MULTIDIMENSIONAL MODEL FOR QUANTIFYING ASPECTS OF THE SITUATION - PERSON – TASK SYSTEM

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Abstract: The article focuses on the specification of aspects entering the domains of cognition, reasoning, and subsequent decision-making in different situations. We assume that each situation event is not localized in a static environment but an environment with changing conditions. The primary purpose is to develop a theoretical model to achieve the operationalization of quantifying personality factors concerning the cognitive domain of the individual in the situation-person-task system.

Keywords: information domain, cognitive domain, continuum, event, situation / person / task system.

1 Introduction

We tend to investigate, to study phenomena, i.e, "reality," facts. What usually escapes attention is the environment, space, and "background," context, relationships, and influences, which fall into the domain of ontology, epistemology (or gnoseology or noetics), and philosophy, social sciences, or human sciences. We can quantify what we can grasp, stabilize, measure, weigh, and convert into quantities (Neubauer, 2009, p. 80-82), that, what is accessible to our sense organs and perception, technologies and sensors, techniques, criteria, and methodologies that increase and also strengthen their discernment (Attig, Franke, 2020). We tend to understand as metaphysical or as a "quality" what is beyond the direct distinction and "manifests" or "shows" itself indirectly, through relationships or influences. Identifying phenomena of a qualitative nature is a question of the methodology of the scientific process and agreement on their validity and relevance, similar to identifying aspects of phenomena that are constantly in motion, change, and transformation, whether they are "individual" participating elements - parts, e.g. the situation, person, or role is, or their entirety (Johnson, 2021; Schroeren, 2021).

We have created a multidimensional model for the needs of some aspects of cognition, reasoning, decision-making, and action when solving problems and tasks in different situational contexts. The authors' aspirations and the model's ambitions involve aspects that contribute to critical thinking or that influence the process of cognition, reasoning, and decision-making. At the beginning of the process, perception (reception and perception) cannot be omitted, as well as contributing mental and psychological parameters (related to the "state" of the cognizer - condition). The pragmatic scheme of the process of "reality" - "data/information" - "cognition" - "decision" - "action" is presented by the NNEC model (Víšek, 2005), which proposes a fundamental distinction between three domains - informative, cognitive, and the physical. We consider our model for the informative and cognitive domain of this model as the "background" environment in which the process takes place, in which sub-processes instead of phases can be distinguished with a higher or lower degree of clarity, and we consider them as cognition, reasoning, and decision-making. To make correct decisions and effectively solve task situations, as well as from the point of view of recognizing and applying suitable or practical methods and methodologies for them, it is necessary to reduce ambiguities and also to look for "relatively common" parameters for participating "members" of the "situation" system as a whole. Ambiguity reduction is usually made by definition (quality itself as a phenomenon determined by definition - fact) or by a model or theory (by reference to the object of investigation, context, or paradigmatic limitation) as a space of "occurrence of quality" or its manifestation or application (Yamamoto, 2021; Farnell, Varela, 2008; Matsuo, Tsukube, 2020).

We understand the presented model as a tool, a reference space for describing the participating "players" in the situation and the process of its transformation, change, and solving problems or related tasks. We designed it as a tool, a diagram of the environment to test potential relationships, co-occurring and interacting influences in various domains and modes. In this sense, the model forms a distinguishing background for the parameters of other, mutually relatively independent domains. We propose it as an environment enabling topological "capture" (location) and "shaping" (morphological template) for the schematic display of captured "data" of participating phenomena, process states (facts of acts, events), and their relationships and influences. We will create the shape of the scheme, the shape of the situation, the event, and the representation of the structure of coexisting and non-inert (i.e, always with some degree of influence) potentially "relative" or "influential - influencing" aspects. It is possible to quantify qualitative data and work with more disparate and unrelated dimensions and levels in the information domain. In terms of the meaning and purpose of information and knowledge for cognition and knowing, for the cognitive domain, in the information domain, it is mainly the ability to distinguish the meaning of differences (Bateson, 2006, 2018, p. 317; Maturana, Varela, 2016; Vopěnka, 2001, 2014). Information in this context can be understood as a double object, data correlation, event (fact/act), whose integral aspects are the mind, thinking, way of knowing (cognitive/mental model), position, attitude, and the "state" or level of the mental condition of the particular perceiver.

Specific related topics that are not the authors´ focus include the information concept (content, meaning, origin, formation, transmission /conversion, translation/ and use), the topic of cognitive models, styles, ways and logics of cognition, and the mental and "mobility," thinking of a specific person not only in terms of ways of cognition (cognitive or mental models) on the continuum or in the analytical/heuristic dimension (Hammond, 2000; Kahneman, 2012), but also in terms of its change in the process of cognition itself, and qualitative change through reflection, a reversible process or metanoia (Senge, 2016), which naturally occurs in a changing environment, the space of the system (situation – person – task).

2 Theoretical background

In the cognitive domain, the dimension of distinction dominates, i.e. the distinction ability degree. Another dimension of the cognitive continuum consists of the limits of the general (universal) and the unique (singular), between which the boundary "oscillates," the range currently known both from the point of view of a specific person and the general level of "cognition and knowledge" of the human community (system), its axiological intentionality, and the technological and methodological condition (see more, e.g. in Neubauer 2009; Vopěnka 2001, 2015; Bateson, 2006, 2018).

The meaningful subtlety of distinction and evidence happens on a conscious mental level both by analysis (where it is explicit, obviously relative, graspable, measurable, quantifiable, and calculable) and feeling (where it is present, noticeable, or influential, only technologically and methodologically not/capturable, not/affectable and not/graspable), where the level of significance of differences in states, relationships, and processes is vague, diffuse or relatively insignificant, and unquantifiable, e.g, as for its vagueness (indeterminacy) or changeability (instability), etc. Thus, analysis and feeling form

two cognitive continuum limits (Lin, Lane, 2022; Keefe et al., 2011; Holzberger, Prestele, 2021; Stephan et al., 2021).

The model represents an attempt to establish parametric indicators of qualities selected aspects for critical thinking and the mental condition of an individual when solving problems, making decisions, and acting in various task situations, including those an individual cannot prepare for or apply experience or a proven methodological procedure. In this sense, it enables the description of a situation "without determination" (Bondy, 2009, p. 158-159), i.e, a situation "in itself," suchness and facticity, as an event of happening that is in a state/process of change and transformation. The model allows us both a description of the state and a realistic prediction of the development trend intention since the data/information that is actually "identified" and processed is necessary "the past" and may no longer correlate or correspond with the current state of the system (e.g, due to dynamics and complexity of changes and transformations) and reasoning and decision-making can deviate significantly from everyday reality in terms of correctness. The model enables this event/situation (now only) to be approximated for analysis using selected domains, continuum, and their dimensions, to "characterize" and "parametrize," to convert it into "data" that allow, e.g. comparison with mental or cognitive requirements or psychological and personality qualities, which prove to be potentially crucial for mastering it, or for solving problems and tasks related (Pindešová, Pokorný, Novotný, 2008). In other words, the model enables to search and examine connections, correlations, and potentialities between the characteristics of the situation (environment), the task, the problem, and the prevailing trends of the quality potentials (characteristics) of a particular person (impairment of their degree - intensity and "coherence") or the human system potentials (Biggs, 2022). In specific ways, it can contribute to the formation, transformation, development, or retardation of the cognitive possibilities of a particular person or human system, the transformation or corroboration of knowledge, valuable methods, and methodologies of cognition and reasoning for decision-making and action (Farshid et al., 2021; Rowbottom, 2008; Matsuo, Tsukube, 2020).

The model is based on assumptions of an ontological and epistemological nature, subsequently reflected in preferred philosophical, psychological, and other related field-specific modalities. An ontological background, as well as the gnoseological one, allows us to "untie" and "release" from the traditions of the mesoterraic way of thinking and the tendency of "continuity" with authors and authorities, be it models and ways of thinking formalizing the subject of being and the existence of phenomena, things, states, and processes, the topic of an individual and human systems, or the topic of "linear" transmission of knowledge, cognition, and their results tending to consider some problems as solved, issues as thought out and invented or some questions as answered and ambiguities as explained, with implicit or explicit claims to truth or probability (Neubauer, 2009; Blumenberg, 2015; Horyna, 2020; Petříček, 2009; Fernández-Izquierdo, García-Castro, 2022).

The ontological context is inspired by systems competing with substance models, be it the legacy of Neubauer (2004, 2009, 2011, 2017), Hempel (2015), or selected aspects of the concept of non-substance ontology (Bondy, 2007, 2009; Kužel et al., 2018), philosophy of living nature by Kratochvíl (1994), specific aspects of the concept of processual philosophy of nature and Whitehead's metaphysical system (Andrle, 2010), or thinking about thinking (Heidegger, 2018), thinking in the language of Wittgenstein (2007, 2019), thinking in images (Petříček, 2009) or thinking in metaphors (Blumenberg, 2015; Lakoff, 2006), perception or memory, process and state, movement, matter and time, or freedom, truth, probability and other topics (Bergson, 1947; Blumenberg, 2015; Petříček, 2009). We drew inspiration of an epistemological nature mainly from the concepts and theories dealing with the mind and thinking (Rorty, 2012; Kahneman, 2012), reasoning (Hammond, 2000; Kostroň, 1997; Kahneman, Sibony, Sunstein, 2021) or decision-making in static and dynamically changing conditions, asymmetric operations and postmodern conflicts (Paparone, Crupi, 2002).

The background and inspirations are justified. Egon Brunswik's model of probabilistic functionalism, Kenneth R. Hammond's concept of the cognitive continuum, and the concept of non-substance ontology or procedural epistemology have proven themselves both in everyday situations, conditions, and circumstances, as well as non-standard, and in situations of reasoning and decision-making under uncertainty of conditions and circumstances, characterized by a high degree of dynamics development, including changes and transformations of the system´s internal and external environment in the process of achieving the "goals" of the mission, as well as the high degree of complexity of relationships and influences, or the "globality" of the consequences on the system or its environment (Bocklisch et al., 2022).

The dominant idea behind the model is the existence of a "bare - pure" situation, or better a "situation without determination, "as the state of the entire system in the process of its being in the environment (space) based on the concept of nondual non-substance ontology (Bondy, 2007) following in some respects Whitehead´s way of thinking (Andrle, 2010). This allows working with dual or double categories such as event (fact-act, state-process), a thing (object-subject), noninertial (sequence - continuity), and others, and identify their "position" parametrically on different types of continuums and their dimensions. Following Whitehead's sense and meaning of the term event (fact - act), the event includes both the static and dynamic nature of the situational reality (system as a whole), (Wühr, Richter, 2022).

These categories always differ from the specific relationships, influences, and interconnections that occur. They arise and develop ad hoc, according to environmental conditions, under specific circumstances and can be considered as so-called morphisms (Sheldrake, 2002, 2017), which have normative potential (Bondy, 2009), and which fulfill the analogous function of events, as objects, in various environments. The ontological background naturally and factually has the ultimate characteristic, feature, or manifestation of "the being of any reality," representing "freedom." Only the degree of freedom determines the form and character of the system as a whole (situation-person-task) on the two limit continuums establishing the possibility of differentiation we use in the model.

The model considered in this way makes it possible to relate "parametrically" and evaluate qualities in various domains, continuums, and levels of a specific environment (conditions and circumstances of the situation and task), which place specific demands on, e.g, aspects of the personal psychophysical and mental condition of a specific person, aspects of his cognitive condition or the relational condition of the human system participating in the event. Also, this model enables to process of data from various sources, information, and "insights" of various "types" of observers (from various relatively separate and unrelated domains and their levels) from various positions (points of view) and establishes relatively accurate "coordinates" considered or ascertained quality in a specific system, and thus "quantify" (Bondy, 2009), formalize it as a variable, objectify and hypostatize it as a quantity (Neubauer, 2009).

The proposed model follows a systemic thinking approach and understands systemic thinking as comprehensive, holistic, and interrelated, in which both insight and overview are simultaneously present. It includes the whole "system" of person - situation - task, and its interrelationships, context, and by its character, it mimics (imitates) the "background" of quality phenomena manifestation. In this sense, it is undoubtedly afflicted with varying heaviness, vagueness, and unaesthetic. However, it allows us to apply currently available methods with the ambition of parametrizing these qualities in some form. It works with the levels, continuums, domains, or characteristics that are to a certain extent inherent to both phenomena and situations, conditions, and circumstances or are an aspect of them. Each member mentioned above, including the relationships between them (which also become " phenomena") to a certain extent (however vaguely and relatively

"subjectively"), valorize (appreciate, evaluate), i.e. materialize and quantify. Simple, one-dimensional criteria are insufficient, and their modeling requires bipolar continuums defined by limits and possibilities offered by mathematics, statistics, and modern data processing technologies. This allows other factors to be "involved" in the game, which is naturally involved in the inferential, i.e, critical thinking of a concrete cognizing human being (whether it focuses on the current or the future), but mainly falls into the irrational or "metaphysical" domain. The degree of correlation, i.e, the correlation between different, ostensibly unrelated categories of qualities, can thus provide more reliable information of a "higher" complexity about the phenomenon that is the subject of our interest, and in this sense, no matter how currently oscillating (point = space/environment of occurrence; i.e, not a static "place" in a permanent space), however, topologically (spatially) more permanent or "stable" (spatially more "certain or determinable - more targetable) as a parameter and indicator that a given action (judgment for decision-making) is most often manifested in a specific individual from the "sets" (singulore) of the model's environment space (Schwaninger, 2006; Cabrera, Cabrera, Powers, 2015; Cabrera et al., 2018).

The pragmatics of the model is considered on three levels. A model conceived in this way goes beyond the limiting epistemological possibilities based on sensory knowledge (data) and expands them by the technological and methodological equipment available (Bondy, 2009), including (thanks to the development of modern computer technologies) the possibility to apply multi-valued, fuzzy, or other types of logic. The second level, following the previous one, is the ambition to overcome the limitations of ontological models, according to which something is either material, i.e. tangible, in the sense of being grasped by measurement, weighing, or calculation, formalized with the help of variables and measured through quantities (put into ratio, i.e., rationalize and therefore objectify) and count (calculate). Or a phenomenon is non-material, elusive, unmeasurable, uncountable, and therefore irrational, and non-objective, suffering from the "vagueness" of definition, non/clarity of contours, non/certainty of forms, or "non/sharpness" of boundaries and limits, the absence of categorization, or even being outside our "objective reality," or „beyond“ its horizon (Husserl, 1993; Vopěnka, 2001, 2014, 2015; Neubauer, 2009). The third level represents the assumption that the model enables to overcome the burdens of psychophysical parallelism, anthropocentric or socio-centric concepts from the point of view of finding the "correct" way of realistically solving a problem (task) by a specific individual (human system), with the least possible energy. In this context, the model accepts the "heuristic mode" and the concept of "situation without determination," i.e, it includes the assumption, the possibility that an individual (human system) naturally behaves and acts in a given situation also teleonomically, normatively and axionomically, "from within" and the environment of the situation, self-creating and co-evolving in the process (i.e., non-inert, autopoietic, self-organizing). This authenticity and autonomy mean that the external criteria are understood as proposals, opportunities, possibilities, frameworks, and limits, not as limitations and givenness (circumstances are relative); conditions are more or less "given" (Wiedermann, 2007; Iba, 2010, 2011; Letelier, Marín, Mpodozis, 2003).

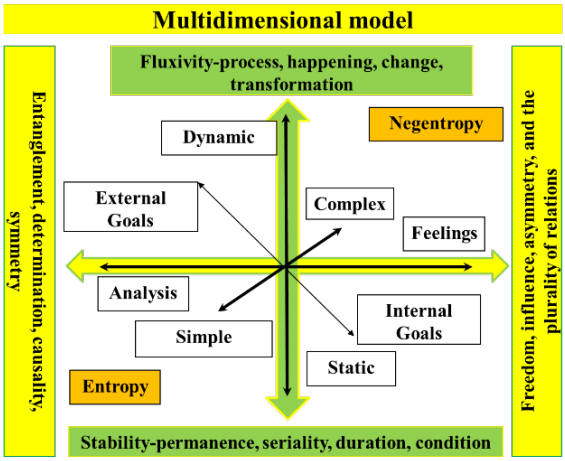

Figure 1: Schematic concept of the proposed model.

The model structure consists of both one-dimensional and two-dimensional bipolar continua. We propose a bipolar or binary continuum; however, we convert them into unidirectional scales for mathematical and statistical data processing into indices and coefficients. This allows scales to be understood and used in different ways, parallel, binary, polar, symmetrically or complementary, or even compensatory (not mutually oppositional on mutually exclusive, but potentially co/referential or co/influential). The dimensions of the considered continua are genuine in the sense of being naturally given, inherent, to all subsystems of the whole (situation - person – task/problem as well as to the whole itself and its internal and external environment. The three-dimensionality of the above schematic representation refers to the multidimensionality of the model. Similarly, as in a two-dimensional (planimetric representation) of space, we can depict an unreal three-dimensional object and suggest processes that do not correspond to our empirical experience or the reality of our world (water "flowing" upwards). The spatial complexity of the whole "system" of situation / person / task-problem can be indicated by three planes perpendicular to each other. However, as the system´s complexity grows, which can again be indicated by additional planes with mutual intersections, the three-dimensional (stereometric) representation of the model space becomes misleading.

Thus, it is necessary to understand the environment of the "system" as a happening event (fact/act, process/state) in the sense of the actual intersection of causalities of phenomena and correlations of relations and states, potentiality of influences, for further possible reasoning or prediction of probable continuity - succession, in the sense of problem-solving - a task that is more or less correct, expected, desirable or not. The model conception is close to a "mathematical point" that can at least represent the unique degree of coherence, homogeneity, and self-identity of the system as a whole (Biagioli, 2020; Bondy, 2009; Hofer et al., 2022; Townsend, 2008; Biggs, 2022).

This mathematical point of "higher complexity," which we call singulore. The term singulore expresses the situational singularity (bipolar singularity) of the state of the entire situation, of an event in the process of its existence, it is happening. In meaning and sense, it approximates Whitehead´s concept of the event. It is then a reference point (Whitehead, 2010) of a concrete, unique system (situation - person - task), a kind of "intersection" (however, only an environment/space of concentration) of all possible, conceivable, and graspable, co-participating levels, relationships, and influences, and therefore also the "center," the center of gravity of the "event," the "punctus" (Barthes, 2005) of the image of its model. Indices and coefficients obtained using the model are then some kinds of "state" quantities around which the "state" of the system as a whole "oscillates" in the process of its being with a greater or lesser deviation from the central position (equilibrium value). If we place these "centers" linearly behind each other in time, a

"hollow" spatial line is created, within which the whole system develops and transforms in time, as well as each of its "parts."

In the "center" of this "hollow line," the envelope of which is made up of the updated positions, the states of the system's co-members, and the limits of the states of the system as a whole (an analogy is created with strange attractors behind each other in time), there is a place - the space of the "highest" density of the internal relations of the whole "center", „center of gravity". The center of gravity also changes over time, and its position and shape in space relate to the internal and external environment development. That space, which we call the clumsy term "center of gravity," is ultimately considered as a "point" that can be placed - marked in the space of the model. This "point" has a different degree of "density," "stiffness" given by the "distance" of the three "centers of gravity," i.e., the subsystems of the whole (person - situation - task), and a degree of their own "density" in terms of individual dimensions, and thus "sharpness," the accuracy or certainty of their limits (boundaries), in the space of the model. The term "center of gravity" is therefore only an additional one, as it is only a "spatial model," where "space" is made up of designed or user-applied dimensions of the model. Its disadvantage also lies in semantics, which evokes the idea of weight. The term center also has a similar semantic disadvantage, which can evoke the illusion of control or even manipulation of the entire system (Bateson, 2018). We perceive these changes as movement, acting of the entire system in the environment. The graphical representation of this "movement", i.e., the being of the entire system in time in autopoietic systems becomes a relatively "circular" form, probably due to the reversal effect of reflection (Blumenberg, 2015, p. 181). The direction of development of the entire system is determined by the character and meaning of each specific event in its existence.

The specific situation of the system as a whole in the form of a "center of gravity" is a relatively "permanent" point from which the actual recognition, reasoning, and decision-making of a specific individual take place. However, this point (space) is still "changing" in the same way as cognition, reasoning, and decision-making, which in reality both happen by themselves (and thus also transform themselves) and happen in a changing external and internal environment. The impact of partial parameters or factors in the permanent transformation and change of events is the topic of the proposed model, which helps to pay attention to those parameters of characteristics that are significant and similar for all participating, co-participating, or interrelated aspects, "co-members" of the whole system. The epistemological (gnoseological, or noetic) initial assumptions for the creation of the model draw inspiration, e.g, from the concept of "probabilistic functionalism" (Kostroň, 1997), the continuum concept by Vopěnka (1989, 2001, 2014), and the theory of the cognitive continuum (Hammond, 2000), as a possible proposal that allows using the potentials of both coherent and correspondence metatheory, as well as from Whitehead´s procedural, or organicist approach (Andrle, 2010), cybernetics, and system and information theory (Bateson, 2018), which we understand as meaningful and useful alternatives to traditional mechanistic concepts.

A specific individual or human system, as a whole, in terms of stability, constancy, change, or even transformation over time, happens, i.e, as a whole "lasts," remains what it is, however partial and more complex changes happen, they do not have partial parameters a "jump" effect on the position of its "center," center of gravity. The change can be noted as a change in the position of its center, the center of gravity in the model. The whole is by its nature inert and constantly "adapts," either unconsciously (reactively, for example, by following some external rules or values) or consciously (learning systems) and proactively (it creates rules, values, or methods in the process). An example of a proactive, hyper-adaptive human system approach is an authentic professional individual, leader, or team in the complete sense of the word.

The most profound cognitive background of the model is based on two continuums, the continuum of duration and relation, in which aspects of any fact, reality, nature, or naturalness are "projected." A characteristic feature of the continuum of duration, whose dimensions are permanence x fluxivity, is temporality, permanence, or duration, describing the relative constancy of a phenomenon in "time" and transformation (change). In the maxim of steadiness, it is relatively inert immobility of elements (members, relationships, and the entire system). In physics, it represents the ideal of a solid body, point, or system (a mechanism). The dimension of constancy is described by terms such as rigidity, atelic repetition, identity, and totality. The dimension of fluxivity is characterized by the degree of complexity of relationships and influences and the dynamics of their changes and transformations. In the maxim of fluxivity (flexibility, change, transformation, flow, process), it is pluralistic, non-inert proactivity as a metaphor for compassion in the sense of non-inertness, and conscious action, self-regulation, auto-dynamics, and autopoiesis (Bateson, 2006; Maturana, Varela, 2016; Wiedermann, 2007; Iba, 2010, 2011; Cabrera, Colosi, 2008).

The maximum of the limit of one pole of the first dimension of duration is the "strength" of the object (state) of the system as a whole, and the second maximum of the limit is fluxivity, flow, fluidity, and duration in transformation, i.e. process. We understand the concept of duration in its duality, where at one pole, the permanence of the object comes to the fore with the analogy of an abiotic "solid," static body, and at the other pole, duration through constant transformation and change with the analogy of a biotic whole (social system) in time and space. Within this continuum, one can observe various variants of process perpetuation or "cyclical" repetition of relationships, positions, algorithms, and influences of the entire system. The topic of distinction at both extremes of the continuum is then the character of the "density" and homogeneity of the system as a whole, either the density being homogeneous or heterogeneous.

A characteristic feature of the continuum of relation, the dimensions of which are "boundness" or freedom, as a measure of "freedom," the form of which is the "tightness" and constancy of relations, bonds, and influences. In the maxim of binding, the dominant feature is continuity, succession, predetermination of the future state, rigidity of the procedure claim, and method in the sense of radical causality. Deviation takes on the meaning of a mistake. The system is internally/externally "closed" (law, norm, definition, criterion), and the system learns in the "matrix" (externally established rules). In the maxim of the dimension of freedom, the dynamics and strength of bonds are variable. The topic of distinction in this continuum is whether the whole tends towards entropy or negentropy at maximum fluxivity. The effect of the limit of this maxim can be either the entropy of the homogeneous (fog), the entropy of the whole (bond to decay / death / the whole of the system/organism), the negentropy of the heterogeneous whole in the sense of qualitative self-transformation (autopoiesis, a system learning in a process), rules, methods, and goals in the process of development. They create a situation, a whole system (situation-person-task). The system is relatively "open," the deviation acquires a new meaning, possibly a mistake, and the non-inert, on the necessity-opportunity-possibility axis, "moves" differently, in contrast to a relatively closed system.

The result of these initial dimensions is the fact that each specific situation "right now" (only now), the whole of the system, has a potentially particular level of degree of freedom and degree of "urgency" of the need for a "solution," i.e, demands reception, cognition, reasoning, and decision-making, which, depending on the conditions and circumstances of the environment, can acquire the characteristics of spontaneity, complex and dynamic transformations and changes in a specific situational reality, or strategic reasoning and decision-making, or the forced application of predetermined algorithms of cognition, reasoning, and decision-making. Another result is the fact of the possibility to change the "direction" of the vector of subsequent development by reasoning and decision-making and shifting the "center of gravity" of the entire system to a more "advantageous" position for the whole itself and the environment. The last result

represents the possibility of changing the cognitive, concrete person's internal (cognitive) attitude in the situation.

3 Methodology of the paper

To define the model we employed theoretical desk research with the application of paired methods such as induction and deduction, and abstraction and concretization. Induction is in comparison with deduction focused on the development of general results from specific situations. Researches include induction for the generalization of hypotheses, e.g. in a questionnaire survey. The deduction has become a process, which passes from general principles to specific – derivation of particular findings from general bases. The deduction is usually used in cases with appropriate theory, which leads to a prediction of application-specific theory in a new situation (Myers, Hansen, 2011). Abstraction has become the method by which is separated unimportant characteristics. That leads to observing the general characteristics of the analyzed element. The Concretisation method is focused on the application of fundamental and general characteristics of elements onto specific groups of effects, belonging to special class elements (Kelnarová, Matějková, 2010).

The model´s basic structure of capturing the characteristics of the situation - person - task system, as well as for describing organizational units, consists of three levels - continuums, which contain the dimensions of static - dynamic, simple - complex, and analysis - feeling. Continuums vary in meaning (correlation), similarity (correspondence), or analogy. They are "unidirectional" or polar, opposite, or even mutually opposite and "excludable" in a given specific context or task situation. This exclusion is not fatal; it only represents a necessity, determinism (symmetric linear causality) becomes opportunity (asymmetric - acausal change) or "deeper" than possibility (transformation), and relatively most profound potentiality (transformation into another force-power quality).

The continuum with static-dynamic dimensions is based on the dualistic concept of state/process. The maximum of static represents immutability, constancy of a phenomenon, stability (algorithm ability) of a process or cognitive methodology, or organizational algorithm in Chronos-type of time. They are represented by product, clone, standard, and algorithm. The maximum dynamic represents not only a change in a phenomenon, a process in time (Kairos-type of time), but also its transformation of both a quantitative and qualitative nature, be it "slow" or fast, requiring quick decision-making and action, a reaction leading to a solution to the situation, or requiring a complex prognosis and "reset of circumstances," including value frameworks, resulting in a change of context, the qualitative transformation of the entire system (permanent situational change/transformation).

The continuum with simple-complex dimensions is a dimension for capturing relations (relationships and influences), whether symmetrical, deterministic, causal or asymmetrical or acausal. The maximum of the simple further represents a meaningfully indivisible "unit," whole, state, process, phenomenon, "and self," thing/event (fact/act, or the entire event). The maximum of the complex represents the "meaningfully" indistinguishable interrelatedness and unrepeatability (uniqueness) of the entire phenomenon, state, and process (tightness of situation-person-task-context relations), "suchness" in the complete sense of the word "now and here," right now (now only).

In the context of the cognitive domain, the place of "movement" in the cognitive plane of a particular perceiver (Ambrozová et al., 2016), his mental mobility in the sense of the ability to engage and change the cognitive attitude (Petříček, 2009) appear to be "core." The cognitive continuum with the analysis of the dimensions - of feeling is based on the concept of psychological functions according to the proposal of Jung (2020) and the concept of the cognitive continuum, according to Hammond (2000), which follows on the probabilistic functionalism of Brunswik (Kostroň, 1997). The maximum of analysis characterizes an environment with apparent (differences), obvious parameters that can be identified and quantified by various methods of exact sciences, structured, categorized, i.e, expressed in terms of some formalized language, or using agreed categories of specific systems (e.g., institutions and corporations).

They are represented by axiom, definition, law, truth, accuracy, calculus, ratio, scale or measurability, quantity, experimental method, objectivity, or symbol (unambiguity). At the maximum of analysis, sensory perception and rational functions in thinking and cognition dominate. The maximum of intuition represents an environment whose characteristics are not/apparent, vague, difficult to quantify, objective, measurable, calculable (countable), and categorizable, differences (as sources of data and information) are not/distinct, not/apparent, not/clear, not/concrete, and non/stable. They are represented by concepts such as feeling, which, in the language of Jung's analytical psychology, describe the natural, irrational functions of the human mind, as well as concepts such as vagueness, fuzziness (Vopěnka, 2015), quality, meaning, sense, method of observation, subjectivity, "probability," image (Petříček, 2009) or "symbol," in the sense of non/obvious, referring "to," pointing "to" (Cassirer, 1996a, 1996b), metaphor (Blumenberg, 2015; Horyna 2007; Lakoff, 2006), possibly, in the language of Brunswik and the lens model concept, also "a hint" (Hammond, 2000; Kostroň, 1997).

Within this continuum, cognitive procedures (methodologies, methods, and logic) or epistemological tactics and strategies, based on coherence or correspondence metatheories (Hammond, 2000), applying procedures known as induction (Bíba, 2019), or deduction, or ways of thinking in terms of cognition, reasoning, and decision-making, adequate to a situation, task, and context (Paparone, Crupi, 2002). This application is closely related to the level of mental or cognitive condition of the cognizant and its flexibility (Bateson, 2018) concerning the conditions and circumstances of the situation, task, and environment, including the organizational environment, in terms of the ability to change style, method, model, as well as position and attitude in the process of cognition.

4 Results

The model can be supplemented as needed and according to the specificity of the user's interests and intentions added with levels, specific dimensions continuums for a more refined distinction, as well as dimensions that affect aspects that contribute to the processes of cognition of a specific person, i.e, his mental mobility. The explanation and graphic expression of the qualities assessment of the situation – person – task system and its sub-elements, using the model, can therefore be varied, again according to the specific characteristics of the assignment (contract) or of the entire system itself, e.g, the continuum inert - non-inert; causal - acausal; rigidity - flexibility; closedness - openness; routine - unique; emergence, risks and more. Data processing using the model works in three phases or levels. See Figure 2.

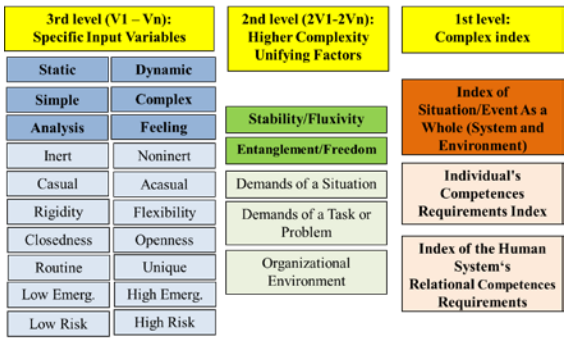

Figure 2: The visual image of the final model creation.

Individual levels of the model can be expressed mathematically. The calculation principle assumes that each variable has a specific weight within the partial level and in the complex form. The coefficient β can express the size of this weight; at a given level and in a given group, the sum of these coefficients equals 1. The balancing coefficient C can also be added to the given equation, which can be optional depending on the specific situation.

$$\text{model}_{3rd\ level} = \beta_1 \times V_1 + \beta_2 \times V_2 + \beta_3 \times V_3 + \beta_4 \times V_4 + \beta_5 \times V_5 + \beta_6 \times V_6 + C \quad (1)$$

$$\text{model}_{2nd\ level} = \beta_1 \times V2_1 + \beta_2 \times V2_2 + \beta_3 \times V2_3 + \beta_4 \times V2_4 + \beta_5 \times V2_5 + \beta_6 \times V2_6 + C \quad (2)$$

Where

β_1 - β_6 – coefficients expressing the variable weight in the determining factor.
V_1 - V_6 – emerging groups of variables.
$V2_1$ – $V2_6$ – emerging groups of variables.
C – balancing constant.

Table 1 shows the model application examples. The values represent the output accumulation of expert evaluations of a specific professional situation of an emergent, crisis nature and the organizational environment of a corporate (institutional) nature company.

	Emergent Situation	**Corporate Environment**
Static	2	8
Dynamic	10	3
Simple	8	4
Complex	3	9
Analysis	3	9
Feeling	8	3
Inert	2	9
Noninert	9	4
Causal	4	9
Acausal	9	3
Rigidity	2	8
Flexibility	10	2
Closedness	2	8
Openness	10	4
Routine	2	9
Unique	9	2
Emergence	10	4
Risk	9	4

For evaluation, we used a scale from 1 (minimal) to 10 (maximal)

Tab. 1: Example of model application

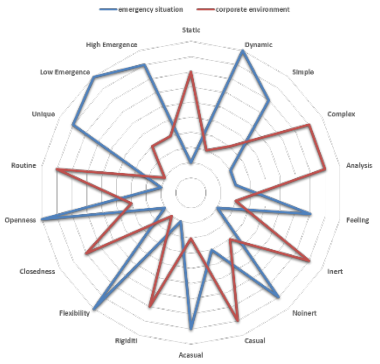

Figure 3: Graphical data representation for the third processing level.

An essential aspect of the model is the fact that continuums can be converted in terms of working with people and human systems, their recognition, preparation, and development into factors of mental, cognitive, psychological, personality, or social condition determined by standardized, valid and reliable methods of psychological, sociological and other diagnostics. The model output, mathematical and statistical data processing are coefficients and indices, such as:

- Coefficient of situational requirements.
- Coefficient of the task/problem requirements and their solution.
- Coefficient of the organizational environment requirements for individuals, micro-teams, partial, relatively independent/functionally, and activity-specialized/organizational units.
- Index of the situation/event (system and environment) as a whole.
- Index of an individual´s competencies requirements in modalities:

  a) Cognitive competencies and mental condition (cognition - reasoning - decision making).
  b) Psychophysical condition (perception and action).
  c) Social condition (communication, relationships, cooperation, and leadership).

- Index of human system competencies requirements (functions, activities, communication, and organization of relationships).

Subfactors of coefficients and indices are not understood as mutually opposite. Indices and coefficients are thus rather specific conglomerates of obvious (self-evident) factors (condensates or specific "fusions") whose existence is naturally possible for every situation, person, or task but occurs in varying degrees of representation. The relative "stability" of coefficients and indices is also determined by the fact that any significant change in a sub-parameter can (but does not have to) have a significant effect and can (but does not have to) be compensated in the "entire" system and the whole of quality manifestations by changes in the parameters of other dimensions or domains. The system occupies a "relatively" constant position in the environment. However, its sub-parameters and their relationships change more or less situationally. Indices and coefficients enable to work, e.g, with continuity in the sense of a causal connection, as well as with discontinuity or with a weak or vague correlation. The fact that there is no correlation as a measure of the closeness of the "occurrence" of phenomena A and B, as well as causality, correlation/succession, or continuity, does not mean that there is no correlation and the absence of any influence. The factors of "influence" instead of correlates contribute to both the occurrence of an event and, e.g, "the tendency" of a specific individual to tend to a particular way of thinking, cognition, reasoning, or solving situations and problems. For example, from the point of view of the index of an individual's competence requirements, it is necessary to work with several modalities. Only in their "cumulation" does the significance level appear in higher complexity factors.

The authors introduced indices and cumulative factors because it turns out that the higher the level of factors, as "cumulative" values of specific input variables, for a given individual, the more robust or more reliable the assumption of his ability to make correct decisions and act effectively in a situation and task, as well as the inclination or tendency towards the character of the environment or profession.

Conclusions

The ambition of the authors of the model is a functional design of a schematic representation of the "universal" aspects of "things" (phenomena, states, processes) to achieve the uniqueness of the entire situation - person - task system in its complexity and dynamics. The model is considered as a possible variant of the coexistence of Mathesis Universalis and Mathesis Singularis, which can be used either for transfer (meaning, sense) or translation or transition between the general, obvious, apparent and exceptional, unique given of the event (Whitehead, 2000, 1970; Andrle, 2010; Townley, 1995) of a specific system unit (Petříček, 2009, p. 128-148). The model also serves as

cognition, grasp, and understanding for meaningful reasoning, correct-realistic decision-making, and valuable and practical actions. The basic dimensions of the model are related to the conditions or parameters of the cognitive continuum, i.e. the environment in which an individual's mind and thinking move, in terms of cognition, reasoning, decision-making, and action. The continuity of the dimensions of the model enables us to perceive the being of the person-situation-task system as an ongoing, relatively stable environment, i.e. a more or less dynamically developing process in its "constancy," as a "search" for the optimal state of relations between the given, natural, spontaneous, and necessary, intentional, voluntary (Blumenberger, 2015), i.e. "oscillating" in the dimensions of static versus dynamic, simple versus complex, and "oscillating" in terms of psychological functions and personality aspects involved in perception, cognition, the reasoning for decision-making and conscious actions of a specific person or human system.

Coefficients and indices, proposed with the use of the model for specific organizational units, situations, individuals, events, and tasks, are then considered as relatively "stable intersections" of domains and dimensions, intersections of "observation" of all aspects participating in the event (including identifiable subsystems as units) in relationships (however their states belong to different domains), while these "observations" also transform themselves, as relating in the event of this relating. Dimensions contain or represent the natural structural aspects of "every" potential "thing" (phenomenon, state, process), event (Andrle, 2010), or "situation without determination" (Bondy, 2007, 2013).

However, it is not data or information in an exact form (according to methodologies and methods of exact sciences), expressed on a one- or two-dimensional scale, but rather something like a cluster of data relations, a complex set of relations and influences, or in other words a higher "topology" the frequency (density) of the occurrence of manifestations of qualities and their degree or intensity in an object (element, individual or system as a whole) in the space of our model. We can consider the analogy of "center," "center of gravity" in the sense of the degree of "density," and the analogy of "vector" in the sense of the tendency or intention of the development "direction" of an event, a phenomenon, a system as a whole in the environment, which creates its way of being. We called this "virtual multipoint," a point of higher complexity singularore. It can be imagined as a space or reference formed by the intersection of levels or planes of several mutually different dimensions. As a qualitative indicator, singulore can reach different levels of density (in terms of the "distance" of the centers of gravity) and thus represent the "strength of the force" of the whole system based on the correlation of the centers of gravity of its subsystems. The sub-dimensions applied in the model enable the relative qualitative homogeneity of the detected or recorded parameter values of the subsystems of the system as a whole (person-situation-task) to describe the current state of the system as a whole and also allow to indicate (propose, model, predict) the "direction" of the development of the system as a whole and its subsystems, or even its "stability" in the sense of tending to constancy, duration (survival and prosperity) or entropy and extinction, or negentropy in terms of qualitative change and transformation. The model can also be used to simulate both the development (e.g, by changing partial parameters) of the entire system in terms of "density," as well as the requirements for changing "direction" in terms of changes in the partial parameters of individual subsystems.

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Primary Paper Section: A

Secondary Paper Section: AA, AN, BA