

1 MAN & ENVIRONMENT

Integrating Man Is Integrating Reality

Abstract 1: Man & Environment

A new general social model of human being's inner life focusing on the relation between mind and body is launched. Constructing human being's functional architecture, the perspective from the other human being is involved. From the point of view of the 1st person "I" and the 2nd person "You", the social model pertains to the physical, mental and social process levels. From a growth-dynamic or evolutionary point of view, the physical reality is axiomatic to deduct a higher order mental and social process level. "Interaction" is the key concept modeling all levels of human functioning in the reference frame of two thinking tools, namely 'finality' and 'causality'.

1.1 INTRODUCTION

It is a common sense notion that environmental events can give rise to subjective experiences, but also reverse, that intuition or thinking has an impact on or control behavior, as the saying goes 'matter influences the mind' and the 'mind influences the body'. From the view of 'matter-mind influencing', (stored) environmental objects/subjects, having an impact on experience is generally hold. For this mental state of subjectivity, the person is dependent on properties of objects/subjects. On the other hand, the notion of 'mind-matter-influencing' holds that the person himself, through his thinking, is making behavioral choices, to adapt to and change his environment. Though real or imagined events are presupposed in subjective experience, the person in his behavioral repertoire is also an active and creative human being to construct and organize his surroundings, in which he lives. Thus, it is a general hold that the human being in relation with the physical-social environment shows an attitude/behavior of *passivity* and *activity*.

The opposite notions of matter-mind influencing and mind-matter influencing had and still have their drawback to the mainstreams in philosophy and science, categorized here under the general heading of respectively 'materialism' and 'mentalism'. In the framework of the materialistic option, the individual is a passive human being dependent on internal or external physical-social impacts. The core issue in this perspective is to explain or describe the mind somehow from matter or brain processes. In this conception, internal or external material conditions are prior and foundational to the activation or emergence of consciousness. In the mentalist option, the person as an active agent of 'I' is hold. In this view, the problem of the nature and origin of qualitative phenomenal experiences is focusing upon. The mind of the human being is presupposed to exist, knowing the environment and adapting to circumstances. The assumption is that the mind gives birth to or moves the body. Thus knowing the human being as an integrated bodily and mental person, two contradictory perspectives are held: the *materialist 3rd person* and the *mentalist 1st person*.

In materialism, the assumption is held that 'neuronal interaction' through brain/body stimulations gives birth to the mind. Using different scanning devices, the point of departure is the 3rd person's 'unconsciousness'. It is hypothesized in this view that physical conditions of interactions could provide an answer of how 'consciousness' emerges. In this approach, it concerns the problem of 'transition' from unconsciousness to consciousness. The other way around from a mentalist point of view, the problem is to capture the genesis of matter/behavior from the mind. To model the mind-matter architecture, focusing on the emergence of the mind to be unveiled from interactive neuronal processes and the other way around the emergence of matter, implies that the two approaches are supplementary to each other. The question arises if the same token of 'interaction' for the genesis of the mind as well as of matter holds. This means that to know the mind-matter relation, is also dependent on the perspective of the *mentalist 2nd person*.

1.2 METHODS & MEANS

In order to integrate the two opposite materialist and mentalist views, the primacy of one or the other view is at issue. However, materialist and mentalist approach are assumed to exist in reality, both perspectives to take into consideration to depart from at the same time is impossible. Advocating a materialistic view, departing from observable processes or products would better fit scientific progress, because of the physical conditions to be controlled and applied techniques. This does not imply however, that the mentalist perspective can be qualified as less scientific, but through its non-controlled status could not be opted to depart from. Thus, it concerns the point of departure and consequently the trajectory of building up human architecture. To construct a model, the primacy of either matter (brains, behavior) or the mind as the starting point is concerned, determining how the mind-matter architecture is built-up. Therefore modeling human system, the point of departure opted is the perspective of the *materialist 3rd person*.¹

If the materialistic 3rd person as well the mentalist 1st person perspective has both to be addressed in a theoretical framework, then the two approaches of the human system as being passive and active have to be integrated. It concerns a 'two-way' road, the input of environmental data on the one hand and covert behavior as thinking or overt behavioral output on the other. In a feedback and feed forward cycle, a linkage between input and output flows does exist. To conceive the human being in a two-way relation with the physical-social environment, involves also his creative adaptation. This implies that behavioral output and its result, is not equal to the input. An 'added value' of the output beyond the input does exist and from an inter-subjective reference frame, it is believed to be possible, to demonstrate. Biological and cultural birth of products does take place between individuals. Thus, a general model concerns 'interaction' between the 1st and 2nd person as two open systems between which stable as well as creative processes are taking place. This approach of the human being refers to the perspective of a *growth-dynamic system*.

To view the human being from a growth-dynamical perspective does have consequences about the well-known tool of causality. It is questionable whether materialism, does provide a sufficient causal explanation for the relation between mind and matter. Though one is inclined to assume a bottom up causation, i.e. explaining consciousness from brain processes, it is questionable if this holds for subjective experience. Experience then would be effect for instantiating behavior as cause. The other way around, if from the 1st person perspective a top-down causation is advocated, to denote the mind as cause for (verbal) behavior as effect, then a causal contradiction comes in front between the 1st person and the 3rd person perspective. It comes down that causal matter-mind influencing and causal mind-matter influencing are living in their own niche with an unbridgeable 'gap' in between. To close the connection between the 1st and 3rd person perspective, the question arises if one has to look for a supplementary tool. Therefore, to frame the mind-matter relation, two thinking tools are applied namely *finality* and *causality*.

1.3 FINALITY & CAUSALITY

A growth-dynamic perspective is prerequisite to tackle the problem concerning the compatibility of finality and causality. The human being is a habitual being, showing repetitive behavior, but in essence he is also a creative creature. He looks for 'new' contacts and goals, but also searches his certainty in 'old' habits. It is commonplace that recording of novel products or events has initially no meaning, when no matching or association with old stored products exists. A novelty in reality is meaningless when not founded on what a person never saw. A novel product encountered for the first time refers not only to an external object or subject, but also to an internal image, like weird dreams. To extract a meaning from an event, it is basic to encounter this for the 'second time'. This 'new-old' dichotomy of recording an object/subject the 'first' and 'second' time is the border of the distinction of 'meaningful' and 'meaningless', which underlies to define finality and causality and their compatibility between them. ²

Demonstrating the compatibility of finality and causality, an environmental stimulus and subsequent response serve as the starting-point. Sensori-motor functioning from moment to moment, is built up of small pieces (chunks) or 'process units'. A distinction between preceding stimulus and consequent behavior does exist, because on the input of a stimulus, feedback towards a response not necessarily takes place. The person is not interested in many events and flow outside his awareness or records it as meaningless. While irrelevant and/or meaningless to him, the impact of an object through his senses is unaffected upon his motor responses. This primary stimulus activity is an autonomous process, with 'objective' status, because of the lack of comparison or relation to a secondary object. However, if a motor response follows the input of a stimulus, then they form together two 'relative' processes. Therefore, the following process units are distinguished: 1) *linear process unit* 2) *cyclic process unit*. ³

1.3.1 Finality: Linear Process Unit

Activity of a bodily object, impinging upon the senses (eye, ear, taste, smell, touch), does not necessarily have a functional meaning for an individual. This is in particular the case when a person is not interested in that object/subject or that an event is unknown to him or that the impact is unconscious (subliminal). No response will or can be executed towards that object/subject. The meaninglessness or to be unconscious of an object/subject is not only restricted to what man receives through his sense organs, but also what comes to his mind. Many internal images of events can be senseless represented, as weird dreams or pre-conscious notions. Therefore, an object or subject, either internally or externally processed is a primary autonomous activity, outside the subjectivity of a person. An object/subject, showing a directed primary autonomous activity, having a meaningless impact on the individual, has the status of *finality* (BOX 1a).

BOX 1a A Born Tennis-player

Your parents are fervent tennis-players and wanted you as a young boy to acquaint with tennis sport. Therefore, one day they take you to the tennis court for the first time. When they start playing, you are astonished to see an unidentifiable flying object in the air and another strange object in their hands. You do not comprehend what they are doing, running after that flying object hitting with the other strange object. You notice that your parents enjoy their play having an impact on you. You also see unidentifiable objects not flying anymore, but somewhere lying on the court. Curiously, you walk to the round object and seize one of them for a closer look.

During a pause, your father comes to you and put these strange objects in your both hands, telling what you have to do. You are trying what your father told you, but without success. Your father helps you and directs your hands against those objects telling you to hit those two objects. At a certain moment you succeed to hit the round object and see this object flying over the tennis net, giving you a lot of fun. Now you have got some notion what to do and tennis gradually becomes familiar to you. A tennis-player is born.

Recording the unidentifiable objects as the ball and racket for the first time and even your parent's behavior, being 'new' and not functional to you is meaningless. However, looking to your parent's tennis behavior, you notice that what they are doing gives them a lot of pleasure. The joy in their play has an impact on you and therefore you intend to mimic your parents to learn tennis to be as good as they are. Though at first instance your parents play behavior and the unknown objects they are using are initial meaningless to you, you hope it gives also fun to you and function to play as your parents do.

Recording of a novel object you are not acquainted with or can associate is unrecognizable as such and is therefore meaningless. This also holds for an internal image of an event, coming senseless to your mind. This unrecognizable object/subject recording is meaningless because no relation exists to what is stored in memory. The input of a novel stimulus-object is therefore absolute and autonomous. The impact on you of the stimulus activity is an objective 'linear process unit', to be ascribed the status of *finality*.

FIGURE 1 Finality



Given activity of unit 1 and unit 2 both operating autonomously in a 'field'. The activity of unit 1 and unit 2 is a random 'Linear Process Unit', which can interact simultaneously by chance. To an autonomous activity is ascribed the status of *Finality*.

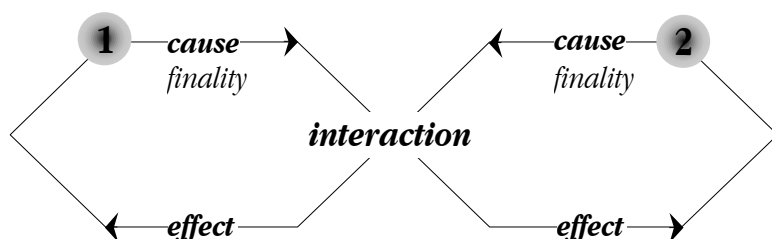
1.3.2 Causality: Cyclic Process Unit

External recording or internal imagery of an object/subject is a process, which can exist on its own without any relation to what is known, it is not necessary that association or feedback towards a response in the brain takes place. For interactive feedback to occur a 2nd object/subject in memory has to be assumed to exist, related to the 1st object/subject. If interaction and feedback takes place between the 1st and 2nd stimulus a secondary process is instantiated, for example, when a stimulus impinges upon an individual is followed by a secondary response. If interactive feedback occurs, a process cycle comes forward. The subsequent secondary response follows the primary stimulus. Though stimulus and response as separate processes are distinguished, they can operate as a cyclic unit. Thus to the primary stimulus and secondary (covert) response, forming together a cyclic process unit, a 'thinking tool' is ascribed, called **causality** (BOX 1b).

BOX 1b A Born Tennis-player

Your parents have contaminated you with tennis sport and during the years, you became a well-trained tennis player. On a certain moment, you encounter a young woman and make an appointment with her in order to play tennis. Before you are going to the tennis court, you have to make some preparations. Firstly, you start walking to the cupboard where you pick up your tennis bag, a shirt, trouser, a pair of socks and tennis shoes. Then you grasp your racket, the balls and put them all in your bag. When you have collected all your tennis equipment, you leave your home, walk up to your car and drive to the tennis court. On arrival, you go to the changing rooms, put on your tennis clothes, pick up your racket and balls, and walk to the court, where your partner also has arrived and both start playing. Your course of several actions of collecting items, from picking up your bag until start playing tennis is like a movie consisting of a sequence of separate pictures of doing things in time and place. Recording of several objects followed by your behavioral movements at different moments is built-up of single meaningful pieces. The object of recording undergoes feedback to an overt or covert response. If a secondary behavioral process follows the primary intake of an environmental object or inner representation, a feedback loop is established. The input of a stimulus followed by the output of a behavioral response, constitutes together a 'cyclic process unit', to be ascribed the status of **causality**.

FIGURE 2 Causality



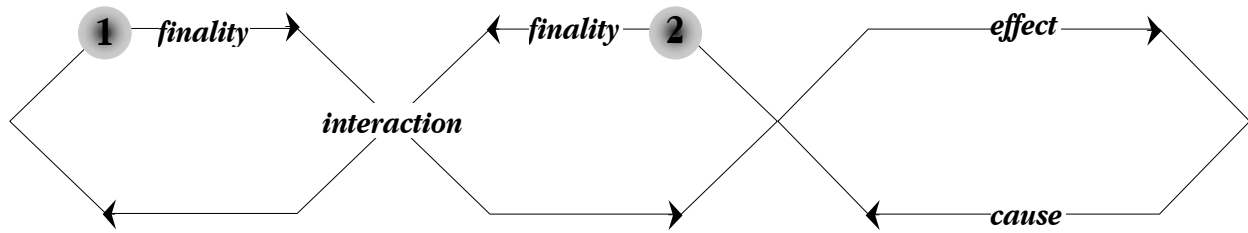
If final interaction (I) between unit 1 and 2 takes place, feedback occurs instantiating a secondary process, forming together a "Cyclic Process Unit", ascribed the status of *Causality*.

1.4 MAN & PHYSICAL-SOCIAL ENVIRONMENT: INTERACTION

An external environmental object/subject impinging upon the senses or an internal object/subject of imagination is a process being 'autonomous', 'random', and 'objective', to be ascribed the status of finality. If a primary final process preceding a secondary process instantiated through interaction, then this interactive feedback is establishing a causal cycle of two relative processes. Interaction between two stimuli is the necessary condition to activate a secondary subsequent process forming a causal cycle. Interaction is a 'simultaneous' occurrence between two final autonomous processes and causality 'sequential' processes of cause and effect forming a loop. The autonomy of the two final processes and their interaction obtains a causal meaning, when through interactive feedback the cycle of start and end comes together, as for instance the feedback loop of stimulus as cause and response as effect. Thus, the fundamental units serving as building blocks to construct human architecture to depart from are *stimulus 1* en *stimulus 2*.

The model to be constructed is final and causal constrained, in which the phenomenon of interaction plays the key-role on all levels. The interactive feedback on physical level and between the 1st person ("I") and the 2nd person ("You"), is an event of the human being in relation with the physical and social environment. Interaction between persons bridges the material gap between the physical-biological level and the socio-cultural one. Though the social level is material, it is questionable whether a reduction of the social to the physical level can explain the emergence and development of higher order functioning and the resulting social products. The 3rd person' unconsciousness, the sub-individual level of physical-biological interactions, serves as the point of departure on the basis of which the higher-order mental processes and social functioning on the supra-individual level is derived. Mind and matter comprises all levels of human being existence, in the sense that the mind flows in between the physical and social level. A conceptual model of mind-matter accounts the domain in between the 'sub-individual' and 'supra-individual' level. Thus, in this mind-matter game, the whole 'family' does play a functional role from the perspective of the *1st, 2nd and 3rd person*.

FIGURE 3 Survey Finality & Causality



Given unit 1 and unit 2, forming a sub-system nested in a super-system. Finality does play an autonomous role for unit 1 and unit 2 and derives its formal meaning before interaction (antecedent condition) and causality plays a role after interaction (consequent condition). Only after final interaction between unit 1 and 2, cause and effect holds, and finality does not play a role anymore. Finality and cause does not coincide, because of their relative role. The tools of finality and causality are instrumental for building up mind-matter architecture. Finality is useful for the description of the emergence of 'new' process or product units and causality for the establishment of 'old' related events between units. Modeling the human being from a structural and functional developmental perspective, the 1st and 2nd person interaction plays the key-role. In the reference frame of an integrated mind-matter outlook of the human being, the functional-structural process levels, as well as the development of personality and culture has to be incorporated.

2 SOCIAL MAN: MIND & MATTER

One Man Is No One; He Is Always A Social Man For Better Or For Worse

Abstract 2: Social Man: Mind & Matter

The design of the mind-matter model centers on the phenomenon of 'interaction', a general phenomenon to occur on physical, mental as well as social level. Building up the human system by applying the same rule of deducting higher order processes from the assumed physical level, departs from the question of 'how' the processes emerge and their relationship to each other are established. In the reference frame of finality (goal) and causality (cause-effect), the process architecture on all levels provides a general basic social model of the human being. From an integrated point of view of the relation between the 1st and 2nd person, it is tried to unveil the issue of mind and matter.

2.1 INTRODUCTION

Knowing the human beings mental-social functioning, the approach of starting from is the 3rd person "He" or "She" as a passive person. The environmental observable bodily or brain events are departed from to build up the bodily and mental architecture. This approach from physical-biological conditions, the 3rd person is assumed to be in a state of 'unconsciousness', to be stimulated to invoke 'consciousness', like an alarm clock wakes up from sleep. Herewith a 'transition' from unconsciousness towards consciousness occurs. Through the 'emergence' of the mind, the status of the 3rd person changes towards the 1st person. Starting from the 1st person "I", consciousness being activated, one takes it for granted that through his/her (verbal) behavior the 1st person is experiencing environmental events. It is questionable when from 1st person awareness, (verbal) subjective experience comes about and behavior is executed. Is awareness emerged equal to subjective experience giving rise to behavior to be experienced? Therefore, it is questionable that awareness emerged equals subjective experience.

The question arises, whether from the point of view of the 1st person solely, subjective experience can be made transparent. The problem is if emerging of awareness give rise directly to (verbal) behavior and to subjective experience. The core question concerns whether an inter-subjective approach is more appropriate. In this conception behavior is instantiated through 'mental contact', resulting in the exchange of thoughts and emotion in communication. This notion gives rise to the question whether the phenomenon of 'interaction' between the 1st and 2nd person could account for the so-called 'mind-matter influence' and with the same token also holds for 'matter-mind influence'. Making the human system relatively closed, the 3rd person's unconsciousness serves as the point of departure, and through interaction between the 1st and 2nd person feedback occurs to be stored in the 3rd person unconsciousness. Thus to capture mind-matter relation and in particular subjective experience, it is advocated that unconsciousness plays the borderline in the framework of which consciousness flows.⁴

2.2 PHYSICAL LEVEL: AUTONOMOUS BASIC BEHAVIOR

When looking at the surroundings, many events of things and people are taking place. These objects are to use whether or not for one's own sake and one can talk to others. Behavior is observable to anybody and even one's own behavior when looking in the mirror. The 'external' environment is however, not restricted to events and overt behavior. Observing the 'internal' environment of the body is also concrete, as for instance when a physician scrutinizes the inside of the body using operation techniques or scanning devices. Not only bodily objects/subjects located in the 'external' environment, but also 'internal' biophysical processes are concrete. Thus, environmental objects can externally be located as well as internally. The environment of events can have an impact on the individual, physiologically and behavioral processed unconsciously. The observable external or internal environment is the basic level to depart from, called the *physical level*.⁵

2.2.1 Sensation of a Stimulus

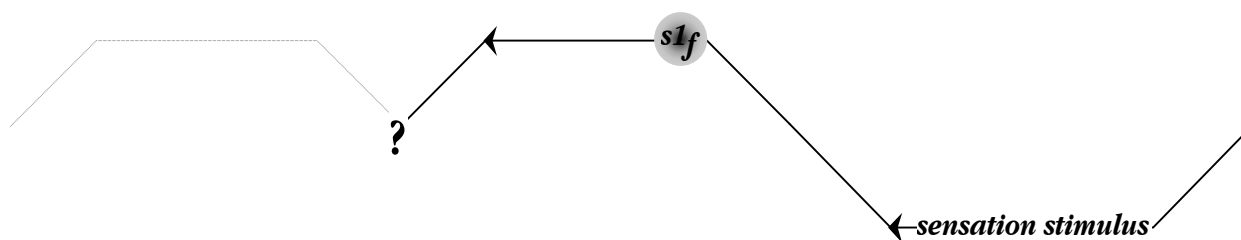
The input of events including one's own behavior can flow outside consciousness. The sense organs receive millions of stimuli per second from the environment and only to a fraction of them attention is paid of. The human being also acquires experiences by learning; he is trained in all kinds of skills enable him to do things automatically. He is able to think of something else, which at that specific moment is unrelated to activities occupied. The impact of an object upon a person can be an autonomous event of which he is not aware or experiences it senseless. Object recording by the senses is a primary activity of that object directed towards the brains, physiologically processed, ranging from an unconscious to a tacitly knowing event, as for example hearing without listening. If an object is objectively recorded no relation or comparison between object 1 and object 2 exists. The impact of the activity of a physical object, physiological transported to the brain, is an autonomous final process unit, called *sensation of a stimulus* (BOX 2a).⁶

BOX 2a Playing Tennis Tacitly

You are playing tennis with a female partner, as equally trained as you are. Because of your training in tennis, you are mostly aware of and focused upon your partner's position in the field and how she is going to return the ball. You are not watching or reflecting your own bodily movements most of the time. Your behavior on the tennis court operates automatically, coordinated by your brains. The bodily movements in tennis must flow outside your focal attention; otherwise, you are not able to play tennis properly and smoothly.

To your behavior, sense organs are recording stimuli from the environment including your own body. These stimuli like your racket and your bodily position on the tennis-court keep you automatically in touch with the game. Holding your racket and the position of your feet and bodily attitude as well as other environmental stimuli are unconsciously recorded by your senses and physiological transported. This transportation of the input of one or another object is a process called *sensation of a stimulus*.

FIGURE 4 Sensation of a Stimulus



s=stimulus, f=finality

If a human system records a final 1st object (**s1_f**) transported to your brains, the process of that object is called *sensation of a stimulus*.

2.2.2 Motivation of a Need

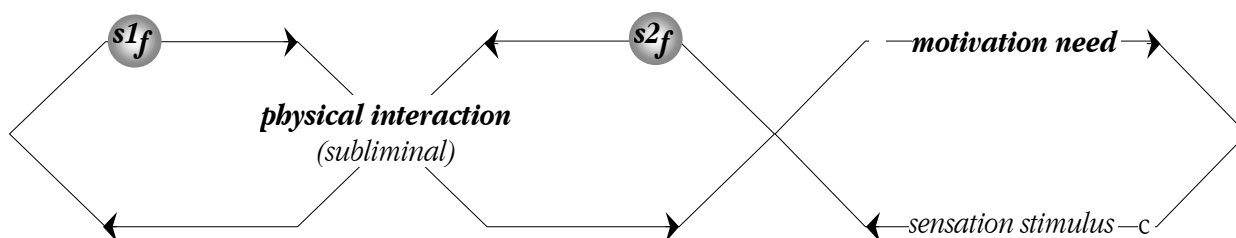
Stimulus activity impinging upon a person can operate autonomously without an effect on (covert) behavior. However, sensation of 1st stimulus can be interrupted by an internal stored 2nd stimulus. If interaction between them occurs, feedback towards a (covert) response takes place. In general, a change of direction or feedback of an object only occurs by the impact of another object. Negatively speaking, no feedback takes place without interaction between two stimuli. Thus, within the framework of interaction between a 1st stimulus and a 2nd stimulus, a feedback loop is brought about. If interactive feedback occurs between the 1st and 2nd stimulus, a covert or overt response is instantiated towards the initiating 1st stimulus. The feedback loop of a stimulus denoted as cause and the covert or overt response as effect is a causal cycle (e.g. eye-hand co-ordination), which can operate automatically and unconsciously. The secondary covert response following the primary stimulus sensation is a process called ***motivation of a need*** (BOX 2b).⁷

BOX 2b Playing Tennis Tacitly

The unconscious sensing of your racket, including your own body positioned in the field underlies the automatic movements of your tennis behavior. The input and output is a recurrent cycle consisting of stimuli on the one hand and your motor responses on the other. However, antecedent to your tennis behavior, activity exists which involuntarily steers your behavior. You are not aware of this inner activity as even of your tennis behavior, because of your training in tennis.

The (neuro-) physiologic trajectory of physical stimuli does have an interactive feedback in your brains to your inner drive followed by motor responses to play tennis. A feedback loop between your sensors on the one hand and effectors instantiating your behavior on the other does exist. Antecedent to your behavior a recurrent process of interactive feedback operates autonomously at brain/bodily level. The inner drive or covert (energy) activity, following the stimulus, is a process called ***motivation of a need***.

FIGURE 5 Motivation of a Need



s=stimulus, f=finality, c=cause, e=effect

If final interaction between stimulus 1 and stimulus 2 (s1f I s2f) does take place on subliminal level (unconscious), a causal cycle is formed of sensation of a stimulus and the arousal of *motivation of a need*.

2.3 MENTAL LEVEL: MIND BETWEEN MATTER

Outside focal attention, the causal cycle of sensation-motivation/response executes automatically coordinated by the brains. The body belongs to a person, but this does not necessarily mean that the body is identical to the person. The person is more than just his body. A person can experience his body and in this subjective experience, he is not his body, otherwise one cannot speak of an experience of that body. Conscious subjective experience can never coincide with the body itself. In the statement of 'I have an image of an tennis-court', the image of the 'tennis-court' as the object and the subject of 'I' are distinguished. Therefore experience as such on the one hand and one's own behavior on the other are separate process units. The body consists of receptors and the brains are processing stimuli, which is basic for and underlying experience. If consciousness emerges to give rise to the subjectivity of experience to qualify true-false, good-bad or beautiful-ugly, then it is assumed to be a process, to be distinguished from the physical level.⁸

To take place the 'emergence' of consciousness from 'unconscious' state, interaction between the 1st stimulus and 2nd stimulus processed in the brain must occur. Stimuli to interact can be located in the internal and/or external environment, the person is born with (e.g. genes), through learning stored in memory or between an external and internal stimulus. Thus, for the emergence of consciousness to occur, interaction between two physical stimuli from unconsciousness must take place, usually between two internal stimuli or between an external and internal stimulus. The 'before' condition on subliminal, unconscious level is foundational for the emergence of consciousness. To take place the primary mind to emerge, two directed activities of physical stimuli towards each other must therefore break through a 'threshold', being the border between mind and body. If through interaction between a pair of stimuli consciousness emerges, it is a process on 'higher-order' level, called the *mental level*.⁹

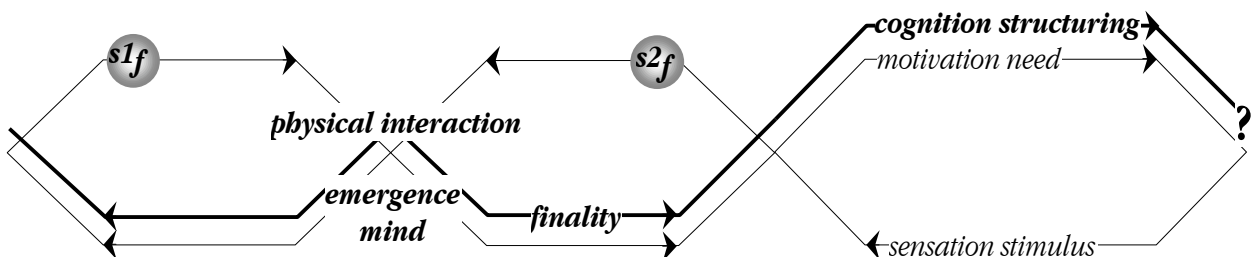
2.3.1 Cognition of Structuring

For the emergence of consciousness to take place, interaction between the 1st stimulus and 2nd stimulus is a necessary condition. If through interaction consciousness emerges breaking through a 'threshold', it flows as an autonomous 'higher-order' process on mental level. The primary consciousness activated has through its autonomous state at that very instant no substantial meaning. It is an objective final process because mental activity of the 1st person lacks interaction with the social environment, especially with the 2nd person. Besides 1st person consciousness is unknown of his mental birth and cannot be a subjective spectator simultaneously. Primary awareness is a vague or diffuse social intuitive process and it is 'empty' and meaningless during autonomous flowing. Through its concomitance with motivation, a response of searching or looking for structuring attends by. Consciousness being a primary mental activity towards the social environment has a cognizing, anticipatory function, called ***cognition of structuring*** (BOX 3a).

BOX 3a Playing Tennis Consciously

When you play tennis, your body does not move outside your consciousness all the time; otherwise you could not anticipate, evaluate, and correct your own tennis behavior. There are moments of spontaneous awareness to emerge of your own tennis performance and occurs, when you hit the ball on return of your tennis partner. At that instant, you feel, hear, and see hitting of the ball, becoming aware of your position and holding your racket. To return the ball adequately you have to imagine several positions for your partner. You must anticipate various conceptual 'open' positions. Therefore, what is important to you is to choose a position to hit the ball to your advantage. The rule of the game is to hit the ball in such a way that your partner is unable to return it. What counts for you in the game is to win the match through anticipation of the position and movements of your partner. Choosing an open partner's position is 'mental activity' emerging through interaction coordinated in the brain of your behavior, your field position, holding your racket and the ball. It is your active mind, choosing a conceptual blind position relative to her actual position. Your anticipation of a blind position is meaningless because you do not know at that very instant what you have in mind is (expected to be as) right or wrong. This anticipation is a final process of your active mind, called ***cognition of structuring***.

FIGURE 6 Cognition of Structuring



s=stimulus, f=finality

If interaction (s1f I s2f) occurs, breaking through a threshold—> ***cognition of structuring***.

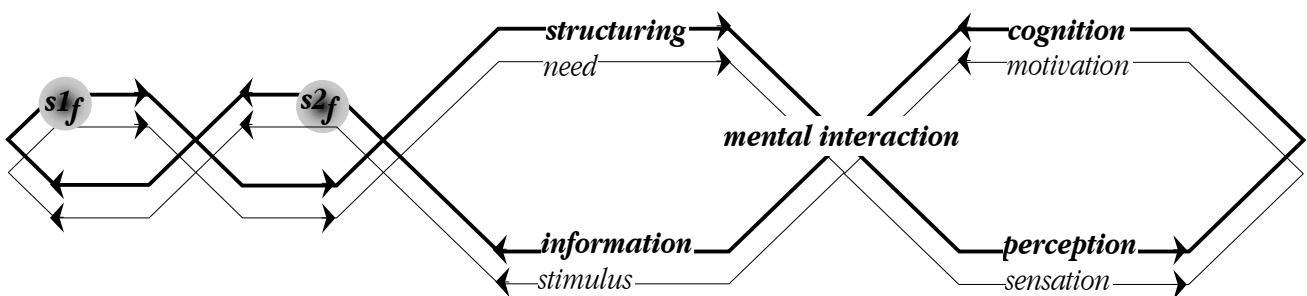
2.3.2 Perception of Information

On basis of physical interaction between the 1st and 2nd stimulus, emergence of 1st person cognition takes place concomitant with motivation/behavior. The 1st person tries cognitively to structure towards the 2nd person by showing a response, to evoke a response by the 2nd person. In case of cognitive interaction, feedback occurs and the 1st person extracts a meaning from the 2nd person response, if the response is known to him. The meaning is build up from a relation between the already known response and the recorded external recorded response. A 1st stimulus-object/subject' response is only meaningful recorded when it is 'matched' to a stored 2nd stimulus-object/subject' response and on this basis the individual is able to 're-cognize' the subject' respons. Thus, if cognition is fed back through 1st and 2nd person interaction, based on their mutual response, a mental process of 're-cognition' comes into existence, forming with cognition a causal cycle, to be called **perception of information** (BOX 3b).¹⁰

BOX 3b Playing Tennis Consciously

To choose a blind open position disadvantageous to your partner is meaningless for you, because you do not know whether your hitting the ball is right or wrong. This is only possible if your partner's changing behavior hits the ball in return or not the next moment. Only by your partners returning the ball and your hitting it, your behavior in the subsequent cycle is tested. Your goal position as being right or wrong is the outcome you can extract a meaning. The active anticipatory mind directed to her blind position flows back in reference to your partner's of hitting the ball and therefore the cyclic causal mental unit is set. The feedback of your anticipation to give meaning of her hitting the ball is a process called **perception of information**.

FIGURE 7 Perception of Information



s =stimulus, f =finality

If cognitive interaction between the 1st and 2nd person takes place ($C1_f \text{ I } C2_f$), feedback is brought about by the 2nd person and a behavioral stimulus obtains a relative meaning processed by way of **perception of information**.

2.4 SOCIAL LEVEL: 1st & 2nd PERSON INTERACTION

Given that interaction between the 1st and 2nd stimulus occurs and final cognition emerges concomitant with motivation, executed by an instrumental response as effect. If 1st person instrumental behavior is executed, it is perceived as object-behavior as cause by 2nd person. On basis of successively performed mutual behavior, cognitive interaction can occur, giving rise to perform novel behavior providing additional information. If novel behavior is concomitant with an already known object, not only meaningful object information, but also additional input referring to a novel behavioral process comes into existence. The emerging of novel behavior or product emitted by the 2nd person, is a final process for the 1st person. Thus, the 1st person recording of novel behavior is not directly linked with the perceived stimulus-object, but with the emitted physical behavior of the 2nd person as initiating subject. The emerging of novel 2nd person's behavior and its recording by the 1st person is a physical 'supra-individual' process level, pertaining to the **social level**.

2.4.1 Sensation of a Norm

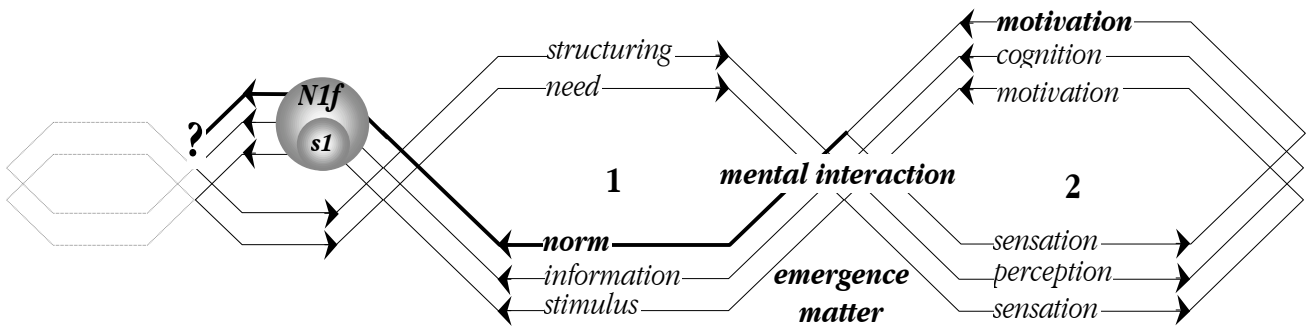
Feedback of cognitive interaction between the 1st and 2nd person, results in the meaningful perception of a physical object, (verbal) behavior or one's own object-behavior. The object perceived is meaningful because of its matching with a stored object. Through perception of behavior, also concomitant 'higher-order' process of input on social level can come into existence. This is the case if the 1st person input is a novel autonomous process, originated from the 2nd person's behavior. At that very instant the recorded 2nd person's novel behavior does not have a meaning for the 1st person, and cannot be responded at. The recorded input emitted from the 2nd person' (role) behavior does have for the 1st person a final status. Though object perception is meaningful recognized, this is not the case with the concomitant 2nd person novel behavior performed. The social-physical process level of recording of novel behavior is called **sensation of a norm** (BOX 4a).

BOX 4a Playing Tennis For Two

You and your partner did have a good training in tennis and play a match. You are both capable to hit the ball in such a way to bring each other in a difficult position. Your competitive attitude makes your tennis life very hard for each other. On a certain moment, your partner hit the ball in a stop volley by swinging her racket from behind her back, very hard for you to return. This odd hitting the ball such a way by your partner is quite new for you and you are very astonished by this sudden tennis performance.

Your tennis partner's behavior did surprise you and because of the novelty of her behavior, you do not know what to do. You never experienced this behavioral performance of hitting the ball swinging her racket behind her back. The novel recording of her tennis execution did compel your admiration for her and you hope to respond adequately on this odd behavior the next time. The recording of her novel behavior is a process, called **sensation of a norm**.

FIGURE 8 Sensation of a Norm



s=stimulus, N=norm, f=finality

Cognitive interaction between the 1st and 2nd person (C1_f I C2_f), brings about feedback on basis of mutual behavior. An object has a meaning by perception of information and the 2nd person novel normative behavior is directive for the 1st person as *sensation of a norm*.

2.4.2 Motivation of a Value

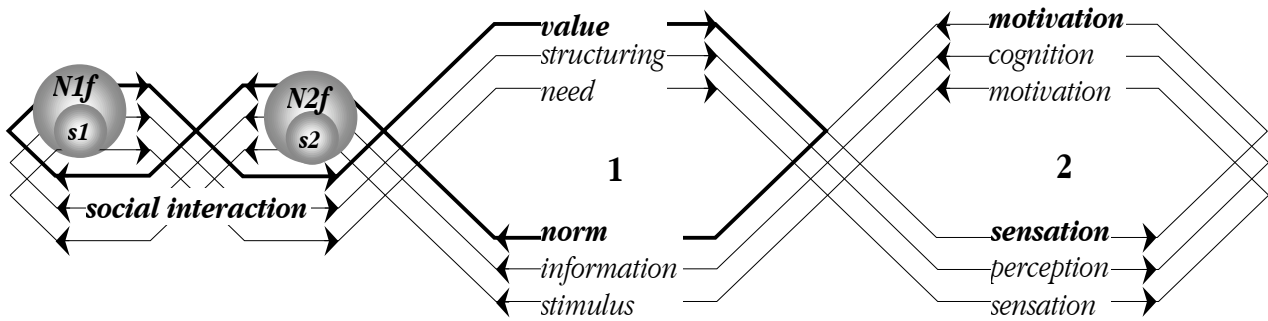
If the 1st person initially records a norm behavioral emitted from the 2nd person, then the norm is not meaningful recognized, because it is not related or associated with a stored norm. Novel normative behavior of the 2nd person can only obtain a meaning for the 1st person, if the recorded 1st norm interacts with the already stored 2nd norm. This norm-interaction only happens in the next encounter between the 1st and 2nd person. If this is the case, the recorded behavioral norm is meaningful perceived. If in the next contact, the norm is meaningful perceived, the 1st person is in principle prepared to answer to the norm and to respond adequately to the 2nd person. Thus, a norm is only useful for the 1st person when he perceives this as positive, thereby willing to comply with the norm of the 2nd person. Therefore interactive feedback of the 1st norm recorded with the stored 2nd norm must occur, to bring about the willingness to respond to the 2nd person. The arousal of a covert or inner response is a process called ***motivation of a value*** (BOX 4b).

BOX 4b Playing Tennis For Two

The recording of your tennis partner's novel behavior did surprise you a lot and initially do not know how to handle this. When you hit the ball right straight to her, she tries this swinging her racket behind her back for the 2nd time. You now did recognize her behavior and prepared to receive this stop volley from her by running quickly to the ball to return. You have learned how to meet her behavior to return the ball.

Her achievement of swinging her racket from behind her back the 1st time, you could not respond at. The 2nd time, she perform this behavior did not surprise you and you was capable to return the ball adequately. Your drive underlying your behavior could meet her valued performance. The drive of meeting her behavior is a process called ***motivation of a value***.

FIGURE 9 Motivation of a Value



s=stimulus, *N*=norm, *f*=finality

In the next 1st and 2nd person behavioral encounter, 1st norm stored and the 2nd norm recorded, norm interaction occurs (N1_f I N2_f) → causal cyclic feedback on social level through instantiating *motivation of a value*.

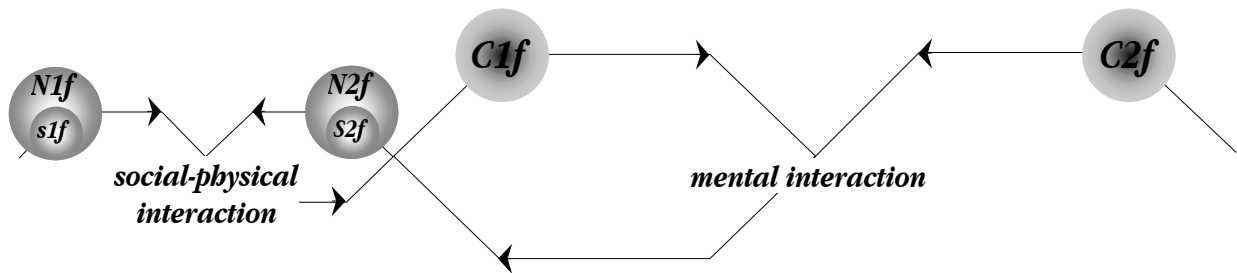
2.5 PROCESS LEVELS: MIND & MATTER

The processes of mind and matter are final-causal constrained by the same rule. Finality refers to every autonomous novel activity directed to interaction, occurring the 2nd time of encounter, is a simultaneous event on equal level, thus between stimuli, between cognitions and between norms. Final processes being physical and social sensation and cognition do possess an objective status, super-ordinate of its substrate processes as effect. If final interactive feedback occurs, final activity emerges, accompanied by its causal substrate. Final cognition operates autonomously concomitant with its physical substrate of motivation and consequent behavior rendering causal meaning to a stimulus as cause and motivation/response as effect. Thus by mental interaction, the emergence of the social level of sensation of a final norm is concomitant with its substrate of perception to establish a causal mental cycle with cognition. No reduction of the distinguished levels to each other is possible. A linkage of all process levels through finality exists (FIG. 10).¹¹

It is not possible to derive higher order process levels, because the system is relatively closed. However, between 1st person motivation/response as effect and 2nd person sensation as cause at physical-social level, a 'discontinuous transition' exists. This also holds on mental level between perception as effect and cognition as cause. These transitions are the thresholds for the emergence of mind and matter/behavior. Breaking through the transitions, leave open room to develop product systems. It concerns the emergence of a new product unit within the 1st person and between the 1st and 2nd person. The process levels are functional carriers for the development of a memory system on the one hand and an external material system on the other. The genesis of product units refers to the building up of a 'personality' system and to an externalized system of 'culture'. Personality and culture are the ultimate products of the mediating bodily and mental process operation and unfold mind and matter in their developmental aspect (Ch. 3).

FIGURE 10 Survey Social Man: Mind & Matter

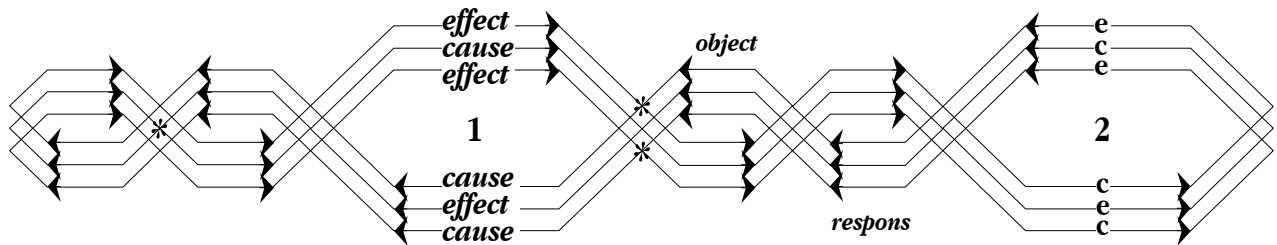
Finality



f=finality, s=stimulus, N=norm, C=cognition

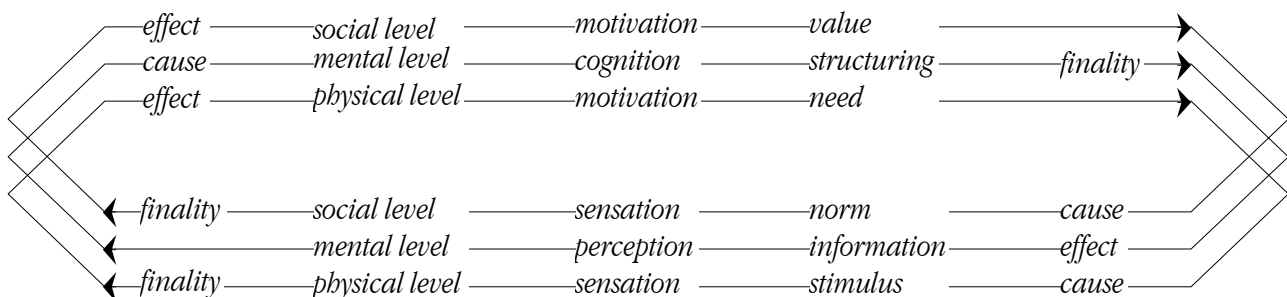
Final interaction brings about a mental and material level into existence under 'new' conditions and links all levels. 12

Causality



Finality does not play a role anymore when all levels are causally cyclic operating under established 'old' conditions. Every level possesses its own causal structure. A non-causal discontinuous transition (*) between perception as effect and cognition as cause and between motivation as effect and sensation as cause exists. 13

Process levels



Recording of stimulus-norm is the input from the environment, and a need-value the (covert) output towards the environment. Through stimuli interaction, emergence of 1st person cognition directed towards the 2nd person takes place, concomitant with its substrate of (covert) response, making a causal s-r loop. With the same rule, cognitive interaction gives rise to object perception, forming a causal cycle of cognition-perception if a percept matches the stored percept. Perception is concomitant with the emergence of a norm, behavioral emitted from the 2nd person. If a norm is stored from previous encounter, norm interaction occurs and a value is aroused, forming a causal cycle of norm-value.

3 CULTURAL MAN: PERSONALITY & ATTITUDE

"Man Is Predestined To Create Culture Together With Others"

Abstract 3: Cultural Man

Recording of and acting towards environmental objects/subjects by the person operates on physical, mental, and social level. The mental level of cognition is social directed to get feedback by perception extracting information from objects and behavior. The social level of recorded norms in particular, are prerequisite for the formation and development of personality (long term memory) and emerging of new values for building up of a collective culture. Attitude (short term memory) mediates attuning communication and matching of values to create culture. The formation of personality and culture being respectively a mental and material development are the end-result of human functioning.

3.1 INTRODUCTION

The human being is a learning organism. His brains/body is equipped not only to learn physical skills, but also to acquire verbal and social behavior. In his training of physical and social functions, the mind plays an intermediary role. If learning of some function succeeds, it becomes a habit, a repetitive behavioral pattern, executed automatically; a relation between the internal and external environment is established; the role of the mind is extinct. The mind lights up in case of a problem, trying to solve this through performing adequate behavior. Through the growth-dynamics of society, problems become complex, requiring more abstract and discriminate thinking. Apparently, the mind is able to enhance itself to perform distinct behavior. The human being is able to adapt creatively to his surroundings to solve problems of making new products. Making use of existing percepts, in his creativity the human being provides in his products and behavior *value added*.

The question arises where does creativity come from to supply value added products. Apparently, the resulting output of thinking and behavior is more and not equal to the input of information of stimuli/norms. In the domain of unconsciousness behind the back of the human mind, further processing of stored percepts are taking place to account of human creativity for the construction of value added behavioral products. As counterpart of complex value added material product units, processing for the formation of simple units has to take place, to make for example abstraction or generalization manifest in language comprehensible. If one the one hand matter shows a more complex structure or subtle discrimination in thinking and language, processing for the emergence of a simple structural product system is foundational on the other hand. The occurrence towards the formation of higher-order abstraction is a contradictory event of concretization and they are taking place respectively in ***personality (long-term memory)*** and ***attitude (short term memory)***.¹⁴

3.2 PERSONALITY: MENTALIZATION OF THE ENVIRONMENT

Recorded percepts of a stimulus/norm can be stored without any relation to previous storage. If this is the case, long-term memory (LTM) system is just a plain system of stored accumulated percepts. If a recorded percept matches to a stored percept, the cycle of cognition-perception is finished and the information extracted is stored in LTM. However, the trajectory of storage is not finished and from related old percepts, formation of new units takes place. For the genesis of new units, further processing operates towards a more general level, to develop individual 'personality'. In the long term, stored percepts will continue to operate towards a higher order 'product-levels'. Subjective experiences will therefore hierarchical organized and stabilized in a personal unique way. The emergence of a new unit extracted from a pair of stored subjective percepts is a mental development of higher order structuring of personality. This higher order integration for building up a unique identity is a process of *mentalization*.¹⁵

3.2.1 Personality & Perception of a Stimulus/Norm

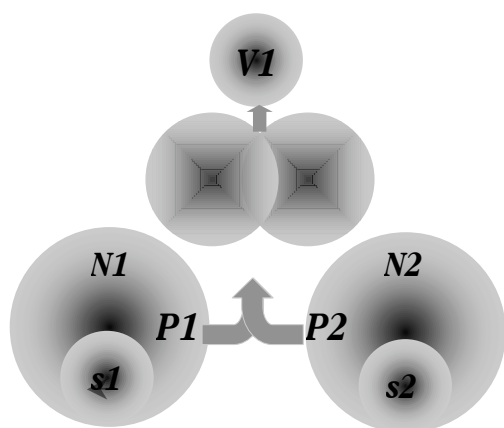
Mentalization, based on a pair of matched stored percepts in long-term-memory (LTM), is a process of transformation, an event through which a pair of lower order more or less concrete subjective percepts is transformed into a higher order percept unit. Though the causal cycle of cognition-perception is finished, mental trajectory continues on a higher level. Thus, personality development founded on two stored percepts transformed into one single compound higher-order percept unit is a two-to-one operation. Several sets of higher order units develop through accumulation of experience for the formation of a hierarchical organization of LTM. Through the emergence of higher order units, the person is building up a unique identity and the more integration takes place, the more the person develops his personality. This new higher order percept unit is more than the sum of its constituent old percepts, possessing therefore *mental surplus value* (BOX 5a).¹⁶

BOX 5a Talking about Tennis Abstractly

During a tennis pause, you and your partner take a rest and talk about the game you both just played. Sometimes you speak in more abstract and general terms about tennis issues. You use the more general compound term 'tennis racket', in which for instance concrete words as Slazenger-racket and Wilson racket is nested.

Your language can play a role at various levels of generalization. You can listen to, or speak abstract words, as for example bat in general. The transition from concrete to abstract words is a process of transformation, a 'fusion' between more or less concrete stored terms nested into a higher order compound word. Transformations of lower-order terms into one higher order ones, does occur on several levels of categorizations building up a hierarchical structure, denoted as *personality (long-term-memory)*.

FIGURE 11 Personality (Long Term Memory) & Mentalization



s=stimulus, N=Norm,P=perception, V=value

Personality or LTM formation is an event based on matched two percepts (P1, P2) transformed into a mentalized memory unit. Personality built up is two-to-one operation forming in the long run a hierarchical long term memory system.

3.3 ATTITUDE: MATERIALIZATION OF THE INDIVIDUAL

The storage of percepts and its hierarchical structuring of LTM through transformation is one side of the coin. The human being is also an active and creative person to invent new things, aimed to adapt towards the social environment. Physical needs are aroused, controlled by social values mediated by cognition retrieved. Though needs are often expressed to be satisfied immediately, especially standardized or instinctive needs, the arousal of values and cognition are subject to development in LTM. In case of abstract issues, abstract language, or inventing products, concretization takes place in order to manufacture a product or execute concrete verbal behavior to attune communication. To outweigh a need against a value, cognitive attuning towards the social environment must occur. Transformation from a general to a specific value, a breakdown takes place in the attitude or short-term memory (STM) and this process is an event of **materialization**.¹⁷

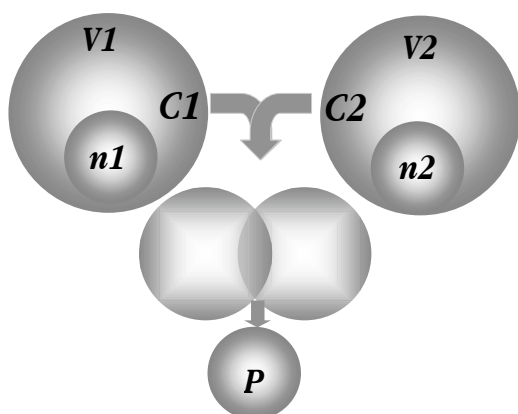
3.3.1 Attitude & Cognition of a Need/Value

Cognition is retrieved from one or another level of mental organization in LTM. Though motivation/response reflecting a need can be aroused autonomously, the emergence of cognition is mentally fused from a pair of matched percepts and concomitant with a value controlling the need in the reference frame of the 1st and 2nd person. A general higher-order value does have a compound character, being abstract or vague. A process of transformation operates, to take place concretization of a value. In the transformational dynamics, one or another concrete value-unit breaks away from the higher order mental domain of LTM. However, this is not an automatic event but dependent on value matching and 1st and 2nd person cognitive interaction. If a concrete product emerges from a higher order value, it possesses **material surplus value** (BOX 5b).¹⁸

BOX 5b Talking about Tennis Concretely

Sometimes you speak about tennis rather abstract, your partner did not quite understand. To communicate, you have to translate your words in more concrete terms or examples to convey your message to your partner. You can make an abstract word as 'bat' concrete to point at in for instance this Wilson tennis racket. You need to concretize your language, to attune your intention to your partner's feelings for understanding. This transition from abstract to concrete terms is a 'break down' from a general compound word into a single one. To convey your message, words and sentences are not sufficient to communicate. Verbal utterances, does not necessarily imply that your intention is transferred. For instance the sentence "I hear what you are saying, but I don't comprehend what you are aiming at". To communicate your intention must attune to her feelings. The message concretization refers to a language breakdown and mental contact, the flow of cognitive intention and perceptual feelings, which occur in a system called **attitude (short-term-memory)**.

FIGURE 12 Attitude (Short Term Memory) & Materialization



n=need, V=Value, C=cognition, P=percept

Based on matching of values (V1, V2) between the 1st and 2nd person interaction takes place and materialization through fission is brought about. ¹⁹

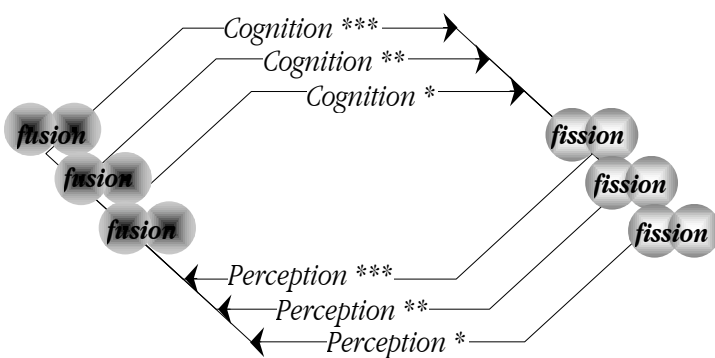
3.4 SYSTEM LEVELS: PERSONALITY & ATTITUDE

The human processes are perception carrying stimuli-norms information from the environment to be stored and transformed into higher order in LTM on the one hand and 1st and 2nd person cognitive values to be transformed into material products in STM on the other one. Transformations in LTM and in STM are counterparts of each other, conceived of as respectively 'mentalization' and 'materialization'. The underlying mechanism of fusion for mental surplus production in LTM manifested in material surplus production in STM, renders the development of mind and matter. In building up personality of higher order values, cognitive development also occurs and to built-up human culture, perceptual development (abstract imagery) takes place. Thus, the emergence of the mind and that of matter continues in LTM and STM for the formation of mental surplus and material surplus units. Though mentalization and materialization are counterparts, it is obvious that time intervals in LTM and STM are different, being respectively long in LTM and short in STM. ²⁰

Transformation in personality and attitude are both events, which occur respectively after matching of percepts on the one hand and values on the other. In personality, fusion connects the matched percepts, transformed into a new higher order mental process unit. In the attitude, based on matched values, a higher order value is transformed into a materialized product unit possessing 'material surplus value', which is the result of the 1st as well as the 2nd person's cognitive interaction. The mental-material ratio of product units increases in favor of the mental by higher ordering in personality and decreases in favor of the material by lower ordering in the attitude. Based on learned old norms and values, evolution of culture and contra-evolution of personality takes place, making place for new norms and values. ²¹

The emergence of mental and social processes and the development of personality and culture represent 'how' the functional household of the human being operates. It says however, nothing 'why' these processes are instantiated. Stimuli interaction through which mental cognition is activated and cognitive interaction through which social norm sensation is brought about provide a functional picture of the human being, but the question must still be answered, why these processes are going into interaction. This question pertains to the energy flow within the 1st person and between the 1st and 2nd person. Though the energy flow originates on individual level, an exchange of matter/energy on inter-individual level must occur for balancing the energy household within the individual. The development of culture can only take place within the reference frame of the 1st and 2nd person. For the formation of personality, norm-value development is dependent on the 2nd person emitted energy flux. Especially mind and matter is more transparent in the framework of *energy transaction* and *energy transformation* (Ch. 4).

FIGURE 13 Survey Cultural Man: Personality & Attitude



*Cognition-Perception level * = 1st order, ** = 2nd order, *** = 3rd order*

Higher order structuring of personality entails a development of the 1st person cognition and values. 1st person cognition retrieved from a memory unit is aimed towards the 2nd person in the framework of which a need against a value is weighted and controlled to be social accepted. Comparison of a represented value against a concurrent percept in the attitude (STM) takes place, to optimize satisfaction to be expected. Materialization to occur, cognitive values are social matched for the emergence of a new material product.

4 NATURAL MAN: ENERGY TRANSACTIONS & TRANSFORMATIONS

" To Be One With Nature Is To Be One With Oneself"

Abstract 4: Natural Man

Modeling the architecture on physical, mental, and social level and the formation of personality and culture, mediated by the attitude, tries to give an answer on the question of 'how' these processes and systems emerge. It says nothing concerning the question of 'why' the human being does perform his behavior at that specific way. This issue refers to the household of matter/energy flow in the reference frame of relative energy 'shortage-surplus'. From an unbalanced state of a lack of stimuli/norms, 'energy transaction' originates within the 1st person, in order to bring about an energy balance in the framework of the 1st and 2nd person. Through the exchange of psychophysical matter/energy of 'cost-benefit', subjective experience takes place through 'energy transformation', an operation of 'fusion-fission' between mind and matter.

4.1 INTRODUCTION

Human functioning tries to adapt to the environment through extracting information to match the best bet for benefit through his thinking. He is concerned by the question of 'how' to fill the stomach, 'how' to plan work, 'how' to achieve in school, etc., but this question does not provide an answer 'why' he is doing such things. This issue refers to conceive the human being as a 'natural man', represented as a bunch of energies. Witness the common sense notion of energy 'cost' and 'benefit', 'giving' and 'receiving', 'emission' and 'attraction', denoting that the human being can also be viewed from the perspective of energy flow of transfer and exchange with the environment. Man consists of a household of psychophysical energy processes to occur within the 1st person as well as between the 1st and 2nd person. Mental energy dynamics is apparent in mental contact and mutual energy exchange, for example in intuitive assessment and empathy. Thus, material and mental processes take place in the energy household of **transactions** and **transformations**.

4.2 ENERGY TRANSACTION: INTERACTION SHORTAGE & SURPLUS

The energy household refers to physical, mental, and social transactions within the body and with the environment. Transactions are necessary for balancing mind-body through consumption, and to develop personality and culture. For the exploitation of nature to transform into cultural products, the human being needs another person. From birth on, others have to take care of supplying material and mental energy. The existence of the other is prerequisite when it concerns the transfer of mental energy, as attention, love, etc. The arousal of a need is an event within the person, but for the fulfilling of material and mental needs, the human being is dependent on the other. Though nature can supply the necessary physical elements to survive, normative energy transfer and personal norm integration are prerequisite to become a member of society.

Input of energy/matter is prerequisite for the output of activities. No output exists without (stored) input. The input-output flow refers not only for physical energy, but also for mental energy. Besides food, man needs another human being for mental energy, like affection and approval. Normative energy supports and develops social functioning. Therefore, energy transactions are necessary for functioning and developing of mind and body. For the formation of personality on the one hand and the creation of culture on the other, energy 'build-up' and 'break-down' occurs. Output of energy is a 'loss' or 'cost' for the system (entropy). For the maintenance of the system, input of energy as a 'profit' or 'benefit' (negative entropy) is necessary. Transactions of energy input-output, representing loss-profit within a person and between persons, does occur in the framework of relative **energy shortage** and **energy surplus**.

4.2.1 Personality & Perception: Energy Shortage

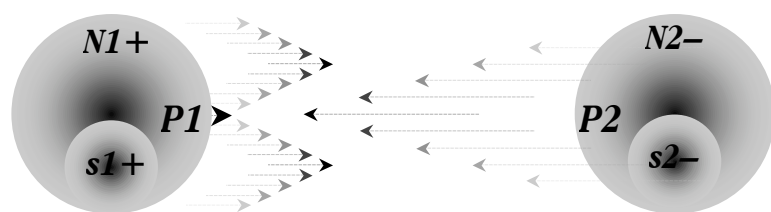
Bodily and/or mental activities do cost energy resulting in energy shortage. Energy shortage does occur on all levels, the physical, mental, and social level. A lack of norms or normative energy from other people also brings about shortage of energy within the person. Through energy shortage of a stimulus/norm, energy activity is aroused representing a need. A need is thus increased energy activity coming from a stimulus/norm shortage. In this unbalanced state, the 1st stimulus/norm energy shortage fires a signal trying to establish interaction with the 2nd stimulus/norm with relative energy surplus stored from a previous consuming or encounter in LTM known as rewarding. A complementary relation between energy shortage and surplus does exist, instantiating interaction. If shortage-surplus interaction takes place, initially starting on unconscious level, a causal cycle of stimulus-need is established. The energy shortage-surplus of interaction, instantiating stimulus-response cyclic flow not breaking through the threshold is an unconscious event. Thus, movement of behavior does occur from an unbalanced energy state of **energy shortage** (BOX 6a).²²

BOX 6a Tea after Tennis

After having finished a tennis game, you and your partner are tired and thirsty. You both have consumed much physical energy and body fluid through transpiration. You take a rest and decide to drink tea in the tennis restaurant. Your partner wanted first to go to the dressing room to change and leave silently ordering a drink up to you. You know that she usually drinks tea after tennis.

Being thirsty is a lack of liquid in your body. It is an unbalanced state, which invokes a feeling of tension, being a high internal stimulus activity. A need is therefore aroused in order to bring your body in balance. The lack of liquid emits a signal towards the brains trying to go in interaction to the knowledge of tea to be valued stored in memory. The lack of liquid refers to the bodily **energy shortage**.

FIGURE 14 Personality & Energy Shortage



s=stimulus, N=norm, P=percept

In an unbalanced energy state a shortage of $s2-/N2-$ exists and fires an interactive signal to the surplus $s1+/N1+$. Signaling between shortage $s1-/N1-$ and surplus $s2+/N2+$ occurs initially on unconscious level (subliminal).

4.2.2 Attitude & Cognition: Energy Surplus

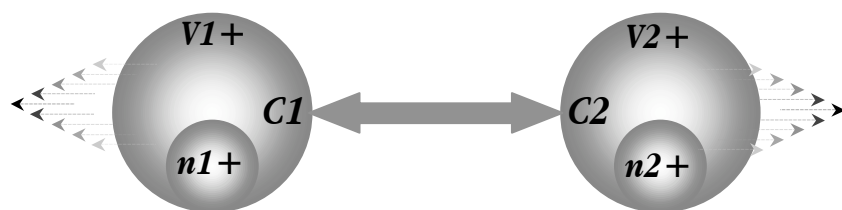
If interaction between energy shortage-surplus of stimuli/norms does take place, breaking through the threshold, the psychophysical process of cognition and social motivation of a value representing energy surplus comes into existence. 1st person cognition anticipates to structure towards the 2nd person trying to solve the unbalanced state by comparing the need against the (represented) value-object through perception. The surplus value representation of 1st person is attuned to his own need and to the energy surplus offering by the 2nd person. If between the 1st and 2nd person matching of values does exist, energy/matter exchange takes place. Between the needs of the 1st person and 2nd person, a complementary relation of respectively energy-shortage and energy-surplus exists, whereas their values matched are common. In case of matching of values, complementary behavior and matter/energy exchange takes place. By fulfilling mutual needs of matter/energy shortage of the 1st person, supplied by the matter/energy surplus of the 2nd person, need reduction is brought about towards a balanced energy state in the reference frame of **energy surplus** (BOX 6b).²³

BOX 6b Tea after Tennis

The shortage of liquid emits high-energy activity arousing your need to satisfy. Initially you do not know what to drink, but suddenly the image what comes to your mind is tea for yourself and also tea for her. You think that tea satisfies your thirst and therefore you order tea for two with the restaurant-keeper assuming he has a surplus of tea. Through ordering and supplying tea both your needs are satisfied.

For balancing your energy state of your body, the need of tea is aroused, trying to interact with the positive knowledge of tea. If interaction succeeds, retrieval of the knowledge of tea takes place and represented as valued. If by comparing the value-representation of tea and what your body needs, you can satisfy your need with the restaurant-keeper. Relative to the stimulus shortage, the represented value of tea is a relative state of **energy surplus**.

FIGURE 15 Attitude & Energy Surplus



n=need, V=Value, C=Cognition

Conceptual comparing of need and value takes place and if values (V1, V2) between the 1st and 2nd person are matched, matter/energy exchange takes place through complementary behavior and mutual needs are satisfied towards a balanced energy state.

4.3 ENERGY TRANSFORMATION: MATTER IN MIND & MIND IN MATTER

Matter/energy transactions between stimulus/norm shortage and stimulus/norm surplus in the reference frame of an unbalanced and balanced states give rise to the question of 'how' a shortage/surplus has an impact on the subjective experience of the human being. The cost-benefit of energy transaction influences subjectivity and inter-subjectivity. The relation of loss-profit refers to the mutual energy/matter transfer between persons, on basis of which a surplus value comes to existence. The relative relation between energy surplus and shortage, results in positive or negative experience. However, positive or negative experience based on cost-benefit transaction does say something how experience is established, but the question concerns the so-called body-mind influence in LTM and the mind-body influence in STM. In particular, the transfer from material towards mental energy in LTM, and from the mental towards material energy in STM is however, not a linear one-to-one operation, but a two-to-one, being a matter of *psychophysical transformation*.

The two-to-one psychophysical transformation is an event already starting on the subliminal moment of shortage-surplus stimuli interaction, to account for the emergence of cognition. Further processing to build up the hierarchical personality is also a two-to-one transformation. This transformation in LTM is an event before cognition and after perception. This transformation does also take place in the domain of cognitive interaction in STM. In LTM as well as in STM, the two-to-one operation, give rise to the emergence of the mental process of cognition and the social-physical process of a norm. For psychophysical transformation to take place, a break down of matter and built up of mind in LTM, and a built up of material energy and break down of mental energy in STM has to occur. Thus, transformation of material into mental energy in LTM is explicit in reverse transformation of mental energy flow into material energy in STM. In LTM as well as in STM, this is an operation of *fusion* and *fission*.

4.3.1 Personality & Perception: Matter in Mind Transformation

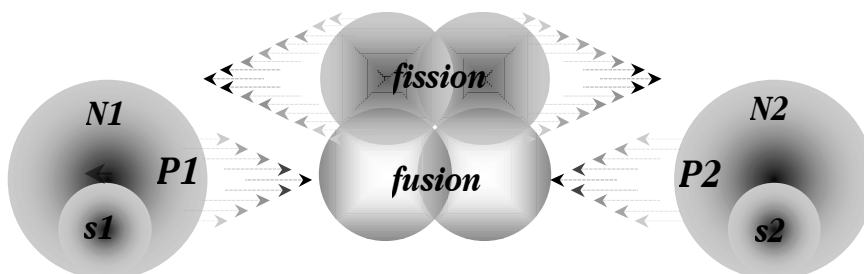
In the reference frame of an energy shortage-surplus interaction between percepts, psychophysical energy flows from the shortage-percepts firing a mental signal towards a stored surplus-percept. Material energy output of a shortage-percept is a 'loss' added to energy input flow for the surplus-percept as a 'profit'. In the psychophysical transformation, a 'break-down' of material energy into smaller units takes place to be mentally structured, a 'built up' to higher mental order. In this event of mental fusion, extraction of mental energy from the material energy percepts does occur losing mental binding to break down into elementary parts. The mental fusion, a transformed binding or structuring operation proceeds for further development of personality. Transformation is thus an event of annihilated material energy from percepts, a break down into elementary units and structured by mental fusion, being a ***matter in mind transformation*** (BOX 7a).

BOX 7a Tennis Partners Unity

After having played tennis together very often, you are beginning to like each other. At a surprising moment an unexpected event occurs. A 'mental contact' takes place between both of you and fall in love with each other. You experience a warm emotion transferring to your partner. You perceive that your emotion has an impact on her and her energy flows back to you. This mutual exchange of energies between both of you, reinforce your feelings for each other.

Mental contact of falling in love between both of you is a spontaneous simultaneous mental event you are both not aware at the instant of flowing. After mental contact, mutually feedback is instantiated successively in both of you. Through the exchange of energies, a beginning love relation is build up into both your personalities towards a stable 'mental relation'. Further processing through fusion of energies (mental synergy) in both your personalities takes place. The energy fusion is a higher-order unity of mutually received energies, a process of ***matter in mind transformation***.

FIGURE 16 Personality & Matter in Mind Transformation



P=perception, s=stimulus, N=norm

Fusion of stored matched percepts (P1, P2) of stimuli/norms (s1/N1, s2/N2) takes place, resulting in surplus cognitive value process through fission.

4.3.2 Attitude & Cognition: Mind in Matter Transformation

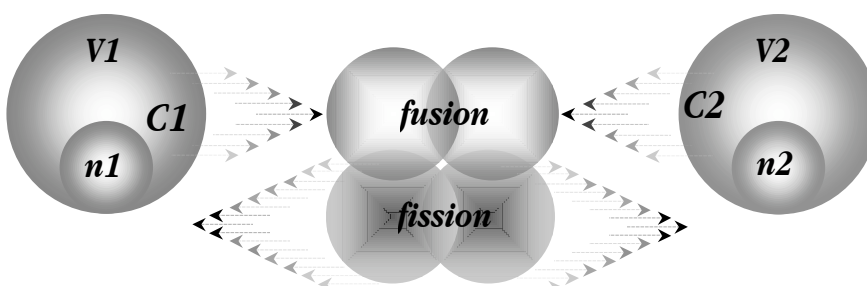
Through material towards mental transformation, a definite destruction of transformed material energy does not take place. Through mental fusion, a built up of a higher order unit, and a fission or break down of elementary percepts, a higher order psychophysical energy flow comes into existence, being the 1st person cognition to structure towards the 2nd person and a surplus value originated from a surplus percept. If through cognitive structuring, value matching succeeds to fulfill both needs, transference of value added energy/matter occurs. However, to concretize a value to transfer, cognitive interactive fusion of the 1st and 2nd person occurs to be transformed by fission in order to bring about a surplus energy/matter unit. In transformation, mental energy breaks down into smaller mental units to bind or structure the built up of a material value. Through cognitive energy fusion, followed by mental fission in elementary parts, mental energy is not lost, but transformed as a binding or structuring force of material energy/matter and therefore one can speak of *mind in matter transformation* (BOX 7b).²⁴

BOX 7b Tennis Partners Unity

Your love relation is manifest through your motivation and behavior to her. Energy fusion in personality concomitant with energy 'fission', physical energy flow, as your motivation accompanied with mental energy flow as cognitive anticipation to attune her perceptual expectancies. If matching of both your values and mental contact succeeds, transformation from mental towards material energy takes place expressed in energy exchange heating up energy collision as for example in sexual behavior. The mutual transfer of emotional energy transforms again into mental energy in LTM, reinforcing your love relation.

Mental-material energy transfer is not bodily bound, but break through the border of your body. Energy transfer of mental energy occurs beyond the velocity of light advancing material energy. Initially mental contact only occurs if you and your partner are in each other's bodily vicinity (locality). If through reciprocal energy exchange a relation is established, mental signaling takes place on internal level. Mental contact with your own mental energy transferred in your partner's body is preserved. You carry each other's energy, holding on at a distance (non-locality). In this love game, cognitive mental energy fusion of you both taking place is *mind in matter transformation*.

FIGURE 17 Attitude & Mind in Matter Transformation



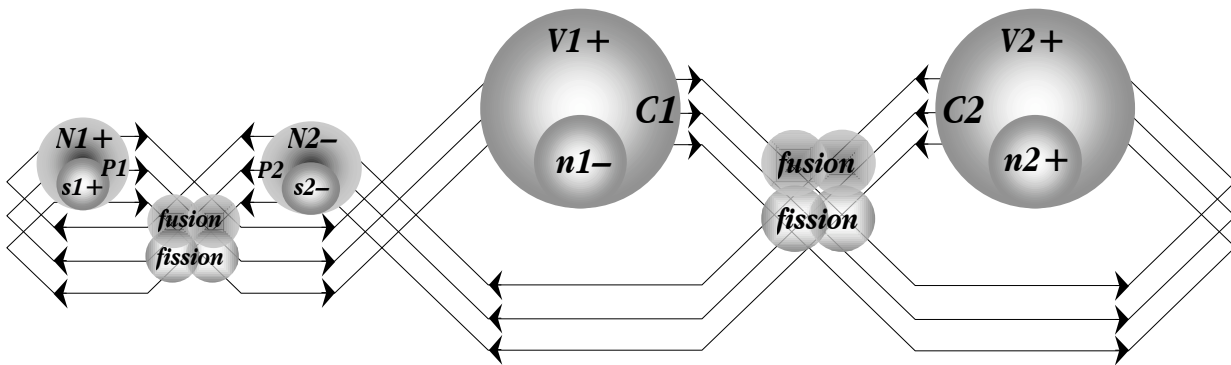
C=Cognition n=need, V=value,

1st and 2nd person cognitions (C1, C2) fuse into a materialized value unit through fission.

4.4 ENERGY LEVELS: TRANSACTIONS & TRANSFORMATIONS

The mental-material energy flow of energy exchange is a peculiar one. In the reference frame of causality, a causal relation is established between 1st person cognition as cause and 2nd person perception as effect; no causal gap of mental energy exchange between them does exist (mental entanglement). This reciprocal transfer of emission and absorption is a direct causal flow of mental energy, and partly concomitant with material energy flux. Transfer of material energy does not keep pace with mental energy. A causal flow does not exist, but a discontinuous transition between 1st person material energy emission as motivation (emotion) being effect and 2nd person energy absorption being sensation as cause. At this junction of material energy flowing, transformation of mental energy as binding force into material energy does occur, giving material energy value added. After initial locally bound interaction, the mental-material processes transferred between persons is in case of an established internalized relation non-local bound. The input-output flux of energy between persons takes place on internal level.

FIGURE 18 Survey Natural Man: Energy Transaction & Transformation



s=stimulus, n=need, N=Norm, V=Value, c=cause, e=effect

For the formation of a higher order mental cognitive value in personality and a materialized product unit in attitude, transformation is a simultaneous event of fusion-fission in LTM and STM. From initial interaction, the start of cognition, and consequent matching, the end of perception, the mental cycle of cognition-perception operates. Interactive fusion is a matter of the mind on all levels, to bring about compound matter through fission.

- 1) Through interactive fusion between the shortage-surplus set of $s1+/N1+$ and $s2-/N2-$ ---> $C1(n1-/V1+)$. $C1$ structuring with $C2$ through value matching $V1/V2$ to balance $n1-$ and $n2+$.
- 2) Perceptual fusion ($P1e, P2e$) takes place through matching of stimuli/Norms ($s1+/N1+, s2+/N2+$). Cognition and value emerge through fission.
- 3) Cognitive fusion ($C1, C2$) takes place through matching of values ($V1+, V2+$). The resulting product becomes explicit through fission, obtaining the status of surplus percept.
- 4) a causal relation between 1st person cognition and 2nd person perception exists (mental entanglement).

Notes

- 1 Through the history of philosophy, one has opted either for the material or for the mental point of view (e.g. rationalism vs materialism), in psychology (e.g. behaviorism vs cognitivism), physics (e.g. wave vs particle) and biology (e.g. evolutionism vs creationism) and mathematics (e.g. intuitionism vs formalism). It looks like that the gap between the main-streams or between the 3rd person as object and 1st person as subject cannot be closed.
- 2 Recording of meaningless and meaningful objects/subjects must not be confused with non-functional and functional response from the 1st person view.
- 3 At first glance it looks peculiar, to ascribe to stimuli the status of finality associated with goal-directed. Object finality relatively defined, is conceived as a 'directive' for the person involved.
- 4 Neuro-science (physics, biology, psychology), trying to tackle from the 3rd person perspective the physical-biological conditions for the emergence of the mind from 'unconsciousness', only provides the functional relation between several brain states and (verbal) behavior or subjective experience. It says nothing about the relation between mind and matter, (cf. Chalmers, 1995).
- 5 A distinction between a physiological process as sensation or motivation and its physical object content or its property exists, like round and yellow as property of the tennis-ball. An environmental object can exist autonomously, but the reverse does not hold, a physiological process operates only if an object is involved.
- 6 Between sensation as a neurophysiologic process and an environmental stimulus as product, a distinction exists. An observable product and its property can exist on its own in stable state, but the reverse does not hold.
- 7 The 1st stimulus stored in the 1st recording is meaningless and in the 2nd input it becomes meaningful having the status of 2nd stimulus. On this basis interactive feedback can occur. The covert as well as overt response does have both the status of effect. This does not imply that a response follows always a need.
- 8 The distinction between matter and mind denotes a 'dualism'. 'Mental monism' also holds, explained later. It is a matter of perspective whether to advocate a dualistic or monistic view.
- 9 The assumption is that interaction activates consciousness and that the brain is a 'transducer' or 'medium'.
- 10 Physical interaction pertains only between two stimuli at subliminal level (c.f. percept - percept coupling, Epstein, 1982). This implies that a subjective percept does not interact with a stored percept, but that they are 'matched' after ending the loop of cognition-perception. The distinction between 'sensation' and 'perception' is traditional in psychology. Usually it pertains to the differentiation through which the senses affected by stimuli (sensation) and the results of 'categorization' of objects and events in the environment (perception).
- 11 Over the past several decades, it has become increasingly clear that information exchange at the synapse is bidirectional: the postsynaptic cells also provides a variety of retrograde signals to the presynaptic neuron, and this reciprocal interaction is crucial for the differentiation and maintenance of the presynaptic cell as well as for the formation and maturation of the synapse. H.W. Tao and M-M. Poo – On retrograde signaling at central synapses Proc. Nat. Acad. Sci. 2001 98:11009. Science-Week 7 Dec 2001 <http://scienceweek.com>

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- 12 Usually finality (teleology, intentionality) is connected to the object imagined, located in the future to explain behavior to be performed. To ascribe finality to an object whether unconscious or conscious recorded, has to do with the directive or final character of the object related to the human being.
Finality pertains to the mental flow, being the mental bond between all sub- and super-systems.
- 13 A reverse 'effect-cause' relation is contradictory and not endorsed. Causality does not exist in the phenomena themselves, but is a forceful tool for ordering reality, being a 'structuring' device (cf. Hume).
- 14 In psychology, one uses for definite storage of percepts 'long term memory' after filtering other environmental elements in 'short term memory'. One uses usually personality in the reference frame of 'personality traits', 'cognitive styles', etc. Later it will be demonstrated the connection between the input (3rd person) and output (1st person) flow.
- 15 The question why personality development is a process of 'mentalization', is an issue of matter towards mind transformation (see Chapter 4).
- 16 The underlying assumption is that fusion of two percepts is primarily a mental event. This means that the physical-social units must possess a mental nucleus instantiating fusing.
- 17 An internal value as an image or value representation is not conceived of as mental but as physical. No distinction exists between an internal image and an external percept. The border of the skull to denote internal and external objects, is a false dichotomy, which only pertains to human 'processes' being internal and not to the 'products' they convey.
- 18 Though it looks like in everyday experience that transformation from abstract to concrete occurs by one single 'jump', the same reverse mechanism takes place, as in transformation into higher order units in personality. In physical-biological reality, the emergence of a new product unit occurs always through interaction in a 2-1 correspondence. Thus, several loops for materialization do exist. However, a jump, or discontinuous transition of a value as effect for the 1st person exists, having the status of a percept being cause for the 2nd person.
The meaning of surplus value of an object refers to the shortage of a stimulus-norm (see Chapter 4).
- 19 The reverse process mechanism does occur in LTM in the sequential order of: 1) interaction 2) matching.
- 20 Cognition emerges from 'unbalanced state' of a complementary set of surplus-shortage between stimuli-norms (percepts) interaction, whereas the mental development of personality (LTM) occurs through fusion from a balanced state of equal matched percepts (see Chapter 4).
- 21 It is a physical-biological fact that fusion is a simultaneous event with fission. Fusion pertains to the matching of 1st and 2nd stimulus/norm in the personality and 1st and 2nd person need/value in the attitude. Fission refers to the emergence of a new unit, for instance fertilization is a fusion of male and female cell, followed by fission into several cells/organs forming a fetus.
- 22 Energy activity is whether or not attended by behavior. It is not necessary that motivation as energy activity is manifest in behavioral execution.

Only by high-energy activity of stimulus/norm shortage, breaking through the threshold, retrieval of cognitive value takes place (see Ch.2).

23 Remind that cognition and motivation is not to know for the person at the very moment of processing. A value-object/subject obtains its meaning by perception when (implicit) cognitive interactive feedback has taken place.

24 Though it looks like that an internal image is mental, it is obvious that the imagery of a (generalized compound) value is material and not mental. Plain immaterial values do not exist being a matter of speech. An internal representation has therefore the same functional status as an external percept. There is some evidence that a 'retinoscopic map' in the brain (neo-cortex) exists.