Съзнанието
The Consciousness

„ВЪЗПЯВАМ ЕЛЕКТРИЧЕСКОТО ТЯЛО“

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Резюме. Съвременният дебат за конституентите на съзнанието е особено оживен във връзка с тезата на т.нар. елиминативен материализъм, че думите за ментални състояния (убеждения, желания, страхове, надежди и т.н.) не реферират реални феномени, а са част от погрешния речник на всекидневната психология. Въз основа на емпирични данни, идващи от невронауката, настоящият текст аргументира тезата, че емоциите имат телесна природа, достъпни са за тези, които ги преживяват, независимо от езиковите конвенции на всекидневната психология и затова следва да се приемат за неподправени ментални състояния. Първият аргумент използва експеримента на А. Дамасио за приоритета на емоционалното насочване на поведението към рационални решения спрямо логическите разсъждения. Вторият аргумент стъпва на данни от наблюдения и експерименти на М. Газанига и Дж. Леду, според които преживяващият определени емоции може да даде сведения за тях и да ги използва като насоки за поведенчески реакции при отсъствие на достъп до езиковата система на мозъка. Третият аргумент използва откритията на Д. Дътън, А. Арън и П. Екман, за да покаже приоритета на физическите реакции във възникването и функционалното описание на емоциите, както и че последните не са просто ефекти на телесните изменения, а са конститутивни за емоционалния опит. В заключение се стига до тезата, че емоциите са поне един вид ментални състояния, които не могат да бъдат елиминирани, защото думите за тях имат реален референт в света.

Keywords: mental states, eliminativism, emotions, body

1. Introduction. The title is borrowed from the well known poem by the American poet Walt Whitman (1819–1892). During the 60-ies years of the 20 century the theme is taken up by the science-fiction writer Ray Bradbury (1920–2012). What is philosophically interesting in the above title is the implicit view about the so called embodied mind: the entity to which a mind can be ascribed is neither just the brain nor the nervous system, but the whole human body. What arguments can be brought about to support this thesis? Poetry with its metaphorical thinking is quite different from philosophy which seeks clarity of expression and from the sciences that call for empirical evidence. In this text I am going to talk about emotions as part of our mental inventory and present scientific experiments and other empirical data

in confirmation withthe thesis that rational thinking and decision making depends on the emotions and becomes impaired when the emotional system of the body does not work properly. Then I am going to consider the concept of emotion in folk psychology and present briefly the model of the American medical scientist and psychologist Robert Plutchik. The last part develops an argument in favour of the view that emotions are mental states or mental events that possess intrinsic properties to be captured by our language non-tendentiously[1)], i.e. independently of any particular theory or convention. This must be taken as evidence that elimination is not applicable to emotions and therefore there is at least one type of mental states that deserves the status of explanandum in neuroscience.

2. Emotions as bodily changes.Contemporary neuroscience discovers step by step the grounds of Whitman's poetry that endorses the idea of the bodily character of emotions. The latter emerge and function in a process called by some neurologists „the body loop" (Damasio, 1999): beginning in the muscles, emotions reach the proper place in the brain via the corresponding neural paths. A. Damasio studied the emotions for over 30 years and came to the conclusion that we literally steal our feelings from our muscles, because mind is extended to the whole body (Damasio, 1999). The question is, then, how the 'metaphysical' experience of emotions is produced by the physical body? According to Damasio, we first encounter the so called emotive stimulus, say, see a bear in the woods. The brain immediately launches a series of changes in the body in order to prepare it for action. The pulse accelerates, the arteries widen, adrenalin flows into the bloodstream. It is precisely these bodily changes that the cortex detects and interprets them as a feeling of fear – the very one feeling that has actually brought about those changes. Our mental image is an idea that has been generated by the body.

Part of Damasio's studies is of people who suffered some brain lesion that has severed the connection between body and mind in the very part of it that concerns the emotions. Such people are fully aware of their feelings but are unable to transform them into emotions. The accelerated heartbeat does not become fear. These people are literally indifferent to the events around them, including their own tragedy. Damasio writes: „The body contributes more than life support. It contributes a content that is part and parcel of the workings of the normal mind". (Damasio 1995, 126) Sometimes, even when the body does not undergo real changes, the mind creates an emotion by hallucinating bodily change. This, according to Damasio, is an „imaginary body loop" and by imagining a certain body state, say, accelerated pulse, the mind is able to create its own emotions.

3. Emotions, reason, and the body. However, we are interested in one particular discovery by Damasio which shows that the feelings produced by the body are an integral part of the rational thought. We usually think – because we are so trained – that emotions impede rationality. Contrary to that, Damasio's patients with damaged emotions prove unable to make rational decisions. After suffering a brain lesion

all show significant behavioural changes. Some invest wildly and go bankrupt. Others become dishonest and asocial. The majority, however, spends long hours in deliberation over irrelevant details concerning some routine decision they have to make. The lives of those patients are evidence for the thesis that rationality requires emotions (and emotions require bodies). Making a hypothetical generalization that emotions guide reason, Damasio decides to conduct an experiment to support or overthrow this generalization. The experiment proves successful and becomes well-known worldwide. Let me describe it.

The experiment is called 'the gambling task'. The subject is a player who receives four packs of cards – two blues and two reds, and $2000. Each card contains instructions for the player according to which he either wins or loses money. The player is required to turn one card from any pack, and the aim is to win as much money as possible. The cards, however, are not distributed randomly. Two of the packs contain risky cards: according to the instructions on them the player gets big rewards but even bigger punishments. For example, you win $100 in a lottery, but have to pay $1200 taxes. The remaining two packs offer small rewards ($50) and also small punishments ($100). If the player turns card only from the conservative packs, he is rapidly going to accumulate a lot of money.

How do people behave during the experiment? Initially they take cards at random, exploring all the packs and showing no preferences to any of them. The subjects seek for winning patterns which repeat themselves. Gradually, however, changes in behavior occur. At average, after 50 turns people start to draw cards only from the winning conservative packs without being able to explain why they are doing so. After 80 turns, however, the informants are able to tell why they prefer the conservative packs. This behavior shows that experience teaches us what to do faster than logic is ready to give an explanation. It is possible to speculate that empirical knowledge is prior to the rational: we need a certain body of experience on which to reflect and from which to draw conclusions via reason.

Speculation aside, Damasio develops the experiment further in order to explore the bodily changes. He attaches electrodes to the palms of the informants and measures the electro conductivity of their skin. Our bodies are literally electric – our neurons communicate through electrical impulses (which include also chemical reactions) with low voltage. When electro conductivity rises, this means that the person is getting nervous and upset. Damasio finds out that already at the tenth turn the subject's hand 'gets nervous' if it reaches for the wrong pack of cards. While our rational thinking is far from realizing the patterns of the game, our hands 'know' which pack is not to be touched. With the increase of the electro conductivity the informants start to reach to the winning packs more often. Feelings which we are not aware of precede conscious decisions. The body leads the mind.

4. Emotions and eliminative materialism. In the philosophy of mind, eliminative materialism claims that our everyday 'mental words' like belief, desire, fear and

hope do not refer to anything real. Therefore such purported mental states should be eliminated from the conceptual framework of science. The alleged mental states are dependent on the words we use to describe them and if those words undergo a proper analysis it would become clear that they do not refer anything in the world. Damasio's experiments give support to the thesis that emotions are language independent and therefore they can be detected from the third person stance. Emotions can be identified pre-theoretically without using the conceptual framework of folk psychology. There are further empirical data that back up this view and they come from studies of people with divided brains.

In such people the connections between the two brain hemispheres are severed to prevent expansion of epileptic seizures. Thus the dominant hemisphere that is responsible for the functioning of language (this is usually the left hemisphere) has no access to processes that take place in the non-dominant part of the brain. Such patients are able to respond to stimuli which are processed in the right hemisphere, but are unaware of them. However, those processes actually determine the patient's behaviour. Gazzaniga and Ledoux (1978) find out that patients with a divided brain are able to verbally supply correct data of their emotions even when the stimuli are projected to the 'non-verbal' right hemisphere. This means that the patients do not have access to the conventions of folk psychology, because the latter is maintained in the 'verbal' left hemisphere. Informants, who respond negatively to drugs presented to their right hemisphere, then respond positively to a picture of their own father. The informantsare not in a position to use the generalizations of folk psychology nor the verbal knowledge about the perceived object. Only the emotional response that occurs without earlier conscious guidance and without linguistic codification in the left hemisphere, is able to guide the behavior in this case (Gazzaniga and Ledoux, 1978: 153 ff). The correct data supplyis explainable solely on the assumption that emotional states posses intrinsic properties allowing for interpretation independently of a certain theory or linguistic convention.

5. Neuroscience and folk psychology. These empirical data are of great significance for the evaluation of folk psychology. The latter is not able to penetrate as deeply in the emotional experience as the eliminativists suggest. Let us try to show the independence of the emotions by using the model of Robert Plutchik (1993: 57 ff). He calls it 'circumplex', because the basic emotions form a functional circle. According to Plutchik our feelings are reducible to eight primary emotions: fear, anger, happiness, sadness, trust, disgust, expectation and surprise. Each primary emotion is a part of a certain innate programme that guides behavior in survival relevant situations. For example, disgust helps to avoid uneatable substances and the feeling of expectation steers behavior in uncommon situations, say exploration of new territories. Systematic connections exist between the primary emotions. For example, happiness is closely connected to trust and opposite to sadness.

Plutchik's model can very well illustrate the interdependence of emotional

experience and functional relations in the mind. Emotions are not only causally responsible for behavior, as for example, the fear can make someone flee. In this case the distinction between cause and effect is possible and it works as an explanation of behavior. However, such functionally describable properties of behavior can be constitutive for our phenomenological states. The tendency to flee (or to wish to flee) is not an effect but a constitutive part of certain experiences of fear. Same holds for accelerated pulse which is not a consequence of the strong feeling of happiness but a part of this experience. These reflections, however, take the behavioural properties as indicators of the constitutive role of certain bodily states and behavioural events for our emotions. Their justification needs more: further specification of behavioural tendencies is necessary, so that the latter, when characteristic of certain emotional states, can be rendered truly constitutive.

There are two further aspects of our folk psychological conceptions of emotions – a cognitive one and one that concerns the bodily changes in the subject (Pauen, 2005). Those aspects can be functionally described. Studies carried out in the 70-ies show unequivocally that self-ascription of emotions depends on the cognitive evaluation of the situation. The experiment of Dutton and Aron (1974) can serve as an example here. Next, the bodily activities which are relevant for the emotions are the responses of the autonomous nervous system. In case of fear states the pulse accelerates, the blood pressure rises, the skin turgor drops and big quantities of catecholamine and cortisol are released. Facial muscles play a significant role, too, and it is not an accompanying phenomenon but a constitutive one. P. Eckman and al. (1972) bring plenty of empirical evidence for that conclusion. This means that these constituents are not just effects of the respective emotional states but are their genuine part.

5. Conclusion. Emotions are mental states with manifest bodily constituents. Emotions guide behavior independently of any linguistic convention, therefore they cannot be eliminated from our philosophy of mind inventory as sheer folk psychological entities without physical referent.

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1. I borrow the term from G. Rey (1997)

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„I SING THE BODY ELECTRIC“

Abstract. Contemporary debates about the mind's constituting elements are particularly lively regarding the thesis of the so called eliminative materialism that the mental states words (*beliefs, desires, fears, hopes*, etc.) do not refer to real phenomena but are part of the fallacious vocabulary of folk psychology. Based on empirical evidence coming from neuroscience, this paper argues that emotions have bodily nature, are accessible to the experiencer independently of folk psychological linguistic conventions and, therefore, they should be accepted as genuine mental states. The first argument steps on A. Damasio's experiment showing that emotions have priority over logical reasoning in guiding behavior towards rational decisions. The second argument makes use of observations and experiments made by M. Gazzaniga and J. LeDoux in which it becomes clear that the experiencers of certain emotions are able to report the latter and use them as guides to behavioral response in the absence of access to the brain's language system. The third argument is based on discoveries by D. Dutton, A. Aron and P. Eckman and tries to establish the priority of physical responses in emergence and functional description of emotions; those experiments lead to the conclusion that emotions are not simply accompanying effects of bodily changes but are constitutive for emotional experience. Hence, the thesis is put forward that emotions form at least one kind of mental states that cannot be eliminated as emotion words possess genuine referents in the world.

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