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# EMOTIONS AS A MULTI-MODAL SYSTEM OF REPRESENTATION IN NON-LINGUISTIC THINKING

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## *abstract*

*Emotions can carry meaning, evaluations, knowledge, experience and sometimes also plans for the future, thus they can function as part of non-linguistic thinking. In my contribution I would like to establish the function of emotions as an important part of an effective system of thinking and deciding that does not use the concepts of language but visual scenes combined with feelings.*

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## *keywords*

*non-linguistic thinking, daydreaming, meaning of emotions, multi-modal use of emotions, the scenic-phantasmatic system of representation, deciding in non-linguistic thinking*

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First I should make clear that my view on emotions in human mental life is quite exceptional: I will consider the function of emotions in the framework of non-linguistic thinking. In this view emotions are usually connected with phantasmatic scenes of a state of affairs or a connection of events, and they carry sense, evaluations, experience and sometimes also plan and a look on the future. In a sentence: Emotions are an important part of a system of thinking that does not use the concepts of language, but is somehow older than language.

Now I have to explain two items: (1) Why does it make sense to speak about non-linguistic thinking and (2) why should we take into account the age of language in this concern? Well, first because it is important to know that language is not as old as we tend to think. There is hard evidence from palaeoanthropology that language is not more than approximately 120,000-150,000 years old. The evidence for this is that today all living humans (*homo sapiens sapiens*) have a characteristically large-sized tongue bone that can be used to form extensively vocalized language expressions. In comparison to this large tongue bone, the corresponding bone in non-linguistic monkeys and also in Neanderthal hominids is quite small. Today, it is widely supposed that the articulation of spoken language is strictly correlated with this anatomic characteristic.

On the other hand, we know from studies in the lifestyle of early hominids that there has to be a function of thinking and conceiving of future plans and the past during the hominid's lifetime since the offspring of *homo erectus* (1.8-2 million years ago). But this way to think cannot be linguistic, but nevertheless it has to solve important tasks. So quite a big gap of time emerges in which hominids have to be able to think but are not yet able to use language.

The idea of investigating non-linguistic systems of thinking thus tries to solve this enigma of a function that our hominid ancestors used to have but that is for us living *homo sapiens sapiens* today somehow difficult to detect. The alternatives are obvious: Either the function of non-linguistic thinking has vanished completely with the rise of language, or it is still there but we cannot recognize it. A further alternative is: Such a phylogenetically old system of thinking might well be conserved in our consciousness as a *redundant system* that solves the same problems as our language system of thinking does, but it still remains functioning and it immediately steps in for the function of thinking in situations where we cannot make use of our standard language-based thinking.

I will now list some topics that a non-linguistic thinker must be able to think about - simply imagine you were a chimpanzee in a group of others: 1. *states of affairs* of special parts of the world, for example whether a banana is dark yellow, ripe and tasty or green and unripe, 2. the *character*, the *motives*, the *social status* and the *plans* of other persons of my group, for example if there is another member of the group with a higher status in hierarchy and more privileges, he will easily take the banana I found first. 3. the *meaningfulness* of such states of affairs, for example what relevance the state of ripeness has for my own life, 4. this implies also an *evaluation* of an event or a state of affairs and this evaluation could be limited to (solipsistic) values I can judge on my own and on the basis of my experience alone, say, ripe bananas are tasty and I like them, 5. Perhaps also 'objective' values that are shared by my community and thus have a more objective character, 6. the *certainty* of my knowledge in single cases, i.e. whether I am very certain about a fact so that it will lead my actions in the future or not, 7. the location in *time* when my conception of state of affairs has been true or will be true (i.e. whether it is my wish or a memory I am thinking about): yesterday, just now or in the future. - This list may be not exhaustive.

I am quite sure that I will not be able to discuss all aspects of this list of necessary themes of a thinker who is not able to use language. What is quite obvious is that we humans are able to conceive of all these topics using language. But I will try to convince you that we humans are still able to think about most of these themes without the use of language. For this reason, we are also allowed to suppose that intelligent animals might use the same means of thinking. And in my view, feelings do play quite an important role in this non-linguistic thinking.

#### **Alternatives for symbolic representations in non-linguistic thinking**

What are the non-linguistic means we might use for symbolic representation of state of affairs? I will name three types (This list does also not claim completeness): 1. *Codified national gesture languages* (German gesture language, ASL, etc.). 2. Non-codified gestures together with mimics and pantomimes (this is a *hand & foot communication system* I will come back to later.). These first two modes are usable for communication as well as for thinking. 3. A *system of scenic phantasma* consists of series of pictures in our imagination sometimes uniting to a kind of video clip of past and future events combined with feelings. It is suitable for the representation in solitary thinking but it cannot be used for public communication. Sometimes we tend to identify scenic phantasma with daydreams.

Generally, the connection between language and thinking is not as tight as we tend to believe. Not only can we express our insights in different languages, but we can also think in a language other than our mother tongue. Most of us are familiar with the following experience: After spending some days in a foreign country where a foreign language is spoken with which we are familiar, *our thinking takes on the form of this other language*. This example shows that the level of language is only on the surface of the whole phenomenon of thinking.

But do we need a symbolic representation at all to think about our cognition and our options to act in the future? I think so because seen from the phenomenological theory of cognition, we can hold on to the intuition of states of affairs (categorical intuition) only for a short time. After this we must have a symbolic medium to hold on to the contents of our cognition, but it must not be language.

The access to a symbolic carrier of a conviction is the presupposition for the three essential performances of thinking: (1) the ability *to awaken* and *to retain* in mind the same object of cognition; (2) the ability to *engender* other cognitions from this one; (3) the ability to *manipulate* our future possibilities. These central performances allow me to think about the possible future of an object or event in different situations, ponder possible consequences, obstacles and alternative solutions of problems. Essentially, thinking is an active treatment of the contents of our cognition.

#### **1. The principle idea of non-linguistic thinking**

Thus thinking *must have a medium of symbolic representation*, but this medium need not be language. Yet language gives us a hint to the most important feature of such a system of symbolic representation: I must be able to produce the material carriers of symbols at any time; for example, I must be able to produce spoken or written words at any time either in public speech, or in inner speech. I am only able to think if the symbolic carrier is ready at hand all the time. This carrier must achieve its meaning in a meaning-giving act based on the intuitive cognition. This is true for language and for all non-linguistic systems of representation. In this regard, the use of non-linguistic symbols follows the pattern of Husserl's *theory of meaning*<sup>1</sup>.

Thus we may conclude what we already know: language is a usable carrier of cognitive meaning; it makes thinking and public communication possible because I can speak loudly any time. And in regard to inner thinking, I can let my inner voice function as the carrier of thinking. But our conclusions can go also beyond this trivial insight because I now know at least the minimal requirements of symbolic systems useful for thinking: I must be able to produce the carrier of symbols at any time - either in inner or outer sensibility. Thus internal carriers of meaning that allow for thinking but *not* for public communication can also occur. And there may also be carriers of symbols that allow for both, such as language, gestures and pantomimes. In the next part, I will concentrate on the scenic-phantasmatic system of representing cognitive contents that belongs to the first class. In my view, this is the basic mode of our non-linguistic thinking.

### **2. The scenic-phantasmatic system of representation**

The first problem we have to solve is to understand how we are able to think of states of affairs without using language. In this concern, I have to shortly characterize the scenic-phantasmatic system of representing a state of affairs or the follow-up of events. The scenic-phantasmatic system of representation is quite simple because I only have to imagine vividly a state of affairs (it is not yet determined whether it is a present, past or future state): I "see" a ripe banana with the help of phantasma.

This phantasmatic picture makes the banana appear to me in full color and perhaps also with the slight smell of banana. I like ripe bananas and a felt desire to eat the banana comes up in me, raising more positive *feelings*. - Then perhaps I imagine that another person comes into the scene, grabs the banana and eats it before my eyes and upon seeing this, I feel great *disappointment* perhaps mixed with *fury*. - And there are even more feelings connected with this scene because this other person might be a highly recognized member of my group with high privileges, and a feeling of *respect* arises in me. - Then I also feel *anxious* about my sudden wish to ignore his privileges and to start a fight with him: I may try to grab the banana from him. Imagining my possible act of disobedience (opposing the rules that guide our community) a feeling of *fear* accompanies my imagination. Imagining the following sanctions of some other members of the group let me fear future pains. - So we see that there is grief, fury, and anxiety connected with the same basic situation and its possible developments. Each of these feelings is representing different aspects and is related to *different future options and resulting events* coming into my mind spontaneously. And we also understand that beside the evaluation in the accompanying feelings, there is already an indication of the location in time and the follow up of the imagined events. Fear can only be connected with a future event.

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<sup>1</sup> Cf. E. Husserl: *Logische Untersuchungen*. Husserliana XIX, Den Haag 1984. I would like to thank Andrew Krema for his kind help with the English text.

By this short story of my vivid imaginative ideas about *real* or *possible* states of affairs<sup>2</sup> in a non-linguistic mode, I wanted to show you that humans are using this method of representing future and past events and states of affairs by using pictorial presentations and scenes that run in my fantasy - and all of this without language. And you will also have realized that feelings are accompanying these fantasies adding important elements of sense concerning the respective evaluation, relevance, location in time of this real or imagined events. - We might even think that we have already detected a full-blown system of representation for the most common but quite basic events of our everyday life.

It seems to me that in series of imaginative pictures and in *daydreaming*, we are using scenic phantasma to express our knowledge of states of affairs as well as to think about our wishes and fears - generally they function as representations of cognitive contents connected with practical and evaluative components. It is always a state of affairs that we wish for or are in fear of. But we do not only express our preferences, our urgent wishes and our views of the state of affairs by these means. It turns out that the scenic-phantasmatic system can also be a kind of response to a (real or possible) problem. Sometimes we may find even a *mental action*, a mental manipulation of the problematic situation might lead to a solution of something which until now was unthought of. My thesis is this: *Series of phantasma and daydreaming are an old mode of thinking still working in our consciousness*<sup>3</sup>.

In my view in daydreams, we are playing out possible solutions to a problem, i.e. we are mentally testing our options, their usefulness for a solution and their respective consequences. This "life" of scenic phantasma constitutes a great and important part of our conscious life. Some examples: Worries about urgent challenges and the effects of events or uncertainties concerning possible developments that make us sleepless at night. There are many fantasies of having success. In these scenic episodes of our conscious life, the linguistic expressions emerge in the background in favor of pictorial elements. Thus we realize the meeting of past, present and possible future events in our scenic phantasma, but we still have to find out how this thinking proceeds<sup>4</sup>.

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2 It may seem that the modality of the events is still not determined, but it may be that in this regard feelings do have a say too, for example the secure feeling about a state of affairs may express its reality etc. And it may also turn out that we have to be more precise in describing the connected feelings, for example in the case of disappointment about a possible development we might in fact *feel different* than in the case of a real disappointment.

3 To work out this hypothesis I will have to ignore for a while some other theories about the status of fantasy in daydreaming. There might be objections to our very "reasonable" interpretation of daydreaming from different points of view: From a *liberal-fantasy point of view* our fantasy is usually completely free in the formation of daydreaming and therefore it cannot be of any use when it comes to the "real" problems of everyday life. But some sober reflection and self-observation will convince us that we are not completely free in the formation of our daydreams. - From a *part-part point of view* we might suspect that we are free in the formation of our positive and pleasant daydreams but passive in the formation of our daydreams about lasting fears. This is not the case either: in both cases I experience myself to be bound. - From a *psychoanalytic point of view* we might suppose that all the contents of our daydreams are closely bound to our individual experiences just like our dreams are bound to them. But we will have to ignore these theories about our daydreaming for a while.

4 We might also take a side-view on animals. We know that most highly developed mammals can dream (for example dogs). While dreaming they show first signs of an attempt to act and emotions. We might interpret these phases of their sleep as dream episodes prolonging wakeful states of action and representing aims.

We might therefore claim that a system of representations on the basis of scenic phantasma combined with feelings, is also operative in higher cerebralized mammals up to primates in dreams and wakeful state in the same way as in humans. This claim, however, only indicates an important consequence that stems from my investigations into the systems of representation in humans. But nevertheless this hypothesis about animal thinking is not mere fancy or an arbitrary fantasy because, as the phenomenological analysis reveals, it characterizes an important dimension of our own thinking. Thus through these analyses we might find out in which way we are still thinking like animals. In the present analysis I will not concentrate here on the theme of animal thinking. Cf. for this D. Lohmar (2016), *Denken ohne Sprache*, Heidelberg.

In the simple examples we have also realized that feelings are an important element of the non-linguistic system of representation, functioning in the framework of scenic phantasma<sup>5</sup>. Emotions can easily grant the most important request for a system of representation for we can have them in an actual situation and we can also “produce” them (although not arbitrarily) in the absence of the intuitive situation, i.e. only through imagination. For example, the feeling of fury might move me violently in a certain situation, and the same feeling can also reappear in mere thinking of the same situation later on. In both cases the feeling “tells” me something about the value of this event, it is a part of my inner “expression” that has a certain meaning. In thinking about a nice experience, the pleasant feeling “means” the desirable quality of the event<sup>6</sup>.

But when analyzing feelings in non-linguistic thinking, it turns out that the most usual way in which feelings arise is in the context of an intention of an object of thinking. Thus, it has to be an object that is present to me in the scenic phantasmatic way of vivid phantasma before I can combine it with emotions that mirror for example my evaluation or the relevance of the event. Emotions cannot stand alone in this concern<sup>7</sup>.

We might realize another difficulty while regarding feelings as part of a symbolic system of representation. It is obvious that in using language symbols for thinking about cognitive contents, we have a certain freedom of choosing alternative wording to express the same cognitive content. We may speak about a nice or pleasant outcome, or we might speak about a necessary or an unavoidable outcome referring to the same state of affair. When using feelings in the scenic-phantasmatic system in thinking about an outcome in our actions and its high value, we simply have no choice: a pleasant feeling accompanies the idea of this resulting state. In non-linguistic systems, we cannot use an alternative “expression” to characterize my valuation<sup>8</sup>.

We see that we should not expect the same characteristics in a system of non-linguistic representation as in the case of language. The two systems of representation are phylogenetically at a great distance from one another and they are using quite different semantics<sup>9</sup>.

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5 In my view we can not interpret emotions as an independent system of representation because we always have to presuppose another kind of representation in which we have in mind things or (real or possible) events that are object of feelings.

6 We might suppose that also most animals have feelings as part of their system of representation. It makes no sense to have objects and properties of them if you don't have feelings to evaluate this objects and events, this is the way to actively make use of our experiences with them.

7 This is to a certain extend an opposition to Heidegger's claim that moods are a way in which we relate to the world as a whole. But also in this case the world is also an object of my intention.

8 Beside this in non-linguistic thinking we are not obliged to use for example a more neutral expression of our feelings like we do in public language to meet the standards of our society. Think about the case where the pleasant outcome is in fact an accident that hits a personal enemy. We feel pleasure about his accident but it might not be accepted by the community to speak about it in terms of pleasure. Therefore I choose another wording somehow hiding my true valuation. But obeying this kind of rules is specific to systems of representation useful also for communication. Only here the rules of “good manners” are working. In my private, solipsistic non-linguistic thinking I do not feel to obey these rules. Thus in a certain concern non-linguistic systems are more truthful to what we really think - but in other concerns they do not have to be so truthful. Cf. for this D. Lohmar (2012), “Psychoanalysis and the logic of thinking without language. How can we conceive of neurotic shifting, denying, inversion etc. as rational actions of the mind?”, In Lohmar, D., and Brudzinska, J. (eds.), *Founding Psychoanalysis. Phenomenological Theory of Subjectivity and the Psychoanalytical Experience*, Springer, Heidelberg, pp. 149-167.

9 Cf. for this aspect D. Lohmar (2016), *Denken ohne Sprache*, Heidelberg, Kap. III, 3.

There are more important facts about the function of feelings in the non-linguistic system of representation and thinking in humans (and perhaps also animals). I have already announced these aspects in the heading of my paper by the word “multi-modality” of the function of feelings. What we have already realized is that feelings can help in many places of this life of imagination to fill in elements of sense that we cannot represent simply in scenic-phantasmatic pictures - like evaluations and meta-cognitive elements of sense like security or insecurity of our knowledge. We have to be able to represent these elements of sense somehow in our non-linguistic thinking; even if they are a more sublime, they cannot be sensed by one of our senses. I will discuss some of these aspects in the following.

The aspect of relevance or meaningfulness for my life is represented in the feelings of liking and disliking, grief, and promise. For example, when I see the banana, I feel joyful about the possibility of eating it, I am “happy in advance” concerning this possibility. Thus we have to be attentive that being happy in advance (in German: *Vor-Freude*) feels different than simply being happy now. And the same is true for “feeling happy afterwards” (*Nach-Freude*).

Let us think briefly about *security* or *confidence* concerning a possible solution to our problems. Both aspects are on the level of metacognition for they do not concern the content of cognition but rather a meta-quality like the knowledge about the source or the reliability of this knowledge.

Think about the problem that you have a serious lack of money. Different solutions then pop up in our mind: For example, winning the lottery will easily solve the pressing financial concerns, but it is unlikely to happen and does not give me a feeling of *confidence*; working hard or suffering for some time from certain hardships will work as well, and this idea gives me much *more confidence* in its success. - This shows clearly one function of feelings in non-linguistic modes of thinking: Feeling is realistically adjusting to the chances or probability of the effect of our actions. Therefore, daydreaming should not be interpreted as an evasive regression to a childish mode of handling problems only in fantasy<sup>10</sup>. There is a strong realistic trait in daydreams and - surprising enough - it is hidden in feelings<sup>11</sup>.

This opens up an easy way to understand the meta-cognitive abilities of many animals. Up to now there are only a few insights in the meta-cognitive abilities of primates, but this kind of empirical research has only been done over the last 10 years. With a view to the role of feelings in non-linguistic thinking, we immediately understand why animals can also think about such meta-properties of our intentions in states of affairs. The only thing we or other animals need is a representation of the state of affair itself - this can happen in scenic phantasma - and additionally a feeling of security that accompanies this idea of a state of

### 3. The multi-modality of feelings in the non-linguistic system of thinking

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10 We might also stress that non-linguistic modes of thinking in the scenic-phantasmatic system are not as quick and effective as linguistic modes of thinking; it will always take some repetitions to find a way to solve the problem, even if the scenic representation of an event is running in a compressed speed-mode.

11 In the context of phenomenological analysis it is sometimes discussed whether evidence is a kind of feeling or not. What is quite obvious is that in the constituting higher level insights we have to have a means also to “conserve” somehow whether an intention has been evident to me and in what degree there was evidence. For example: If we take into concern the building up of knowledge in science and in our life-world then we usually have to relate in a way to simple knowledge and its evidence in one ray. In the *Logical Investigations* Husserl speaks of nominalization to denote the condensed intention to a cognitive content after having intuition of the state of affairs in categorical intuition: We first realize that the breaks of the car are defect and conclude: “This is dangerous” referring to this state of affairs by using “This”. And in using the word “This” for the state of defectness of the breaks we also have to have a kind of surrogate for the evidence we have had. Therefore you see that feeling is not only a necessary element in non-linguistic thinking but it also accompanies our language use (but without realizing this). Therefore we may conclude about the relation of evidence and feeling (1) that evidence is no feeling but (2) certain feelings are used to represent evidences we have had before in the context of the next step of cognition, for example in a conclusion: This is surely dangerous.



affairs. The meaning of this feeling is the conviction that the state of affairs we are thinking of is a fact, that it is real.

There is another aspect of meta-cognition closely connected to the probability of events to happen: It concerns our confidence to act effectively in a certain way. I “think” myself to be capable of some action and this conviction - which is in fact a meta-conviction - is mirrored in my confidence, in my safe feeling concerning this activity. On the contrary, when I do not feel confident in my abilities to act - for example to climb a wall - I feel helpless and depressed when thinking about my planned action.

Feelings are not a simple element of conveying sense in non-linguistic thinking; sometimes the contents they have may be quite complex. We see this in the case of social feelings like pride or shame. In being ashamed, we are in shame *of something* - this is usually a past action or something related to my body - I may have curled hair, dark skin, a clumsy figure or my clothes do not fit the lifestyle standards etc. - or my *personal history* - my father may have been a drunk, or in prison etc. And, I am ashamed *in the eyes of a community*, a group of people that share a valuation of my person. Therefore, social feelings usually connect a complex net of relations of the valuation of history and personal relations etc. This mirrors generally one of the big advantages of feelings: they can represent very complex relations.

We cannot see time, nor taste it, nor sense it in any other way. Therefore time is difficult to indicate in the scenic-phantasmatic system besides being indicated in the form of extended episodes that are structured in time - a kind of narrative story. We might think of time passed in seeing flowers blossom in spring, or snow on the hills may indicate winter etc. but it is difficult to indicate whether events I am conceiving in my scenic phantasma are past or future events without the help of additional information. And in this situation, emotions also do their work in the framework of non-linguistic thinking by indicating past or future.

To realize this, think of a nice event that is going to happen this afternoon (i.e. in the future) or yesterday (i.e. in the past). You will notice a difference of feeling in these two cases - or perhaps you are not so sure whether a difference is felt? If we were to take language concepts as a clue in this concern, we might think of the differences of naming: pre-joy and past-joy (in German: *Vor-Freude* and *Nach-Freude*). Try to find out what is indicated by these words. And try to be attentive to the differences in your own experience: Is it more arousing to think of the future event - is to think of the past event exciting in the same way? Definitely not. But you should also be attentive of the contents of your thought: In thinking about a joyful event in the past, we may easily be tempted to skip over to a possible repetition of the event in the future and the same exciting arousal of joyful expectation might accompany our thought. - Thus we realize that emotions can also indicate the place in time and time relations of events<sup>12</sup>.

It seems difficult to imagine a scenic image of the character of a person and of his or her probable behavior towards me, especially within complex constellations with others involved in action. But scenic phantasma offer a simple solution to this apparent difficulty. In remembering a brutal former classmate, I see his face looking at me with evil eyes, with clenched fists, and ready to give me a beating. But this “image” is not simply an image of him; it is a very characteristic scene within which I am present, writhing with pain from his beating and in fear of his further beatings, and in the background, there is a group of “friends” not helping me. This scene presents central aspects both of his character and of his future behavior within a social context. -- And there is also the *felt aversion of him towards me* that is

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<sup>12</sup> It goes without saying that this is an important part of the function of syntax. But this should not mean that non-linguistic systems of representation needs a syntax, it is only to hint that all systems of representation have to perform certain general functions, but they realize them in different ways.



present in his facial expression. I *feel* that he hates me. The co-performing of his hate is not to identify with self-hate, but nevertheless, feeling is the only way of representing his deep motives.

But the scenic presentation of the attitude and behavior of a person need not be so one-dimensional as in this case, since there are normally multiple facets of the character of other persons that we are able to present. Thus the question arises: How can I think a multitude of (changing) attitudes in a scenic mode? Now, think of a colleague with whom you work together successfully in most cases, but who occasionally appears to have an air of high-nose arrogance. Both “faces,” i.e. both aspects of his character, may be represented in a scenic phantasma, one after the other, or, even, as *mixed in a changing way*, which results in an uncertain base for your plan making. The modal character of *possibility* and *uncertainty* is thus also presented in the changing and merging faces of your colleague. We might even interpret this changing image as a non-linguistic form of the logical “or.” Additionally, his attitude towards other persons and his preferences to act in a changing situation may be represented in a short but eloquent side-view of others.

The value and the usefulness of objects are also reflected in feelings. And as we know that the reliable qualities of objects can change, this may be also reflected in feelings. For instance, if I own a car that usually breaks down and thus has to be towed off and repaired, the characteristic scene within which I am *positively excited* about my car is modified and converted to one that is negative. The emotional aspects of this bad experience are mirrored in feelings: I no longer imagine the car with the joyful expectation of reliable use, but with the *cheerless expectation* of future harm, expense, and inconvenience.

In the non-linguistic system of thinking in the mode of scenic phantasma, feelings have another important role that is quite difficult to understand because it deals with the big problem of non-linguistic thinking about general ideas. General ideas are what we speak about in the language system as concepts, ideas of not only one object but a group or class of objects, like horse, man, animal, living creature, fairness, justice etc. In the non-linguistic system of representation, there is a rather easy method of thinking of *low-level general ideas* like horse or man in using a vague visual phantasma of what we think of. Vagueness is one useful method to think about low-level general ideas without using language. But this method does not lead up to a high point on the mountain of generalities; already with “living creature,” we exceed the limits of generalities that we can think of with this means of vagueness.

There must be other means to “think” about *high-level general ideas* without using language concepts. One of these means is using objects of our experience in an exemplary way. We might therefore call this method *exemplary semantics*, and we find it, for example, where we are trying to think about unlimited generosity, benevolence or moral integrity in a person, then suddenly a picture of our grandfather comes into our mind. In this situation, he represents unrestricted benevolence - but in exemplary semantics - and this is a general idea of higher order, i.e. an idea we cannot represent in the pictorial mode of scenic phantasma because there is simply no “visual side” of the high-level general ideas of benevolence, justice etc. But also in low-level general ideas, there is a fine stratification of generality that is not easy to represent with the means of greater or less visual vagueness. This difficulty can be easily exemplified by my remembering an embarrassing situation that also has some witnesses, i.e. there were some people around when the event happened. If we try to think about this event, there is the event itself in the center of my scenic phantasma, but there are also these people who come to see the embarrassing event too. Who are they? These witnesses in the background are presented only vaguely if I remember the situation but my feeling tells me additional things about them for I imagine them with a graded *feeling of acquaintance*. I understand that perhaps they were colleagues, neighbours or even friends of mine. But without fully individualizing

them in my scenic phantasma, I only feel that they are not complete unknown to me – perhaps they were neighbours. If the feeling of acquaintance is weaker, it may have been only loose acquaintances, people I have met only once in a while. - In this way, emotions also modulate the generality of low-level general ideas in non-linguistic modes.

We see that emotions can carry a multitude of meanings and functions in non-linguistic thinking and that it will be difficult to reach a complete list.

#### **4. On deciding in “emotional calculation”**

Now we may ask: Is the fact that there are so many mixed and concurring emotions found in our non-linguistic thinking about former events and future plans a problem for this kind of thinking, or is it an advantage? It is not so easy to find an answer to this question because there are in fact possible difficulties concerning the extensive use of emotions in non-linguistic thinking. I will discuss them in a minute.

Beside disadvantages, there are also big advantages in the mixture of emotions in non-linguistic thinking. I will first give you a rough idea about the general advantage of deciding following the result of an “emotional calculation”, then I will give you a concrete example, and later I will discuss problems arising out of this fact.

“Emotional calculation” has to be used in non-linguistic thinking in situations where there are many different factors that influence our decision. The decisions in everyday life are usually of this kind. Think for example of the decision to choose a certain restaurant. Here we find the factor of quality of food, but this is not the only factor because the ratio between quality and expenses usually lead us to a kind of compromise. Beside this, there may be other factors like the experience that my favourite restaurant is usually overcrowded, so there is a substantial probability that we will not get a table. Besides that, if I am short on time, there might be the factor of time expenditure in reaching my favourite restaurant. - But how are we able to find a solution to this difficult decision? There are factors that influence our decision-making, but these factors cannot really be set against each other in a conceptual way: In what rational relation can we think of quality and price, of probability and time etc.? In fact, we solve problems like this all the time, but the solution is not based on concepts and rational calculations. We come to a solution simply by listening to our emotional answer in posing this kind of complex problems.

Speaking of “emotional calculation” should not imply that this method of relating partly paradoxical motives is somehow a calculation with numbers on a methodical basis.

“Calculation” in this context is used only as a metaphor for our ability to reach a decision in the stormy centre of mixed emotional motives.

This kind of mixture of motives is to be found in so many situations of our life that it is easy to see that we only gain our capacity to act by using the “emotional calculus”. And there is another advantage of this method of decision-making: It can be done in a second. - I will not claim that this decision is always the best decision we are able to find. It will often point out that there might have been much better solutions. But in the point of view of evolution theory, the mere fact that we are able to decide in a situation with very mixed motives must be understood as an incredibly big advantage.

Besides that, there are advantages of the strong mixture of emotions in the scenic-phantasmatic system of representation, and there are also some disadvantages of founding our decisions on the “offset of different emotions” in an “emotional calculation.” One of the very obvious problems is that we have to take elements stemming from very different sources into our “calculation” of the mixture of emotions. I’ll give you an example: On the one side, there may be our strong aversion of certain persons, say Peter, who usually starts his day by playing a mean joke on me. Think of the situation when you enter the office after having realized that someone has let the air out of your bike’s tires, so you are already suspecting that Peter might

be the one. Then he welcomes you with a broad grin in his face, and you immediately know: It was him, i.e. you are sure without any further examination that it was him, even though you heard children laughing in the bushes in the background near your bike. In cases like these, we might speak about “prejudices”, and this may be true if we are only language-using thinkers, but in fact there are strong emotions stemming from completely different sources, and we do not hesitate to rest our judgement and the further actions on this emotional information. Thus you see immediately that emotions stemming from our wishes concerning future events, our fears and aversions and on the other side emotions representing the security of former insights etc. may be calculated together as if they were the same “currency” and deserve the same respect.

In the end we see that we can consider emotions quite different from the standard view, and there are advantages to look from a completely different angle at emotions as a central multi-modal element of a non-linguistic system of thinking. But as we are now informed about the great variety of information and valuations entailed in the condensed emotional attitudes we experience in our everyday life, we may easily run into radical questions about the relation of the two systems (Language and non-linguistic thinking). I see in principle following alternatives: 1. The non-linguistic system is only a non-functional redundant system of our consciousness, and real thinking takes place only in the mode of language concepts (primacy of language); 2. Both systems work parallel in our thinking and they do not influence each other (parallel systems of equal performance); 3. Our language-based thinking is only a kind of second, symbolic form of the fundamental non-linguistic system of thinking. I should confess that this is the thesis I am sympathizing with most (primacy of non-linguistic system of thinking).

This third alternative implies that our rich life of highly condensed scenic phantasma, accompanied with multi-modal emotions, is the basic way of thinking in everyday concerns. Language is only reformulating the problems that are presented in very condensed forms in this non-linguistic thinking, but it does not really have a productive impact and makes only a minor contribution to our thinking. Language only “translates” what we have been thinking and deciding before in non-linguistic ways, and thus is only a rather superficial part of the whole process of thinking on everyday topics.

Nevertheless language has the merit to be a means of communication so that we might be able to speak about and discuss items of some importance with others. By this, we reach a new level of constitution in intersubjective thinking about states of affairs in the objective world. It seems to us that only by communication we can reach this level of common opinions on common topics. And it helps us to make up our mind about topics like fairness, justice and other important topics that can only be conceived in high-level general concepts. But it seems to be difficult to find a decision on this level of generality without going back to the everyday intuitions that guide our actions.

In the end, we had quite an interesting journey into the deep subjective core of a non-linguistic creature. And in fact, we realized that we humans are quite like this, a big part of our conscious life proceeds in a non-linguistic mode, and a big part of our everyday decisions rests on the rather strange form of calculation in emotional currencies. I do not tend to interpret this way of deciding as “irrational” (only following the prejudice that emotions are irrational); it is a path to getting back to finding the special rationality of creatures that are also able to think in non-linguistic modes.