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Emotions as individual and social phenomena: Seeking new answers to old questions

Abstract: *The paper presents state of art in the area of emotion studies. It is stressed that emotions are multicomponent processes including neural, expression, subjective and social elements. We have tried to show that synchronization and coordination of these elements from elementary through intermediate to the most complex level may be understood in terms of emergent processes. Manifestations of emergence may be observed both in social aspects of emotions, as well as subjective and expression ones. Although the idea of emergent processes was not explicitly used by contributors of this volume, the traces of it are present in their papers.*

Key words: *organization of emotions, emergent processes, emotions in social context*

An introduction to a journal issue can take a similar form to that of a restaurant menu, which informs what dishes are worth considering. We have decided to adopt a slightly different approach, and think about rules that operate in the kitchen and about consequences of applying different methods of preparing the dishes. In other words, we would like to share our reflections on the condition of and perspectives on our discipline.

Psychological studies spread in many domains in an epidemic manner. A particular problem starts to attract attention of a larger group of researchers – they get infected, and the epidemic spreads in an exponential manner. Then, some part of the infected population give up the primary issue, whereas others become immune to “the virus”, and the epidemic gradually extinguishes. Among examples of such epidemics there were attempts to introduce mathematical models or analyses of attribution processes.

The newest epidemic, the origins of which could be spotted in the 1980s, is connected with the emergence of cognitive science and neuroimaging techniques. A certain response to cognitive science was creating affective science. Comparably to cognitive science, this new discipline has an interdisciplinary character, and includes not only theoretical considerations and psychological

studies, but also philosophical, biological, sociological and anthropological concepts (Gross, 2010). In 2012, the Society for Affective Science was created, and the first conference organized by this association took place in April 2014. Affective science has developed as a result of an integration of achievements of various disciplines – not only psychology of emotions, but also psychology of motivation (issues connected with free will), cognitive psychology (the role of working memory in the emergence and regulation of emotions) and personality psychology (dispositional determinants of processes involved in coping with emotion-provoking situations). Studies on affective states are of great importance to medicine, and they find application in the analysis of both psychological disorders and determinants of many somatic diseases (including the special meaning that has been ascribed lately to relationships between affective states and either oncological conditions or chronic diseases, such as diabetes). A separate group – undoubtedly very interesting from the practical point of view – constitute attempts to investigate collective emotions, the outbursts of which can either temporarily disturb social order (Boski & Wilczewska, 2014) or lead to a revolution.

All this contributes to formulating some basic questions. We will not dare to answer the most fundamental

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question formulated by William James (1884): *What is an emotion?* Although our questions do pertain to fundamental issues, nevertheless, they do not have such a general character as that of James'.

What processes decide about the emergence of emotions?

Although in the majority of cases emotions emerge spontaneously, they are seldom triggered exclusively by external stimuli. Most often their appearance is an effect of the interplay between internal and environmental factors. As biological beings, we are preprogrammed to receive certain stimuli and, at the same time, we are less prone to stimuli that are not included in this program. Despite the fact that we as a species possess a unique flexibility in reacting to different types of stimuli, there still exist limits of this flexibility. We can refer here to the commonly cited examples of arachnophobia (fear of spiders) or ophidiophobia (fear of snakes). A child who observes its mother reaction to the appearance of a snake or a spider, very quickly starts to be afraid of these animals. Evolution prepared our species for experiencing fear in response to this kind of stimuli (Ohman & Mineka, 2001). This view – although very common – has been challenged recently (Tierney & Connolly, 2013). Irrespective of the result of the dispute (i.e., final conclusions) on evolutionary sources of this emotional reaction, this fear can easily become generalized on similar animals, e.g., earthworms. In turn, it seems difficult to evoke in a child a phobia of, for instance, lilies.

A similar situation occurs in the case of internally induced emotions. An example of such an emotion can be jealousy: it emerges as a consequence of thoughts and ideas about the partner, and sometimes also as a consequence of his or her actual behaviors. However, when the partner does not give any reasons to be jealous, the jealous person can construct such reasons. The jealous person may not be able to differentiate between his or her own thoughts and the reality. All things considered, emotions are seldom conditioned exclusively by stimuli that come from the environment.

What is the organization of emotions?

Izard (1990, 1993) claims that emotions are multicomponent systems, and that they emerge as a result of an activation of four interrelated systems. Emotions encompass physiological and expressive processes and changes of the behavior. An important component of emotions are feelings, which reflect subjective experiences associated with changes that take place within the other components. Thanks to that, the primary components of the emotional process can undergo changes. A grimace of anger that appears on the face of a subordinate who hears that s\he will be able to take a leave no sooner than in November, disappears when the person realizes that his or her boss could have noticed it. Even more important problem connected with the manner of discussing emotions occurs when we ask what bonds all these components

under one verbal label. One could expect that particular elements that constitute emotions correlate with one another. However, a number of studies indicate that correlations between components of the emotional process are very low, sometimes even close to zero (Duffy, 1962). This also pertains to correlations between indicators of physiological arousal, i.e., reactions that are controlled in an entirely automatic manner. Trying to explain the lack of relationships between elements of an allegedly one process, researchers put forward the concept of activation patterns (Lacey, 1967). According to this view, different stimuli, and also different tasks accomplished by a person, cause the emergence of specific patterns of physiological arousal. Specific activation patterns emerge also when a person experiences emotions that differ in terms of their quality (Ekman, Levenson, & Friesen, 1983). To be more specific – increasingly important role in analyses have started to play lately not so much the indicators connected with the activation of the autonomous nervous system, but rather indicators associated with the brain activity. Studies conducted with the use of neuroimaging techniques showed that different brain regions are activated when people experience disgust (Borg, de Jong, Renken, & Georgiadis, 2013; Lane, Reiman, Ahern, & Schwartz, 1997). Still, we cannot be sure whether we are able to observe analogous differences in other complex emotions, such as pride, irony, or disdain.

Researchers refer to different hypotheses when no co-dependencies between subjective feelings and physiological arousal can be observed. For example, it can be hypothesized that it results from a distraction or repressing emotions. In case of distraction, an individual starts to recall different thoughts or undertakes another engaging activity in order to divert attention from the activated emotion. Yet, different situation takes place when expression does not correspond with the actually experienced emotion, as it can be observed in the case of mediocre celebrities. We need to remember, however, that sometimes such discrepancies can be dispositional, like in the case of alexithymia.

All of the examples described above pose a difficult problem to researchers of emotions. For, they contradict the thesis that an emotion is a global process that possesses an internal organization. In order to cope with such theoretical and empirical challenges, researchers resort to ad hoc hypotheses. Probably, the number of such hypotheses will eventually become so large, that the initial model will become so complex, that it will be reasonable to seek for a new model.

New theoretical possibilities of solving these contradictions have been enabled by the concept of emergence. One of the creators of this approach writes that "...emotion ... [is]... *bounded episode* in the life of a system that is characterized as an *emergent pattern of component synchronization*, preparing *adaptive action tendencies to relevant events*, as defined by their *behavioural meaning* and aiming at establishing *control precedence* over behaviour" (Scherer, 2009, p. 3459). The idea of emergence assumes that elementary processes,

after reaching a certain degree of complexity, create a new whole, the properties of which cannot be equalled to the properties of the elementary processes. In other words, from elementary processes emerge complex processes and the latter ones organize elementary processes in a new manner. The phenomenon of emergence occurs when we move from neural processes to emotion expression; emergence can also be observed in the case of moving from emotional expression to subjective feelings; a further example is the transition from emotions experienced outside the social context to emotions that occur in interpersonal contacts.

Let us take a closer look at the cases of emergence mentioned above. Let's start with emotion expression, which can be interpreted in terms of a new organization of neural processes. Thanks to it, changes in functioning of neural circuits can be communicated to others. It needs to be noted, though, that expression – as opposed to neural processes – is liable to certain control. At the same time, emotion expression can reciprocally change neural processes – this is taken into consideration in the facial feedback model.

Another emerging form of organization are subjective feelings. They combine various, sometimes very remote, forms of expression, such as face grimaces and clenching fists by a person who has been publicly humiliated. They are accompanied not only by subjective changes, but also by attributions pertaining to sources of the given emotional process, and by judgments about consequences of experiencing emotions and showing them to other people.

The case is yet different when an emotion occurs in social context. In some cases, people suppress emotions expression, in some they show emotions that they do not really experience, whereas in other cases, there is a consistency between what a person feels and what s/he communicates to others. The described situations have been the subject of analysis of the authors of the texts included in the present issue of the Polish Psychological Bulletin. Although they did not refer directly to the idea of emergence, they would frequently investigate emotional processes that operate on different levels of organization, characterized by different levels of complexity.

When a new form of organization of emotional processes appears, it leaves certain freedom to processes that operate on a more elementary level. The following example illustrates it quite well. A river that grooves a new channel does not have to influence the location of every grain and grains that are in its closest vicinity. In other words, elementary processes can manifest a certain level of autonomy with respect to global processes. It is no different when it comes to emotional processes – neural or expressive processes can exhibit certain autonomy with respect to subjective feelings. This enables understanding the lack of strong relationships among the components of the emotional process. The lack of strong relationships is an inherent property of emergent systems (Hollenstein, 2014).

Emotions as social phenomena

In a great majority of cases, other people, their appearance, their behavior, or their alleged intentions trigger emotions; emotions are also addressed to other people. The studies of Oatley and Duncan (1992) showed that free-floating emotions are a rarity. Such emotions do not have a clear source, at least a person who experiences them is unable to, for example, indicate who or what made him or her angry, irritated or sad. These emotions are not directed at any particular person. However, other types of emotions, which constitute a vast majority, possess an object. They also are a communication tool and a tool that enables maintaining social relationships or leads to breaking them off. Only a small group of emotions have purely biological origins – among them one could distinguish panic fear, impulsive anger, deep sadness, and primeval disgust (understood as a reaction to repulsive smells or tastes). The rest of emotions have social functions: apart from the communication function mentioned above, they also constitute a tool of social influence. Exhibiting particular emotions or triggering them in others, we can make other people act in a specific manner. A great part of these influences have a non-intentional character – people use their implicit theories of emotions. These theories are implicit, however, because they govern something that can be called a policy of showing and controlling emotions of other people. To illustrate it, we can use the following example. People are not aware of the fact that assuming a submissive attitude can inhibit aggression in other people. Yet, having a conversation with their boss, when they anticipate reproaches, they stand with their head dropped and avoid eye contact with the person. On the other hand, they can be surprised at the fact that when they exhibit an impulsive outburst of anger, behaviors of other people that infringed on their interests or dignity, suddenly disappear.

When it comes to social determinants of emotions, there also operates the principle of emergence. Emotions that occur in social context are triggered, organized and exhibited in different manners when compared to emotions that appear outside such context. Even in the case of such a simple expressive reaction as smile, there are special rules that define situations in which it is allowed to smile and also what kind of a smile it should be (Szarota, 2006). It is worth noting that people tend to smile differently at different people. Analogous conditionings can also be found in respect of many other emotions. A good example is sadness after losing a person who persecuted other people. During the funeral, the victims can feel deep sadness, although when they found out that their oppressor died, they might have felt a relief that their suffering was over.

In studies on emotional processes researchers can either use the bottom-up or top-down approach. In the first case, studies concentrate on elementary processes (e.g., on neural foundations of emotions, and then move forward to higher processes), whereas in the case of the top-down strategy the direction of investigations is opposite. Both strategies expose a researcher to various dangers.

The first one leads to becoming immersed in a jungle of empirical data, the second one to creating global concepts that can have a speculative character. The authors of the articles included in this issue of the Polish Psychological Bulletin tried to follow a third path. They did not go down, in the majority of cases, to the level of elementary processes, but they tried to investigate the phenomena at a higher – psychological – level. At the same time, the authors were convinced that the analysis of emotions could not be conducted in the Cartesian spirit, i.e., based upon the assumption that the sphere of psychological phenomena is separate from the sphere of neural and neurochemical phenomena. The most important thing was, however, adopting by all of the authors an assumption that only when social and interpersonal context is taken into consideration, the function of emotions can be better explained. Although emotions initially constituted biological equipment, in human beings they have become to a large extent an element of social and cultural equipment. We do not claim that this biological equipment fades away, but we assume that it is a source of emergence of the social and cultural equipment. The concept of emergence enables understanding coordination rules of processes that form emotions and that operate at different levels. It also makes it possible to assume that the emotional life of human beings, especially outside a laboratory, is extremely rich. What is more, it also enables taking into consideration the fact that emotions are not stiff series of processes activated by specific events. Emotions are very plastic and volatile, although when we are under their influence, we can treat them as stable phenomena, immune to external conditions. This changeability of emotional processes is much easier to understand when we treat emotions as emergent systems, in which particular levels of organization are relatively autonomous from one another, than when we treat them as prewired biological programs (Freeman, 2011).

Individual and social consequences of emotional functioning

This special edition of the Polish Psychological Bulletin is devoted to the search for common and new perspectives in the field of emotion research. It contains twelve articles representing various theoretical and methodological approaches. A common denominator of the research presented in all of the included articles is searching for consequences of emotions, at both the intrapersonal and interpersonal level.

The first two papers refer to the suppression of emotional expression. Specifically, the authors ask what happens when we consciously hide our emotions. Baka places emotion suppression in the organizational context (*How do negative emotions regulate the effects of workplace aggression on counterproductive work behaviours?*), and investigates the mediating role of job-related negative affectivity and the moderating role of emotional suppression in the workplace aggression–counterproductive work behavior relationship. The

results of his study have demonstrated that workplace aggression is linked to counterproductive work behavior both directly and indirectly (through an increase of job-related negative affectivity), and that the suppression of anger and anxiety intensifies the effects of workplace aggression on counterproductive work behavior. The second paper, written by Szczygieł and Maruszewski (*Why expressive suppression does not pay? Cognitive costs of negative emotion suppression: The mediating role of subjective tense-arousal*), presents the results of two experiments, in which cognitive consequences of expressive suppression were analyzed. The results have shown that suppressing emotional expression is a very “expensive” way of regulating emotions, i.e., it deteriorates the memory of events that emerged during the period of expressive suppression, and it decreases the efficacy of working memory. Szczygieł and Maruszewski tried to explain the mechanism underlying the effect of suppression on cognitive performance, and they found that expressive suppression decreases cognitive performance through its effects on subjective tense arousal.

In the third paper, Wytykowska and Gabińska (*The effect of emotions, promotion vs. prevention focus, and feedback on cognitive engagement*) examined the impact of emotions on cognitive engagement, measured by subjects’ engagement in categorization tasks. The results of their study have shown a positive effect of positive emotions on cognitive engagement. Moreover, Wytykowska and Gabińska have observed a positive effect of promotion orientation on cognitive engagement.

The next paper, written by Kalka and Pawłowska (*Health enhancing coping as a mediator in relationships of positive emotionality and cognitive curiosity with quality of life among type 2 diabetes patients*), examines the importance of emotions in the context of health psychology. Specifically, the authors have investigated the relationship between positive emotionality, cognitive curiosity and perceived quality of life among people suffering from type 2 diabetes. They found that the higher the positive emotionality and cognitive curiosity among people with type 2 diabetes, the higher their satisfaction with life. Moreover, Kalka and Pawłowska have demonstrated that the relationship between the positive emotionality/cognitive curiosity and the perceived quality of life is mediated by proactive and preventive coping strategies.

The next two papers refer to the symbolic meaning of emotions. Zięba and his colleagues (*The affective tone of narration and posttraumatic growth in organ transplant recipients*) hypothesized that there is a connection between the affective tone of narratives about life and the experience of posttraumatic growth in groups of kidney and liver transplant patients. The results of their study have shown that the patients who described their recent experiences in a more positive way, reported a higher level of posttraumatic growth. Of importance, these results were obtained in a longitudinal study. The authors concluded that the affective tone of narratives about life, understood as a relatively stable individual characteristic, promotes posttraumatic growth.

The affective tone, treated as an emotive meaning, was also analyzed in Jasielska's paper (*The psycholinguistic world of "zdziwienie"- "astonishment" and "zaskoczenie"- "surprise"*). Jasielska tried to identify the valence of the synonymous words "zaskoczenie"- "surprise" and "zdziwienie"- "astonishment" on different levels of mental representation of emotions. The results of three studies conducted by the author have shown that on each level of language cognition, i.e., perception, symbolization and conceptualization, it is accompanied by a repetitive pattern of word application. The valence of the words "surprise" and "astonishment" is present in the colloquial understanding, and is expressed in popular narratives. The conducted studies have provided evidence that people manifest a tendency to use the word "surprise" to describe emotions that occur in positive situations, whereas the word "astonishment" is applied in negative and positive situations with a comparable frequency.

The next paper, written by Górska (*Mentalization, specific attachment, and relational satisfaction from the intrapsychic and interpersonal perspectives*), refers to mentalization, i.e., a process that involves inferring about one's own and other people's behavior on the basis of unobservable mental states. Górska observed a strong negative effect of one's own attachment anxiety and avoidance, and a strong effect of the partner's attachment anxiety on the relational satisfaction. She also observed that mentalization predicts the relational satisfaction beyond the attachment style of the partner, however, this effect could have been observed only in women.

The paper written by Grzywacz (*Dream emotionality. Selected formal properties of dreams*) discusses characteristics of dreams. Specifically, Grzywacz investigated whether time variability of dream features depended on the participants' age and affective value of their dreams. Grzywacz found that pleasant dreams of young and middle-aged participants related mainly to the period of middle adulthood, whereas unpleasant dreams referred to their present developmental phase and to the period of late childhood. In contrast, unpleasant dreams of older individuals were predominantly connected with the period of middle adulthood, whereas those pleasant ones referred to various periods of their entire life.

Wróbel and Królewski have discussed in their article (*Is your mood more contagious if you are likeable? The role of liking in the social induction of affect*) consequences of the presence of emotions in the social area. They have explored the role of liking in the social induction of affect. The authors have described not only the role of dispositional likeability in the socially induced affect, but also the role of an emotion expressed by a sender. Wróbel and Królewski observed that when the sender expressed positive emotions, the dispositional likeability influenced the social induction of affect. In an opposite situation, i.e., when the sender expressed sadness, the dispositional likeability was insignificant.

The next paper (*Emotional and attentional predictors of self-regulation in early childhood*), written by Stepień-Nycz and her colleagues, refers to self-regulation in early

childhood and its predictors. The paper presents the results of a longitudinal study on the relationships between the functioning of attention, regulation of emotion and later self-regulatory abilities. The obtained results indicate that early ability to focus attention and later executive attention functioning are significant predictors of self-regulatory abilities in early childhood.

The paper written by Wrzosek (*Autonomous vs. heteronomous mode of action control and task performance: The role of the situational context and action vs. state orientation*) presents the results of two experimental studies in which the effect of the situational context (autonomy-supportive vs. external control) and action vs. state orientation on perseverance and efficacy in task performance were investigated. The results of the first experiment revealed that in a context that supports autonomy – as opposed to one that induces external control – people are more likely to be both more persistent and effective in their actions, as well as more interested in the performed task. The results of the second experiment showed that a context that supports autonomy affects both persistence and efficacy. Moreover, in an autonomy-supporting context, action-oriented people have a more positive attitude towards a given task than individuals who are state-oriented.

The last paper (*Psychometric properties of the Polish version of the Trait Emotional Intelligence Questionnaire-Short Form*), written by Szczygieł and her colleagues, presents the Polish version of the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF). The results describe the reliability and validity of the scale. The evidence supporting the validity of the TEIQue-SF came from the pattern of relations with the other self-report measure of EI, personality measures, as well as affective and social correlates.

This special issue of the Polish Psychological Bulletin includes a wide variety of papers on different aspects of emotional functioning and reflects the complexity and diversity in the area of emotion research. We would like to thank all of the authors for their valuable contributions to this special issue. Our special thanks go to the anonymous reviewers for their insightful comments and important suggestions.

References

- Borg, C., de Jong, P.J., Renken, R.J., & Georgiadis, J.R. (2013). Disgust trait modulates frontal-posterior coupling as a function of disgust domain. *Social Cognitive And Affective Neuroscience*, 8(3), 351–358.
- Boski, P., & Wilczewska, I. (2014). Uprzedzenia polsko-rosyjskie a emocje polskich kibiców w trakcie Euro 2012. [Polish-Russian prejudices and Polish football fans emotions during Euro Cup 2012]. *Psychologia Społeczna*, 9, pp. 258–284
- Duffy, E. (1962). *Activation and behavior*. New York: Wiley.
- Ekman, P., Levenson., & Friesen, W.V. (1983). Autonomic nervous system activity distinguishes among emotions. *Science*, 221, 1208–1210.
- Freeman, W.J. (2011). The emergence of mind and emotion in the evolution of neocortex. *Rivista Di Psichiatria*, 46, 281–287.
- Gross, J.J. (2010). The future's so bright, I gotta wear shades. *Emotion Review*, 2(3), 212–216. doi: 10.1177/1754073910361982

- Hollenstein, T. (2014). Models and methods of emotional concordance. *Biological Psychology*, *98*, 1–5.
- Izard, C.E. (1990). Facial expressions and the regulation of emotions. *Journal Of Personality And Social Psychology*, *58*(3), 487–498. doi: 10.1037/0022-3514.58.3.487
- Izard, C.E. (1993). Four systems for emotion activation: Cognitive and noncognitive processes. *Psychological Review*, *100*(1), 68–90. doi: 10.1037/0033-295X.100.1.68
- James, W. (1884). What is an emotion? *Mind*, *9*, p. 188–205.
- Lacey, J.I. (1967). Somatic response patterning and stress: Some revisions of activation theory. In M.H. Appley, R. Trumbull (eds), *Psychological Stress* (pp. 14–44). New York: Appleton-Century-Crofts.
- Lane, R.D., Reiman, E.M., Ahern, G.L., & Schwartz, G.E. (1997). Neuroanatomical correlates of happiness, sadness, and disgust. *The American Journal Of Psychiatry*, *154*(1), 926–933.
- Oatley, K., & Duncan, E. (1992). Incidents of emotion in daily life. In *International review of studies on emotion* (pp. 250–293). Chichester: Wiley.
- Öhman, A., & Mineka, S. (2001). Fears, phobias, and preparedness: Toward an evolved module of fear and fear learning. *Psychological Review*, *108*(3), 483–522. doi: 10.1037/0033-295X.108.3.483
- Scherer, K. (2009). Emotions are emergent processes: they require a dynamic computational architecture. *Philosophical Transactions of the Royal Society. Biological Sciences*, *364*, 3459–3474.
- Szarota, P. (2006). *Psychologia uśmiechu. Analiza kulturowa* (Psychology of Smile. Science of Culture Analysis). Gdańsk: GWP.
- Tierney, K.J., & Connolly, M.K. (2013). A review of the evidence for a biological basis for snake fears in humans. *The Psychological Record*, *63*(4), 919–928. doi: 10.11133/j.tpr.2013.63.4.012