

## Rethinking a Timely Response of Human Resources to Global Signals: A Case of Organizational Reflexes

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*The general idea of this paper is to present a model that could explain which characteristics of the human reflex arc are inherited by the system of an organization's human resources when they respond to a signal incoming from the global environment. The possibility of inheritance in an organization is discussed in the theories associated with Sociobiology, Biological view in Strategic Management, Reductionism, Microfoundations, and the advanced experience of inheriting neural activity that can be found in Experimental Neuropsychology. Similarity and consolidation of differences incoming from these theories allowed for the theoretical development of a Reflexes model of an organization's human resources response to the signals from the global environment. The analysis of organizational response to the signals incoming from the global environment and its reaction to the system's activity have shown that an organization operates very similarly to the human reflex arc. This insight allowed recognizing the human nervous system's structure as a constituent in an organization's decision-making system. In this paper, the model of the biological nature of the organization behavior is presented. It explains how an organization forms its reflexive competitive response to the signals incoming from the global environment.*

**Keywords:** *Reflexes; Human Resource; Organizational Response; Global Environment; Reflexes Model.*

### Introduction

Analysis of human resources management discourse (Sadowska & Lulek, 2020; Jashary & Kutllovci, 2020; Elrehail *et al.*, 2020; Rodjam *et al.*, 2020; Han *et al.*, 2019; Barrera-Martinez *et al.*, 2019; Shah, 2019; Gunnigle *et al.*, 2019; Chaudhary, 2019; Roscoe *et al.*, 2019; Yang *et al.*, 2019; Li *et al.*, 2018; Vasantha & Kennedy, 2017; Newman, 2016; Tang *et al.*, 2015; Youndt *et al.*, 1996) and review of organizational internationalization theory (Brymer *et al.*, 2020; Andersson & Sundermeier, 2019; Vahlne & Bhatti, 2019; Suseno & Pinnington, 2018; Alon *et al.*, 2018; Godos-Diez *et al.*, 2018; Jankowska, Gotz, 2017; Chen *et al.*, 2016; Kalvionyte & Korsakiene, 2016; Fitzgerald & Rowley, 2016; Babinska, 2013) enabled theoretical modeling of the system that explores the fundamentals of information reception incoming from the global environment in an organization. This finding has led to the development of a concept that describes the ability of a public-sector organization to respond to the tasks related to its internationalization.

In answering the question of how the response to the incoming signals from the global environment process works in an organization and why it inherits its biological features, theories were reviewed that discuss the biological nature of the organization. These theories – the biological organization theory (Milne, 1970; Morgan, 2006), and Biological view in Strategic Management (Davenport *et al.*, 2007) – allowed one to establish the relation of the organization to its human nature, and also to highlight structural variables of

organization interaction that reveal the principles of an organization functioning under the laws of human anatomy. The analysis of the theories of Sociobiology (Wilson, 1975), Reductionism (Udehn, 2002), Microfoundations (Barney & Felin, 2013), and Experimental Neuropsychology (Dreher & Tremblay, 2017; Allpsychologycareers, 2016) were an important grounding of the human reflex arc as a constituent of the organization response system. The latter theories permit the grounding of the human reflex arc's capability to explain how the organization develops its reflexes.

Analyzing the theoretical statements describing the processes that intermedate the management of human resources and internationalization, it has been noticed that, in the process of the reception of information from the global environment and during the formation of a response to it, hypothetically, an active role is played by human resources assessment and the organizational climate (Hu & Zhao, 2020; Gokalp *et al.*, 2020; Klinck & Swanepoel, 2019; Walker *et al.*, 2014; Pandey & Chandel, 2013; Popa & Demyen, 2012; Dadelo *et al.*, 2012; Riego de Dios, 2020; Akbar *et al.*, 2019; Gaviria-Rivera & Zapata, 2019; Nasreen *et al.*, 2019; Berberoglu, 2018; Phua, 2018; Polat & Iskender, 2018; Naldoken & Tengilimoglu, 2017; Pozveh & Karimi, 2016). Studying the human resources assessment and the organizational climate in the case of internationalization, allowed for an insight as to the information incoming from the global environment. The effectiveness and influence of the penetration itself depend on the assessment of human resources. Rethinking an earlier research on the

interdependence between organizational climate and the assessment of human resources has revealed that the assessment of human resources possibly has an impact on the organizational climate and can be used as a tool for management of its sensitiveness. It acts as the guiding system activating or deactivating the perception sensors that are naturally built in human resources and are responsible for acceptance or rejection of the incoming information.

The penetration analogy was selected because it describes not only the information's reception, but also enables an interpretation of a reception as a selective process that describes a free will of the organization. It is based on the philosophy of existentialism (Stanford Encyclopedia of Philosophy. *Existentialism*;

<https://plato.stanford.edu/entries/existentialism/>).

From the philosophy of existentialism, the concept of freedom is taken, which is used to describe a relation of the human and his/her surrounding world as a percept. The philosophy of existentialism emphasizes individual existence, freedom and choice, and it asserts that humans define their own meaning in life, and try to make rational decisions despite existing in an irrational universe. The same properties are described by G. Morgan (2006) in his book *Images of Organization*. For example, in Morgan (2006), an image of organization as an organism also describes an organization as a living unit and emphasizes the importance of the relationship between an organization and its environment. This is important as a description of the concept of an organization's freedom and choice.

The image of an organization as a brain emphasizes that an organization is capable of learning and that it depends on self-organization. This explains the rationality of an organization and its competence to define its own meaning. This point of view also can be extrapolated from the philosophy of existentialism as an analogy to the contraposition expressed by existentialists regarding human's materialization chosen by rationalists (Webber, 2011). Criticism of an organization's materialization from a biological point of view (Gavin, 2018; Arvey & Zhang, 2015) also can unlock possibilities of knowing the organization as pertains to existential freedom. According to existentialism, freedom is what a human would be not as something formed due to natural or social necessity, but what one would "choose" himself/herself, would form himself/herself by his/her every action and act (Berdjaev, 2006).

In the case of an organization, and assessing it from a biological point of view (Gavin, 2018; Arvey & Zhang, 2015; Davenport *et al.*, 2007) that is close to G. Morgan's (2006) image of the organization as a brain, the organization also can "choose" itself and reshape itself. There is revealed a similarity of human resources management as a tool of self-formation, and the organizational climate is revealed as a reason of self-choosing in the analyzed context of human resources management and interaction of internationalization. Therefore, the basic problem of the research is what is the anatomy of an organization's information receiving process, and what simultaneous acting of human resource factors

determines the organization's reaction to an organization's internationalization?

Therefore, the main problem of the research is the discovery of the organization's sensorimotor, cognitive, and affective response functions that would allow increasing or decreasing sensitiveness of the enterprise to the signals incoming from the global environment.

The research examines the mechanism of human resources response to the incoming signals from the global environment and to the management stimuli, and based on the finding result develops the typology of an organization's sensorimotor, cognitive, and affective response functions.

*The aim* of this research was to develop a model that would reflect the biological characteristics of the organization's response to the signals incoming from the global environment.

*The research methods* – theoretical modeling based on development of analogy grounded by hermeneutical analysis of interdependence between the human reflex arc and the organization's response to the signals from the global environment.

The intention of the research:

Rethinking the reflexes model of the organization's HR communication with the external environment, it has been noticed that the same components, like human resources or organizational climate, can play different roles in the same organization. It is possible that the interaction between the organizational climate and the human resource management can be not only responsible for a motor-response that consists of a conditional and unconditional response, but also can act as a knowledge-development tool, which replicates the human brain activity. What if the organization can see, hear, feel, analyze, and decide as people do? The answer to this question became possible after Barney and Felin (2013) interpreted the Microfoundations theory. They draw the line between the constituent and the system, and explained to what extent the constituent is capable of explaining the system. This led to the presupposition that an organization can replicate human anatomy and use it to be self-organized.

The idea was to separate the layers of personal and organizational thinking by using the critical hermeneutic theory, and then to find out by what means the brain functions in the organization.

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## Literature Review

### *Theories Grounding the Biological Model*

Such theories as Sociobiology (Wilson, 1975), Biological view in Strategic Management (Davenport *et al.*, 2007; Niman, 1994; Fos, 1994; Penrose, 1952), and Microfoundations (Barney & Felin, 2013) explain how

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Vilnius (Lithuania) / Editor Agota Giedrė Raišienė. Bologna : MEDIMOND, 2015. ISBN 9788875877262. p. 157-168.

biologic qualities can be related to the decisions of a group. For example, the theories in the tradition of sociobiologism (Wilson, 1975) provide a good explanation for unreflective behavior of living organisms, animals and humans. Such theories can contribute to an explanation of individual and group behavior, which is driven by genes / biological programs, instincts, strong emotions, extreme or irrational forces (for example leaders and followers, mass behavior, and behavior in unusual or extreme situations) (Diefenbach, 2013). These theories say that part of a group of people's actions consists of unreflective behavior that needs no outside instructions and regulations because the action model is inside of the organism itself. This partially explains why some people can easily understand each other without initial instructions and succeed in the decision-making process at the business start-up. It is simply because they act under some kind of similar algorithm, which is common to group or organization members. Here we come to an important question: is it enough to link the organization to the human nature of its individuals?

The theory of Microfoundations (Barney & Felin, 2013) answers this question. The possibility for an organization to inherit human qualities can be found in the study of Barney and Felin (2013), where they describe microfoundations as a concept. In their paper, to define microfoundations, they review the reductionist approach where they discuss the practice of analyzing a complex phenomenon in terms of its simple or fundamental constituents (Udehn, 2002). Barney and Felin (2013) clearly define the limits of the reductionist approach stating that *“organizations and social systems are a function of the set of individuals contained within them. From a practical perspective, this means that we can understand organizations and their performance by carefully specifying the exact nature of these individuals—their personalities, abilities, and skills—and study organizational and social performance in a simple, additive fashion”*. The next important thing which authors explore and which is important for model development is their description of the microfoundations features. They argue: *“but microfoundations are not solely about individuals. The problem with reducing everything to individuals [...] is that it ignores the interactions among them as well as the context of the organization itself (cf. Whetten, Felin, & King, 2009). Individual interactions are not simply additive, but can take on complex forms and lead to surprising aggregate and emergent outcomes that are hard to predict based on knowledge of the constituent parts. Thus, reducing, or attempting to reduce, everything to individuals is only “micro” – not microfoundational. In other words, the foundations portion of microfoundations is important in that it places emphasis on the need to specifically understand the unique, interactional, and collective effects that are not only additive but also emergent.”*

This explanation on the one hand says that one system is not equal to another, which explains the nature of its behavior because the nature of the behavior itself is not equal to the achievement of the aim behaving in this way. It means that part of the system is important but not important enough for explaining the complete operation of the total system. This insight raised the question whether the system of such an organization can be considered as a

uni-living system or is it just like a bunch of grapes growing or fastened together and which is recognized as grapes but not the grape alone. The Biological view in Strategic Management (Davenport *et al.*, 2007) answers this question.

According to the Davenport *et al.* (2007), *in the biological view, or living organism paradigm an organization is considered as a uni-minded living system, just like a human being, with a purpose of its own. // Uni-minded systems have a choice, their parts do not - the organization is seen as being under the control of an executive function, and its parts have no choice – if parts should display choice, a conflict would arise.*

The biological view when compared to the discussed theories takes its own unique place. It tightens the statements of previous theories by considering that a group, which is driven by the same quality of its members (sociobiology and reductionism) and being not the same as its part (microfoundations), can also be a uni-minded living system – which means that the organization operates like a human being. This leads to the statement that an organization as a human being may share the same qualities that are inherent in human nature.

From the perspective of our research, the limitation of already discussed theories is that they mostly are based on Mereology (Stanford Encyclopedia of Philosophy (2015. Jan.15). *Mereology*. Stanford Encyclopedia of Philosophy; <http://plato.stanford.edu/entries/mereology/>).

The limitation is that the mereology does not explain the possibility of the system (as a whole) to inherit the quality of its constituent (as a part). This theory only explains how and to what extent the system depends on its parts. In other words, mereology and the discussed theories explain why an organization consists of humans' actions according to human nature, but it does not explain the organizations' phenomenon of inheriting the qualities of a human like a brain or motor response. More clarity in this discussion is brought to light by the work, Experimental Neuropsychology (Ellis & Young, 1995). In seeking for the answers, Experimental Neuropsychology concerned itself with organization management principles.

Experimental neuropsychology leads to the insight that if such qualities like cognition, attention, perception, and memory are inherited by the organization, possibly the motor function and the substitute of cortical structure can be inherited by the organization too.

This statement has been made not by following the basic principles of mereology, but, instead, by the applying the Phenomenological Hermeneutics (Vaitkevicius, 2013) as a tool that defines the thinking logic for construct development. The difference in applying of Phenomenological Hermeneutics is that the result of this comparison is not an exploration of the parts, which are essential for an organization's humanity, but also the discovery that an organization acts as a human being. It does this because the organization replicates the processes of human decision-making, and not because humans make decisions for it. In other words, this does not turn the organization into a human, but makes it act like humans do. This happens because such a way of acting is governed by human nature and, according to the theory of sociobiology, it is essential in the development of the natural environment for unreflective

behavior of humans within an organization. This explains how an organization consisting of different people, becomes a uni-minded system where all of its human parts being self-supporting by nature and by nature similar to the system as a whole coexist in harmony and operate simultaneously, and do not needlessly overlap each other. That is the true phenomenon of an organization which allows its growth from one person being the company, which fully replicates and is completely dependent on that one person's behavior, to the hundreds of thousands people, each of them replicating only a small part of their own behavior in order to create the more advanced algorithm of the cumulated natural human behavior. All of this definitely led to the statement that an organization inherits the qualities of the human being and that this makes it similar to human beings. Therefore, according to Mereology, the organization does not inherit physically from the human the brain itself, but, according to the Phenomenological Hermeneutics, it inherits the brain function. This statement grounds the organization's ability to inherit the motor function from human physiology.

*Core Elements of a Model of an Organization's Communication with the External Environment*

Due to this modelling, a system of environment communication with the organization is being studied as a latent variable that is operationalized by the cumulative interaction of three variables: assessment of human resources (Hu & Zhao, 2020; Gokalp *et al.*, 2020; Klinck & Swanepoel, 2019; Walker *et al.*, 2014; Pandey & Chandel, 2013; Popa & Demyen, 2012; Dadelo *et al.*, 2012), organizational climate (Riego de Dios, 2020; Akbar *et al.*, 2019; Gaviria-Rivera & Zapata, 2019; Nasreen *et al.*, 2019; Berberoglu, 2018; Phua, 2018; Polat & Iskender, 2018; Naldoken & Tengilimoglu, 2017; Pozveh & Karimi, 2016) and organization's internationalization (Brymer *et al.*, 2020; Andersson & Sundermeier, 2019; Vahlne & Bhatti, 2019; Suseno & Pinnington, 2018; Alon *et al.*, 2018; Godos-Diez *et al.*, 2018; Jankowska & Gotz, 2017; Chen *et al.*, 2016; Kalvionyte & Korsakiene, 2016; Fitzgerald & Rowley, 2016; Babinska, 2013). Variables: assessment of human resources, and organizational climate were analyzed as individual factors. These factors function as an information mediator and as a cumulative factor which moderates a motive of information receiving in the context of human resources management; the third, the organization's internationalization was selected as a moderator. It transforms a signal from the environment into a stimulus of change.

Whereas human resources management and the organizational climate as a factor of an organization's adaptation to the changing environment are widely discussed in the literature (Riego de Dios, 2020; Akbar *et al.*, 2019; Gaviria-Rivera & Zapata, 2019; Nasreen *et al.*, 2019; Berberoglu, 2018; Phua, 2018; Polat & Iskender, 2018; Naldoken & Tengilimoglu, 2017; Pozveh & Karimi, 2016), thus, using the method of phenomenological hermeneutics (Vaitkevicius, 2013), there have been identified the features of its use for the purpose of organization's self-defense. This is why, human resources management and organizational climate in relation to the internationalization, can be discussed as a quality of the organization that allows it to secure its identity.

This approach allows to study an assessment of human resources and organizational climate as a barrier that has to be taken by information incoming from outside to the organization. It leads to the understanding that this additive part of the total organizational structure at the same time can act as a barrier for coming changes and as a system which separates the desired changes from the unwanted ones in the organization. The limitation of previous research is that assessment of human resources, the organization's climate, and internationalization were not yet analyzed jointly. The research prior to this time explored the fact that an organization communicates with its outer environment, and the way this is utilized: the internationalization (Brymer *et al.*, 2020; Andersson & Sundermeier, 2019; Vahlne & Bhatti, 2019; Suseno & Pinnington, 2018; Alon *et al.*, 2018; Godos-Diez *et al.*, 2018; Jankowska & Gotz, 2017; Chen *et al.*, 2016; Kalvionyte & Korsakiene, 2016; Fitzgerald & Rowley, 2016; Babinska, 2013) as a connectivity system; the organizational climate as a system that remains responsible for the functionality of the organization (Riego de Dios, 2020; Akbar *et al.*, 2019; Gaviria-Rivera & Zapata, 2019; Nasreen *et al.*, 2019; Berberoglu, 2018; Phua, 2018; Polat & Iskender, 2018; Naldoken & Tengilimoglu, 2017; Pozveh & Karimi, 2016); and the assessment of human resources. The assessment of human resources an organization uses as a tool for directing the personnel's efforts to achieve the organizational objectives during the communication process (Hu & Zhao, 2020; Gokalp *et al.*, 2020; Klinck & Swanepoel, 2019; Walker *et al.*, 2014; Pandey & Chandel, 2013; Popa & Demyen, 2012; Dadelo *et al.*, 2012). The previous researchers sufficiently explored the features of the constructs discussed above, but they also revealed the need for a theoretical modeling of their content's compatibility by assessing how an organization's forms and perception of itself could be important for further study of the organization's functioning principles. This importance can be discussed from at least two perspectives.

The first perspective is that despite the different authors, there is no analysis of the influence of the assessment of human resources to the organizational climate in the context of an organization's internationalization; however, each of these factors separately has been widely discussed and disputed in the literature.

The second perspective is that authors discussing each of these factors are taking the same common organization's model as a base. Therefore, it could be stated that all three factors substantially coexist in the same organization at the same time. Therefore, there should be a logically explained relation between them. Besides, while comparing all three constructs, internationalization is distinguished as an external factor, while the management of human resources together with the organizational climate is distinguished as an internal factor of the organization's development and identity that is inevitably intertwined with an external factor. These different philosophies can lead to the different causes of the nature of the interaction between the inner and outer factors. For example, existentialism would ground the interaction of inner and outer factors as becoming important from the perspective of an organization's internal need for change, while from the point of view of rationalism, their interaction would be seen as caused by an external impulse.

All of this shows that the interaction between organizational climate, assessment of human resources, and internationalization, not discussed until now, can be interrelated and they can share the same purpose.

All three constructs used for modeling in the literature are pointed out as important for the development of the organization. They describe the directness of an organization's development (Seilius *et al.*, 2006), its competitive potential (Kazlauskaite & Buciuiniene, 2008; Isoraite, 2011), and its ability to establish itself and survive during market evolution (Kersiene, 2008). A priori, all markets in which organizations are acting irrespective of an organization's type (business or non-business organizations) are developing. Markets differ only by the speed and scale of evolution. For example, the markets in which business subjects are acting have a tendency to develop more rapidly than the markets in which organizations warranting social security are acting. This is due to the different nature of organizations, which determines an organization's inertness and resistance to change.

The interrelation of market evolution and an organization creates a need for the modeling of an organization's communication with the external environment, and allows for the answering of such questions important to management science as: with help of what functional mechanism, an organization reacts to the signals sent by the environment; why organizations do not form a response to all signals sent by the environment; and if the organization's response can be treated as unconditional and conditional as regards to the process of how it responds, and finally if it can be equated to human unconditional and conditional reflexes.

*The Objective of an Organization's Communication with the External Environment, and the Distinguishing Features Describing its Identity*

The assessment of human resources as a tool of an organization's self-development is characterized by its active features. They describe the directness of the organization's evolution (Guest, 1987). This is because the assessment of its own structure accumulates indicators from the knowledge acquired. This knowledge serves as a reference point for achieved level assessment and exists as: a human's capability criterion in the organization, a direction for personal evolution, and as a target to be achieved. The assessment creates an achievement motive for the person. This motive being expressed as an achievement argument for an objective, acts as a direction tool for the person and helps him/her to separate the true decisions from the false ones in an organization. Therefore, the assessment can assist the person in choosing selectively what incoming information from the global environment to accept and what to reject in order to achieve the organization's greater competitiveness in the market. In a broader sense, an assessment, by directing the persons to build their competencies in a certain field, makes them more sensitive to the particular kind of incoming information and develops the selection criteria for it.

The nature of an organization's climate in the organization reveals itself through its structure. The organization's climate shows the balance in communication between the people. In some organizations, especially the smaller ones, where people know each other, the organization's climate will be characterized by *viva voce*

communication. This will lead to less control of the information flow process and to the greater independence of the person who decides to accept or reject the incoming information from the global environment. In this case, the effectiveness of the decision will depend on the experience and the knowledge of the person who makes the decision.

In other organizations, the organization's climate will depend on the documented rules and the written instructions. They serve as the decision-making algorithm for the organization's personnel. Documented control is more often used in bigger organizations where it synchronizes the decisions and coordinates the actions of the personnel. It helps to standardize the routine processes including information acceptance and rejection; also, it reduces the number of mistakes in predicted situations and prevents the emergence of conflicts.

The level of internationalization is the ability to integrate an international, intercultural, or global dimension into the purpose, functions, and delivery of products or services. It shows how much information from the global environment the organization receives and to how much of it the organization has to respond. The level of internationalization also can be used as an indicator for the evaluation of the organization's sensitivity to the signals incoming from the global environment. This is because organizations having a higher level of internationalization are more sensitive to the signals incoming from the global environment. It is in their nature. Being close to the global markets, international organizations learn to identify a higher variety of the signals incoming from the global environment, whereas local organizations only react to these signals which affect and change local conditions.

Complex analysis of the assessment of human resources (Hu & Zhao, 2020; Gokalp *et al.*, 2020; Klinck & Swanepoel, 2019; Walker *et al.*, 2014; Pandey & Chandel, 2013; Popa & Demyen, 2012; Dadelo *et al.*, 2012); organization's climate (Riego de Dios, 2020; Akbar *et al.*, 2019; Gaviria-Rivera & Zapata, 2019; Nasreen *et al.*, 2019; Berberoglu, 2018; Phua, 2018; Polat & Iskender, 2018; Naldoken & Tengilimoglu, 2017; Pozveh & Karimi, 2016); and internationalization (Brymer *et al.*, 2020; Andersson & Sundermeier, 2019; Vahlne & Bhatti, 2019; Suseno & Pinnington, 2018; Alon *et al.*, 2018; Godos-Diez *et al.*, 2018; Jankowska & Gotz, 2017; Chen *et al.*, 2016; Kalvionyte & Korsakiene, 2016; Fitzgerald & Rowley, 2016; Babinska, 2013) showed an intentionality of interaction of human resource assessment and organizational climate, which is the response to the attempts of the global world to penetrate an organization's existence in order to change the perception of its being.

During the comparison, it was noticed that their interaction in accordance to internationalization is revealed not only as a complex identity, but also as a condition of the organization's resistance to the impact of the external environment. So, from the one side, this allows for an analysis of the ability of the organization to adapt to the changing environment; from the other side, it can be used for a description of the motive formation mechanism, which helps to resist and prevent influences from the environment. Therefore, looking from an organizational perspective, what creates the existential presupposition of the organization, at

the same time creates a barrier for external factors that can distort the perception of organization's being.

## Method

### *Analogue Model for the Study of the Biological Nature of HR Communication with the External Environment in an Organization*

An organization is a sophisticated system consisting of many structural elements that individually have contact with the internal and external environment, and constantly act and actively respond to environmental changes. The ability to react to environmental changes distinguishes the organization from lifeless physical objects, stimulates the organization to retain its uniqueness, and creates a process within an organization's evolution: signal, reaction, and response. It is similar in the case of the human nervous system, where the brain consists of about 100 billion neurons and about 100 trillion synapses which are responsible for acceptance of the incoming signal, reaction to it and the response (Neuronal connections, 2007). In human nature, the reaction to the incoming signal and response to it predetermines the human physical activity, human mind and emotions. (Neuronal connections, 2007). In an organization, hypothetically it may predetermine its activity and the process of decision making.

To develop a hypothetical model which explains how organizations respond to the signals sent from the global environment, the operation of organizations has been studied under the conditions of the internationalized market. The results from this study have been compared to a model of the human nervous system's structure and activity, and have been assessed in perspective of the biological theory that states that every organization function as a living organism (Milne, 1970; Morgan, 2006). This model is presented in Figure 1.

The interrelation between organizational climate and human resource assessment has been rethought. As a result of earlier studies, the presupposition was made that hypothetically an organization intuitively manages its response to the information. This statement came from the perception that, the human resource assessment as a phenomenon in the organization hypothetically can play a role similar to the management of the organizational climate. The studied researches demonstrated the significant impact of the human resource assessment on the organizational climate. They also explored whether the human resource assessment can tune the organizational climate and make it more or less sensitive to the environment and incoming signals from it.

The internalization in the model was used as a factor to explain the mechanism by which, the organization receives the information incoming from the global environment. According to this source, the flow of the information from the global environment depends on the level of the internationalization changes. It was found that the greater the internationalization, the more the information received from the global environment. This means that hypothetically the internationalization in the company can operate as a signal receiver which is responsible for the management of the global information flow.

The modeling of interdependence between the organizational climate, the human resource assessment and internationalization has led to the development of several models that explain how interdependence between organizational climate and human resources assessment becomes a barrier for incoming information from the global environment and how it supports the incoming information flow.

To explain the developed models, answers were looked for in different disciplines: human resource management, organizational sociology, psychology, strategic management, management etc. These disciplines have already developed the models that mostly explain how an organization operates and what processes are taking place in it. Some of them described the behavior of the actors during these processes, but none of them discussed the nature and intention of interdependence between the organizational climate and human resource assessment. The exploration of this has led to the development of a model of a system of global environmental communication which reflects the biological nature of the organization, and explains how a signal transferred from the global environment to an organization and passing the organizational climate becomes an organization's competitive response to the global environment.

*The Methods and Philosophy of Research.* Because such cases have not been researched yet, it was decided to rethink the findings from the research already done and, by using theoretical modeling based on development of analogy, which is grounded by hermeneutical analysis of interdependence between the human reflex arc and an organization's response to the signals from the global environment, to develop a model that could explain the organizational climate's and human resource's assessment role in that process. For this modeling, the concept of metaphysical materialism as a philosophical tradition has been selected (Hudson, 2001).

## Result

*Reflexes model of an organization's HR response to the signals from the global environment.* The principles of an organization's reactivity system operation (TARGET (T)) could be explained with the help of the human reflex arc (SOURCE (S)) (see Table 1). It was an attempt to link the knowledge of anatomy that allows for the recognition of the human nervous system structure and the knowledge of epistemology to the findings from the human resource management survey. This created a possibility to compare the principles of the human nervous system and an organization's operation (see Figure 1 and Table 1).

During the comparison, essential elements of the nervous system – sensors (d), effectors (C), spinal nerves (B, D) and brain as a system (Swanson & Bota, 2010) (see A) – were extrapolated to the model of a system of global environment communication with the organization (see Picture 1). As a result of the extrapolation, a model of a system of global environment communication was developed.

The model shows that the signal sent by the global environment can reach the organization because of internationalization. The internationalization as an example is responsible for the scanning of the global environment, for



learning from the global environment, for networking, for the use of new technologies etc. These and other features of the internationalization makes it important for the model.

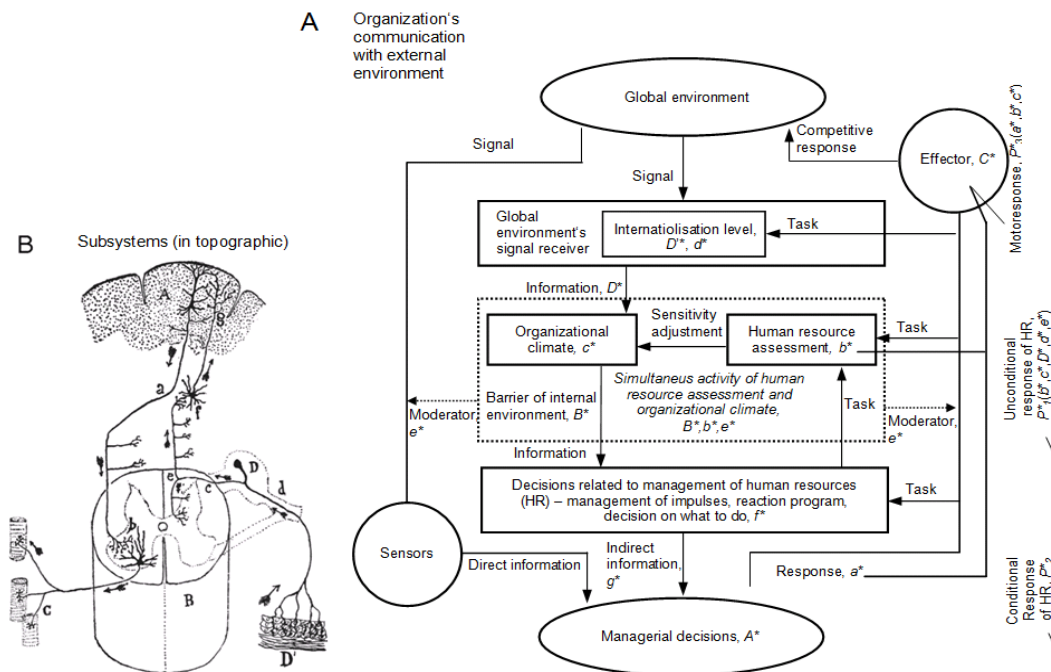
While developing the model, there was no objective to explain all possible connections to the global environment; therefore, attention was focused on the explanation of the role of the organizational climate ( $c^*$ ).

The organizational climate ( $c^*$ ) plays at least two very important roles in this model. First, it supports the unconditional response of human resources ( $HR$ ) ( $P^*I$ ). Second, it develops the barrier for unwanted information that may distract the strategic course of the organization.

The purpose of this comparative analysis was to find the possible similarities between the human reflex arc ( $S$ ) and the organization's communication with the external environment, but not to relate them completely. The supposition in this research is that the human anatomy is not the anatomy of the organization, but because humans create the organizations, so, hypothetically, the organization is about human nature, and therefore, despite some differences, it can be of the same design as human anatomy. This can explain why the interdependence between the organizational climate ( $c^*$ ) and human resource assessment ( $b^*$ ) reflects the memorization of

the signal and reflex formation ( $B, b, e$ ) in the human reflex arc ( $S$ ), and creates the barrier of the internal environment ( $B^*$ ), which is responsible for admittance of the wanted and filtering out the unwanted information that comes from the global environment.

Another feature that makes the barrier of the internal environment ( $B^*$ ) comparable to the spinal cord ( $B$ ) is that the organizational climate not only separates the incoming information, but also together with instructions from human resource assessment ( $b^*$ ) helps to decide to respond to it conditionally or unconditionally. In this case, it acts as a moderator ( $e^*$ ), which is responsible for strengthening of the incoming signal through the sensors, for response through the effector ( $C^*$ ), which can be any particular action of an organization that creates the competitive response to the global environment, and for a request sent as information to the management level of human resources ( $f^*$ ). The typical example of such a request would be the personnel request for an internship to learn a new technological process, which in the future could become a necessity for work in this position (a task for human resource assessment ( $b^*$ )), and which may result in the company's interest in the use of it to strengthen its competitive advantage (indirect information ( $g^*$ )).



**Figure 1.** Reflexes model of organization's HR communication with external environment<sup>2</sup> (similarity modeling presented in Table 1)

The human resource assessment's ( $b^*$ ) role in this model is to direct the organizational climate ( $c^*$ ) through the management of his sensitivity (increase and reduction) to the incoming information from the global environment. An

example of such an operation would be requiring the employees to learn English. If they do not speak English, they thereby reject all information that comes in English from the global environment (this acts as a kind of barrier

<sup>2</sup>(B) Seminal Cajal drawing (43) shows elementary network model of nervous system organization based on neuron doctrine and the functional polarity hypothesis. The former stated that the basic unit of nervous system organization is the neuron, a cell type usually interacting with other cells by contact or contiguity, not continuity; the latter stated that in typical neurons, information conducts from dendrites and the cell body (input side) to the axon (output side). This basic hypothesis allowed information flow prediction (arrows) in neural networks based on individual neuron shape. A, cerebral cortex; a, pyramidal cell > motoneuron axon; B, spinal cord; b, motoneuron; C, motoneuron axon branches > muscle fibers; c, spinal

nerve ganglion cell axon; D, spinal nerve ganglion; D', skin; d, spinal nerve ganglion cell dendrite; e, sensory axon bifurcation branch; f, somatosensory brainstem relay; g, brainstem somatosensory > cortex axon terminals. (A) Model developed using dialectic hermeneutic system of interpretation together with empirical research data from Human Resource Assessment Impact to Organization Climate: Case of Lithuanian Public Sector Organizations study and from Network Model of Human Resource Evaluation and Organizational Climate Interaction Phenomenon study.

for incoming information); if they speak English the decision-making process starts (act as the spinal cord (B) in the human reflex arc (S)) and the organizational climate (c\*) together with human resource assessment (b\*), and internationalization level (D\*, d\*) starts acting as an unconditional response of human resources (P\*1).

The inclusion of the management level of human resources (f\*) and the managerial decisions (A\*) to this process enabled the study to define the conditional response of human resources (P\*2), which explains how organizations

make decisions that require consideration. In this model, the unconditional response of human resources (P\*1) can be related to the emotional response and the conditional response of human resources (P\*2) to the deliberate response.

In the model, the sequence of the response (a\*), Human resource assessment (b\*), and effector (C\*) reflect the condition of the motor-response (P\*3) that reflects the processes which are used in delivering the competitive response.

Table 1

**Similarity modeling between the Histology of Neural Centers and an Organization’s HR Communication with the External Environment Based on Analogical Reasoning**

Source domain (S)		Target domain (T)	
<b>KNOWN SIMILARITIES[1]:</b>			
Set of accepted statements	Symbols for source items	Symbols for target items	Set of accepted statements
Cerebral cortex;	A	A*	Positive analogy. MANAGEMENT DECISIONS
Pyramidal cell > motoneuron axon;	a	a*	Positive analogy. RESPONSE
Spinal cord;	B	B*	Positive analogy. BARRIER OF INTERNAL ENVIRONMENT
Motoneuron;	b	b*	Positive analogy. HUMAN RESOURCE ASSESSMENT
Motoneuron axon branches > muscle fibers;	C	C*	Positive analogy. EFECTOR
Spinal nerve ganglion cell axon;	c	c*	Positive analogy. ORGANIZATION CLIMATE
Spinal nerve ganglion;	D	D*	Positive analogy. ACCEPTED INFORMATION
Skin;	D'	D'*	Neutral analogy. It is not known whether an analogue holds in T.
Spinal nerve ganglion cell dendrite;	d	d*	Positive analogy. INTERNATIONALIZATION LEVEL
Sensory axon bifurcation branch;	e	e*	Positive analogy. MODERATOR
Somatosensory brainstem relay;	f	f*	Positive analogy. DECISIONS RELATED TO MANAGEMENT OF HUMAN RESOURCES (HR) - MANAGEMENT OF IMPULSES, REACTION PROGRAM, DECISION ON WHAT TO DO
Brainstem somatosensory > cortex axon terminals.	g	g*	Positive analogy. INDIRECT INFORMATION
<b>INFERRED SIMILARITY:</b>			
Set of accepted statements	Symbols for source items	Symbols for target items	Set of accepted statements
Unconditional reflex system (b, c, D, d, e)	P <sub>1</sub>	P* <sub>1</sub>	Positive analogy. UNCONDITIONAL RESPONSE OF HR (b*, c*, D*, d*, e*)
Conditional reflex system	P <sub>2</sub>	P* <sub>2</sub>	Positive analogy. CONDITIONAL RESPONSE OF HR
Motor-response	P <sub>3</sub>	P* <sub>3</sub>	Positive analogy. MOTOR-RESPONSE
Memorization of the signal and reflex formation (B, b, e)	P <sub>4</sub>	P* <sub>4</sub>	Positive analogy. SIMULTANEUS ACTIVITY OF HUMAN RESOURCE ASSESSMENT AND ORGANIZATION CLIMATE (B*, b*, e*)
The organization’s communication with external environment functioning under the concept of the histology of neural centers, what mean that human nature determines the managerial decisions in an organization.	Q	Q* (modal epistemic operator)	Hypothesis: that it is <i>prima facie</i> plausible that the organization’s communication with the external environment functions under the concept of the histology of neural centers. It means that human nature determines the managerial decisions in the organization.
<p>[1] Known similarities developed using the method of the Phenomenological hermeneutic system of interpretation (Vaitkevicius, 2014, Vaitkevicius &amp; Kazokiene 2013). The concept of the histology of neural centers is used as a thinking logic for the real authorial intention interpretation of an organization’s communication with the external environment. Source domain (S) and Target domain (T) items are taken from Biological model of organization’s communication with external environment (see Fig. 1).</p>			

In summary, it can be stated that with the help of the Reflexes model of an organization’s communication with the external environment, information acceptance in the organization was described, and the mechanism of actions taken to accept or reject the information incoming from the global environment in the organization operating in terms of internationalization was revealed. This discovery allows for knowing the organization better and helps in studying its competitive capabilities and timely response to the incoming signals.

The model was used because there was a need for an explanation of how organizations react to known and unknown signals incoming from the global environment.

The model explains how the organization forms the reflexes needed for its timely response to environmental change.

The developed Reflexes model of an organization’s human resources response to the signals from the global environment explains how an organization receives external signals, reacts to them, and how barriers within the internal environment – distorting the signals sent from the global environment and decreasing the organization’s response – are formed inside of it. These barriers are important because of their significant role for the organization’s conditional and unconditional reflexes development that possibly are responsible for timely response of organization to the influence that comes from external environment.



## Discussion and Conclusions

Similarity modeling between the histology of neural centers and an organization's HR communication with the external environment based on Analogical Reasoning explored that organizations like the humans has their own reflexes.

The developed model will further help in studying the processes inside the organization which help them to achieve greater competitiveness by developing unconditional reflexes and by the optimization of the conditional reflex structure. This possibly may lead to the development of new methods for an organization's management and decision-making process control.

Therefore, the COVID-19 situation shows the importance of development of organizational reflexes because it helps an organization to adopt to the global changes and survive and stay focused then changes happen.

More in-depth analysis of development of organizational reflexes is not presented in this paper, but hypothetically the similarity between the Histology of Neural Centers and an Organization's HR Communication with the External Environment led to presupposition that in the organization the reflexes can be a part of company's defensive and adaptation system. That mean, that global change called by COVID-19 crisis could be the best case for future study of the development and operation of organizational reflexes.

The finding that the reflexes of organizations like the human's reflexes are responsible for timely response and decision-making process management opens the possibility to study the organization's capability to reduce timely response to the signals incoming from the outer environment. Hypothetically can be stated that the less time organization need for decision making, the grater its competitiveness.

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