

Creative Processes and Metaphors-Multi-associative or Chaotic? Methodological Remarks for Aesthetics and Innovation

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ABSTRACT

Human beings (at least “creative” ones like artists, poets, inventors, engineers, scientists) can have and develop a consciousness for using phantasy, fiction, similes, comparisons, reflexions, metaphors. They - and we all - are capable of reflecting, developing new ideas and projecting them to other fields and levels. We have and can refine “metaphoric consciousness” (after Cohen). We might even understand the human as the being which is capable of what I called creative ascent” [1] by ascending to higher-level abstract, musical or picture-like phantasies or constructions. e.g. in theories or architecture. Only humans are capable to transcend any positions, levels, strata, perspectives to reach ever new viewpoints and vantage points. The drive to be creative, to transcend limits and levels if in a symbolic manner is indeed psychologically characteristic for any creative activity. Thinking, meditating, reflecting new ideas, solutions and metaphors (“reflectators” after Peat). may be especially productive or “creative”. We are creating beings I call highly creative metaphors “creataphors”. Being human turns out to be possible only if one would live in a continuous creativity of at least a middle range and if one would exercise this creativity, if one is beyond that at least potentially able to create and develop as well as utilize reflectaphors and creataphors. Humans as the interpreting and meta-interpreting beings are the specifically creataphoric beings.

KEYWORDS: Creativity; Metaphors; (Meta-)Interpretation; Reflectaphors; Creataphors

THEORY OF MENTAL PROPULSION CHARACTERIZING CREATIVITY

One of the latest attempts to combine psychological and philosophical aspects in a developmental theory of creativity is by the editor of the well-known Handbook of Creativity [2], Robert Sternberg [3]. In his book “Wisdom, Intelligence, Creativity Synthesized” [4] Sternberg would develop a theory of types of creative processes which he calls “The propulsion theory of creative contributions” [4]. This rather new theory of types of creative

contributions should replace his own earlier “Investment Theory of Creative Contributions” Sternberg [5] where the authors refer essentially to the decision of a creative person to become and stay creative, to creatively act by engendering ideas beyond or against the usual expectation (“Defy the crowd!”). The main accent of the theory was to be ready to forward, advertise, fight for and socially innovate new exceptional ideas by which Sternberg describes the intellectual capacities, knowledge, styles of thinking, personality variables, risk acceptance and the motivation and attitude to

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overcome obstacles, to stand ambiguities as well as digging into intrinsic motivation and the description of creativity-fostering facts within the social (and natural) environment. All this should be coordinated to an integrated dynamic, still accounting for certain thresholds and interaction between such components. This reads rather a little bit traditional like the common theories trying to provide from well-known and fashionable accounts of capacities and capabilities, as well as from intelligence and personality traits and social factors a certain integrative construct which should be supported by empirical studies and accompanied by educational recommendations like "Sell your creative ideas!". Psychological factors like taking into account the "deferred gratification" pattern, appropriate willingness to take over risks and conflicts, to save time for creative thinking and practical paragon personalities as well as the mutual fructification by cross-thinking etc. Sternberg RJ [4].

Sternberg's "Propulsion Theory" of Creative Contributions" would in a much more differentiated manner take into consideration structural conditions, occasions, causes of events and stages of progress of typical creative contributions being developed and classified in eight types of creative contributions. The main thesis is that "Creativity is by its nature propulsion. It moves a field from some point to another. It also always represents a decision to exercise leadership. The creator tries to bring others to a particular point in the multidimensional creative space". "Leadership, like creativity, is propulsion", too.

The eight types of contributions represent a qualitative, nominal classification rather than an ordinal one. Yet, "Certain types of creative contributions probably tend, on average, to be greater in amounts of novelty than are others". Creativity is notably instigated and characterized by rather fundamental novelty of the respective results of the creative processes and work involving high quality assessments and judgements. Sternberg tries to order the types of creative contributions into some major categories like the ones to accept and carry on current paradigms or reject them and those trying to integrate multiple current paradigms displaying a certain kind of combinatorial meta-type. In the middle of the whole enterprise resides the topic of a dynamic development of the field of creativity by the contributions of the creative individual to bring the field closer to a certain kind of goal state or new direction.

The first, not genuine, type is but mere "Replication" which does not change the field at all. Also, the second one, "Redefinition" of a field or problem, would at most be or engender a new perspective but doesn't change the field. The third type of a "Forward Incrementation" is typical for what one can call "small creativity" (see also below, Koestler) by resulting in meaningful solutions (of a largely combinatorial kind) which fall under the current moving on the field anyhow. By contrast, the fourth type, "Advance Forward Incrementation" or "Accelerated Forward Motion" would consciously and explicitly change the field by transgressing the status quo: "The creator accelerates beyond where others in his or her field are ready to go often 'skipping' a step that others will need to take". The fifth type will even change the direction consisting in a "Redirection" of the extant development from the given state at present. It thus includes a deviation from the past and the actual general line and strategies. The sixth type would be a combination of Reconstruction and Redirection in which the creator moves the field back to a point it previously was at and then moves it in a different direction: "The work is judged as creative to the extent that the individual is judged as correctly recognizing that the field has gone off track and to the extent that the new direction is viewed as a useful one for the field to pursue".

The type number seven would be "Re-initiation", a new direction and reorientation, representing "a major paradigm shift" in which "the contributor suggests moving in a different direction from a different point in the multidimensional space of contributions" by a new "start-over" after having criticized traditional hypotheses, suppositions, premises etc. The last, the eighth (actually the genuine seventh) type is called "Integration" consisting in that the contributor or "creator puts together two types of ideas previously seen as unrelated or even as opposed. Formerly viewed as distinct ideas, they now are viewed as related and capable of being unified".

As with all these types, Sternberg presents some case studies, mostly from the psychology of intelligence and capability as well as social psychology, but also from music, arts, literature, and science. For instances of new paradigmatic Re-initiations, he cites Festinger's theory of Cognitive Dissonance in psychology as well as Duchamp's and Cage's new paradigms in arts and music. For the last type "Integration" you may also think of a new theoretical combination of quantum theory and the general theory of relativity.

The types are meant to better explain and represent changes, differentiations and cultural take-overs as well as social innovations without in advance judging the quality or heights of creativity and without claiming that just one type is relevant and fitting for a given creative contribution or case. There is an overlapping of these analytical types emphasizing the fact that not just one process, procedure or encompassing type is relevant. Thus, creativity cannot just be characterized by just one trait, process type, or paradigm structure. What we call "creativity" is indeed a multifactor phenomenon and "types of creative contributions do not immediately translate into levels of creative contributions" or other paradigms. Thus, "the propulsion model may help explain several creativity-related phenomena, although it does not provide a unique explanation".

Moreover, the model may not just be applied to the labelling software developments and new programs in computers as a sort of "replications", but also lead to differentiated answers to the "long-standing" problem "of the extent to which creativity is domain-specific or domain-general": whereas "successful forward incrementations may be largely domain-general", "the ability to perform a Re-initiation may be quite a bit more domain-specific, requiring a sense or even feeling for a field that goes well beyond the kinds of more generalized analytical abilities measured by conventional tests". Sternberg thinks that his classification of types might not be exhaustive yet admitting that it is "unlikely that there is anyone 'right' model of types of creative contributions". In addition, creators and even children "will need to decide for themselves..., how they wish to unlock and express their creative potential. ...they will decide, because creativity is a decision. How can one encourage people to decide for creativity? According to the view of creativity as a decision, fomenting creativity is largely a matter of fomenting a certain attitude toward problem solving and even toward life".

Indeed, also Sternberg's new model is a bit integrationist and largely one-dimensional. You could certainly deal with more than two different creative contributions of theories in a creative integration of the last type. Also, we could think of a creatively dividing development, differentiating refinement, sub-structuring or separating of components of factors as another model or - which I think to be very important the "methodological ascent" to higher theoretical meta-levels or even to comprehensive interdisciplinary meta-theories, meta-languages and meta-perspectives leading to higher level new insights which I called "creative ascents" in my book thus entitled "Kreative Aufstiege" [6].

Sternberg's paradigms and typological classifications as well as differentiations would however seem meaningful since they allow to characterize different forms of creative progressive developments and the movement of the fields of creative procedures or paradigms shifts and all incremental progresses in a more systematic manner even than the interrelationships described by Sternberg. (It has to be taken into account whether these model types are methodological speaking of an ideal type character; after Max Weber, only more or less to be clearly separated in a reality, but frequently overlapping and being open to be interpreted or combined with one another.) They might be interesting for describing jumps and shifts over the traditional fields in arts, music, and literature as well as the projection or transfer of new creative or provocative paradigms from one field of human culture to another. Creative hybrids in multimedia arts, in the sciences and medical technologies between the inorganic and organic research fields, between artificial intelligence, virtual reality, transgenic manipulation of organisms and neuro-implantation, between social processes and mass suggestion, "artificial worlds" and world representations as well as "ways of world-making" (to borrow the term from Nelson Goodman): these will be topics of future creativity research also in aesthetics and of life in general (because aesthetic processes and products are also changing our lives all the time). Transgressing borders, frontiers and the restrictive fields of any realm of cultural and social life seems to be the indicative mark of our progress-oriented "neotenic" society transgressing all the traditional borderlines between old realities and new "virtual", "artificial" worlds and realities. This will certainly amount to great challenges of a future philosophy of creative processes, designs, developments etc. as Whitehead thought. Indeed, Whitehead re-shifted, virtually "virtualized", represented on a meta-level-Whitehead artificially refined and alienated? These are really thrilling ontological and methodological questions. Extant psychology and philosophy of creativity seem to be a bit behind the times in dealing with such pressing and acute topics like "artificial world", "artificial life", "artificial intelligence", computer design in arts, science, and technology-think only of molecular design, artificial cloning, computer-aided, fMRT-guided surgery, any multimedia technologies or any mixture of different art fields and modalities.

As yet, there is no real deep-rooted philosophical anthropology of creativity and creative developments of such hybrid integrations of different modes and fields of creative phenomena and border-crossing developments and strategies. Plessner's "law of artificial naturalness" of the human being is but a too comprehensive and vague or even paradoxical notation and term in order to be really able to give some explanations; it just covers deeper interacting and co-evolving factors and effects in a superficial formula however right it may be from the basic perspective. Also the post-modern aggregations and collages as well as quotations of old-fashioned paradigmatic or basic styles and the quasi ironic distancing oneself from one of them by using all of them, in particular contrasting and at the same time incorporating out-dated styles seems to be due to a similar over-simplification, although there are certainly "new" creative insights and types of post-modernist developments in arts and aesthetics.

In general, creativity will in what follows be dealt with as a multi-dimensional process of associations carrying novelty and originality for persons and creative processes profiting from

such ideal delineations as Sternberg's types but still walking so to speak on a tightrope between taking over traditional methods and developing new original endeavors to extant fields of creative activities and to cross borders between different modalities and realms of cultural life and even technologies. This is certainly true and characteristic also of aesthetic creative processes, persons and new perspectives.

CREATIVITY AS A MULTI-DIMENSIONAL ASSOCIATIVE PROCESS

It seems to be characteristic for creativity and creative persons that they deploy and display a tendency to oscillate between originality and the taking over of traditional methods by experiencing and sustaining in a certain quivering suspense and/or an "optimal mix" between "iconoclasm and traditionalism" [7]. This, however, reads quite paradoxically, but it seems to be yet a necessary condition to uphold for originality a productive tension of forces which is apparently indispensable for rendering creative results.

Beyond that, mutual mental fructification between different areas and disciplines as well as at times diverse capacities and opportunities seem to be characteristic for creative innovations. This, however, frequently leads to a certain kind of marginal position of the creative authors and personnel primarily within their own discipline; they sometimes have to be in a (semi-) external or marginal position and to become creative just from such a marginal vantage point. At times, they might not even be discovered or only very late as truly creative instigators, inventors or discoverers, (think of Mendel or Robert Mayer, regarding hereditary statistics or, respectively, the relation between heat, energy and entropy in thermodynamics). All this would imply that the tension between traditionalism, the established methods and common opinions within a discipline on the one hand and the rather "iconoclastic" radical orientation and innovation on the other side as well as the fundamentally novel possibly being transferred from quite another area is often characteristic for a creative "collision", for the "fusion" of creativity and innovation. Thus, it seems that confrontation and the struggling between different approaches and areas is conducive or even necessary for creativity. Creativity certainly also originates from certain cultural and social conditions and psychical dispositions and motivations¹. This constellation, however, would rather describe but necessary conditions, though generally not sufficient ones, particularly if we would like to deal with the explanation of outstanding accomplishments by the "intuitive" or "analytic geniuses". Simonton [7] sees "chance" intervening at different points and intersections: chance would already figure as essential with regard to the permutation of mental elements in getting new innovative ideas, in comparing relations of configurations, as well as regarding the probabilistic interplay between quantity and quality of the output, finally especially pertaining to the chance and occasion of acceptance of the respective new idea and, last but not least, also in historical development, e.g. in the face of simultaneous discoveries and developments.

Simonton's theory of creativity is, however, mainly a theory of the combinatorial, i.e. normal creativity. To be sure, also here one has to withstand to just stereotyping by freely permuting and using exhaustively the combinations and combining

¹Here, I cannot dwell in a detailed manner on other psychological theories of creativity, although that would seem necessary (see my 2000, 76-137, 138-173).

them in new arrangements and new configurations of already known achievements seem to be characteristic for the so-called “reproductive-creative” type. But this theory does not suffice to cover the overwhelming creativities of the geniuses. Only some elements to characterize the respective personalities, their products, the stimulations and inspirations of “normal” size so to speak, the places, processes as well as personalities and products are to be described rather historically and methodologically than purely psychologically. The “four P”-theory of creativity (personalities, products, places, processes) seems to be too much down-to-earth to cover the outstanding examples of the creativity of a genius like Mozart. There are limits to psychological models and tests with respect to such extraordinary and exceptional personalities (due to lack of repetition, statistical reliability and validity as well as generalizability). (With regard to Hildesheimer [8], Küster 1991²).

Methodologically speaking, more interesting than the combinatorial psychological theories of creativity seems to be Koestler’s approach [9]. Koestler compares creative discoveries and developments in science, art, and other creative areas with phenomena of humor and joke, by paying attention to the “fusion”, more exactly: associative “fusion”, entertained in theories of the comical. He emphasizes the perspective of association (“bi-sociation”) of different planes and perspectives as well as approaches from quite diverse areas. These might within an act of sudden illumination or inspiration be connected like an “aha”-experience in which, e. g. in a sudden insight or impulse, even a burst of ideas might lead to a specific combination or conjunction of the respective factors from different sides culminating in a real “fusion” as frequently experienced in connection with jokes. Interconnections which had not ordinarily been expected or suspected are thus getting together in such a “fusing” culmination. The comical explosive effect in jokes certainly relies on confrontation, confounding or even “confusing” of the rules of the games of different realms and planes usually being alien to one another. However, in the act of “bi-sociation” they are suddenly and in expectedly conjoined leading to a certain kind of “collision” ending in laughter or *mutatis mutandis* in a merger or fusion of a new mental or spiritual synthesis or in the differentiated confrontation of parts within an aesthetic experience. Koestler thinks that all “bi-sociations” may cover comical, tragical or spiritually stimulating or inspiring effects whether or not it is a comical or tragical or purely intellectual experience of fusing, it nevertheless displays the same magical pattern of “bi-sociation” as mentioned.

Similarly, as in the cases of jokes and humor, according to Koestler the mutual association typically also characterizes discoveries of new knowledge, of intellectually novel insights and innovations. These would in most regards originate from a “bi-sociation” of different planes and areas from the relevant perspectives which would remain unconnected otherwise. The “spiritually” stimulating effects take center stage here. Koestler, however, does not define additional characteristic features of the differentiation between the comical, the tragical or a fusing new discovery except that the discoverer has searched around in one or two areas for a long time (one automatically thinks of the exploratory appetite behavior expounded by ethologists) before

the respective “bi-sociation” would really fuse. The researcher or thinker looks for ways to clearly and precisely state his problem, to find a clear leading question and to solve this on a specific plane E1 (but in vain). In a critical moment, however, from a certain plane E2-which is so to speak orthogonal to E1 (thus representing an independent dimension) - by a certain kind of interpolation (by contrast to the just exploratory extrapolation within E1) a fusing “bi-sociation” originates suddenly opening the connection between originally quite different planes or “experience systems”. (This seems to be indeed also the wit of a joke, the mentioned surprising effect, consisting of the rather unexpected flashing and striking of a sort of “lightning” from another plane where one would just expect routine answers. The comparison to lightning is common sense in humor and the comical as well as in sudden novel insights called creative ones).

Koestler’s “bi-sociation” or the fusing creative occurrence of an idea would combine as yet unconnected “systems of experience”, the respective planes or symbols and approaches leading within the juncture or connecting line or connecting point of the respective two or three planes to what is called a novel idea or to the experience of laughter and the comical epitome, respectively. (According to Koestler, there might also be a “tragic” effect going with such “bi-sociation”.) In any case, the subjective experience is projected into a connection with a respective objective frame of reference deviating from routine thinking patterns and gaining – if successful – a creative combination of two dimensions of different kinds: thus, the name of “bi-sociation”, i. e. mutual combination and association of two approaches and/or dimensions. - of course, one may critically mention that the concept of this bi-sociation is in a sense quantitatively and terminologically speaking too restricted. This model refers either to just two factors or planes of “bi-sociation” (there may be multi-associative associations of creative provenance), or to just the “exchange of concepts” just projecting or simulating but an “one way ‘digital’ associating” though from two different planes whereas real processes are much more multi-factorial and complex relying on parallel wiring and multiplex switching [12]. This was also already highlighted by William James who spoke about the “cauldron of bubbling ideas” in creative processes or rather chaotic systems emphasizing that there is typically rather a multi-voiced or multi-lane configuration in conjoining and associating within creative processes. These activities would to be sure lead to a certain kind of one-way narrowness or restriction of consciousness, but this would be only the tip of the iceberg: In the underground, in the unconscious part of the mental and the mind there are plenty of rich structures and a partially chaotic, partially highly connected abundance and profusion of interconnections and parallel wirings. On the one hand, I would say that this is certainly right, but this seems to me to be implied in Koestler’s model. On the other hand, I would criticize that the approach of bi-sociation from just two planes or areas is too restricted to cover multi-association processes and also that this kind combinatorial approach would easily mislead one to just another “digital” or combinatorial psychological or now rather methodological approach for covering the main aspects of creativity. This again seems not to be enough to intensively deal with the creativity of extraordinary geniuses.

²Weisberg [10,11] would deny even the existence of geniuses and the respective exceptional personalities as well as the extraordinary visions and experiences of heureka. He would instead rely on normal successive acceptance and continuous development of “elements”. Apparently, he does only honor the combinatorial creativity and what Simonton calls “combinatorial gymnastics”. However, he does generalize this from too few single cases (in science e. g. from Darwin and Watson-Crick). A mathematician like Ramanujan would have gone far beyond the scope of such combinatorial gymnastics. This would certainly also be true in Mozart’s case.

In any case, one should not reduce this approach just to two planes or areas (as suggested by the word “bi-sociation”). Instead, we typically or frequently have to deal with multiple collisions, collusions (“playing together”), confounding phenomena, interconnections and inter stimulations of many kinds and planes – not just with an “extrapolation” within one or two planes or an “interpolation” or a transposition between just two planes. This kind of sketch would to my mind indeed too much simplify the general situation of extraordinary creativity. Instead, we have a rather multifarious and mostly unconscious interplay of many factors not restricted by the proverbial narrowness of consciousness. It might be almost infinitely many planes crosscutting each other, flexibly intermingling in confrontation and collision zones to lead a solution or fusion in the form of a sudden insight.

Moreover, Koestler does not pay attention to the creative building up of meta-levels which seem to be very characteristic for theoretical and intellectual abstract insights by the way of going to meta-level models, analyses and schemas [13-17]. The creative establishing and shifting up of meta-levels is to my mind very characteristic for intellectual discoveries, particularly very fundamental ones, for generalizations and overarching insights beside the just horizontal “bi-sociations” of different disciplines and perspectives. The transcending interpretation through and by the way of using higher levels is a decisive characteristic feature of intellectual creativity beyond Koestler’s extrapolation, interpolation, transposition and transforming (apparently just oriented at one-level-explanations). The ascent or what I call creative ascent means going to an abstract modeling or abstracting more general concepts; it also means the overarching and summarizing of trans-level concepts on different planes and meta-levels: It seems to me that surveying and overarching specific levels and planes is particularly important for novel intellectual and far-reaching insights: we could here talk of “transcending” instead of just “transposing” or “transforming”, rather “meta-transposing” or even heaving up to higher levels, i. e. of meta-interpretations under higher-order and higher-level perspectives (like a higher-order approach of consciousness in the philosophy of mind). Creativity, particularly with respect to intellectual endeavors, insights and activities is really not restricted to just different perspectives within the same plane or level. It is frequently the meta-interpretations, the creation of new planes and levels which is especially creative and characteristic for an “over-combinatorial” creativity³. Perspectives are indeed usually leveled ones, if not multi-leveled, i. e. level-overarching patterns. It seems not only necessary to put on a new “think(ing) cap” (as the science historian Butterfield has labeled it [9]), but the mental transpositions within the planes of the scientists would not simply originate from new observations and additional data, but mainly by ordering the bundle of data at hand to a totally new system of mutual relations by giving them a new framework. This indeed would be a new “thinking cap”: NEW THINK!

Therefore, Koestler’s decisive idea that two different as yet unconnected systems of experience are conjoined by such a flash or lightning of inspiration metaphorically combining two or three orthogonal planes in a specific line or point with one another has to be extended or generalized, although the basic idea of a certain kind of association (not just bi-sociation, but multiple association!)

of different experience systems is certainly valid and intriguing as a guideline or model to capture processes and ramifications of creative processes and developments. However, such a conjoining or crosscutting can in the case of real creativity not just be conceived of as the adding of values and magnitudes, but it certainly amounts to a real integration and structural establishment of internal mutual effects, interferences and mutual fructifications of perspectives which cannot just be understood by a model of adding up factors. But this can indeed also be critically remarked with respect to Koestler’s own approach: Even many creative “bi-sociations” cannot just be restricted to just adding up or criss crossing or cross-cutting different planes or a certain kind of combinatorial establishing of relations, but usually the circumstances in the case of real fundamental creativity processes are much more complex and indeed more interesting than just conjoining two planes or factors in a certain kind of “fusing” process.

To be sure, Koestler highlights the deeper perspectival transformations and “fusing” interpretations by metaphors, analogies, analogical concepts, comparisons, transformations, criss-cross comparisons, cross-way thinking and cross-way interpretations as well as certain conflicts between partial perspectives and approaches, but also conflicts within the creative personalities themselves (as captured by psychological research and theories, see Weisberg, Simonton, Gardner). All these factors are due to intensified or enlarged tensions sometimes eventuating in a blockage, but now and then amounting to a higher probability of such a multiple association or collision of insights to render a real creative discovery or mental “strike”. One could even speak of a collision of conflict-bound preliminary or initial constellations of factors and/or of a collusion, a playing together or interconnectedness comprising the interaction of the respective different experience systems sometimes leading to an associative “fusion”. We often encounter the exchange of different codes at times even arriving at the level of consciousness. Fixed strategies are rendered flexible; for that one has typically to go over to another framework. The changing and modification of frameworks is very important in fundamental creativity processes. However, you cannot predict the solution or solubility of a complex multi-association problem: It cannot be causally explained or deduced nor combinatorially and mechanistically produced or rather enforced. Koestler’s approach does not render an explanatory theory, but rather amounts to a kind of phenomenological attempt to describe the respective “striking” “burst” or explosive “fusion”. However, you cannot reduce and restrict such “mental lightnings” or other “striking” events just to combinatorial gymnastics as mentioned. (This is also true for Simonton’s and Koestler’s theories.) “Bisociating” or even multiple associating is tendentially oriented at combinatorial manipulation of approaches and the respective accesses to and from different experiential systems in a rather systematic combination. Yet, frequently there is really a random coincidence, if not even typically triggered by external circumstances. Thus, psychologists and sociologists of science like Merton [18] talk of “serendipity”, when such a stimulating experience from the environment or socio-cultural vicinity has a “fusing” effect. One may try to model such stimulating experiences from the environment by analyzing the factors rendering such a collusion more probable, by conceiving of

³According to Kant’s theory of creativity and originality of the genius, it is characteristic that a genius not only has new insights and findings within a field, but that he or she would set or change the rules of new areas in the historical development of the arts (see his Critique of Judgment, §46f). The same is mutatis mutandis true also for intellectual approaches and in particular also for the transcending of limits and frontiers between different areas, e. g. in science and philosophy.

a “mental strategy” of somehow scanning or sampling features in a subjective internal mental map or by wandering around within a “virtual inner landscape”, as Koestler describes for goal- and aim-oriented thinking, e. g. if we direct the focal beam of consciousness on different parts of the internal map, try to explore it. But all this are but metaphors which do not suffice for a really theoretical grasping - or even “explaining” in a stricter sense - of the factors and phenomena. They just try to circumscribe something which is really undepictable “from outside” by using certain metaphors. Reference to the unconscious, to crosswise thinking and interpreting, even “thinking away” or pushing aside would take an intriguing role to play.

There are some indirect strategies to induce or engender the necessary associations for problem solutions as shown by autobiographical reports related by the mathematician Poincaré [19,20]. These strategies include indirect, cross-way thinking or thinking away and intellectually pushing aside in order to increase the probability of an essential strike of insight by extending the time and situation of incubation: “Luck would only hit the prepared mind”, as Louis Pasteur had said.

As we saw, Koestler’s model is too simple, just relating to two intersecting levels or perspectives and restricting the preparation of the striking creativity situation to just combinatorial procedures. In particular, he has not really taken into account higher and more abstract levels. He did not see that besides horizontal “bi-sociation” and association there is also vertical association, even meta-level multi-association from meta-theoretical and meta-linguistic perspectives which render some perspectives of lower-level phenomena differently. We may also creatively associate in a vertical direction or manner. We could even speak of “meta-associations” and of methods to create meta-associations. Thus, we have to generalize and so to speak lift up Koestler’s methodological model to a multi- and meta-level theory of creative processes not only looking for variations, interpolations and extrapolations as well as transpositions and transformations, selections etc. within the same level or two planes to collide, but also to overarching wider and higher “super-perspectives” and to attempts and strategies of ascending to higher levels of modeling, abstract structuring and to the flexible usage of metaphors and meta-metaphors, even of what one can call “creataphors” (see below).

What about creativity on the side of the artist? Is it just similar to the creativity of the scientists? Koestler indeed forwards this thesis. He thinks that the development of the creative - the creative process as well as the creative personality - would be very similar in science and art: Equal observations are valid regarding the “strikes” of new ideas on the side of the scientist as well as the artist. Fundamental novelties would emerge, if sudden transpositions of awareness occur and the emphasis of an as yet ignored part of the spectrum of human existence are highlighted. They would originate in science as well as in art by an unexpected connection or even “conwiring” of as yet separated systems by way of “bi-sociation”: All great discoveries of science as well as of art would result from such “bi-sociations” and associations. It would be part and parcel, fate and privilege of scientists and artists to have to walk on these

intersecting lines like on a suspended rope. We have extended and generalized as well as modified this associative model in the direction of multi-association and vertical leveling. But there may be another grain of truth in this similarity between both areas of creative activities still at least with respect to the really creative processes, developments and personalities. In other words: the creative phenomenon would be in all these areas of the same structure; the causes of the creative processes and acts seem to be mainly of like structure - including the motivation of the creative processes which appears to be really similar in both fields⁴.

New truths and new beautiful phenomena are only gained by creative acts and they have themselves a “creativating” effect. However, it is important to the pioneering activities and trail-blazing or epoch-making new effects, perspectives, approaches etc. to describe really fundamental creative processes. Just mirroring and re-experiencing truth or beauty already known is not called creative, but just a surreptitious re-experiencing of former creative processes, although such a “re-living” of creativity is motivating and important for all of us as normal persons - even for the real creative ones outside of their very own fields. Thus, originality, the novelty has to be added, in order to amount to real creativity.

But even such perspectives which are legitimate in principle, do not suffice, or so I think. We have to add at least the following characteristics and (e)valuative perspectives to capture real creative developments:

1. The principal orientation at configuration, wholeness, totality (particularly with respect to especially grandiose creativity [12];
2. The novelty in principle. It is certainly included in the requirement of originality, but still too general: It has to be added that the development of new perspectives, new modes of representations and perspectives, new rules, new fields are indicative of genuine high creativity. Originality does not consist just in elementary extending approaches on the same plane or establishing new combinations of already known factors and solutions, but necessary for real creativity of high standards is the establishment and origination of new basics, new foundations, new fundamental perspectives and new levels and meta-levels of interpretation: In sum, it is new perspectivity and a new perspectivism which count.
3. Respective insights hold for the conception of new rules of interpretation and creation, if we follow Kant’s conception of the genius (Critique of Judgment, § 46f); this is also true for interpretations and meta-interpretations. These new rules constitute not only a new special or “individual rule of the game”, but a total new direction of art (we might, e. g. think of the transition from painting on canvass to an art of reliefs and collages extending to the three-dimensional space and integrating that with traditional pictures, or we may imagine the example of twelve-tone music). All this amounts to the establishing and implementing of new rules or new rules of evaluation leading of course to radically new styles and subsequently to new developments and branching areas. The genius according to Kant establishes himself or herself new rules and creates by this also new standard of valuation and evaluation. This

⁴Koestler goes back to Freud’s idea of the “oceanic feeling” being the climax of satisfaction and the most sublime expression of the integrative striving of the human being motivating the scientist to look for ultimate causes, for truth and also the artist to try out the ultimate realities of what can be experienced by producing works of art. Kepler related the intoxicating feeling carrying in a way to “the experience of wonderful clearness”, beauty and truth at the same time when he had discovered his second law. Similar reports are due to Poincaré and many creative artists.

kind of neo-regularism or neo-standardism could be analyzed and related to the meta-levels of analysis and interpretations as implied in the approach of methodological schema-interpretationism.

4. The encompassing phenomenon of creativity and the creative would thus reach across individual areas rendering by this something rather philosophical. This is expressed by the fact that all abstract models and higher levels of interpretation and their respective developments are leveled over one another. The respective meta-perspectivism might lead to level-transgressing creations, so to speak to meta-creativity. This might even result in an interdisciplinary overarching view from the perspective of a philosophy of creative activities yet to be developed concentrating on the quality and similarity of phases, kinds and structures as well as motivational basic factors of creativity and the creative in very different areas.

IS THERE A CHAOTIC CREATIVITY?

Cramer [21]⁵ thinks that the beautiful is to be interpreted as kind of tight rope walk between order (or the ordered) on the one hand and the chaotic (chaotic phenomena) on the other. Especially the intriguingly ordered structures of fractal geometry are relevant here exposing relations and correlations between the physics of complex dynamical systems with fractal (chaotic) attractors (so-called “strange attractors”) and evolutionary biology. Because all developments in living systems generally depend on the current state at the time of the respective evolving systems there are consequently formal identities or at least analogies. Cramer tries to apply the theory of the so-called deterministic chaos to the transitions between order and chaos in arts and the reception of the beautiful as well as to the relevant experiences, notably aesthetic experience: “Aesthetic” beauty originates wherever chaos would border on order and order on chaos. Beauty is equal to the open, irrational order of the transition and thus according to its own principle transitory, fragile, endangered and unique – as life itself. Beauty can only exist as living beauty”. This certainly reminds us of Goethe’s statement that beauty can only be realized (“realized” in a double sense!) as “Gestalt”, which lives, develops, always modifies and renovates itself (“prägende Form, die lebend sich entwickelt”).

According to Cramer fractal geometry and the mathematics of chaotic systems and phenomena (“procreating the beautiful form”) would allow by its non-linearity to describe nature more effectively than the Newtonian approach in physical theory. Reality is non-linear whereas linear equations and superpositions of magnitudes and linear combinations of them are just a very simplified model.

A similar phenomenon is to be encountered with works of art: “Novelty originates in going through chaotic zones. Art creation is an act in the highest possible neighborhood to ›just not yet chaos‹, “the work produced in an artistic tight-rope walk at the edge of chaos would display the real moment of the artist” - a climax ever conjured up (e.g. by Lessing) - “and it is exactly this that would render it a work of art, namely that this moment is fixed so that it can never deny its subtly endangered creative process any more”. The process shows at the same time the orientation at the symmetric and ordinary rule-governed structures as well as the

minor deviations with at times surprisingly new original variations. Total symmetry would be boring (as known from psychology of faces with identical hemispheres mirrored): In other words: it is only the deviation and modification from the symmetrical and rule governed structure and/or even the fractal self-similarity that would really enliven the work of art.

If we would like to further develop the ideas of self-similarity towards an aesthetics of a chaos-theoretical and fractal-geometrical approach we have first of all to ask ourselves, what such an aesthetic would consist in. Does it depend on the fact that we in our re-experiencing of structures are biologically preprogrammed in a sense that our neuronal assemblies and their stabilized plastic interconnection in the brain tend to follow such ramifications in that they would display similar oscillations and stabilizing oscillatory processes like such dynamic systems. Holistic interconnections and feedback processes seem to play a decisive role in both areas. Brain patterns are according to neural scientists stabilized and swung in by such oscillations and respective coherence of firing and spiking rates according to what we can call “a hire and wire” principle of a dynamical oscillatory kind. Researchers like Walter Freeman Christine Skarda 1985, Paul Rapp and others try to discover and identify strange attractors that is chaotic and fractally structured attractors within the brain itself. One could then at least in principle have the starting line for such a thing as a fractal aesthetics relying on a fractal basic model structure and background chaos of brain processes rendering understandable why we would evaluate such quasi natural, fractal, very ramified, dynamically complex structures as “beautiful”. Cramer [21] thinks that chaos research would contribute to a new understanding of the aesthetics of the beautiful and to the respective interpretations of the arts of different times, cultures and schools [22,23]. Regarding our topic of genuine creativity, the more interesting partial questions would read: what amounts to the difference between fractal computer-produced shapes and structures on the one hand and really highly creative art on the other? What is the difference between a computer-engendered graphics, or a series of “pictures” drawn from the edge of the Mandelbrot set and the spiral shaped seahorse like structures of some pictures of Picasso or Van Gogh? According to Briggs [24] the representation of a genuine work of arts seems to be very “catching” because it accords to the receptivity of the brain, but on the other side the greatness consists by contrast in resisting to this customary tendency of the brain by deviating from the normal standard form of self-similarity and the expected level-structure, i. e. deviating in a more surprising than in a systematic way. It seems that “a great work of art would provoke in every (novel) encounter in the human brain a new, very strange attractor”. Therefore, one would again and again in one’s reception experience such a varying and varied creation or pattern experience in ever new ways. The exceptional, the greatness of a great work of arts resides in this ambivalence which on the one hand borders on artificial self-similarity, is so to speak an expression or instantiation of it and its ever-reproducing or repeating patterns and structures, from which however the work of art deviates notably again. In that manner it would in a typical way arouse and enforce again and again a kind of new reflectaphoric⁶ tension displaying and reconstituting

⁵ Cf. also Cramer/Kaempfer 1992.

⁶ An artificial juxtaposition with many self-similar forms, ambivalences and dynamical tendencies – even on several levels of sensing and interpretation, are called by Briggs [24] “reflectaphors”: Not only forms are self-similar to one another and are mirrored in those as in a metaphor, but also a tension between “similar and different forms of expressions”; this “reflectaphoric tension” would “shake” and move our understanding with a mixture of amazement, respect, bewilderment, perplexity and the sentiment of unexpected truth or beauty.

itself on ever deeper levels or with the further development or new encounter, respectively. Great works of art do use self-similar forms and colors, but they would indeed vary these deviating from the ever-relevant rhythmical regularity. They withstand or resist to strict repetition, they do not just strictly mirror the self-same partial structure, though they might again go or feedback on these patterns in a self-reflexive manner by creatively modifying and varying the structures. They would always engender tensions of a new kind, engendering stimulating ambivalences, provoking them, alluding to them. Such a new variation of nuances is the factor which is also found in the new tension and deviations within the usage of creative metaphors which Briggs and Peat call "reflectaphors". They are metaphors or metaphor-similar structures deploying a special tension in the interplay of similarity and difference in kind and structure, of harmony and dissonance: This "reflectatoric" or "reflectaphoric" tension is dynamic, provokes and engenders an ever new kind of vivacity, even in experiencing, perceiving, sensing. One would experience astonishment or perplexity entertaining unexpected perspectives and points of views. Therefore, according to Briggs artists have to find the right distance between the forms of expressions of their own reflectaphors in producing works of arts by reaching for the right balance between harmony and dissonance in order to create the tension and multifarious ambiguities which an artwork can display. This right balance would outstrip the processes of thinking and prevent the process of habituation. For it would enforce our understanding to perceive words or forms or sequences of tones in such a way as if it would be the first time, each time in a new way notwithstanding how often we did perceive them already before⁷. One could also emphasize here that we do not deal just with the balance on one and the same level, but that a contrasting relation between different levels and meta-levels of tension forms is relevant, that harmony and dissonance on different levels and planes would of course also play an overarching role as mentioned earlier with regard to the levels of creativity in intellectual, aesthetic, humorous productions and activities. We might conceive of a "creative ascent" overarching the one-level balance and extending to a "meta-balance" by stabilizing and interpreting meta-balancing processes as mentioned with respect to meta-interpretations in interpretive level transitions. Now only this is to be applied to the reflectaphoric tension and play between different functions of the reception – as well as creation – of a great work of art. Artists and poets would according to Briggs (ibid.) "find the reflectaphoric harmony by trying out the distance between self-similar conditions" and the respective deviations and conscious differentiations "in their own understanding". "Does a metaphor again lead to a surprising effect even if frequently re-read?" If that is the case and if the metaphor is different within the overall self-similarity of the "reflectaphoric tissue" and if its ambiguities do interact with other forms and gestures of the work slightly modifying the self-similarity at large, then a work of art is "living and dynamic".

CREATIVE METAPHORS AS CREATAPHORS

In his work on cognitive theory of metaphor MacCormac [25] accomplished an extension of metaphoric processes and operations from the linguistic and writer's perspective to pre-linguistic processes of imaging and thinking which seem to be of special importance for the understanding of creative activities and processes. According to his approach the creation and usage of

metaphors have to be conceived of as processes not just restricted to the level of language, but on three related levels, namely besides the speech and "language process" as a "semantical and syntactic process" leading to a linguistic explanation and especially as "a cognitive process set in the context a larger knowledge evolutionary process": establishing metaphors is not only understood as "a semantic process", but also explained "as an underlying cognitive process without which new knowledge might not be possible". He relates as examples of that some metaphors like the famous one by Charles Sherrington: "The brain is an enchanted loom where millions of flashing shuttles weave a dissolving pattern". The function of metaphors would consist in engendering a tension between the two relata, the "referents", of the metaphor, i. e. they would display a "diaphoric quality" which may lead to a new representation, a surprising opposition, in any case to a tension with regard to the adapted or habituated scheme, provoking at times emotional restlessness. The tension originates from "an apparent semantic anomaly rather than from emotional discomfort": "The psychological tension arises from a semantic tension" [26].

Whenever a metaphor dissipates within a language community the speakers and hearers are getting used to it so that it by and large loses its semantic and psychological tension and may lead to a new meaning variant in the dictionary. According to MacCormac many metaphors start "their literary life mostly as diaphoric, i. e. productive or prolific metaphors (though they always have also epiphoric quality); later on, gradually they would then become largely epiphoric ones, by expressing analogies rather than suggesting potential meanings and would finally make their entrance as "dead metaphors" within the corpus of normal language. Metaphors die if at least one of its referents adds a new lexical meaning to a dictionary entry" [24,25].

MacCormac's claim amounts to the idea that metaphors as the basis for conceptual semantic anomalies are engendered by a surprising, more or less conscious opposing activity of the referents or relata whereby especially the identification of dissimilarities would allow the possibility of transforming these, a relationship of which one had not yet thought before; by this, "the creation of a new meaning" is established and "ensured". Creativity lies in the respective selection of suitable "referents" displaying or, rather, "producing" "enough similarity for recognition" and re-identification as well as producing sufficient and "the right kind" of dissimilarity in order to engender new "hypothetical possibilities, say for interpretations and research or artistic variations". This would apply both to the establishment of new metaphors and perspectives in all creative areas of association and imaging and for the finding of new basic ideas in scientific research as well.

The decisive moment is that without metaphors neither the creative production of new scientific nor of other hypotheses and comparisons would be possible and that therefore semantic modifications in language would be drastically restricted. Furthermore, without any account of metaphors, the intentional conceptual construction of semantic anomalies one would hardly be possible and able to speculate about the unknown at the borderline of and dependent on the known knowledge or intrude to the area of the yet unknown:

Thus, "metaphors "perform the cognitive function of creating new meanings through the juxtaposition of referents in language:

⁷My relatively liberal re-translation - also in the following.

Without them, humanity would find it difficult to extend its knowledge into the unknown, and language would be largely static. The diaphor offers the possibility of taking a familiar referent and transforming it by juxtaposing it with a referent or referents not normally associated with the familiar referent. The combination of referents that produces semantic anomaly forces the hearer or reader of a metaphor to locate the similarities among the attributes of the referents as well as the dissimilarities. Not only does the recognition of similarities not seen before producing new insights or new meanings, but especially the identification of dissimilarities allows for the possibility of transformation of these dissimilarities into previously unthought of similarities, thereby ensuring the creation of a new meaning.”

Highly creative persons seem characteristically to engender and use frequently metaphors in language and above all metaphoric imaginations referring to deeper processes. The process of metaphor construction or establishment is also a process of new cognitive associations. MacCormac stresses that the creative formulation of new metaphors would expand the imagination most effectively by using the most unusual combinations. How these unusual and vivid combinations of concepts are to be expressed in words would remain a secrecy. “Were he a painter a poet would not be compelled to dress the non-verbal intuitions in words, but since language is his artistic medium he has to comprise all his concepts in language”: Therefore he would struggle for “metaphors” in order to render “greater suggestive force” to language. A poet therefore would probe and prove one of the “miracles of language, namely its plasticity and creativity, its capability to grow with, in and by the mind of a skilled language user. The distance between the imagination of the poet replete with fantasy and the banality of normal speech would determine the battle about artistic moods and ways of expression. A poet permanently pushes on the limits of normal language beyond the usual framework. Whereas the gap between fantasy and usage becomes narrower whenever the poet creates new metaphors for expression, ironically victory eventually becomes a kind of defeat, because the poetic language is not any fresher and more unused. He epitomizes that “the poets have either always to create new vivid and sparkling visions, or the creations will indeed due to their success wear out and become customary” or even vulgar. It seems to be a true dynamic of wearing off and using up the creative potential and semantic visionary content of metaphors. This dynamic has certainly decisive and determining influence on aspiration, fantasy, visionary force and potential as well as originality and novelty. In short: new fruitful metaphors setting off a creative dynamic of opening up new realms and combinations of ideas typically would wear off after having become customary or all too usual. That’s the fate of inventing new styles, setting new rules and widely disseminating the results of creative productions. The dynamic certainly reaches far beyond the world of poetry and the fine arts, it also affects the creative production in other realms like the forming of new ideas, new visions in all creative fields - even in philosophy.

This certainly is not only valid for the motivation and aspiration of the creative person and language, for the poet to design and grasp new syntheses, but also for all other realms of creative production, for the connecting activities regarding representations and concepts, for the further development of styles, perspectives, modes of experiencing and sensing in world interpretation notably in philosophy, scientific discoveries, technical developments, mental imaging, above all of course in the fine arts.

All creative realms and processes of the above-mentioned associations and multi-associations, the development of new perspectives on higher levels, also the phenomena of creative ascent (not only transpositions on the same plane) would correspond with this pattern. (This might even be referred to the interplay of different modes of the senses known as synaesthesia, but also to imagistic or pictorial representations as studied by Kosslyn [27]. Generally speaking, the idea that metaphoric processes are the basis of creative processes and that the conception of the metaphoric is not just restricted to external language and pure syntactical-grammatical forms seems to be very plausible: Even if we would not identify all metaphors in the narrower sense with these creative processes of multi-associative and deep psychological provenance this might be still true although we should introduce a new expression for it, e. g. “creataphors” as I would like to say which means the conception of creative cognitive and comparison engendering activities in connecting usually unassociated concepts and representations or imaginations by oppositions and comparisons regarding similarity and dissimilarity of characteristic features, properties, modes of experiences etc. leading to a dynamic development of new perspectives in creative activity and knowledge of any kind. Instead of the “metaphorical consciousness” hypostatized by Jonathan Cohen one could more specifically for creative persons and attitudes talk about a “creataphorical consciousness”, i. e. a consciousness and a vivid dynamical tendency are always necessary to use and establish new tension-generating metaphors, “reflectaphors” according to Briggs - Peat [23] as vehicles of the creative. Indeed, the really creative metaphors truly leading to novelty are creative reflectaphors and as such creataphors, i. e. innovative creative metaphors of a dynamic provenance.

It would certainly amount to an interesting task, to explore and explain mental and psychical functions of the creataphors and reflectaphors within and corresponding to the creative activity of the artist or poet or scientist as well as the creative philosophical thinker. Thusfar we have but very few pioneering studies here.

Generally speaking and summing up, it should have become clear that the development and utilization of creative metaphors does indeed shed a sort of explanatory, at least plausibility-enhancing illustrative light on the origination and the course and continuing sequences or flow of creative processes and on the conceptions and interpretations entertained by creative persons, both thinkers and artists. Therefore, MacCormac’s extension of the originally only language-oriented theory of metaphors towards a more general theory of creativity regarding metaphoric imagining and thinking seems to be right. However, it should furthermore be extended towards creative actions and activities. One could and should, however, terminologically separate it from the linguistic connotations in the narrower sense, by possibly speaking of “metaphor in the narrower sense” with regard to the linguistic realm and of creataphors, i. e. dynamic, progressive and further-reaching as well as guiding creative reflectaphors of representations and imaginations or even judgments in a Kantian sense, when addressing a general conception of a theory of creative processes not only of cognitive, but also of acting and creative (or in a wider sense “poietic”) metaphors and reflectaphors.

Creative games and plays, i. e. the playfulness of create, creating something new not only in knowledge and cognition is not to be found in Caillouis’s famous list of the kinds of play and games. Indeed, the really creative – by the way also the creative play of the capacity of judgment (“Einbildungskraft”) à la Kant - is not mentioned at all

by Caillois [28]. The creative games (“Kreativspiele”) have to be characterized by another feature: “creativitas” (creativity) however is no expression in classical Latin, but in new classical Latin “creans”, the creating, would be mentioned to be distinguished from that what is or was created, the creatum (after Whitehead). The simile and metaphor of play and games is obviously a very encompassing phenomenon in human life. Frequently this idea generalized to cover some of the most encompassing phenomena at all. This is even true for some natural scientists, e. g. Manfred Eigen and Ruth Winkler who developed the idea that “Spiel” (“play”) would be in a rather extended sense the fundamental principle of creation of life forms and dynamical shapes almost in Goethe’s sense of “shaped form, which develops in a living (and lively?) manner”. Playful creations may be products of a quasi Darwinistic selection principle or a dynamic of self-organization on a rather generalized level of interpretation. However, to my mind one should proceed by rather differentiated distinctions: Game and play amongst conscious human and higher developed animals (like dogs and primates) are certainly different from the mentioned “play” of physical or chemical elements in a dissipative, dynamic system of deterministic provenance. Correspondingly there are differences as regards creation as selection with respect to the concept of creativity. According to Darwinism the Darwin-selection is but a reproduction, “descent with modification by natural selection”, i. e. selection in a specifically biological hereditary sense. The valuation and modification here enter rather at random. It is not a controlled interaction and reaction, but much more of a random selection, random modification etc. By contrast, an intentional-productive and strategic creation would much more neatly correspond to the usual concept of creativity. Here we find no selection with just random modification, but an election with strategic modification, that is a rather intended and planful modification under strategic, at times conscious variations. This engendering of variants is certainly much more characteristic for creativity in the arts. Therefore, one should at least ideal-typically distinguish between the mentioned random creativity in a Darwinistic and neo-Darwinistic sense and a designer or design creativity under these strategic intentionality-guided perspectives.

PRODUCING, INITIATING AND USING CREATAPHORS

To be sure, philosophical reflection is also dependent on ever changing and at times new perspectives, that means it is creative in this sense. Philosophizing is not just mirroring (somehow passively reflecting) the given, but philosophizing always amounts to interpreting, involving active conceptual work, or even changing perspectives, gaining new vantage points, limiting experiences and level transitions or transgressions. Genuine philosophizing is creative, creatively transcending levels and limits by, via and in interpretations and conceptual designs. Philosophizing as the activity of transcending interpretation should at least be creative in that sense. Indeed, philosophy at its best is a creative, transcending interpreting activity, it is trans-interpreting and meta-interpreting. Similarly, to other creative realms and other risks of creativity also the philosopher is required to take risk, to develop designs, creative activities and creative acts. We should internalize the plea suggested by Weiss [29] that there is a characteristic, “unique” creative impulse embodied in any creative activity whatsoever far beyond the usual areas of creative production like the arts. The creative basic impulse can of course only be captured and grasped as a certain kind of theoretical construction or interpretative construct [12,30-32] and need not be described as an ontological real causal entity per se or as such. It is necessary to develop a creative philosophy of creativity

itself taking into consideration modern methodological insights like the one about the constructive-interpretative constitution of all knowledge and “Erkenntnisse” as well as action structures, i. e. of all phenomena of “grasping” (in a double sense, see my book *Grasping Reality*).

As a take-off and stimulation guideline one might use the Darwinistic metaphor of evolution and combine it with the shifting and grading up of levels and the transition of limits between these as well as with symbolic meta-interpretations. There is obviously a structuring tendency in the universe displayed by processes of self-organization to build certain systems with emergent properties [33] which are the basis of all structures, shapes and forms stemming from processes of interaction and developments as well as chance encounters and interstitutions. That much, Whitehead’s basic pattern may be upheld (a Darwinistic perspective, so to speak) without here already taking into consideration creativity in the narrower sense. Creativity would then – thus the rather terminological proposal – be given only, when not only some chance activities are organized in a certain goal-oriented or teleogenic activity as such, but if this activity is taken up and performed by a creator and more specifically, if fundamentally new structures and phenomena are implied which are due to Whitehead’s principle of originality or Weiss’s factors of excellence and creative ventures. It has however to be added, that this is not just the living out of or living it up to a creativity impulse and creative drive as such in works, but that also conceptual developments like theories, new perspectives and approaches and last but not least philosophical designing conceptualizations and theories may be creative, too. Creativity is possible and especially important in transcending limits and levels as well as strata of perspectives. The very creative moment in philosophy consists in the activity of transcending meta-interpretation as mentioned above. Indeed, the transition across levels is only possible by symbolization and the shaping and modification of metaphors. The creataphors as tension-maintaining, ever further stimulating dynamic metaphors are centers of creative processes and acts. Creativity is here not just characterized by novelty, possibly (but not always) by goal-orientation and conscious orientation at end states, objectives or outputs, by prospective excellence and originality, but also by a continuous exploratory activity of dynamic curiosity. This is at least true for creative philosophers continuously thinking ahead, seeing and searching for new problems, deeper questions and more overarching perspectives to get to higher levels and strata of interpretations and generalizations if not universalization.

Humans as the meta-interpreting [16,34], continuously symbolically transcending beings are the creative beings par excellence. Human creativity is per se semper creans. Expressions like “creative ventures” [29-35] and “creative ascents” [36-42] would intriguingly reflect this. According to this general interpretation one should certainly not neglect a specific fostering of high creativity. On the contrary, it is necessary to open new perspectives, developmental fields, scopes and alleys for potential creative capacities and people including chances for creativeness. To open and maintain these opportunities by engendering stimulating vantage points, affordances (in Gibson’s sense) as well as instigation and motivation seems to be of utmost importance: Homo semper interpretans, ludens, creans: The human creature is always the interpreting and meta-interpreting, playing and creative being.

We may add that especially creative reflectaphors consist in seeing and establishing similarities and differentiations from different perspectives on diverse levels and overlapping strata. If

stimulations towards new developments are based on transpositions to other perspectives and towards higher levels and strata, then we have a particularly creative, i. e. creativity-stimulating, reflectaphor. I proposed a new word for this: "creataphor". "Creataphors" certainly are also metaphors - however special ones which would overarch perspectives, bridge and transform as well as maintain tension within a stimulating play between similarities ("homeotaphors", "syntaphors" after MacCormac) and dissimilarities ("diataphors", dissonances). Creataphors would constitute creative plays and games and vice versa. There is also a creataphoric process or a creataphoric instead of just a metaphoric and reflectaphoric activity which is at stake here. I think that this is a rather interesting idea relating back to the human as the creative being who has not only the capacity to engender metaphors and combinatory creativity, but also creative reflectaphors and creataphors). Humans are creative and creataphoric beings. This is to be understood as a particularly outstanding property and characteristic feature of the meta-interpreting being. In other words: the creative meta-interpretational moment of the creataphors would characterize these special capacities of a human being with respect to dynamic, creative representation and creative production ("Gestaltung") as opposed to mere usage of symbols or just interpretation restricted to a unique given perspective. It is the capacity to transcend special perspectives, to arrive at higher perspectives, levels, more abstract interpretative strata and the capacity to change approaches, perspectives and points of view as well as vantage points on one and the same level [42-55].

Creativity is moreover symbolic authentic activity, Eigen-activity and Eigenleistung: such a philosophy of being creative would at the same time amount to a philosophy of an extended personal and authentic Eigen-activity and performance and achievements of humans, as subjective, social beings or even artificial interpreting systems. The capacity to design, establish and maintain as well as a change metaphors, reflectaphors and creataphors is indeed a kind of characteristic anthropological feature since it is unique for the human being that only (s)he can discover analogies, think in metaphors and all kinds of different modifications of these (from syntaphors, synphories, diaphors as well as reflectaphors and creataphors) in order to develop new creative metaphors allowing to extend our knowledge into the realm of the as yet unknown. This also refers to higher-order representations, meta-symbolizations and abstract meta-levels as particularly at stake in philosophy and epistemology as well as in the methodology of actions and design. Only humans are capable to transcend any positions, levels, strata, perspectives to reach ever new viewpoints and vantage points. The drive to be creative, to transcend limits and levels if in a symbolic manner is indeed characteristic for any creative and aesthetic activity, for being creative as we saw. Innovative human life turns out to be possible only if it is embedded in a sort of ongoing creativity of at least a middle range and if this creativity is exercised and continually practiced [56-65].

It is indeed a kind of "creative play" ("Kreativspiel") with metaphors, namely reflectaphoric metaphors and especially the creative reflectaphoric metaphors, i. e. creataphors. We could go as far as to ascribe to humans (at least to creative humans) a creataphoric consciousness as a specification of the mentioned metaphoric consciousness (after Cohen) understanding the human being as the potential author and agent who is capable of creating creataphors, being the specifically "creataphoric" or the "creataphor(is)ing being". Creativity is a permanent and continuing creative process, a kind of an ongoing transformation of creataphors, the capacity and motivation to reach beyond old

or "dying" metaphors and reflectaphors by going on with the play of creativity. The meta-interpreting being is the creative and "creataphoring" being at the same time: homo creataphoricus [66-92].

REFERENCES

1. Lenk H (2000) *Kreative aufstiege*. Frankfurt/M, Suhrkamp, Germany.
2. Sternberg RJ (1999) *Handbook of creativity*. Cambridge, London.
3. Sternberg RJ (1988) *The nature of creativity*. Cambridge, London.
4. Sternberg RJ (2003) *Wisdom intelligence and creativity synthesized*. Cambridge, London.
5. Sternberg RJ, Lubart TI (1995) *Defying the crowd*. Free Press, New York, USA.
6. Lenk H (2000) *Kreative aufstiege*. Frankfurt M, Suhrkamp, Germany.
7. Simonton D (1988) *Creativity leadership and chance*. Sternberg, USA, 386-426.
8. Hildesheimer W (1977) *Mozart frankfurt*, M Suhrkamp, Germany.
9. Koestler A (1966) *Der göttliche funke*. Bern München, Scherz, Germany.
10. Weisberg RW (1986) *Creativity genius and other myths*. Freeman, New York, USA.
11. Weisberg RW (1993) *Creativity beyond the myth of genius*. Freeman, New York, USA.
12. Polet S (1993) *Der kreative faktor*. Bensheim Düsseldorf, Bollmann, Germany.
13. Lenk H (1993) *Interpretationskonstrukte*. Frankfurt M, Suhrkamp, Germany.
14. Lenk H (1993) *Philosophie und interpretation*. Frankfurt M, Suhrkamp, Germany.
15. Lenk H (1995) *Schemaspiele*. Frankfurt M, Suhrkamp, Germany.
16. Lenk H (1995) *Interpretation und realität*. Frankfurt M, Suhrkamp, Germany.
17. Lenk H (1995) *Das metainterpretierende wesen*. In: Allgem Z(Eds.), für Philosophie, Germany. 39-47.
18. Merton RK (1957) *Social theory and social structure*. Glencoe, Free Press, Scotland.
19. Poincaré, H (1921) *The foundation of science*. New York, USA.
20. Poincaré H (1983) *Science and method*. New York, USA.
21. Cramer F das Schöne das Schreckliche und das Erhabene (1994) 'Natur' im Umbruch. In: Bien GG, T Wilke (Eds.), Stuttgart-Cannstatt, Germany, 259-282.
22. Cramer F, Kaempfer W (1992) *Die natur der schönheit*. Frankfurt M Insel, Germany.
23. Briggs J, Peat FD (1993) *Die entdeckung des chaos* (1989). Munich, Germany.
24. Briggs J (1993) *Chaos neue expeditionen in fraktale welten*. Munich, Germany.
25. MacCormac ER (1985) *A cognitive theory of metaphor*. Cambridge MA: MIT USA.
26. MacCormac (1988) *Die semantische und syntaktische Bedeutung von religiösen metaphern*. In Noppen (Eds.), JP Erinnern, Neues Zu Sagen. Frankfurt, Germany, 84-175
27. Kosslyn SM (1980) *Image and mind*. Cambridge, London.
28. Caillois R (1982) *Die spiele und die Menschen*. Maske und Rausch. Frankfurt:Ullstein.
29. Weiss P (1992) *Creative ventures*. Carbondale IL, Southern Illinois, USA.
30. Lenk H (2003) *Grasping reality*. World Scientific, Singapore.

31. Stephan A (1999) *Emergenz*. Germany.
32. Lenk H (2008) What makes human beings unique. *Philosophy Now*, Germany, 17-20.
33. Freitag EL (2018) *Der Kreativität* Renningen. Expert, Germany.
34. Amabile TM (1983) *The social psychology of creativity*. Springer, New York, USA.
35. Barron F (1969) *Creative person and creative process*. Winston, New York, USA.
36. Bell D (1975) *Die nachindustrielle gesellschaft*. Frankfurt, New York, USA.
37. Bergson H (1946) *The creative mind*. New York, USA.
38. Boden MA (1991) *The creative mind myths and mechanisms*. New York, USA.
39. Boden MA (1994) *Creativity and computers*. In: Dartnall T (Ed.), USA, 4-26.
40. Boden MA (1994) *Dimensions of creativity*. Cambridge, USA
41. Boden MA (1995) *Understanding creativity*. In: Götschl J (Eds.), *Revolutionary changes in understanding man and society*. Dordrecht, Amsterdam, Netherlands, 75-82.
42. Bruner J (1962) *The conditions of creativity*. In: Gruber HE, Terrell G, Wertheimer M (Eds.), *Contemporary Approaches to Creative Thinking*. New York, USA.
43. Cohen JL (1979) *The semantics of metaphor*. (Orig. 1958) In: Ortony A (Ed.), *Metaphor and thought*. Cambridge, UK, 64-77.
44. Cramer F (1989) *Chaos und ordnung*. Stuttgart DVA, Germany.
45. Csikszentmihalyi (1988) *Motivation and creativity*. *New Ideas in Psychology* 6: 159-176.
46. Csikszentmihalyi M (1988) *Society culture and Persons*. In: Sternberg, *The nature of creativity*. Cambridge UK: UP 325-339.
47. Davies P (1990) *Chaos frees the universe*. *New Scientist*, 48-51.
48. Dennett D (1991) *Consciousness explained*. Allen Lane Penguin, London.
49. Dennis W (1966) *Creative productivity between the ages of 20 and 80 years*. *J Gerontology* 21(1):1-8.
50. Edelman G (1987) *Unser Gehirn ein dynamisches system*. Munich Piper, Germany.
51. Eigen MW (1975) *R Das Spiel*. Munich Piper, Germany.
52. Feyerabend PK (1975) *Wissenschaft als kunst*. Frankfurt M Suhrkamp, Germany.
53. Finke RA, Ward TB, Smith SM (1992) *Creative cognition*. Cambridge, London.
54. Gardner H (1993) *Creating minds*. New York, USA.
55. Geo Wissen (1990) *Chaos und Kreative*. In: Wissen G(Ed.), *Hamburg Geo*, Germany.
56. Gleick J *Chaos* (1987) *Making a new science*. New York, USA
57. Gruber HE Davis SN (1988) *Inching our way up mount olympus the evolving systems Approach to Creative Thinking*. In: Sternberg RJ (Ed.), *The nature of creativity*. Cambridge UK: UP 243-270.
58. Hadamard J (1945) *An essay on the psychology of invention in the mathematical field*.
59. Heer F (1977) *Das Wagnis der schöpferischen vernunft*. Stuttgart Kohlhammer.
60. Hildebrandt S (1995) *Wahrheit und wert mathematischer Erkenntnis*. Munich Siemens.
61. Hübner K (1994) *Die zweite Schöpfung*. München Beck.
62. Huizinga J (1956) *Homo ludens*. Hamburg Rowohlt, Germany.
63. James W (1880) *Great men great thoughts and the environment*. *Atlantic Monthly*. Germany 46: 451-459.
64. Jürgens H Peitgen, HO (1989) *Chaos und fraktale*. IN: Saupe D (Eds.), Heidelberg, Germany.
65. Karmiloff Smith A (1993) *Is creativity domain specific or domain general*. In Dartnall, Australia.
66. Kosslyn, SM (1994) *Image and brain*. Cambridge MA.
67. Lenk H (1983) *Eigenleistung*. Osnabrück Zürich, Germany.
68. Lenk H (1986) *Zwischen wissenschaftstheorie und sozialwissenschaft*. Frankfurt, Germany.
69. Lenk H (1988) *Postmodernismus postindustrialismus, Postszientismus*. In: Zimmerli W (Eds.), *technolog zeitalter oder postmoderne*. Munich Fink, Germany, 153-198.
70. Lenk H (2007) *Global techno science and responsibility*. Berlin: LIT Germany.
71. Lenk H (2013) *Kreative Pluralität*. Bochum Ffreiburg, Projektverlag, Germany.
72. Lenk H (2013) *Lilun, lunluxie he tiyu jian de jutirenxin*. Chongching, China.
73. Lenk H (2017) *Scheme dynamics*. Bochum Freiburg, Projektverlag, Germany.
74. Lenk H (2018) *Human zwischen Öko-Ethik und Ökonomik*. Bochum Projektverlag, Germany.
75. Lenk H (2019) *Not a long way to concrete humanity*. Bochum ua Projektverlag, Germany.
76. Lenk H (1995) *Poser PH (Eds.), Neue Realitäten Herausforderung der Philosophie XVI. Deutscher Kongress der Philosophie*. Berlin, Akademie Germany.
77. MacCormac E (1982) *Metaphors and fuzzy Sets*. *Fuzzy Sets and Systems* 7(1): 243-256.
78. MacCormac ER (1995) *Die geographie und die geometrie des gehirns*. In: Lenk H, Poser H (Eds.): 76, Berlin, Germany, 210-221.
79. MacCormac, ER (1995) *Neuronal process of creative metaphors*. In: Redman Z (Eds.), *From a metaphorical point of view*. Germany, 149-164.
80. MacCormac E Stamenov M (1996) *Fractals of brain. Fractals of mind*. Philadelphia, USA.
81. Merton RK (1957) *Social theory and social structure*. Glencoe, IL, USA.
82. Peat F (1994) *Chaos and verborgene weltordnung*. *Der Stein der Weisen*, Germany.
83. Peitgen H, Jürgens SD (1992) *Bausteine des Chaos. Fraktale*, Berlin, Germany.
84. Peitgen, H, Jürgens, SD (1994) *Chaos: Bausteine der ordnung*. Berlin, Germany.
85. Pepper St (1970) *World hypotheses*. Berkeley, University of California, USA.
86. Perner J (1993) *Understanding the representational mind*. Cambridge, London.
87. Popitz H (1997) *Wege der kreativität*. Tübingen, Mohr & Siebeck, Germany.
88. Simonton DK (1984) *Genius, creativity and leadership*. Cambridge, London.
89. Simonton DK (1989) *Scientific genius* Cambridge, New York, USA.
90. Stephan A (1999) *Emergenz*. Dresden: UP.
91. Wallas GF (1926) *The art of thought*. London cape, Hartcomb, New York, USA.
92. Whitehead AN (1960) *Process and reality*. Harper & Row, New York, USA.