

Aleksandra Jasielska*

The psycholinguistic world of “zdziwienie”- “astonishment” and “zaskoczenie”- “surprise”

Abstract: The aim of the study was to answer the question whether the words “zaskoczenie” [phon. zaskɔˈʃɛjɛ]- “surprise” and “zdziwienie” [phon. zɔɕiˈvjɛjɛ]- “astonishment”, which are treated in the Polish language as synonyms, possess a fixed pattern of application, and whether the colloquial context of using these words differs in terms of its emotional valence. The theoretical background for this investigation was the triadic approach to language cognition that includes perception, conceptualization and symbolization, and corresponding to this approach concept of mental representation of emotions. The obtained results have shown that people tend to use the word “zaskoczenie” to describe emotions that occur in positive situations, whereas the word “zdziwienie” is more frequently applied in negative situations. The observed emotive connotation of the investigated words has been explained by the rules of phonetic symbolism and implicative meaning of the words preserved in the popular/colloquial understanding.

Key words: surprise, astonishment, psycholinguistics, denotative and connotative meaning, emotional valence, conventional sound symbolism

Introduction

Strauss and Allen (2008) introduced the concept of blended words which refers to words that do not have an unequivocal emotional connotation and are treated as equally good exemplars of several emotional categories. It can be assumed that the words “zdziwienie” [“astonishment”] and “zaskoczenie” [“surprise”] possess in the Polish language the characteristic of the blended words¹. In the original studies, an example of this particular category of words was “znudzenie” [“boredom”] that was associated with a neutral state (38%), sadness (31%), anxiety (15%) and disgust (12%) (Strauss & Allen, 2008, p. 121). However, the English words „surprise” and „amazement” were categorized unequivocally as connected with the emotion of surprise (the average result was 98% and 78%, respectively) and to a small extent with happiness (the average result was 6% and 20%, respectively). Moreover, the expressions “zaskoczenie”

[“surprise”] and “zdziwienie” [“astonishment”] can also be labels for the category of the so-called *bittersweet emotions*, in the case of which overlapping of positive and negative emotional states can be observed (Djikic, Oatley, & Peterson, 2006; Magai, 2008, p. 384; Pargament, 2002). Such a characteristic has, for example, the word “love” that is frequently accompanied by ambivalent connotations (e.g. combine rapture and pity). The lack of coherence within the “love” was supported in many different languages around the world (Jasielska, 2013, p. 85–86; Kimoze, 2001, p. 197–212; Karasik, 2003, p. 212; Lutz, 1988; Ogarkova, 2007, p. 95; Szczygiel & Kolańczyk, 2000).

The existence of possible differences in the way of comprehending the words “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”] can be related to the opinion of Anna Wierzbicka (1999, p. 158) who provides an advanced and, at the same time, meticulous, explanation of the meaning of the synonymous verbal labels used in

¹ During the class of “Basic Helping Skills”, I practiced with my students emotion reflection, and to train this skill, we did an exercise from the book “The Helping Relationship: Process and Skills” by Lawrence Brammer (1973). The exercise consisted in creating a list of words, as rich as possible, that would describe emotional states, and then discussing proposals of each individual with the entire group. The result was a list of over 300 labels of emotions. During the analysis, it turned out that there were among us individuals who ascribed the words “zdziwienie” [“astonishment”] and “zaskoczenie” [“surprise”] a completely different sense, whereas some individuals treated them as synonyms. In the first group, there dominated voices that “zdziwienie” [“astonishment”] is ascribed to situations of negative valence and “zaskoczenie” [“surprise”] to situations of positive valence. In the latter group, there was no unanimous stance on the sign of emotional states described by these words. This situation became an indirect stimulus to conduct the studies reported in the present article.

a situation of »an insult, which diminishes “I” and “mine”« (c.f. core relational theme in the theory of Lazarus, 1991) (cit.) »“Gniew” [“anger”, “wrath”] implicates a judgment that “this person has done something bad”, and it easily gains slightly intellectual and moral connotations; “złość” [“anger”, “spite”], in turn, can be associated with almost animal aggression or child’s fury. “Gniew” can be full of dignity and impressive, but “złość” – just like outburst of anger, bad mood, aggressive irritation – cannot«.

The characteristic of surprise is an intriguing psychological state, because it shares the majority of prototypical features of basic emotions (Ekman, 1992), such as: is present in other primate species, triggers a specific physiological reaction, is preceded by common events, is a manifestation of coherent autonomous and expressive reactions, occurs fast, is transient, generates an automatic evaluation of the stimulus, is experienced as an event that cannot be fully controlled, and has an important adaptive function. Notwithstanding, surprise is not always treated as an emotion, because it does not meet the definition criterion of possessing either positive or negative valence. Therefore, it is very often defined in the literature of the subject as a neutral state (Reisenzein & Meyer, 2009). In turn, Polish studies (Jasielska, 2013, p. 110) conducted with the use of semantic differential have shown that the semantic distance between the word “emocja” [“emotion”] and the word “zaskoczenie” [“surprise”] is the smallest of all names of basic emotions. Additionally, on the dimension of evaluation the word “zaskoczenie” [“surprise”] turned out to have a markedly positive connotation. Thus, it seems that in common understanding, for Poles, the word “zaskoczenie” [“surprise”] is treated as a representative of the category of positive emotions. This result is in contrast to scientific understanding e.g. “surprise” is identified as negative emotion in Plutchik’s Wheel of Emotions (Plutchik, 1980).

Analyzing the etymology, it has been observed that in the nest of the word “zdziwienie” [“astonishment”] there occur mutually exclusive explications. On the one hand, the origin of the word “dziwić” [“to wonder”] is derived from the prefix verb “podziwiać” [“to admire”] that denotes admiration and esteem; on the other hand, however, it is explained as “astonishment, usually connected with additional strong emotions, such as fear or derision” (Boryś, 2005, p. 146; Malamor, 2013, p. 125). The negative connotation of “zdziwienie” [“astonishment”] appears, *inter alia*, in the definition of the conjunction “i” [“and”], where we learn that it is “an exclamation that expresses discouragement, doubtfulness, dialectically also astonishment” (Malamor, 2013, p. 171), and in the definition of the word “cud” [“miracle”], where dialectically “cud” [“miracle”] and “cudo” [“marvel”] are things that are unusual, beautiful and that arouse admiration, but also astonishment, indignation” (Malamor, 2013, p. 94). In turn, the word “zaskoczenie” [“surprise”] does not appear independently in the dictionary, nevertheless it can be found in the formation nest of the word “ale” [“but”], where it says that » it is an exclamation that expresses “zdumienie” [“amazement”], “podziw”

[“admiration”], “zaskoczenie” [“surprise”] (Malamor, 2013, p. 35), whereas an opposite explication can be found in the formation nest of the word “razić” [“to shock”, “to dazzle”] that refers to negative phenomena, such as „zaskoczyć” [“to surprise”], przerazić [“to frighten”] or “załamać kogoś” [“to deject someone”]« (Malamor, 2013, p. 361).

This article is focused on the analysis the Polish words, which describe the emotion surprise and does not aspire to by analyzed the phenomenon of discrete emotion. These two words “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”] are treated in the Polish language as synonyms. The third word very closely connected with them “zdumienie” [“amazement”] was excluded from the study because of more cognitive meaning than emotional in Polish.

The linguistic representation of the world of emotions

Psychology of emotions investigates emotions and independent understanding of emotions by human beings (Russell, 2005). Language is present in both of these spheres. In the former one, due to the expressive function of language, people are able to express emotions, whereas in the latter one, thanks to the descriptive function of language, they stabilize the “sensory-affective” experiencing of emotions and are able to talk about emotions, which reveals how they experience and conceptualize emotions (Szumska, 2000). In the latter realm, one can distinguish two types of knowledge. The first one is the knowledge of emotions represented in the notional-conceptual structures, the second one is the linguistic knowledge that serves as a means of expressing these structures in language (Marczewska-Okuniewska & Kurcz, 2003). The meaning of a word that describes an emotion is not identical with the meaning of the emotion. For, language is a tool that describes the emotional reality, it does not create it. As a result, language utterances are semantically transparent, and their aim is to direct attention towards the non-language reality. This is why one cannot treat the subject’s utterances as fully reflecting the meaning of his or her emotions (Parkinson, 1995). On the other hand, the analysis of emotions meanings is practically impossible without referring to the process of “naming or talking about emotions”.

In order to structure the process of using words to express the meaning of emotions, it is worth referring to the triadic conception of phases of human experience, which includes perception, conceptualization and symbolization (Nowakowska-Kempna, 1995, p. 87–88). Under this approach, perception processes, observation of sensory data and psychological reflection that accompanies these processes are activated with reference to the non-linguistic reality. Conceptualization, in turn, is connected with getting to know this reality, and it includes, among others, such mental processes as processing memory data or inferring, which in the end lead to the creation of a notion. The process of symbolization pertains to the act of capturing the phenomenon linguistically, i.e., expressing the notion

in the form of a linguistic unit. The analysis of human cognition starts usually with the effect of symbolization, i.e., the linguistic representation of the world, in order to arrive on its basis to the processes of conceptualization of the non-linguistic reality, and then turn to the perception processes and understand their influence on the process of conceptualization. Yet, the central element is a notion that, in order function as a unit that organizes and describes the non-linguistic reality, takes predominantly the linguistic (and conventional) form. The above suggestion, present in works of linguists, and referred to as informational rhombus (cf. semantic triangle, Odgen & Richards, 1989, p. 11), refers to the elements and processes present in the contemporary triangular concept of mental representation of emotions (Maruszewski & Ścigala, 1995). In both of these approaches, the meaning of an emotion does not refer exclusively to the content of the notion or the meaning of the word that describes it, but also to the cognitive and instrumental activities triggered by the given emotion. So, the process of perception would be an equivalent of transformations within the pictorial code, conceptualization within the abstract code, and symbolization within the verbal code. Initial stages of emotion representation are accompanied by both reflecting the characteristics of a given emotion (in conformity with the perceptive potential of a person) and assigning linguistic labels. Symbolization (i.e., verbalization) "is connected to the elements of interpretation of the non-linguistic reality that results from the structured form of language and the mechanisms of its functioning" (Nowakowska-Kempna, 1995, p. 89). Following this line of reasoning, it can be supposed that there probably is at least an indirect relation of adequacy between the name (symbol) of the given affective state and the meaning that is an effect of the process of correspondence between conceptualization and perception of the given non-linguistic reality. According to this assumption, three studies that aimed at verifying whether there exists a common pattern of applying the words "zaskoczenie" and "zdziwienie" have been conducted.

The present study

The purpose of the three independent studies was answering the following questions: 1) is there an established pattern of using the words "zaskoczenie" ["surprise"] and "zdziwienie" [astonishment] in the colloquial language? 2) does the colloquial context of placing the criterion words differ in terms of emotional valence?

The studies were based upon the concept of the triad of experience stages that refers to the processes of perception, symbolization and conceptualization of

criterion emotions, described above. It has been assumed that the words "zaskoczenie" ["surprise"] and "zdziwienie" ["astonishment"] applied in the study have the following characteristics: 1) they are common nouns, 2) they are synonyms, 3) they denote a neutral mental state, 4) they possess the same functional morpheme, 5) they differ in length, 6) they start with the same sound, 7) they differ in terms of articulation, 8) they incorporate different sounds.

Study 1²

Procedure. The first study³ consisted in analyzing press materials from the electronic archive of the daily newspaper "Rzeczpospolita". Using a browser, articles that contained the criterion words⁴ were found. Out of the first seventeen articles for each word, 34 excerpts with similar amount of words ($M = 30.42$; $SD = 2.51$) were selected. Each of excerpts had one criterion word and the author deleted the criterion word from them.

Measures. The prepared material was assessed in random order by three competent judges in terms of its emotional sign and intensity. Every judge assessed the every excerpt. The judges were psychology students and they did not know the aim of the study. The conformity of the judges' assessments was satisfactory (W Kendalla = .83; $p < .001$). The judges had at their disposal a 7-point scale, where -3 stood for 'very negative', 0 for 'neutral', and 3 for 'very positive'. The final assessment for each excerpt was the statistical mean of ratings provided by judges.

Results. In order to determine the differences in respect of the sign and emotional intensity between the selected excerpts that contained the word "zaskoczenie" ["surprise"] and the fragments that contained the word "zdziwienie" ["astonishment"], an analysis with the use of t-Student test for independent samples was conducted. It turned out that the context of "zaskoczenie" ["surprise"] differs significantly from the context of "zdziwienie" ["astonishment"] in terms of the sign and emotional intensity, $t(32) = 2.94$; $p < .01$. The excerpts that contained the word "zaskoczenie" ["surprise"] were assessed as positive with a low level of emotional intensity, whereas the fragments with the word "zdziwienie" ["astonishment"] were assessed as negative with a high level of emotional intensity (see Figure 1). The effect size (*Cohen's d* = 1.04) pointed to a strong relationship between the word and the characteristics of the emotional context of its application. An analysis of frequency of identifying the application contexts of the words "zaskoczenie" ["surprise"] and "zdziwienie" ["astonishment"] as either positive or negative showed that the context of "zaskoczenie" ["surprise"] was more frequently assessed as positive (45.1%) than as negative (35.3%), yet this tendency was not statistically significant. In turn, the context of "zdziwienie" ["astonishment"] was significantly more often

² Full description of the study can be found in the author's publication entitled "Charakterystyka i konsekwencje potocznego rozumienia emocji" ["Characteristic and consequences of colloquial understanding of emotions"].

³ The study was conducted under the supervision of the author by students of SWPS in Warsaw, Katarzyna Świętorecka and Dariusz Trojanowski, in the academic year of 2002/2003.

⁴ The study also comprised the words "smutek" ["sadness"] and "radość" ["joy"], which have been excluded from the present description.

evaluated as negative (64.7%) than as positive (21.6%)⁵, $\chi^2(1, N = 85 = 8.55; p < .01)$.

Discussion. The obtained results show that the context of using the word “zaskoczenie” [“surprise”] is more often assessed as positive or equally often positive or negative, which can indirectly suggest that “zaskoczenie” [“surprise”] is used to express an emotional experience that occurs when a sudden change in the environment is favorable. The opposite and more clear relation pertains to the assessment of the application context of the word “zdziwienie” [“astonishment”] that is more frequently assessed as negative, which enables to infer that a sudden change in the environment that is perceived by an individual as disadvantageous is called by the person “zdziwienie” [“astonishment”].

The higher estimated emotional intensity of “zdziwienie” [“astonishment”] is probably connected with the necessity to stop the currently operating process of information processing (see orienting reflex) and to locate mental resources in an activity that is necessary in a given situation to cope with a new, unpleasant state of affairs. In turn, the intensity of “zaskoczenie” [“astonishment”] can be lower, because the individual does not need such a mobilization when the sudden change that s/he experiences is pleasant (c.f. cognitive-psychoevolutionary model of surprise, Meyer, Reisenzein, & Schützwohl, 1997).

Deleting the names of emotions from the text excerpts enabled getting to the actual valence of the context and prevented the participants judges from inferring about it on the basis of the criterion words meaning. It is important to notice that assessment came from only three participants. Using text fragments made it possible to build a situational model, which is a necessary condition of understanding when a message contains gaps (Nęcka, Orzechowski, & Szymura 2006, p. 625). On the basis of

the situational model, the participants could infer about the valence of the read text. The object of assessment in the study was data pertaining to stimuli that trigger emotions, which constitute representations of emotions in the pictorial code (Maruszewski & Ścigala, 1998, p. 59). Pictorial coding, which uses, among others, “perceptive memory”, enables registration of stimuli that at a given moment have an influence on the individual, which corresponds to the perception process within the stages of non-linguistic cognition. The pictorial code is shaped on the basis of affective elements of an external situation, and within this code there also operates tacit knowledge that is used, for instance, in the process of experience generalization.

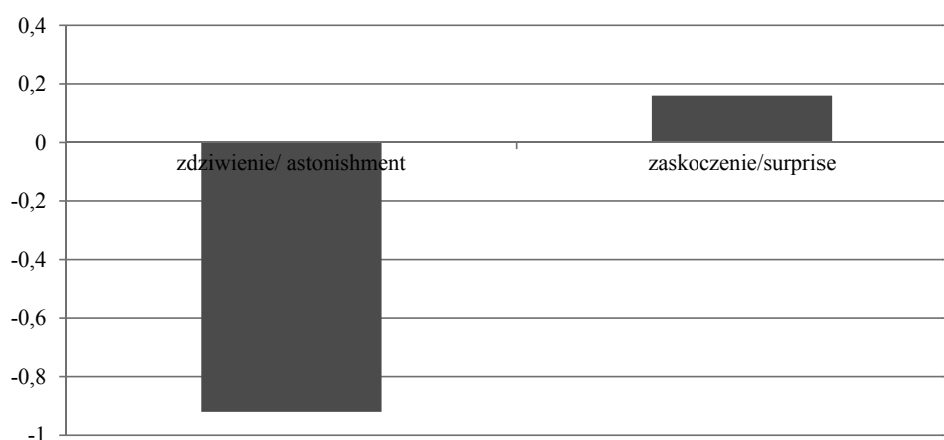
Study 2⁶

The aim of the study was to detect the organization of lexicon of emotions, in the Polish language, in line with the assumptions of the prototypical approach. Exemplars of emotions were used to distinguish separate semantic fields for particular emotions, and to create a hierarchical organization.

Procedure. The card-sorting task was applied. The task is based upon the common assumption that the structure of cognitive representation of emotions is conceptualized as similarities and differences between emotions names (Fontaine, Poortinga, Setiadi, & Markam, 2002; White, 2005). The task consisted in dividing 90 cards with emotions names into groups in such a way as to best reflect which emotions the participant considered similar to one another and which different. The participants had full freedom in creating categories, so they could create as many categories as they deemed necessary, and place in them as many cards as they wanted.

The frequency of appearing of particular words in particular categories was applied as a measure of similarity,

Figure 1. Emotional intensity for the particular emotional contexts



⁵ The percentages do not sum to 100% because also the identification of neutral contexts was taken into consideration.

⁶ Full description of the study can be found in the author's publication entitled “Charakterystyka i konsekwencje potocznego rozumienia emocji” [Characteristic and consequences of colloquial understanding of emotions].

and an analysis of the obtained matrix of conformity was conducted with the use of the non-metric multidimensional cluster analysis technique.

Participants. The participants were 126 volunteers, including 75 women and 51 men between age of 18–71 ($M = 29.31$; $SD = 12.19$).

Result. The minimal number created group was 3 and the maximal 40 ($M = 13.64$; $SD = 7.4$). At the superior level there is a clear division into two clusters—positive and negative emotions, whereas at the basic level there appear categories of basic emotions. The structural framework constitutes here the commonly recognized in the literature the so-called “great six of emotions” (Cowie & Cornelius 2003). At the subordinate level, 16 clusters emerged, which at the basic level were further assigned to 6 categories corresponding to 5 basic emotions: joy (with 2 subsets), anger (3 subsets), fear (5 subsets), anger (3 subsets), sadness (2 subsets), surprise (1 subset) and love (3 subsets). Basic emotion disgust was included into anger category. “Zaskoczenie” [“surprise”], “zdumienie” [“amazement”] and “zdziwienie” [astonishment] created one of the subordinate clusters, nested in the supercategory of negative emotions.

Discussion. The obtained results are comparable to those obtained in the majority of studies realized in this paradigm, which have shown that conceptualization of the domain of emotions is similar at both the superior and the basic level, whereas differences occur at the subordinate level (Fontaine *et al.*, 2002; Shaver, Murdaya, & Fraley 2001; Shaver, Wu, & Schwartz, 1992). Particular emotions names create families focused around the prototypes of basic emotions (e.g., Shaver Schwartz, Kirson, & O’Connor, 1987; Hupka, Lenton, & Hutchison, 1999), the organization of the basic category of surprise is different. *Amazement*, *astonishment*, *surprise* belong to the category of positive emotions and are located very near to the cluster of joy (Shaver, *et al.*, 1987).

It has been observed in one study that the way individuals manifest emotions in their everyday life is only indirectly connected with the semantic understanding of words that refer to emotions (Barrett, 2004). The object of verification has been the degree to which a self-description of experienced emotions is dictated by either the semantic understanding or the phenomenology of a current experience. Although there exist permanent differences among individuals, general regularity shows that the dimension of emotion activation accented in language does not find its reflection in the description of emotional experiences. For, it has been discovered that in the semantic representation a dominating dimension of the organization of emotion names is arousal, whereas in reporting about experienced emotions prevails the valence dimension. When people compare names of emotions, they assign more importance to the aspect of activation than to the aspect of valence. In the concept of estimation processes (Czapiński, 1978) it has been assumed that positive emotions signalize a possibility of acquiring lacking knowledge and a chance of enhancing behavioral programs. Negative emotions, in turn, signalize the necessity of gaining knowledge to

preserve the internal order and prevent it from dissolution, and to save the endangered self-preservation goals of the organism. These premises show that the activity that is, on the one hand, inherent to the relational theme of “zaskoczenie” or “zdziwienie” and, on the other hand, is the basic dimension used in the comparison names of emotions, can imply reluctance towards these emotions (c.f. metaemotion, Gottman, Katz, & Hooven, 1996). One of the possible explanations of the above regularity can be the fact that the Polish society prefers avoiding uncertainty (Hofstede, Hofstede, & Minkov, 2010) and inclines towards conservatism that is associated with conformity, tradition, safety, and not openness to changes (Verkasalo, Lönnqvist, Lipsanen, & Helkama, 2009). This is where the reluctance towards new and unpredictable situations, which are usually accompanied by the emotions of “zaskoczenie” *vel* “zdziwienie” that in the colloquial understanding both have a negative valence, can actually originate from.

Study 3

Procedure. Volunteers were recruited for this study and they were randomly assigned to two groups of the same size. The task of the participants was to describe, according to the provided instruction, a situation from their past in which they experienced a particular emotion. They were asked to include in the description, among others, the following data: information about the cause of the emotion, feelings and thoughts that accompanied it, the manner of talking while experiencing it, bodily sensations, undertaken actions, changes of the sensation over time (c.f. Jasielska, 2012). One of the groups described the situation of surprise, the other astonishment. Next, three competent judges (2 psychologist and Polish philologist) conducted an assessment of the prepared descriptions. The object of the analysis was the number of words used in the description and the positive or negative valence of narration. The judges identified the valence described by participant they did not based on their own opinion. The aim of this analysis was to determine whether the character and structure of the descriptions of the situations retrieved from the memory under the influence of a clue differed depending on the clue.

Participants. The participants were 90 volunteers, including 64 women and 26 men between the age of 20–65 ($M = 30.11$; $SD = 10.39$).

Result. There were no statistically significant differences between the number of words used to describe the situations of “zaskoczenie” [“surprise”] ($M = 185.55$; $SD = 155.07$) and “zdziwienie” [“astonishment”] ($M = 203.91$; $SD = 99.06$). In order to determine the frequency of recalling either positive or negative memories depending on the emotion name (i.e., clue), the χ^2 statistic was applied, and it turned out to be significant $\chi^2(1, N = 90) = 10.52, p < .01$. The strength of the relationship between the retrieving clue and the valence of the recalled situation was weak $\phi = 0.34, p < .01$. The obtained data showed that the individuals who were to describe situations connected with the feeling of “zaskoczenie” [“surprise”] would frequently describe positive situations than the individuals who were supposed

to describe a situation of “zdziwienie” [“astonishment”]. In turn, the individuals whose task was to recall a situation in which “zdziwienie” [“astonishment”] occurred would much more frequently recall a negative situation. The above dependencies have been presented in Figure 2.

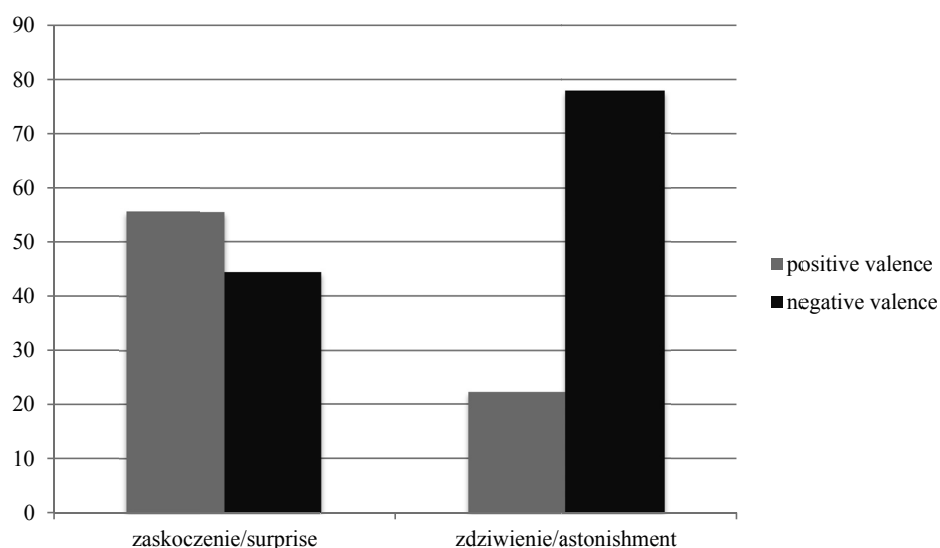
Discussion. One of the possible forms of emotion representation, i.e., narration (Shweder & Haidt, 2000; White, 2005), understood as (cit.) “(...) the content of emotions and motives of an individual that are shaped in the course of interpreting by the person events in which s/he participates as particular stories” (Trzebiński 2002, p. 40), was applied in this study. It has been argued that people think about particular emotions using categories that refer to temporarily structuralized narrative episodes, which contain various characteristics and events, depending on the emotion development phase (Saarni, 1999; Parkinson, 1995; Shaver *et al.*, 1987). Conceptualization of emotions in the form of a script assumes that emotional categories constitute a prototypical sequence of fragmentary events that are causally connected and organized in time (Russell & Lemay, 2000). In the majority of stories about emotional episodes, there occur three fundamental elements that constitute a typical narrative structure of emotions: antecedents, a distinctive experience and consequences (c.f. Trzebiński, 2002, p. 60). Thus, representations of emotions can take the form of mental narrative scenarios (the so-called constant representations, c.f. Nęcka *et al.*, 2006). On the basis of these scenarios, the individual constructs the so-called inconstant verbal representation (c.f. Nęcka *et al.*, 2006) that is an effect of the situational application of an emotional utterance. Both forms are structurally comparable. They are based upon personally significant events, they contain cause-and-effect relationships, they have a time-space order, and are oriented at valuable effects.

It is probable that the applied research procedure enabled getting to the prototypical representations of

situations in which the criterion emotions emerge. The participants could retrieve from memory any situation, and the one that was recalled by them constituted the best example of the given category. Recognizing the colloquial representation of an emotion as prototypical has a long and well-established tradition in psychology (Ben-Ze’ev, 2000; Fehr, 1994; Fehr & Russell, 1984; Russell & Lemay, 2000). Of course, it cannot be excluded that the participants, describing the given situation, were guided by the availability heuristic. Even if that was the case, i.e., even if they recalled one of their recent experiences, they also had to consider it to be a good enough representative of the given category, which, additionally, met the requirements of the task.

A certain complement to the observed regularity can be the frequency of occurrence of the criterion words in the Polish language. In “Frequency dictionary” [“Słownik frekwencyjny”] (Kazojć, 2011), the frequency of the word “zaskoczenie” is 1326, and the word “zdziwienie” 1607. The frequency difference of the two words is statistically significant $\chi^2(1, N = 2933) = 26.92, p < .001$. This can indirectly indicate that, in line with the law of hedonic asymmetry (Frijda, 1988), the individual has to undertake a purposeful effort and assume a reflective attitude in order to experience positive emotions, whereas negative emotions have a privileged position in our lives. This may also be the reason for the more frequent application of the word “zdziwienie” [“astonishment”] to the description of the more frequently occurring sensations, since the overall balance of negative situations in our lives is higher. To sum up, it can be stated that the word “zaskoczenie” [“surprise”] is a label used to represent situations in which a sudden event has a positive character, while “zdziwienie” [“astonishment”] is applied to the representation of situations in which an unexpected event is negative.

Figure 2. The percentage of situations of positive and negative valence recalled by the participants when the clues “zaskoczenie” and “zdziwienie” were provided



General discussion

In two out of the three reported studies, results suggesting that the words “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”] have a different application in the colloquial language were obtained. “Zaskoczenie” [“surprise”] is ascribed a positive emotive value, or at least ambivalent, whereas “zdziwienie” [“astonishment”] has a clear negative emotive value. The different result obtained in the emotional lexicon study resulted, probably, from the fact that the applied task was deprived of context and the participants referred, predominantly, to the meaning of the words, not the situations described by these words.

Generalization of the findings is limited because of the results for the word “zdziwienie” [„astonishment”] are much more clear than for the word “zaskoczenie” [“surprise”]. “Zdziwienie” [“astonishment”] is definitely connected with negative context or connotation. For “zaskoczenie” [“surprise”] is not so clear. The explanation of this situation can be the rules present in Polish language. It is very common to better define “zaskoczenie” [“surprise”] as “być pozytywnie zaskoczonym” [“to be surprised positively”] or “być nieprzyjemnie zaskoczonym” [“to be surprised unpleasantly”]. Conversely “zdziwienie” [“astonishment”] does not need to be better defined. Furthermore the semantic meaning can explain the results. “Zaskoczenie” [“surprise”] is associated with the word “jump” and “jumping up and down” is the prototypical feature of a joy (Shaver *et al.*, 1987) and because of that “zaskoczenie” [“surprise”] can have positive valence. Similarly “zdziwienie” [“astonishment”] has semantic connection with the word “strange” that has negative connotation in Polish language.

In order to explain why synonyms (Dąbrowka, Geller, & Turczyn, 1998, p. 156–157), are *de facto* not synonyms, because they denote a different script, a different class of events, and the way they are anchored in the colloquial understanding reveals a given pattern, one can refer to explanations from the borderline between linguistics and psychology. In the process of symbolization mentioned earlier, between the semantic and the phonological pole there operates the rule of representation, i.e., linking meanings with adequate phonological forms of words in a given mother tongue. Words are usually polysemantic, and this process is based upon the polysemy phenomenon, where successive meanings of a word and an expressions preserve semantic elements from the semantic structure of other, semantically similar language units that sound alike, see love- a feeling, love- the object of a feeling, love-attitude towards another person (Nowakowska-Kempna, 1995, p. 89). A similar character can have the application of the word “zaskoczenie” [“surprise”] to naming an emotion that appears in response to a positive situation and using the word “zaskoczenie” [“surprise”] to express an emotion that occurs in a negative situation. The criterion that differentiates the two emotional states is subjective experience (Fontaine, 2014), which cannot be expressed when the same words are used. This may be why the word “zdziwienie” [“astonishment”] is applied to naming the latter of the above emotions.

Another possible explanation of the observed rule can be language symbolism. It is probable that the metaphoric of sounds present in the Polish language facilitates expressing differences between the words “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”]. The sounds of speech, having a diverse emotional value, can aid semantic associations, yet they remain independent of them. The different emotional valorization of “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”] does not result from their designates, but probably from the set of phonetic properties characteristic of the two words. Conventional sound symbolism (Hinton, Nichols, & Ohala, 1994, p. 1–5) is a phenomenon of a well-established position in psycholinguistics, which consist in assigning meaning even to single speech sounds that *de facto* “are not meaningful within the language convention known to the users of the given language” (Kurcz, 1976, p. 132; Hinton *et al.*, 1994). Moreover, meaning assigned to sounds is independent of the joined semantic meaning of these sounds in a word, and in the synonymic field there can occur gradation that is dependent on it (Sikorski, 2003, p. 51). It has been assumed that reading the hidden meaning of sounds is an effect of an acquired experience and observed relationships between objects of the material world and sounds they produce. It is thus a matter of an impression that takes the form of a learned reaction of which we are not aware (Sikorski, 2003, p. 49).

Systematic studies on meanings of particular sounds enabled discovering many interesting regularities and showed a great richness of possible interpretations and meanings connected with physical parameters (as e.g. size, temperature, brightness) that can be ascribed to particular sounds (Denning, Kessler, & Leben, 2007; Eckert, 2010, p. 70; Makino & Tsutsui, 1994; Norman, 2004).

Speech sounds, apart from their connotative meaning in the form of physical dimensions, also evoke emotions (Sikorski, 2003, p. 50; Makino & Tsutsui 1994; Whissell, 2001). This regularity clearly refers to the Osgoodian understanding of connotation (Osgood, 1976). It is probable that for the emotive evaluation of “zaskoczenie” [“surprise”] and “zdziwienie” [“astonishment”] the first articulation phrase is crucial. Both words start with the [z] sound that is considered to be the fastest fricative consonant (Begley, 2002). This connotation is coherent with the denotative meaning of the word that designated a fast reaction to a surprise (see the next synonymic word that describes this state – “zdumienie” [“amazement”]). The next consonant in the word “zaskoczenie” [“surprise”] is [s] that is associated with a pleasant feeling (Whissell, 2001) and has a tendency to denote states connected with silence and peace (Makino & Tsutsui, 1994). And although [s], being a fricative consonant, is dynamic, it also has an unpleasant connotation. Nevertheless, for the reception of this word crucial seems to be the influence of the vowel [a] that divides the consonants. Apart from possessing a positive connotation, it also facilitates initial articulation. In turn, at the beginning of the word “zdziwienie” [“astonishment”] there is a consonant cluster, which is why its articulation is connected with resistance

of the articulation organs, and which can have a negative influence on its evaluation. Moreover, studies on phonetic symbolism in Modern Greek showed that interpretation of words that contained the sound [dz] was pejorative (Joseph 1994). Recapitulating, the analysis of the phonetic symbolism and phonetic sequence suggests the observed positive connotation of the word “zaskoczenie” [“surprise”] and negative connotation of the word “zdziwienie” [“astonishment”]. Maybe, a buckle that brings these findings together is the notion of *affordances*, borrowed from the theory of ecological optics, and understood as “acts or behaviors that are facilitated by certain objects, places or events” (Nęcka *et al.*, 2006, p. 629). In the classic version, an affordance *vel* offer enables the person to notice a potential and practical function of an object. And maybe on the basis of the same rules the pragmatic value of phonetic phenomena comes to the surface, offering the receiver emotional utility.

The phenomenon of phonological symbolism gives sounds certain meaning, which is why words that are created by these sounds possess a covert emotional value. The manner of valorization and conceptualization of “zaskoczenie” and “zdziwienie” manifested by people stems, probably, from the linguistic tradition of using these words in given emotional situations. Human beings acquire this tradition through the mechanisms of social learning that accompany the process of speech reception. The manner of using the words “zaskoczenie” and “zdziwienie” in the natural language proves that in the colloquial understanding of these words there appears a common and recurrent pattern of ascribing them a particular emotional valence. In this case connotation, understood originally as an attitude toward a word or a phenomenon, has probably been included in the denotative meaning, as these words are applied to the description of distinctive and opposite emotional states. Consequently, it seems that people are able to distinguish between the experience that occurs in a situation in which an unexpected event is pleasant and the experience that occurs in a situation in which the unexpected event has an unpleasant character. And to these distinctive experiences they assign words that correspond to the valence of these situations.

A competitive explanation has been proposed by Alina Kolańczyk (2014) who claims that “zaskoczenie” has a short-term character, whereas “zdziwienie” triggers cognitive dissonance, with which the person has to tackle in a long-term perspective. Such an interpretation corresponds to the finding that a constitutive element of an emotional meaning is binary evaluation. The meaning of an emotion within the dimension of evaluation comprises appraisal novelty that is independent of appraisal valence (Fontaine, Scherer, & Soriano, 2013). Taking into consideration the novelty aspect in the emotional meaning may definitely construct a more complex model valence of emotional states.

In order to fully illustrate the observed distinctiveness of the criterion words, it needs to be added that surprise *vel* astonishment are considered to be a component of compound emotional states, both positive (e.g., acceptance

+ surprise = curiosity, joy + surprise = admiration) and negative (e.g., surprise + fear = anxiety, surprise + sadness = disappointment) (Reisenzein & Meyer, 2009, p. 387; Turner & Stets, 2009, p. 32). In turn, in sociological theories of emotions surprise is considered to be a compound emotion that is composed of emotions with opposite signs: fear and happiness or satisfaction – happiness plus aversion – fear (Turner & Stets 2009).

All things considered, it can be stated that the diversification of an emotional experience, of which the representation is an utterance about the experience, is commonly considered to be independent of differences present in language. Words, by definition, are supposed to be transparent to phenomena they designate. The conducted studies have shown that this is not always true, and that the diversification of a perceptive situation may be reflected in colloquial language, and not only by language.

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