

# Fractal Semiotics of the Language of Emotions: a Cognitive Linguistics Dimension

Dr. Iuliia Shamaieva

Department of Foreign Languages, V.N.Karazin Kharkiv National University, Kharkiv, Ukraine  
Email: shamaeva-25@yandex.ru

## ABSTRACT

The article focuses on researching the peculiarities of the fractal semiotics of the language of emotions as a system of verbally represented emotional concepts and categories. As a result of studying the verbal communication of emotions as a natural recursive collision between their fractal evolution and the linear existence of perceiving systems there have been two major types of emotional concepts revealed – operationally closed loop and situationally dynamic ones – according to the aims, the object and the results of conceptualizing emotions as a cognitive process.

**Keywords :** Concept, Emotion, Fractal, Language of Emotions, Semiotics.

## 1 INTRODUCTION

THE vital mission of emotions in human behavior has determined scientists' very close attention to the key issue "emotions and brain", which can be vividly illustrated by the fact that recently there have been more than 1000 analytical overviews concerning this question published (just according to PubMed data) let alone numerous scientific publications and research papers all over the world. All this shows both the actuality of the multi-dimensional problem we have been researching within the framework of cognitive linguistics and a wide range of currently existing theoretical and methodological principles of studying emotions and cognition. At present, the issues of researching emotions as the most influential psychological factor of the biological and socialized individual [2], [12], [18], the basis of people's emotionally and intellectually productive, energy comfortable [3] existence, of studying ways of conceptualizing and verbalizing emotions and feelings have become an interdisciplinary research mainstream focus for both paradigms of modern anthropocentric linguistics, including cognitive, discursive, communicative, emotiological, linguoculturological, psycholinguistic ones, and for other sciences, more particularly, physiology, psychology, philosophy, sociology, culturology, politology, as it is emotions of a human being, not yet Homo Loquens but already Homo Sentiens, that have always been the natural foundation of all primary and secondary nominations [18].

The timeliness of our work can also be explained by the fact of its focusing on semiotics because they haven't even started creating the general semiotic theory of the united informational world yet [13]. Together with this, the problem of coding as converting one signal system into another with the help of the inner code (mental language) or the outer code (existing verbally and non-verbally) which is now so essential in the theory and practice of communication has hardly ever been holistically described and analyzed comprehensively in modern communication sciences [4], [5], [11].

Thus, the subject matter of our research is the language of emotions as a complex of verbalized concepts of emotions (each of which is an amalgamated emotional-feeling event

concept (EFEC) [15] as it mentally represents a network of interconnected thoughts and ideas, memories, feelings, sensations, cognitively determined expressive and motor reactions [20], registering the results of impression, retention, actualization and pretence [1]) and categories that are based on such concepts. Our object is psychosemiotic peculiarities of the language of emotions as a semiotic space whose components are oriented to serve the field of communicating emotions interpreted by a certain linguoculture, which stipulates the reasonability of studying the language of emotions from the point of view of the theory of fractals to better reveal the structural and content specific features of EFEC as its integrative elements.

In the connection with the above, the key objective of this paper is to reveal the peculiarities of the fractality of the language of emotions semiotics, considering the language of emotions to be a system of verbalized concepts and categories of emotions. This presupposes: a) substantiating the status of the language of emotions as a semidynamic system with analyzing the functional peculiarities of its fractals as ways of the recursive organization of verbal signs-representatives of emotional concepts and categories that form the evolution stage of emotion semiosis for both the experienter of emotions and for the corresponding recipient; b) gnoseologically, explicating the difference between operationally closed loop concepts of emotions and situationally dynamic ones determined by the fractality of the semiosis of emotions.

## 2 FRACTAL SEMIOTICS OF THE LANGUAGE OF EMOTIONS

### 2.1 Fractality Peculiarities of the Language of Emotions: Cognitive Linguistics Perspective

It is our language as a polyfunctional sign system that can manifest any area of human experience [4], [10], [18], including emotions. With its imponent immanency of emotional deixis, the cognitive functional-semiotic system of representing experiential knowledge of emotions and about emotions

through language ensures realizing processes directed at receiving and processing, keeping and using, organizing and accumulating multimodal knowledge structures, including emotional ones. Moreover, our language itself belongs to the haptic and emotional culture code involved in a global anthropomorphic metaphor [9].

Understanding emotions as the subject's appraisal concerning those objects that are significant for him/her [16], necessarily including the psychic reflection of the object of emotions (the cognitive component) and the psychological state of the subject-emotion experiencer [21], it is supposed that the key part in the functioning of the second component belongs to the hierarchical system of the subject's needs. All this is embodied in the language of emotions which is connected with the reality of the open limbic system of emotional centers as an interpersonal cognitive-limbic regulation [4] through signs, not reflecting it but representing semiotically as a semiotic instrument with the help of which an individual conceptualize the world (of emotions) in his/her own image and likeness [13].

In many cultures we can notice the idea of scaling (self-similarity), which means various scale iteration of a certain image conceptual structure (ornamental, architectural, literature and folklore (e.g. "There is a hole in my bucket, dear Lisa"), visual (e.g. expressing one's individuality and realizing one's self-conception in the photospaces of Pinterest, Facebook, Carde, Instagram), textual precedent (e.g. "This is the house that Jack built") etc. Recently certain aspects of this idea have acquired a precise mathematical explanation in the concept of a fractal (from Latin *fractus*) which currently not only mathematicians and programmers but professional photographers, cartographers, musicians, linguists are aware of. The term "fractal" was used still by geometricians of the nineteenth century, according to whom the scaling of fractals meant that, having one part of a fractal image, there you could reveal the same structure the main image had. However, officially the term was introduced by the Franco-American mathematician Benoit B. Mandelbrot in 1975, and since his book "The Fractal geometry of Nature" [8] was published in 1977 this term has become widely popular in the metalanguage of many sciences, as well as in arts and literature.

The nature itself of the semiotic phenomenon of the language of emotions as a language of genetic behaviour programs with energy characteristics such as the abilities of transformation, dynamics, intensity [3] determines the reasonability of studying it within the framework of the fractal paradigm in semiotics, founded by Y.S.Stepanov who in his work "Language and Method" was the first to draw attention to the possibility of researching semiotics and languages from the point of view of the fractal theory and evolutionary lines [13]. The fractal as the prime structure of communication (G.Deleuze, F.Varela) proves to be an efficient scheme that allows to draw a tentative outline of understanding the dynamic recursion of the interrelation of the emotional, cognitive and language transformations of a human and his/her environment in the language of emotions represented by means of verbal signs. The fractal is hard to localize in one logical way, and here it is similar to nature creations [16] but with its help you can understand the world better, forming a fractal perception, a fractal mode to recognize the semiotically heterogeneous world of emotions which condenses information and has a memory [9].

According to the results of our previous research [14], [15], emotions and emotional states as semiotic objects consist of several main components. They are the cumulative signifi-

cance of the current needs, the balance between the necessary and the possible, being motivated when making a behavioural decision, and, as a result, an emotional-informational reactive model that emerges in human brain and contains semantic information about problem area where the task of fixing regulated variables is realized. Consequently, generated by the experiencer and/or perceived by the recipient language of emotions itself (communicative situations, various verbalizations) with its own semiotics becomes a fragment of the environment where the identity and adaptation information of Homo sapiens are kept.

In this connection, we can make a conclusion about the intersubjectivity of emotional linguocognitive perception by analogy with the intersubjectivity of cognition, since besides the ultimately superior metacognitive mechanisms "I know that you know that I know..." there are more primitive/basic formats of mutual adjustments of an imitational type. They can be based on inborn mechanisms, part of which, according to B.M.Velichkovskiy [21], is known as the fractal system of mirror emotionneurons. Thus, in the context of our research, a verbal sign as the representative of a concept or a category of emotions as a functional unit of linguocultural knowledge with its own content, used to accumulate and transfer emotional information [18], turns out to be the indicator of an individual's survival as a constantly changeable boundaries between a human being and his/her environment, which we consider to be one of the core peculiarities of the fractal semiotics of the language of emotions. In other words, signs, verbalizing emotions, are fruits of the experience's cognition that become part of the environment and start being used by the experiencer in an eternal process of changing interaction, being an indicator of self-reproducing their own boundaries.

Another peculiarity of the language of emotions from the point of view of its fractal semiotics results from the fact that verbalized concepts/categories of emotions appear to function in at least two semiotic systems: the system of a natural language and the system of a psycho-emotional code where they acquire specific meanings connected with language ones but considerably different from them. So, the experiencer's emotional-cognitive system constantly works with different stimuli, different frames of reference at the same time.

Following N.Luhmann, the world around us influences a system as a result of converting its analogous characteristics into digital-sign (digital-verbal, in our understanding) ones [7]. Therefore, we have revealed one more peculiarity of the fractality of the language of emotions signs as results of converting analogous relationship characteristics into linguocognitive ones that the system realizes itself by means of its inner operationally closed structural interactions with other systems [5]. If we combine this with the image of a fractal machine and semiotic rows, communicating emotions becomes recursively interweaving the observer's state with verbal signs and concepts of emotions into whole. Together with this, fractals of the language of emotions semiotics emerge in ever recurring discontinuities in the wholeness of operational loops at the so-called microlevel of experiencers and recipients, and evolution as a macroprocess can be observed in ever correcting such discontinuities. Thus, we can explicate still another peculiarity dimension of the fractal semiotics of the language of emotions. It is combining discreteness at microlevels with irreversible evolutionary tendencies, constituting inner self-organizing process in the complex system of emotions, cognition and language.

The unique nature of the fractal semiotics of the language of emotions becomes clearer when we turn to the conception of reference as the ability of an organism to identify the world and itself with the help of signs, together with the processes of recognizing and understanding as its necessary but insufficient components [1]. From this perspective, reference can be directed both outwards (other-reference) and inwards (self-reference) [21]. Other-reference is generating signs in the process of cognizing the world considered by the observer/experiencer to be outer. Self-reference is generating signs in the process of cognizing the world considered by the observer/experiencer to be inner, including recognizing/identifying and understanding oneself (one's own identity, structure, status, affects). Interpreting the processes of self-reproduction of human and world boundaries semiotically we have arrived at the conclusion that the observer/experiencer can judge about the outer only on the basis of differentiating between self-references and other-references, connected with changing and harmonizing his/her psycho-emotional and physiological states. In other words, Homo Loquens permanently and recursively functions semiotically, nominating and symbolizing the inner and the outer in cycles.

The above leads to understanding signs of the language of emotions as activators of the inner balance of the cognizing system's state, on the one hand, and, on the other hand, as fixators of certain states of the structural and content interrelatedness between different systems. Therefore, the genetic peculiarities of the fractality of signs under consideration are not in their outer or inner reference but in their being oriented towards redefining boundaries of the inner and the outer, which is realized recursively by the experiencer in acts of reference. As a result, the fractal perspective as for the semiosis of emotional experience and communicating emotions presupposes that communicating emotions as verbalizing the corresponding EFEC and formed on their bases categories is a natural recursive process, a peculiar semidynamic collision between the fractal formation of conceptualized emotions and the linear ontology of linguocognitive systems.

## 2.2 Major Types of Emotional Concepts Determined by the Fractal Semiotics of the Language of Emotions

From the experiential point of view, cognition necessarily presupposes dividing the world into specific objects, revealing various characteristics, properties and regularities, as well as realizing the boundaries of your own self/ves, your own place and role as the subject and the object of cognition in the world order. And it is concepts that are the units of knowledge where results of conceptualization as one of cognitive processes are represented [6], [16]. At the same time, verbal signs take part in forming concepts as knowledge structures, arousing states of neural activity as representations of interactions with constantly changing environment the organism is structurally related to all the time [3], that is the fractal semiosis of the language of emotions actively participates in the structural and content dynamics of the experiencer as a living system. In this context, EFEC are units of conceptual content a human being singles out in the process of cognition to eventually share them verbally or for the further accumulation, which presupposes their specific format, as well as the relevant structural organization while storing [10], [17].

Conceptualization as a fractal cognitive process is to realize the two following missions which pre-determine two different directions of studying its results and their different orientations at the peculiarities of the research object (emotions, in our case). First, it is accumulating knowledge about the world, its objects, events, characteristics, and about the experiencer him/herself as a result of revealing new conceptual fea-

tures as editorial units of knowledge. Second, it is identifying units of new/already known information by language means to communicate them to the recipient. In the first case, the research focus is a combination of language units of various scales and levels that express similar conceptual meaning of emotions or represent different characteristics of one and the same EFEC as an element of the conceptual system of the experiencer as a socium, deepening knowledge about the world in each specific individual's memory. In the second case, the research object is certain language signs/units that represent a certain EFEC in a specific dimension of its content as a certain emotional sense (a unit of individual knowledge). It determines different kinds of EFEC nature, different conceptual structure and content, which is immediately connected with their collective or individual status, which is with the fractality of their outer or inner reference.

Thus, conceptualizing emotions as a cognitive process carried out by means of the fractal semiotics of the language of emotions, depending on its orientation, its object and results can gnoseologically be understood in statics and dynamics. The static aspect of conceptualizing emotions in terms of stability of concepts themselves presupposes revealing signs-knowledge units as core conceptual system elements in the entirety of their content, formed under the influence of many factors, including historical, social, educational, national ones. Actually, such concepts that we call operationally closed are results of quantitative and qualitative accumulation of knowledge and experience in the process of multiple conceptualizations of emotions, which is all emotional and cognitive activities of an individual as a socium. It is concerning such knowledge units that it is possible to speak about different levels/layers of conceptual content as different knowledge scopes [13], [18]. Operationally closed emotional concepts function as the basis of forming categories that are conceptual unities of objects, which means the fractal diversity of semiotic representation. That is why it is not desirable that conclusions concerning linguocognitive mechanisms of their formation should be made [9] because their content evolutionize with time as a result of Homo sapiens' interpretative activities, and the term "mechanism" primarily characterizes processes of representing conceptual content and forming/communicating specific emotions. Simultaneously, compositionality seems to be important to reveal structural and content peculiarities of such concepts, their interconceptual and derivational interactive relations.

In works by modern psychologists (A. Bandura, J. Lacan, A. Miller, C. Rogers, S. Pinker and others) dynamics is viewed as both the ability to form categories and to represent infinitely. The dynamic aspect of conceptualizing emotions in terms of conceptual interaction is connected with revealing and representing objects, stimuli, events and their peculiar features as units of emotional knowledge right in the process of verbal interaction to communicate knowledge/emotions, to exchange information to get oriented in the world [19]. In this case, it is EFEC that become results of cognition as gestalt units of the operative ontology of the world, specific emotional concepts that are formed and communicated while interacting verbally. In the light of fractal semiotics we consider them to be situationally-dynamic. Such concepts are results of the functioning of various cognitive (profiling, (re)perspectivization, comparison, conceptual metaphor and metonymy, etc) and language (nominating, word building, language metaphor and metonymy, syntactic structures, etc) mechanisms of processing received or already available emotional information. Correspondingly, as such concepts represent diverse ways of configurating accumulated experience and operating these cognitive schemes, it turns out to be efficient to research them in the direction of finding out both their content and relevant cognitive pattern

schemes.

## CONCLUSION

In conclusion, the main peculiarity of the fractal semiotics of the language of emotions as a system of verbalized concepts and categories of emotions is in the process nature of verbal signs of emotions that, for one thing, function as unique filters of the experiencer's biological system and, for another thing, are the result of human organisms' identifying themselves and their environment. From this point of view, results of emotional semiosis are integral for Homo Loquens as reference points of boundaries of the outer and the inner. At the same time, the structure of self references and other-references can be described on the basis of the main categories of the fractal conception – biofeedback and scaling. Therefore, we have come up with the determined by the fractality of the language of emotions semiotics differentiation between operationally closed loop (units of knowledge about the world) and situationally dynamic (units of knowledge about the world) emotional-feeling event concepts as results of the cognitive process of conceptualizing emotions. Here, concepts of the former type are rather theoretical and gnoseological constructs of emotional consciousness received as a result of secondarily interpreting experiential knowledge of emotions and, thus, requiring their content reconstruction. The latter, situationally dynamic type of concepts, are ontologically oriented, primary units of the conceptual system of emotions. They are part and parcel of everyday consciousness, always determined contextually and situationally and, for this reason, they can be studied as distinctive recursive conceptual units. All the above explicates the importance of developing an adequate theoretical and methodological tools to better study the essence of verbally represented EFEC as the object of fractal semiotic linguocognitive research, which is the perspective of our future work.

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