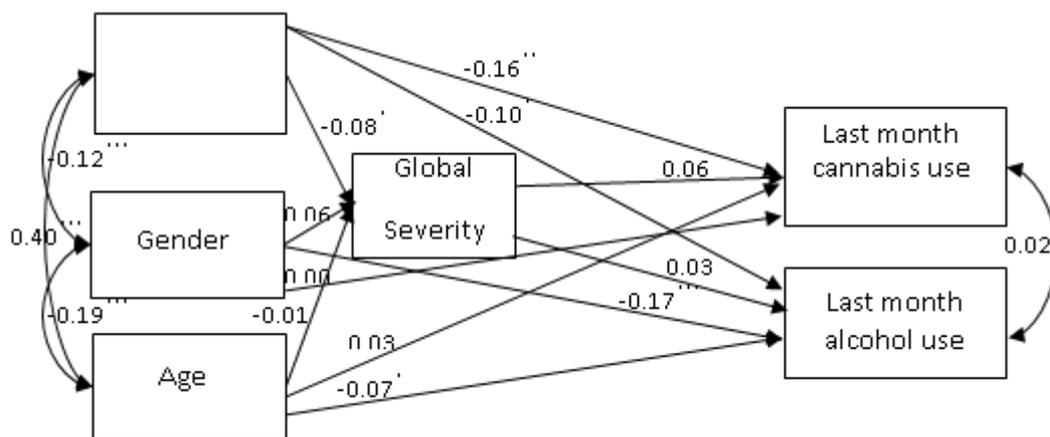
SEM: Path analysis

Based on our results, a path analysis was conducted in order to explore whether or not the severity of psychiatric symptoms (GSI) as endogenous variable has a mediating effect between the grouping variable of being an artist or non-artist, age and gender as covariates and the frequency of past month alcohol use and past month cannabis use (0= no alcohol or cannabis consumption, 1.5= on 1-3 occasions, 6.5= on 4-9 occasions, 14.5= on 10-19

occasions, 25= on 20 occasions or more, 30= on every day) as endogenous (dependent) variables (Figure 2.).

The grouping variable of being an artist or non-artist had significant predictive value on the frequency of past month alcohol ($\beta = -0.10, p < 0.05$) and cannabis use ($\beta = -0.16, p < 0.01$) as well as on GSI's mean score ($\beta = -0.08, p < 0.05$). Age and gender as the covariates had significant predictive value on the frequency of past month alcohol use (age: $\beta = -0.07, p < 0.05$; gender: $\beta = -0.17, p < 0.001$), but had no significant predictive value on the frequency of past month cannabis use (age: $\beta = 0.03, p > 0.05$; gender: $\beta = 0.00, p > 0.05$) or on GSI's mean score (age: $\beta = -0.01, p > 0.05$; gender: $\beta = 0.06, p > 0.05$). GSI as the mediator had no significant predictive value neither on the frequency of past month alcohol use ($\beta = 0.03, p > 0.05$), nor on the frequency of past month cannabis use ($\beta = 0.06, p > 0.05$).

Figure 2. Path analysis model of past month alcohol and cannabis use



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

IV.4.4 Discussion

In our quantitative study, art and university students' psychoactive substance using habits and possible mental disorders have been studied. Our results showed that being an art student might be a risk factor regarding to the first substance use in earlier age (first drunkenness; first cannabis use; first regular smoking). Art students try fewer types of substances compared to the control group. Further, art students' (N=130) actual alcohol and cannabis use are more frequent compared to university students (N=698). Besides, art students scored significantly higher on three of the nine GSI scales. However, the GSI as a

mediator does not show significant relationship with the prevalence of psychoactive substance use.

This shows that art students tend to use substances more frequently that strengthens Preti & Vellante's (2007) study. Art students were also found to have more severe psychiatric symptoms that strengthens the above described theoretical considerations and Andreasen's (1987) empirical result. Regarding gender, the first drunkenness of females happens first later than by males. Significant correlation was found between the first drunkenness and first cannabis use. Both covariates correlated significant with the first regular smoking.

IV.5 Study 5: The relationship between psychoactive substance use and the artistic creative process: a content analysis of interviews with artists

IV.5.1 The effects of psychedelic substances on the verbal behavior of 60 artists

IV.5.1.1 Aims

The aim of the study was to analyze the relationship between the use of psychedelic substances and their effect on creative artists' language.³

IV.5.1.2 Method

IV.5.1.2.1 Recruitment of participants

In total, 120 artists were recruited to the study by convenience sampling. The inclusion criterion was that they had to be artists by profession, or art students at a higher education establishment. The latter group was selected from the Hungarian University of Fine Arts and the Moholy Nagy University of Art and Design in Budapest. The artists' professions included different fields of the arts: literature, film art, fine arts and applied arts.

IV.5.1.2.2 Interviews

Semi-structured interviews with open-ended questions were conducted with the subjects between August 2010 and July 2011. All interviews were audio-recorded. The average

³ This chapter is based on the following work: Iszák F., Ehmann B., Demetrovics Zs. (2012a). The effects of psychedelic substances on artistic creation. In: Marije Wouters, Jane Fountain, Dirk J Korf (eds.) *The Meaning of High: Variations according to drug, set, setting and time*. Lengerich: Pabst Science Publishers, 2012. pp. 40-53.

duration of the interviews was between 10 to 45 minutes. First, the investigators briefly introduced the study and recorded demographic data. However, the interviewees were not informed in detail about the aim of the study to avoid the possible impact on their language behavior. The interviews had two main thematic parts. In the first, the subjects were asked about the artistic creative process itself: how they experience it, what they think about it, what sort of special working habits (if any), they have, etc. The second part inquired about their opinion and experience of the connection between psychoactive substance use and artistic creation. Participants had to indicate whether they used substances to work and if so, what they thought about the effects of these substances on their creative process. After the interview, the recordings were uploaded to a computer.

IV.5.1.2.3 Questionnaire

A brief, structured questionnaire was administered in the middle of each interview to assess the subjects' legal and illegal substance use. In addition to items on smoking tobacco and drinking alcohol, there were questions on other substances including cannabis, ecstasy, amphetamine, cocaine/crack, heroin and other opiates, LSD, 'magic' mushrooms, GHB, solvents, steroids, alcohol in combination with legal drugs, and tranquilizers or sleeping pills that had not been prescribed for the interviewee. The questions assessed the lifetime, last-year, and last-month substance use. The data obtained from the questionnaire were then used to group subjects.

IV.5.1.2.4 Grouping the subjects

In order to analyze the data, participants were assigned to one of two groups according to their substance use. From the total sample of 120, 60 could be identified in these terms. Thirty-two were allocated to the test group as they had used psychedelic substance(s) – that is, LSD and magic mushrooms – in the last year. Twenty-eight were allocated to the control group as they had never used any psychoactive substances. In order to eliminate the possible effect of any other substances, those who drank alcohol more than three times in a month and had more than four drinks per occasion were excluded from the control group, as were those who smoked marijuana or used stimulants (amphetamine, ecstasy and cocaine) during the previous year. The selected 60 participants' age ranged from 20 to 62 years. Those who used psychedelic drugs were almost 10 years younger (mean: 27.6 years, SD: 5.8) compared to

non-users (mean: 37.2, SD: 10.9). The test group comprised 75% of males and the control group 71.4%.

IV.5.1.2.5 Qualitative and quantitative data analysis

The qualitative method of data analysis aims to explore texts in order to identify hidden phenomena and new patterns that may provide social scientists with better insight into the nature of the issue they are investigating. The body of qualitative knowledge is well-established: it has both classic research textbooks (Denzin & Lincoln, 1994) and classic softwares (Atlas.ti, NVIVO, etc.). Both the theory and the method of qualitative data analysis are used in the psychological sciences: prominent handbooks have been written on various qualitative methodologies, such as ethnography, action research, conversation analysis, discursive psychology, narrative psychology, social representation, and grounded theory (Willig & Stainton-Rogers, 2008; Smith, 2008). The qualitative data analysis approach can be used in various psychological fields, such as social, health, developmental, clinical, counselling, forensic, and work and organizational psychology. This chapter focuses on computer-aided qualitative data analysis of the artists' interviews, with the aim of uncovering new aspects of the relationship between substance use and artistic creativity.

For our qualitative content analysis, the Atlas.ti software was used. As a first step, all interviews were entered into the software. This was followed by a manual selection and coding of every sentence that contained references to the relationship between the use of psychedelics and (a) the creative process and creativity, (b) consciousness, and (c) spirituality. The output of this work was three text files, generated by the software, which contained only the selected sentences. These files were used to break down the sentences into further subcategories, as shown in the results section, below. Sentence selection, discussion of subcategories and coding were conducted by the authors.

This chapter also includes some quantitative analysis of textual data, i.e. content analysis. As opposed to the explorative nature of qualitative analysis, the aim of content analysis is measurement. Computerised content analysis is able to yield statistical data about the frequency of various word categories in texts, and to compare different groups of subjects in various respects (Berelson, 1952/1971; Krippendorff, 2004, Neuendorf, 2002).

The aim of conducting a quantitative content analysis on our data was to explore the long-term effects of psychoactive substance use on verbal behavior. In our earlier language

behavior pilot study (Iszaj, Ehmann and Demetrovics 2011), neither cognitive nor emotional differences were seen when a marijuana- using group was compared to a non-substance-using control group. The authors wanted to expand the selection of word and expression categories for further computerized content analyses. In the present research, we were curious whether there is statistically significant difference between substance user and non-substance user artists in the use of the word categories of creativity, consciousness and spirituality.

Quantitative content analysis was performed using the NooJ linguistic development environment (Silberztein, 2004). NooJ is not targeted content analytic software but a corpus linguistic development environment. Therefore, it has two remarkable advantages over the other programs: it is able to identify not only single words, but idioms as well, and so it is capable of a truly multilingual content analysis. The process was as follows: (a) all texts were arranged into an electronic corpus; (b) a word frequency list was made by the software; (c) from the word frequency list, three word categories were selected by the authors – creativity (e.g. original, autonomous, metaphor, unexpected), consciousness (e.g. dream, automatically, to be awake, ego), and spirituality (energy, to believe, true, God); (d) the distribution of these three word categories in the test and control groups was electronically counted; and (e) statistical significances between the two groups were calculated using an independent sample t-test.

IV.5.1.3 Results

An important element of the study was the artists’ subjective experiences. Quotations from the psychedelic substance users’ group were collected in order to document their perceptions of the effects of psychedelics. Below, we emphasize the references to the three hypothesized word categories with underlinings. For ethical reasons, we gave each subject a code: thus, Psyched_01_F identifies the first female subject in the psychedelic substance user group.

IV.5.1.3.1 Subjective experiences

Psychedelics and creativity

Do psychedelics help artists perform their work?

Nine subjects (28%) in the psychedelic user group reported that under the influence of LSD and magic mushrooms, they are unable to work and reach the creative state because of the strong effects. But 22 (68%) thought that experiencing an altered mental state psychedelics may be useful in the inspirational phase of the creative process.

I had once a try to write under the influence of LSD. I wrote two sentences and I realized that I should not see the white paper, rather the colorful things around me. The white paper was kind of waving about, and I realized that this will not give me inspiration (Psyched_01_F).

... but it is perfect for collecting ideas or for inspiration (Psyched_06_M).

Well, by the use of hallucinogenic substances, various visual things can be seen or one can get into such mental states that are impossible to reach in normal cases. From such a self-reflective, pondering stuff, something can come out what might influence creation indirectly (Psyched_13_M).

Art produced under the effect of psychedelics

Eight subjects (25%) had tried to work under the influence of psychedelics. The works of art they created in altered states were different from those made in their normal, conscious state.

There were some occasions when I was drawing under the influence of mushrooms and I put those pictures onto the wall because they were very interesting drawings. There were motifs branching off from each other, but it was also a human face and a smaller scene within it. So, it is a strange thing, like when dimensions slip together (Psyched_01_F).

A picture was created under the influence of LSD, from which a lot of very good ideas were born. On average, these come off well. Let's say, in 97% of the cases they come off well (Psyched_06_M).

Once I was writing a short story with one of my friends. We were very much high because of taking LSD. I do not say that it will be published, but for me, it is still a very

entertaining work of art. It reconstructs precisely the altered flow of language caused by this state (Psyched_18_M).

Psychedelics and consciousness

Greater ability to understand interrelations

Twenty-three subjects (71%) in the target group mentioned this phenomenon. They emphasized that in an altered state of consciousness, they do not feel more creative, but how things are connected to each other (interrelations) might be observed as a result of their changed perspective. They reported the experience of new and deeper interrelations and a liberation of thinking and introspection:

Under the influence of LSD, I feel as a better interrelation researcher rather than as a creative person (Psyched_18_M).

When we try to find connections between things, these substances can help see the same things from another viewpoint. We can think in a more liberated way and search connections in our own minds (Psyched_08_F).

Improved thinking skills

Twenty-one subjects (65%) reported a change in their thinking processes. They thought that psychedelics might alter perception by changing thinking, which persists after the effects have worn off. They claimed that these substances enhance consciousness.

I think about LSD and mushrooms that they can direct things towards the good way, if one uses them wisely – not every day, but you think it over well and usually these parallel thoughts meet. This way, totally absurd things are born (Psyched_06_M).

The experience is caused by observation and alteration of perception. When you create something, there is also a need to change your own perceptions in order to get into a mood that is difficult to reach in other ways. So, substances can reveal a prototype for having the possibility to think another way (Psyched_11_M).

Using the unconscious in the creative process

Fifteen subjects (46%) were aware of working with both conscious and unconscious content. They stated that when the unconscious is part of the process of creation, they do not feel as if they worked, since they were only a part of the process. Examples can be found about the comparison between LSD-like states and the artistic creative process – the two are similar in relation to altered states of consciousness.

I see pictures because a kind of a register of my brain starts to work, which is not monitored by me at all. People are capable of acquiring and recalling this. ... So, you are able to put the speed of your thoughts to the same level as during the altered state of consciousness if you once experienced it (Psyched_07_M).

The brain stops working and then, oops, I did something, I check it, and say ‘Now then! This is good enough in rhythm.’ or ‘What is this effect?’ It works and then comes the realization that something has happened (Psyched_09_M).

Well, the vision. That is, what comes in an altered state of consciousness (Psyched_09_M).

Psychedelics and spirituality

Connectedness to a higher unity

Twenty-five subjects (78%) believed psychedelics helped them develop their view of spirituality. They reported a special kind of consciousness that causes the feelings of calmness and completeness, and stressed the phenomena of the lack of thinking and the ease of work.

One can get this special viewpoint particularly from the LSD, which is like having a better view of everything. It is very similar to the feeling that is reported by people returning from clinical death. This is a kind of consciousness, which is a sort of seeing but not in a physical sense. Rather, I simply know ‘where’ and ‘how’. This is extremely calming, because somehow, everything is exactly in its place and everything is all right (Psyched_02_F).

It was very interesting, because completely abstract things came from my work and my perception was altered. I felt that I did not have to think. So, the knowledge of why I draw this

or that, which is normally present in creation, totally disappears then. It also happened that I put my hand on the paper just like that and the pencil ran. This happened without the awareness that I was moving my own hand (Psyched_04_F).

Amalgamating with the artwork

Twenty subjects (62%) felt unity with the piece of art they were working on, to the point where, during certain moments of creation, they did not exist separately from it. They saw their work of art as a different dimension of the world compared to the one(s) experienced in normal conscious states.

I remember concretely as if I had created something. As I was drawing and shaping, the whole thing was breathing together with me (Psyched_04_F).

... as if it ceased who I am. Really, only the picture is in front of me as I am there. (Psyched_04_M)

Additionally, I am led into the space of the picture and that is a completely different dimension and it is very difficult to come back. It is very difficult to be transferred but it is also difficult to come back. Or it is not easy to be transferred, but it is difficult to come back, this is sure (Psyched_23_M).

IV.5.1.3.2 Quantitative content analysis

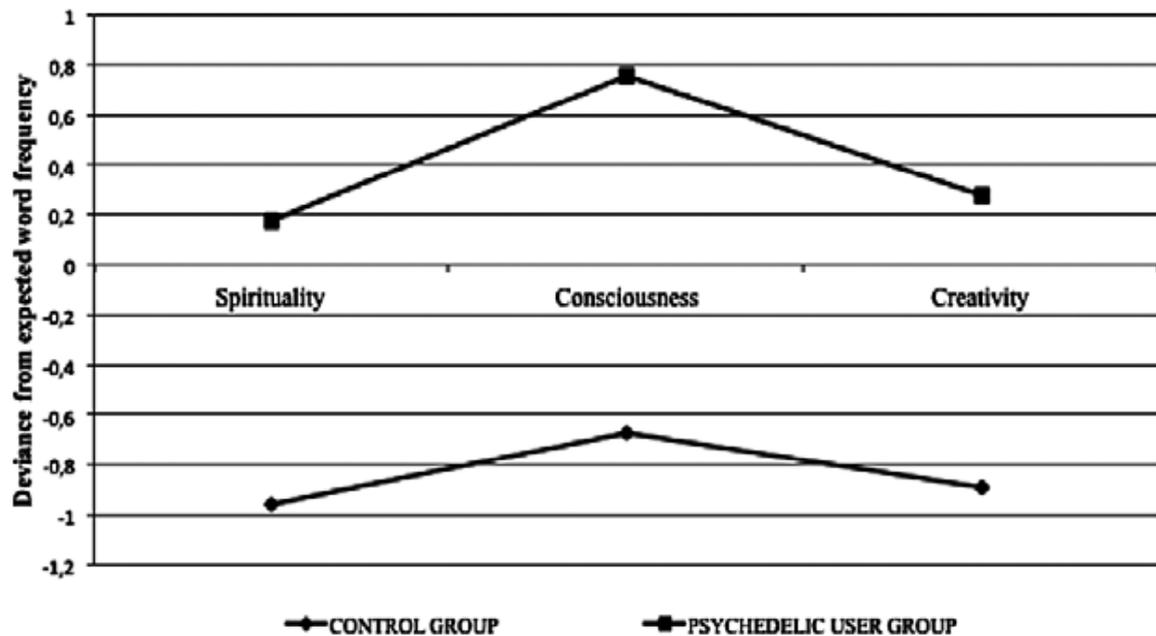
Statistical results of quantitative content analysis found that word frequencies of all the three categories were significantly higher in the psychedelic user group than in the control group (creativity: $t = 4.813$, $p < 0.001$; consciousness: $t = 3.463$, $p = 0.001$; spirituality: $t = 3.021$, $p = 0.004$) (see Figure 3).

It has to be emphasized, however, that these results do not suggest that LSD and magic mushroom users are more creative, more conscious and more spiritual than non-users. The findings suggest only that these subjects are more interested in these issues and are more likely than the control group to use the related words in their spontaneous language.

IV.5.1.4 Discussion

As we hypothesized, the results from this study indicate that the use of psychedelics has an effect on verbal behavior. Significant differences could be demonstrated between the psychedelic user and control groups in terms of all three word categories. This suggests that the subjects using psychedelics are more aware of their relationship with creativity, consciousness and spirituality compared to the subjects in the control group. The significance of the artists' reports is unquestionable because of their subjective content and their reports support the theoretical assumptions described in the literature.

Figure 3: *Word use by psychedelic substance users and control subjects*



Concerning the relationship between psychedelics and creativity, a minority of the artists who used psychedelics reported that they are unable to work under the influence of the substances because of the strong alteration of perception, which supports Fischer's (1972) statement that the efficiency of creativity might not be enhanced. However, over two-thirds believed that psychedelics help improve inspiration, which confirms Masters & Houston's (2000) claim that psychedelics can be used to facilitate creativity. In terms of the art works they produced, the artists report that those made under the influence of psychedelics are

clearly different from those created in normal conscious state, which is consistent with the study of Dobkin de Rios & Janiger (2003).

The experience of interrelations (understanding the meaning of things linked to each other) were important elements of psychedelic substance use for the artists. They can be connected to Farthing's (1992) term 'interpretative introspection' in the sense that the subjects deal with their feelings and thoughts in a deeper way under the influence of a substance than they would on other occasions. Their changed thinking skills, their perception of the creative act as an altered state of consciousness, and their belief that psychedelics enhance their thinking prove the above-described phenomena proposed by Grof (2000) and Grinspoon & Bakalar (1979).

To review the theme of spirituality, the subjects frequently reported Dobkin de Rios & Janiger's (2003) concept of unity, which is characterised by a liberated feeling and sacredness, described by McCabe (1974) as traits of psychedelic peak experiences. Another element of experiencing unity involves the artists' amalgamation with the work of art.

Our study is not without limitations. We used a convenience sample and the generalizability of our results is therefore limited. Moreover, the questionnaire contained a limited list of psychedelic substances. As result, we did not include subjects who were using psychedelics other than LSD or magic mushrooms. New psychedelic substances have recently emerged and future research might usefully to examine their effect on artists and their work. Furthermore, in our study, the quantity of psychedelics was not considered. Future research could group substance users according to the frequency of psychedelic(s) use and/ or the amount used.

IV.5.2 Study 6: The effects of alcohol and cannabis to the verbal behavior of 72 artists

IV.5.2.1 Aims

The study focused on the relationship between the use of psychoactive substances and examines the characteristics of verbal behavior in the case of artists.

IV.5.2.2 Method

Participants

120 artists were recruited to the study by convenience sampling. The inclusion criterion was that they had to be artists by profession, or art students at a higher education establishment. The latter group was selected from the Hungarian University of Fine Arts and the Moholy Nagy University of Art and Design in Budapest. The artists' professions included different fields of the arts: literature, film art, fine arts and applied arts.

Of the 120 artists, 72 subjects were selected to three groups. The other 48 subjects were excluded from this analysis in order to have groups with clean substance use profile (either alcohol or cannabis, however not using other substances).

The *Cannabis Group* (CANN) (N=25) consisted of participants who used cannabis at least twice a week during the previous year. Subjects who drank alcohol either (1) more than once a week and having more than five drinks per occasion or (2) who drank at least twenty days a month with a minimum of three drinks per occasion belonged to the *Alcohol Group* (ALC) (N=18). Those subjects, who used both cannabis and alcohol frequently/in a large amount were excluded from the analysis. Subjects in the *Moderate Substance User Group* (MOD) (N=29) did not use cannabis during the previous year and drank alcohol (1) less frequently than on a weekly bases and having not more than four drinks per occasion or (2) maximum twenty days a month with at most of one-two drinks per occasion.

The selected 72 participants' age ranged from 20 to 62 years. Participants of the MOD Group were elder (mean: 37 years, SD: 10.8) compared to the Alcohol (mean: 30.6 years, SD: 6.9) and Cannabis Group (mean: 30.9 years, SD: 9.04). Among the members of the Cannabis

and the MOD Groups, the proportion of males were about two third of the sample (76% and 75.9% respectively), while in the Alcohol Group this number was somewhat higher (83.3%).

Measures

Interviews. Semi-structured interviews of an average duration between 10 to 45 minutes were achieved with the subjects. All interviews were audio-recorded. After the investigator briefly introduced the study, the interviews contained two parts. First, artists were asked about the artistic creative process, including how they experience this process, what sort of special habits (if any) they have connected to it, etc. In the second part, artists were asked to report directly about their opinion and experience of psychoactive substance use connected to the artistic creative process.

Questionnaire. After each interview, a brief, structured questionnaire was administered about the subjects' socio-demographic characteristics and their legal and illegal substance use. Data obtained from the questionnaire were used to group subjects.

Qualitative data analysis

Computer-aided qualitative data analysis of the artists' interviews was also applied with the aim of detecting possible new aspects of the relationship between substance use and artistic creativity. For qualitative content analysis, the Atlas.ti software was used. As the first step, all interviews were entered into the software. This was followed by a manual selection and coding of each sentence that contained references to the relationship between the use of alcohol and cannabis and (a) *tension control* and (b) the *creative process* and *creativity*. The output of this work was two text files, generated by the software, which contained only the selected sentences. These files were used to break down the sentences into further subcategories, as shown below, in the results section.

IV.5.2.3 Results

Qualitative analysis

Quotations from both the substance user and control groups were collected in order to document their perceptions connected to the two word categories. The *tension control* category is divided into two parts; to the enhancing and the relaxant nature. First, the

relationship between artistic creative process and various mind altering tools are presented. Next, the relationship between the *enhancement of tension* and the use of substances (see ALC_04_M and CANN_03_M) is illustrated below. Similarly, opinions connected to the *relaxant* nature of the two psychoactive substances also appear (see ALC_09_M and CANN_12_M). The references to the two hypothesized word categories are emphasized with *italics*.

The artistic creative process and various mind altering tools

Related to substance use during the artistic creative process, the artists have different points of views. Some of them report that substances are used as only a source of inspiration (e.g. ALC_05_M; CANN_04_M) while the implementation is carried out sober. Others alter their states of consciousness to fulfill the work (ALC_10_M; CANN_06_F). Substance using habits vary due to individual differences in the Alcohol Group. Further, cannabis is reported to ease the appearance of ideas. In the Moderate Substance User Group, there is a tendency of reporting music as a mind altering tool. This might help the artists to get into the state of openness which is the essential element of the creative work.

ALC_05_M: “There is this heightened night state when one perhaps has drunk some glasses of wine, if I want to word mildly. Then, *a lot of things flow from one’s brain*. But obviously, *I need another time when I make a fair copy of it in a sober daylight*; to formulate the given writing in a normal way.”

ALC_10_M: “I am a precise person. I need alcohol, because I know that if I drank three, four, five beers from one a.m. to 6 a.m. then *an illuminated state comes into existence* for two hours, in the good sense of the word. *I am able to concentrate, focus, and experience the situation*. Before that, I am too convulsive or melancholic, and after that, totally terrible. But I need that three hours a day.”

CANN_04_M: “Some ideas came into my mind but the majority of them are carried out sober. The idea born in this state was very useful but in the implementation it does not absolutely help ... Thoughts come earlier, the thinking process is faster but implementation is slower.”

CANN_06_F: “It feels like *I can zoom to the topic more, because it does not divert my attention*. These weird pictures which are in my head can be liberated. At other times, when I

am not high, these are of course in my head, too, but this *eases somehow to realize them, to come out.*”

MOD_01_M: “During work, I usually listen to music. The kind of music depends on my mood, but I almost always listen to music. *I don’t know, if it can be counted as the altering of consciousness, in my opinion, it might be.*”

MOD_06_F: “*Music may be a psychoactive thing, because of rhythm.* Because we work with pictures, ripple, scribble; they are all rhythm and music. I like to work with music, because *I almost forget myself and it will have the life of its own.*”

Substance use and the enhancement of tension

The frequent appearance of the enhancement of tension connected to both substances can be observed. Alcohol is reported to cause an enhanced neural state. In the cannabis group, mainly reports about the disadvantage of long-term substance use can be observed. In the actual creative work, it might cause the loss of motivation (CANN_02_F) or inspiration (CANN_03_M).

ALC_04_M: “And then I retreated from the world for a week. This inspired me for about three days, but then I started to *feel restless* and *I was not able to stay calm*; it was much worse than remaining at home. So, *restlessness is a small problem for me* in the field of writing.”

ALC_05_M: So, *I am quite strongly deconcentrated* anyway which can be observed when I work, too; *I am not able to concentrate more than two hours...* but for instance, wine, especially white wine – to be totally subjective – can rev consciousness to a higher frequency from this point of view.

CANN_02_F: In a time, the following habit became mechanic ‘Ok, let’s smoke a joint and the good ideas will come!’. This referred not only to artistic creation but also to a seminar paper or anything else. In the meantime, it really evolved that ‘I smoke a joint and after, I begin to work.’ So, *this became a bit postponement with the feeling that ‘I haven’t smoked enough, so I roll another joint... and after that, I really begin to work’*. Then, I was just sitting in front of the computer and I would have done anything instead of the work. So, I pay attention to this nowadays.

CANN_03_M: “In normal state of consciousness, I am not able to feel the way through which I reached a certain point, or where I started from. I find this weird, *a kind of bad feeling possesses me that I don't really understand myself and this makes me totally nervous, because all this is about me...* A lot of people don't have time to live this through, think over, retreat, discuss with them, make themselves clean – meaning that they are totally sober and realize what the role of the used substance is. If this period did not exist and if they stayed in that; *'Oh, shit, I cannot work although I also used substances', they realize that they are not able to do anything – this feeling might give them such experiences that will totally block the way of inspiration.*”

The relaxing nature of substances

Alcohol relaxes the user's systems that can be seen from the quotations, below. Artists drink alcohol in order to get into the suitable mood for creation (eg. ALC_13_M). Besides, the liberation with cannabis is reported. Substance use is observed to be part of the individual's personality (CANN_12_M); it cannot only be connected to the creative work.

ALC_09_M: “There have been occasions when I felt that I was incredibly stressed and neither I will be able to sit down nor write even three lines in this life if I don't drink now three glasses of wine.”

ALC_13_M: In the evenings I was writing and drinking beer. It was quite good, because *I could handle my restlessness* with it. I felt I wish it would finish now and *I am really bored to elaborate the details*, I am not in the mood for doing it at all. Because that's what I cannot stand. And if I had drunk a bit beer to it, I became more relaxed and I could work; in this bit stupid mood.

CANN_10_M: Basically, it is *a very liberating, cloudless feeling* when I am high.

CANN_12_M: “Being high is good for me especially, because in that state, I become roughly acceptable in social situations. Then I am able to listen to the other, I don't hurry, I can see not only forward. To be honest, I think, with the use of cannabis, I can come to such level or such interval that makes me tolerable from my usual, extremely revved state... This does not refer to creation, but to all my life. Basically, substance use is part of my personality and this can be seen in the artworks, so this is quite direct connection.”

IV.5.2.4 Discussion

To sum up, we can conclude that artists frequently report about the balancing effect. To reach the suitable state for creation can happen in many ways. Related to this, both psychoactive substances are present in the subjects' reports; artists were talking about the self-medical characteristics of psychoactive substances. On the one hand, substances are able to enhance inner tension, if it is necessary. On the other, if the tension is too big, substances are reported to have a relaxant nature. During the artistic creative process, both emotional conditions are necessary. Another question arises, do artists use substances direct to the creation or is this part of their everyday life? In connection with this, substance use is reported to be part of the personality, it does not only relate to the creative process.

Another conclusion might be that the use of substances can happen in each phase of the creative process. It cannot be stated that artists tend to use substances more often during the first phase of the creative work. However, they use them a lot to get inspiration easier or to build in their intoxicated experiences to the artwork. Most of them think that implementation should happen in a sober state, although we can find the controversy of this statement, too. An interesting observation was made in the MOD group where *music* - especially rhythm – was described as a mind altering tool as a common element. However, our study is not without limitations. A special sample was examined, that is why the generalisability of our results is limited. The broadening of the sample could be an interesting further step in the future.

V Discussion

The aim of my dissertation was to deal with the interaction of conscious and unconscious mental processes by studying the artistic creative process and artistic creativity. Through the creative process, unconscious material is strongly present, although conscious effort is undoubtedly necessary. Two factors were studied connected to this; the use of psychoactive substance(s) and psychological disorders. The above presented balancing phenomenon is the common link between these notions; artists' extreme emotional conditions might be handled through creativity or the artistic process itself, or through psychoactive substances, etc. However, in the long run, the balancing of the instability can mean a difficult task. Researches that would have studied the interaction of the three notions have been missing from the literature so far, although to measure them empirically is quite difficult. To draw a full picture about the dissertation, I follow the structure of the III. chapter.

This complex, multistep study series consist of six studies. Both their viewpoints and methodologies are of diverse nature. First, two case studies were completed focusing on the examination of the artistic creative process in depth. A case study was written with the focus on how Virginia Woolf's bipolar disorder affected her life and artistic activity.

The other case study was written about two artists' psychoactive substance use. The aim of the study was to detect the effects of Edgar Allan Poe's and Samuel Taylor Coleridge's opium use to their lives and literary works.

As the next step, we summarized and analyzed those empirical publications that have been written about the connection between psychoactive substance use and creativity/the artistic creative process.

Based on the results of the systematic review, our studies made attempt to complete the deficiencies of the researches, so far. In this light, our aim was to work with clear methodology by paying attention to details, and to analyze the data carefully. Further, we examined the theoretical considerations from different viewpoints.

In our quantitative study, art and university students' psychoactive substance using habits and possible mental disorders have been studied.

Further, two qualitative studies were conducted with psychological content analysis. Altogether, 120 interviews were recorded. In the first study, 60 artists' interviews were selected for analysis; divided into a psychedelic and a control group. .

Our other qualitative study focused on alcohol and cannabis. Three groups were formed – a Cannabis User an Alcohol User and a Moderate Substance User group. Two word categories were studied – tension control and creativity.

Among the experiences of the former researches, my studies confirmed the followings. The strong connection between writers and affective illness(es) studied by Andreasen (1987) was caught in Study 1. Further, Jeste et al.'s (2004) case study about the self-therapeutical characteristic of the creative work could be seen in Study 1. This coping nature of writing could be observed in Virginia Woolf's case. However, Winnicott's (1989) statement that creativity is essential for a healthy life was not confirmed that can be seen from Woolf's lifelong struggle with her disease.

The emotional regulation with the help of substances was part of Study 2, where the two artists used opium to handle the extreme emotional states being present during the creative act. This confirms Dobkin de Rios and Janiger's (2003) theory. The balancing nature of opium is present in the two artists' case. This meant both the reduction of e.g. pain or anger (Khantzian, 2003) and the appearance of tranquility or joy described by Parrott et al. (2004). On the other hand, the long-term use of the substance had a negative effect on both artists' life.

The systematic review (Study 3) had the following consequences. No studies were found that focused on the connection between psychoactive substance use and the artistic creative process. Only a few researches were identified to deal with the relation of psychoactive substance use and artistic creativity. The effects of psychoactive substances on creativity were only partly proven; like enhanced creative problem solving skill (Harman et. al, 1966). Some aspects of the creative achievement were found that can be connected to psychoactive substances, like the change in the quality of the artworks (Dobkin de Rios & Janiger, 2003). Further, six of the twenty hits have been case studies. The methodologies used in the studies were very different from several aspects, e.g. sampling.

Knafo's (2008) theory about artists' enhanced sensitivity was proven by Study 4. The novelty of this study was that the phenomenon was demonstrated in a Hungarian university sample which was missing from the literature so far. Remaining by this study, in the art students' population, high percentage of substance use can be observed that begins in an

earlier age than the control group that strengthens Ehrenzweig's (1970) opinion and Preti & Vellante's (2007) empirical results. With the use of the substances, artists wish to reach the suitable emotional state that is necessary for creation.

Ten Berge's (2002) differentiation could be confirmed in our two qualitative studies (Study 5 and 6). Artists reported about the effect of using psychoactive substances in both positive and negative ways. Besides, some artists use substances in Kris's (1962) first, inspiration stage that supports Fischer's (1972) statement of the enhancement of creativity. However, lots of them find it difficult to carry out the artwork intoxicated. On the other hand, there were artists who use substances in both stages of the creative process.

My studies pointed out differences that have been hidden so far. The novelty of Study 5 was that in the case of psychedelic substance user artists, in all the three word categories, significant differences were found. This implies McCabe's (1974) statement that psychedelic substances might have effect on behavior in the long-run. The enhancement of creativity that was described by Baggott (1996-97) and Krippner (1977) could not be strengthened with this method. Similarly, only the more frequent use of words related to the two further categories could be seen from this study. A causal relationship cannot be drawn, although it is sure that psychedelic substance user artists deal with these topics more than the control group. Related to consciousness, subjects report about the altered understanding of interrelations. It can be connected to Farthing's concept of 'interpretative introspection' (1992). According to the subjective experiences of spirituality reported by the subjects, Dobkin de Rios & Janiger's (2003) theory of 'Unity' can be caught.

Study 6 had the same consequences related to the word category, creativity. In point of the other category, substances are reported to be able to enhance inner tension, if it is necessary. On the other hand, if the tension is too big, substances are reported to have relaxant nature. These suggest Khantzian's (2003) self-medication hypothesis. Further, the use of psychoactive substances was reported to be part of the individual's personality and the environment that supports Zinberg's (1984) theory. It seems that the alteration of consciousness is present in any case; also the Moderate Substance User group reported about this. This maintains both Krippner's (1968) statement and Rauch & Hons's (2005) opinion.

At present, the consumption of certain psychoactive substances is considered illegal by the law in Hungary. During our research, several substances can be found as examples that are in this category. In all the cases, strong emphasis was laid on the principle of anonymity. However, we must keep in mind the possibility that subjects were not honest related to their

substance using habits all the times. This methodological problem unfortunately cannot be eliminated. This must be definitely considered by the interpretation of the results.

VI Conclusion

This was the first series of studies catching the connection between the above presented three notions. First, the dissertation strengthened the need for further researches in the above described topics. The main question that remained opened was the direction of these links. With further researches on diverse samples, these relationships could be seen clearer. The theory about artists' sensitivity was strengthened. As far as I know, our quantitative study was the first, investigating psychoactive substance using habits and mental disorders in a university environment. Being an art student hides the risk for further problems of both substance use and mental disturbances.

However, several questions came into my mind while finishing the dissertation. E.g. what do the direction of these connections depend on? For example, somebody might become an artist and/or a mentally unstable person as an adult. Similarly, a substance user adult might possess high creative talent or not; or mental disturbances. Several factors might be hidden at this point. Perhaps, a longitudinal study could focus on these relations with greater detail.

I found difficult to answer these questions. It is probable that artists have the fundamental ability to remain very sensitive in adulthood as e.g. Ehrenzweig (1970) hypothesized. Further, substance use might cause further sensitive emotional states both in the short and in the long run. However, this highly depends on the type of the substance, the person and the setting (Zinberg, 1984). That's why the directions of these connections would be hard to define. Besides, mentally ill persons live very close to unconsciousness. The similarity with artists is inevitable but the situation is not much better than in the former case. Most of the artworks that have long-lasting effect in the history of mankind are created by mentally unstable individuals. But if the artist is psychotic, he is unable to create. Artworks created by mentally ill people cannot be interpreted by general opinion; that's why they do not have serious impact on future culture. The line between the acceptable and unacceptable artworks is very narrow. Finally, the comorbidity of substance use and mental illnesses is also a relevant issue. The causal link is interesting – mentally ill people tend to use substances with a greater possibility or they become psychotics by using them frequently, although this cannot be schematized like this.

Besides, we tried to study the balancing effect that was difficult because of its complex nature. As we could see the connection between the above analyzed three notions can be demonstrated. Unconscious processes are highly present through the artistic creative process but generally, it is the everyday element of artists' life. Besides, a lot of conscious effort is also necessary for fulfilling work. The continuous change of these processes implies the need for the tolerance of extreme emotional conditions. To remain productive in these circumstances, artists tend to alter their mood of consciousness. The evidence related to the balancing phenomenon was partly proven. Artists' tendency for trying to stabilize their emotional conditions can vigorously be seen. The case studies serve as evidences; however, further empirical investigation of this notion might be a future task.

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