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Assessing size and subjective value of objects with diminutive names

Abstract: Numerous studies show that language (in its grammatical forms or morphology) can influence both perceptual judgments, as well as the mental categorization of objects in memory. Previous research showed that using diminutive names of objects resulted in being less satisfied with owning said objects and lowering their perceived value. In the present studies, to explore this phenomenon, we decided to investigate whether the influence of a diminutive on the reduction in the subjective value of an object is determined by the perceived size of the object, in accordance with the „bigger is better” heuristic. In Study 1 participants estimated a banknote to be smaller when it was presented with a diminutive label “banknocik” (banknote_{with diminutive}) than “banknot” (banknote). However, this was not related to the perceived subjective value of the banknote. In Study 2 participants declared that they could buy less with a coin labeled as “pieniążek” (coin_{with diminutive}) than “pieniądz” (coin), but the effect was not linked to the perceived size of the coins. In Study 3 a candy bar labeled as “batonik” (candy bar_{with diminutive}) was evaluated worse than the same product labeled “baton” (candy bar), however, once again this was not related to the evaluation of its size (weight). Thus, we show that the effect of diminutives on the reduction in the subjective value of an object is independent of the evaluation of the size of the object and we consider other explanations for the occurrence of this phenomenon.

Key words: diminutives, judgment, language, money, perception, size

Diminutives can be used to describe small objects or to express a positive emotional attitude towards a certain subject (Słownik Poprawnej Polszczyzny, 2007). While numerous languages (eg., Portuguese, Dutch, Russian) have suffixes which are used to create diminutives, the Polish language is especially rich in this respect and allows for the creation of numerous forms of diminutives (eg., “kotek”, “koteczek”, “kociątko”, “kotus” – all meaning “a kitten”) without changing the word formation base (Dąbrowska, 2006; Królak & Rudnicka, 2006). Diminutives are also often and commonly used in both informal and public language, and examples of their use can easily be found in everyday language – a waiter asks if he should bring “rachuneczek” (bill_{with diminutive}),

a friend invites us over for a “kawusia” (coffee_{with diminutive}), a bank advertises a loan to be paid off with a “miniratka” (installments_{with diminutive}), however before we reach the bank teller, we need to take a “numerek” (ticket_{with diminutive}).

Diminutives also appear in advertisement copy (offers’ descriptions, advertising slogans), probably to perform a persuasive function and create the desired positive attitude towards the offered product. However, as our previous research showed (Parzuchowski, Bocian, & Gyga, 2016), this strategy of using of diminutives does not necessarily have to be effective – products with a diminutive name were in fact evaluated as less valuable than the same products with a regular name. To explain this

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effect, we suggested that the use of diminutives makes the perceived object seem smaller and that in turn this lowers its economic value. In a world full of consumer choices, the most attractive ones are usually the large, and not the small offers, and the bigger and not the small products. It seems that besides a few exceptions (products which we expect to be small – like some electronic devices), there is an assumption that “big equals good” – “samochód” (car) is better than “samochodzik” (car ^{with diminutive}), “telewizor” (TV) is better than “telewizorek” (TV ^{with diminutive}), a ring with “diament” (diamond) is better than a ring with “diamencik” (diamond ^{with diminutive}). Similar associations also apply to less valuable products – a large package of washing powder or a mega-pack of salted pretzels are seen as attractive offers. Since the main function of using diminutives is to indicate a small size of the given object (Jurafsky, 1996; Haman, 2003) – a kitten (“kotek”) is a small cat (“kot”), a birdie (“ptaszek”) is a small bird (“ptak”), a booklet (“książeczka”) is a small book (“książka”), we believe that the use of a diminutive in the product’s name may give the impression that the product is smaller, and thus less attractive and less valuable than its full-size or large-size version. Thus, we argue that using diminutive names of objects does not always induce positive attitude, and in some cases, it may even decrease the evaluation of the objects’ value.

In the studies discussed in this article, we decided to directly test the explanation that the effect of using diminutives is caused by the perceived size of the objects for which a diminutive form was used. The consequences of using diminutives are especially interesting in the context of objects with economic value. Diminutive forms are often used to express a positive emotional attitude towards the object, thus evoking a positive attitude of the recipient towards the object. However, if the use of a diminutive influences the evaluation of the size of the object, then – against the speaker’s intentions – it can cause a reduction of its subjective value.

The influence of diminutives on cognition

Language can shape how we perceive the world, and being the primary tool of politics, negotiations, persuasion, propaganda and conflict resolution, it affects memory, reasoning, judgement, decision making, attitudes change, evaluation and attributions in various areas of life (Clark, 1969; Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976; Spelke, Breinlinger, Macomber, & Jacobson, 1992; Fiedler, 2008). Even the classic experiments of Tversky & Kahneman (1986) on the so-called framing effect, showed that language influences the way in which we make our decisions. In one study, the participants preferred to “save 200 people” than take the “33% chance of saving all 600 subjects and 67% chance of saving no one” when in fact both options are equivalent (Tversky & Kahneman, 1986).

To the best of our knowledge, one paper reported on the effect of diminutives on object perception. Parzuchowski, et al. (2016) showed that objects with diminutive names were evaluated as less satisfying and of

a lesser value, than the same objects with regular names. In one of the studies, the recipients of a “złotóweczka” (złoty coin ^{with diminutive}) reported to be in a worse mood compared to the recipients of a “złotówka” (złoty coin). In another experiment, buyers interested in clothes described with diminutives evaluated them as less valuable compared to buyers presented with regular forms. The authors stipulated that the mechanism behind the effect of diminutives on the objects perception is the way in which people code and remember the information about the object, rather than a direct distortion of the perception (Parzuchowski et al., 2016). This explanation is consistent with the notion that the top-down processes do not change the perception per se, but rather influence some higher order processes, for example language processing (Levin & Banaji, 2006; Lupyan, Thompson-Schill, & Swingley, 2010) or memory or coding of information (Firestone & Scholl, 2015). Accordingly, Parzuchowski et al. (2016) proposed that what explains the effect of the diminutives is the influence of the linguistic form of the visual representation of the object’s size – when using the diminutive form, the recalled exemplars of a given category are smaller than when using the regular form.

Nevertheless, in the series of studies mentioned above, authors mostly tested the influence of using diminutives on a subjective evaluation of objects, while the perceived size of the object was measured independently as an outcome variable. In this article, we investigated directly whether there is a relationship between the perceived size of the object labeled with a diminutive and the evaluation of its value. More precisely, whether it is the assessment of an object as smaller that causes a reduction in its subjective value. Thus, we argue that the previously observed effect of diminishing the subjective value of an object described with a diminutive depends on the evaluation of its size. If the object described with a diminutive is perceived as smaller than the one outlined in the regular form, it implies the diminishing of its subjective value, which is coherent with the „smaller equals less valuable” heuristic. If the use of diminutive does not affect the perception of the size of the object, the effect of diminishing its subjective value is in fact sourcing from some other mechanism.

In summary, we expected that the same object will be perceived as smaller when described with a diminutive, rather than when described with the regular form of the word (Hypothesis 1) and that the influence of the diminutive on the perceived size of the object will determine the lowered subjective value of the object (Hypothesis 2). We tested these hypotheses in three experiments by using diminutive forms for three various objects – money in form of a banknote (Study 1), a coin (Study 2) and a candy bar (Study 3), then assessing perceived size (Study 1 and 2) and weight (Study 3) of the objects, and finally assessing subjective value (Study 1), subjective purchasing power (Study 2) and subjective quality and tastiness of the objects (Study 3). The aim of the present research was to replicate the existing findings in the case of Hypothesis 1 and to contribute to the existing findings in terms of Hypothesis 2 suggesting an interaction effect of diminutives and perceived size of the

object on its evaluation. We present all the studies conducted in this series. The participants of all the studies were Polish speakers as the use of diminutives in the Polish language is relatively high.

Study 1

In Study 1 we used a between subjects design presenting participants with banknotes labeled either with a diminutive form “banknocik” (banknote_{with diminutive}) or the regular one “banknot” (banknote). We aimed to verify whether the label influences the evaluation of the banknotes’ size and their subjective value and to test whether the assessment of the value depends on the evaluation of the size.

Method

Participants

Participants were 41 students from SWPS University of Social Sciences and Humanities in Sopot (34 women and seven men, mean age $M=23.15$, $SD=3.87$). They received credit points for participating in the study.

Materials and procedure

Participants were told that they were taking part in research which tests how people perceive different currencies. The experiment was run on a computer – all the stimuli and questions were presented on the screen. Participants were told that a banknote would appear on the screen and they were asked to look at the banknote and to remember its size. Overall, we used two Polish banknotes (10 PLN and 100 PLN) and two Romanian banknotes (10 RON and 100 RON). We decided to use Romanian leu because we wanted to see reactions to banknotes whose appearance and value (purchasing power) was probably unknown to the participants. We assumed that the evaluation of the size and subjective value of those banknotes will be more susceptible to distortion under the influence of other factors (diminutive labels) than that of Polish banknotes whose size and value have a strong mental representation in the participants’ minds. The exchange rate of the Romanian leu to the Polish zloty was 0.964 on the day of the study. Each participant was presented with each banknote (in random order). In one condition, the label above the picture of the banknote stated “banknocik” (banknote_{with diminutive}) and in the other – “banknot” (banknote).

After the banknote was presented, the participants started their second task in which the same banknote was presented in varied sizes, and the participants were to decide which one of them is the same size as the banknote presented at the beginning. Objects were presented on a computer screen; thus, we could control length and speed of stimuli display for each participant. We used a PowerPoint presentation for this task – on each slide we presented an image of the banknote starting from the smallest size (the original size reduced by 40%) to the largest (the original size increased by 40%). In total, we presented 17 slides (the size of the banknote increased by

5% on each slide), which displayed automatically at the rate of one slide per second. The participants were supposed to press the key when the displayed banknote was the size of the model one. Subsequently, the participants answered four items questionnaire which measured the subjective value of the presented banknote: *If I accidentally found* (here the nominal value of the presented banknote, e.g., 10 zlotys) *on the street, my mood would improve; I would gladly hand over* (here the nominal value of the presented banknote, e.g., 10 zlotys) *to a stranger* (reversed); *When selling an item, I could lower its price by* (here the nominal value of the presented banknote, e.g., 10 zlotys) (reversed). Answers to those questions were on a scale of 1 – *no agreement with the statement* to 10 – *total agreement with the statement*. The final item was: *Spending* (here the nominal value of the presented banknote, e.g., 10 zlotys) *during a day would be* (on a scale of 1 – *not at all pleasant*, to 7 – *very pleasant*). In overall, the procedure was repeated four times, however, each time we presented a different banknote model. At the end of the study, we asked control questions on the exchange rate of the Romanian leu and the goal of the study. We also tested the effectiveness of the manipulation by asking which label “banknocik” (banknote_{with diminutive}) or “banknot” (banknote) was used in the study.

Results and discussion

As much as 76% of the participants recalled correctly the “banknocik” (banknote with diminutive) label; while in the control condition, 100% of the participants confirmed that the “banknot” (banknote) label was used. We, therefore, conclude that most of the participants noted and remembered the used label, which was our experimental manipulation. At the same time, no participant correctly guessed the research hypothesis, nor knew the exchange rate of the Romanian leu.

First, we averaged choices for two Polish banknotes (10 PLN and 100 PLN) and two Romanian banknotes (10 RON and 100 RON) which were subjected to consecutive analyses of variance in a 2 (condition: diminutive vs. regular) x 2 (currency: Polish vs. Romanian) design. The analyses revealed only the main effect of condition, $F(1,39)=8.18$; $p=.007$; $\eta_p^2=.17$. Participants who evaluated the banknotes labeled as “banknocik” (banknote_{with diminutive}) indicated a smaller banknote size ($M=-9.88\%$, $SD=7.18\%$) than the participants presented with the label “banknot” (banknote) ($M=-3.70\%$, $SD=6.52\%$). The main effect of currency was nonsignificant ($p=.805$), nor an interaction of the two variables ($p=.325$). Additionally, we averaged choices for two small (10 PLN and 10 RON) and two big denominations (100 PLN and 100 RON). The analyses of variance in a 2 (condition: diminutive vs. regular) x 2 (denomination: small vs. big) design revealed only the main effect of condition $F(1,39)=6.27$; $p=.017$; $\eta_p^2=.14$. In the diminutive condition participants choose a smaller banknote size ($M=-9.50\%$, $SD=7.45\%$) than participants in the control condition ($M=-4.94\%$, $SD=8.67\%$). The main effect of denomination and

interaction effect were nonsignificant (respectively: $p = .710$ and $p = .926$). Regardless of the condition, the participants usually chose reduced images, which is most probably an artefact caused by the presentation order of the banknotes with the smallest images always being at the beginning.

From the four items measuring the subjective value of the presented banknotes, we excluded from further analyses the answers to two of them, as they were correlated the least with the other items. We averaged the answers to the other two questions: *If I accidentally found (here the nominal value of the presented banknote, e.g., 10 zlotys) on the street, my mood would improve; I would gladly hand over (here the nominal value of the presented banknote, e.g., 10 zlotys) to a stranger* (reversed) creating a subjective value of the banknote index (*Cronbach's Alpha* = .82). The results of the analysis showed no significant differences in the evaluation of the value of the banknotes between the experimental and the control groups $t(39) = 1.56$; $p = .128$. There were also no significant differences for the separately calculated indexes: subjective value of the Polish banknote and subjective value of the Romanian banknote.

We then examined whether there was a relationship between the evaluation of the banknotes size and the evaluation of their subjective value. The results of a correlation analysis showed no such relationship $r = .08$; $p = .62$. Moreover, we conducted an analysis testing the influence of the interaction of the language form (diminutive vs. regular form) and the evaluation of the banknotes' size on the evaluation of its subjective value (Model 1, Hayes, 2013). The results showed no interaction effect $t(37) = 1.07$; $p = .29$ meaning that the subjective value of the banknote did not depend on the relationship between the use of a diminutive and the perceived size of the banknote.

The results of Study 1 showed that the participants who were presented with an image of a banknote labeled as "banknocik" (banknote with diminutive) evaluated the presented banknote as smaller than the participants who were presented with the same image labeled as "banknot" (banknote). However, the use of a diminutive did not affect the subjective value of the presented banknote, irrespectively of its perceived size. There are at least three limitations when interpreting the results of Study 1.

The first one stems from being aware of the task at hand, the second is related to the validity of the task we used for probing the size accuracy and the third with the validity of the method used for assessment of the subjective value. First, the participants were presented with images of the original banknotes (on the computer screen) and then the images of the same banknotes varying in stable increments of size, rotated from the smallest to the biggest. Yet, this task did not include any cues on the relative size of the banknotes as it was presented without any reference points, for example a size of human hand holding it. This means it can hardly be interpreted as an ecologically valid judgment (especially when it comes to unknown

stimuli as Romanian Leas). Relatedly, the goal of the task at hand was presented unobtrusively (i.e., „remember the size of the original banknote”). Third, we developed our own (imperfect) measurement scale to capture the subjective value assigned to the perceived banknote, but this was presented after the main task (size accuracy). In Study 2 we tried to resolve these shortcomings: we presented the participants with real coins that they could take into their hands to experience their size. We have not informed them that they will be asked about the size of the coins (and we presented that task after the subjective judgments). Moreover, we used subjective and generative methods for probing the participant's memory of the object's size. Finally, when testing the subjective value, we have adapted the method used before by Alter and Oppenheimer (2008).

Study 2

In Study 2 (a between subjects design) instead of banknotes, we used different size and value coins from various countries. As in Study 1, we labelled the money using either the diminutive form ("pieniążek" – coin with diminutive) or the regular one ("pieniądz" – coin). We first measured their subjective value by asking the participants how many different everyday objects such as paper clips, papers, pencils can be bought with those coins and then we asked participants to recall the size of the coins.

Method

Participants

Participants were 60 students from SWPS University of Social Sciences and Humanities in Sopot (41 women and 19 men, with mean age $M = 29.42$, $SD = 6.23$). They received credit points for participating in the study.

Materials and procedure

Like in Study 1 we told the participants that the aim of the experiment was to establish how people perceive different currencies. We presented the participants with coins, however – and in contrast to Study 1 (presentation on computer screen) – we handed them the coins. We introduced this change because the main dependent variable concerned value rather than the size estimation. In one of the conditions, while the participants were studying the coins, we used verbal cues in a diminutive form, for example: "Study this 'pieniążek' (coin with diminutive) in detail", while in the other condition we used the regular form, for instance: "Study this 'pieniądz' (coin) in detail". We repeated those phrases multiple times during the study. Overall, in both groups, we presented the participants with five types of coins: 1 British Pound, 2 Euros, 1 Czech koruna, 50 Russian Kopeks, 10 Turkish Kurus, controlling the order in which they were presented. After studying each coin, the participants estimated its value by answering how many A4 sheets of paper, paper clips, pins, tissues, pencils and Skittles candies they could buy with it (open-ended question, taken from Alter & Oppenheimer, 2008).

Next, they were asked to draw each of the presented coins on a separate clean A4 sheet. The idea to operationalize the observed size of the coins came from the Bruner and Goodman (1947) experiment, in which children were evaluating coins' sizes.

Results and discussion

We averaged the size of all the drawn coins to one coins' size index. Similarly, we averaged the estimates of the purchasing value of all the items (paper sheet, paper clip, pin, tissue, pencil, and candy) to one index – mean subjective purchasing power (*Cronbach's alpha* = .87). The analysis showed that in the condition with the diminutives the participants estimated the average subjective purchasing power of the coins as significantly smaller ($M=41.15$; $SD=31.13$) than in the regular form condition ($M=78.40$; $SD=95.40$); $t(35.108)=2.03$; $p=.05$; $d=.52$; 95% CI [0.00, 1.03]. This time, we found no differences in the estimated coin size depending on the condition $p=.675$. Further analysis showed no relationship between the estimation of the coins' size and the estimated purchasing power $r=-.09$; $p=.51$. Moreover, there was no significant interaction effect of the language form (diminutive vs. regular form) and the perceived size of the coins on the estimation of the purchasing power $t(56)=1.23$; $p=.23$ (Model 1, Hayes, 2013).

The results of Study 2 showed that the participants who heard the coins being labeled as coins with diminutive ("pieniężki") estimated that it had smaller purchasing power than the participants who heard them being labeled as regular coins ("pieniądze"). Using a diminutive to describe a coin lead the participants to believe they could buy less everyday objects, compared to the coins described with a regular form. This time, unlike the first study, we did not observe differences in the perceived size of the coins depending on the language form used. At the same time, as in Study 1, we showed that the estimated value of the coins did not rely on the evaluation of their size. In Study 2 the personal experience with each coin which drove the estimation of purchasing power was rather short and uneventful. In Study 3 we changed the task to make it more ecologically valid – we turned it into a consumer experience study. Within this scenario we engaged the participants to first interact with the object described with or without a diminutive (we asked them to consume a sample of it) to see whether this taste cue can dilute the linguistic cue within the subjective evaluation of the product (see Mantonakis, Schwarz, Wudarzewski, & Yoon, 2017).

Study 3

In Study 3 instead of using the money, we used a food product – a candy bar – to test how describing it with either a diminutive or regular form will influence its evaluation by the consumers. In a between subjects design participants consumed a piece of a candy bar, labeled either as "batonik" (candy bar with diminutive) or "baton" (candy bar) and then answered a set of questions on its quality,

tastiness and the pleasure of eating it, as well as the price they would be willing to pay for it and its estimated size (weight).

Method

Participants

The participants were 64 students from SWPS University of Social Sciences and Humanities in Sopot (33 women and 31 men, mean age $M=24.78$, $SD=6.04$). They received credit points for participating in the study.

Materials and procedure

Participants were told that they were taking part in consumer research. Participants sat individually at the table with two plates in front of them and a portion of candy bar on each plate. Each candy bar portion was about the same size (10 pieces of equal size, one piece weighed on average 2.9g). Participants were informed that there were various products on the two plates, although it was, in fact, the same candy bar. Next, to the plates, there was a card with a label of the product, in one condition – "Batonik A" and "Batonik B" (Candy Bar A_{with diminutive}; Candy Bar B_{with diminutive}) and in the other – "Baton A" and "Baton B" (Candy Bar A; Candy Bar B). To make the cover story of consumer research more believable, the participants were asked to compare two – supposedly different – candy bars. Moreover, we assumed that with this procedure the attention of the participants will focus on comparing the two products, rather than on analysing thoroughly and trying to guess the reasons behind using a diminutive/regular form of the product's name.

We asked participants to read the product description. The description was based on the original ingredients list taken from the candy bar wrapper (ingredients and their percentage in the product). In the description once again we used the labels "batonik" (candy bar_{with diminutive}) and "baton" (candy bar), depending on the study condition. After a period of familiarizing with the description, we asked the participants to try the product saying either "Now try the 'Batonik A' (Candy Bar A_{with diminutive})" or "Now try the 'Baton A' (Candy Bar A)".

Subsequently, the participants filled out the product evaluation questionnaire which consisted of five items. The participants were asked about the price they would be willing to pay for 100 grams portion of the product (open-ended question), the pleasure of eating the product (on a scale from 1 – *not at all pleasant* to 7 – *very pleasant*), tastiness of the product (on a scale from 1 – *not at all tasty* to 10 – *very tasty*), quality of the product (on a scale from -5 – *very low quality* to 5 – *very high quality*). We also asked about an estimated weight of the test portion in grams (open-ended question). After rinsing their mouth with water, the participants proceeded to test the second product with the same procedure. Afterward, the participants were told the real purpose of the study.

Results and discussion

We averaged the three items related to the evaluation of pleasure, tastiness, and quality of the product to create one overall product evaluation index (*Cronbach's*

$\alpha = .87$). We conducted independent t-test analysis the results of which showed that the overall evaluation of the product with the diminutive name was significantly lower ($M = 4.60$, $SD = .95$) than in the control group ($M = 5.07$, $SD = 1.19$, $t(62) = 1.76$; $p = .042$ one-tailed; $d = .21$; 95% CI [-0.07, 0.92]). The linguistic form did not influence the estimated weight $t = -.94$; $p = .35$, or the estimated value (price) of the product $t = .21$; $p = .83$.

The results of correlation analysis of the perceived size (weight) and the estimated value (price) showed a negative relationship of those two variables $r = -.31$; $p < .05$. The lower the estimated weight of the candy bar, the higher the price the participants would be willing to pay for it. The key to our hypothesis – the interaction effect of the language form and the perceived size of the subjective value of the candy bar was – again – not significant $t(60) = .56$; $p = .58$. We also did not find a significant interaction effect of the language form and the perceived size on the overall evaluation of the candy bar $t(60) = -1.32$; $p = .19$.

The results of Study 3 showed that using diminutives had an adverse impact on the overall evaluation of the candy bar (the pleasure from eating it, tastiness and quality). This result is parallel to the ones obtained in previous studies: tastiness ratings are following the ‘bigger is better’ heuristic (Parzuchowski, et al., 2016). Nevertheless, the use of a diminutive did not influence the perceived size and price estimations of the candy bar. Moreover, the effect of the use of diminutives in the overall evaluation of the candy bar, and no effect of the use of diminutive on the subjective value (price) of the candy bar were independent of the perceived size of the product.

General discussion

The purpose of the three studies presented in this article was to investigate whether the influence of diminutives on the perceived value of an object, which we observed in previous studies, occurs – because of the use of a diminutive – when the object is perceived as smaller. The results of the three studies presented here indicate that there is no relationship between the use of diminutives and the perceived size of the object and their influence on the evaluation of the product’s value. In Study 1, “banknociki” (banknotes_{with diminutive}) were perceived as smaller in size than “banknoty” (banknotes), but it did not affect the subjective evaluation of their value. In Study 2, “pieniążki” (coins_{with diminutive}) were evaluated as less valuable than “pieniądze” (coins), but this difference did not depend on the perceived size of the coins. In Study 3, a “batonik” (candy bar_{with diminutive}) was evaluated worse than “baton” (candy bar), but this effect was unrelated to the estimated weight and price of the product.

In conclusion, these studies replicate the previously observed negative influence of the use of diminutives in the subjective evaluation of the product (in the cases of Studies 2 and 3, although not in Study 1), however all studies did not support the notion that this phenomenon can be explained in terms of perceiving the objects as small.

The influence of the use of diminutives on the perceived object size was only observed in Study 1 (but even there the size estimation was not related to the subjective value), but not in Studies 2 and 3. Although the results of these studies do not provide a clear answer to the question about the conditions in which the use of diminutives causes a reduction in the subjective value of an object, they let us exclude the explanation in terms of the perceived size of the object, which – based on the previous studies – seemed very likely. Our research shows that although using diminutive forms of objects’ names can lead to both perceiving them as less valuable, and to thinking about them regarding having a small size, those two effects are most likely independent of each other. Therefore, the question on why using a diminutive can cause lowering of the evaluation of satisfaction, value, taste or quality of an object remains open.

One possible explanation for this mechanism can be drawn from the perceived competence of the speaker. A person who uses diminutives could be seen as less competent (Fiske, Cuddy, Glick, & Xu, 2002), and that would adversely impact the evaluation of the object they were talking about. The context in which the diminutives are used could also have a vital importance on the effect of diminutives. In situations when skills and agency are critical, using diminutives could lessen the value of the objects described with diminutives, while in situations when communal traits are of importance, using diminutives could increase the perceived value of the object. The mechanism behind this refers to the two basic dimensions of social perception – agency and communion (Abele & Wojciszke, 2014; Wojciszke & Abele, 2008) and is worth verifying in subsequent studies. Furthermore, in our research, we concentrated on the influence of using diminutives on perceptions of inanimate objects. Another interesting line of research might be to verify the existence of the effect in interpersonal behaviours. For example, we could test whether using diminutives during an interaction with another person can be utilized as an effective impression management or influence technique.

Limitations of the current studies

Studies presented in this article have some clear limitations as Study 1 and 2 used money as the objects in question. We chose money to replicate the studies described in the previous paper (Parzuchowski, et al., 2016; and in Study 1 from that article we have noticed the effect of diminutives on the evaluation of coins), but estimating the size of money is not ecologically valid. People poorly remember and recognize actual size of money, what is even more difficult without reference point. Thus, participants’ estimations are burden with large variance error. Moreover, the size of money is not linked to its value, as their value is only symbolic and, for example, a one zloty coin is bigger than two-zloty coin. Therefore, it is worth keeping in mind that from theoretical considerations, the diminutive effect observed in Studies 1 and 2 is based purely on a “bigger

is better” heuristic, while in Study 3 – also on an actual size to value ratio. We also think that weight estimations of a portion of a candy bar and estimations of a price per 100 grams of this product were too arbitrary – as indicated by a significant variance of these estimates. A more valid measure would be asking the participants to compare the weight of the candy bar to another known object and asking to estimate the price of a served portion, rather than 100 grams. Moreover, future research would improve with refining the measures of the subjective value of the objects, for example by carrying out a pilot study, so that they related to a wider range of attributes of an object.

Research on the consequences of using diminutives have numerous practical implications for effective interpersonal or marketing communication, as well as impression management. In our research, we showed that using diminutives when describing objects can alter how they are perceived. However, the underlying mechanism which could explain how using diminutives impacts object perception and its evaluations is more complicated than we anticipated. We found out that diminutives do not influence size perception of the objects described with a diminutive form. Furthermore, the actual size perception of the object was not linked to its subjective value. Thus, until further evidence can be obtained, we should treat this mechanism as unsupported by the available data. That opens new research alleys which could help explain the mechanism and the limitations of the diminutive phenomenon.

References

- Alter, A., & Oppenheimer, D.M. (2008). Easy on the mind, easy on the wallet: The roles of familiarity and processing fluency in valuation judgments. *Psychonomic Bulletin & Review*, 15 (5), 985–990.
- Abele, A.E., & Wojciszke, B. (2014). Communal and agentic content in social cognition: A Dual Perspective Model. *Advances in Experimental Social Psychology*, 50, 195–255.
- Boroditsky, L. (2011). How language shapes thought. *Scientific American*, 304, 62–65.
- Bruner, J., & Goodman, C. (1947). Value and Need as Organizing Factors in Perception. *Journal of Abnormal and Social Psychology*, 42, 33–44.
- Clark, H.H. (1996). *Using Language*. Cambridge University Press.
- Dąbrowska, E. (2006). Low-level schemas or general rules? The role of diminutives in the acquisition of Polish case inflections. *Language Sciences*, 28, 120–135.
- Drabik, L., & Sobol, E. (2007). *Słownik Poprawnej Polszczyzny*. Wydawnictwo Naukowe PWN.
- Firestone, C., & Scholl, B.J. (2015). Enhanced visual awareness for morality and pajamas? Perception vs. memory in top-down effects. *Cognition* 136, 409–416.
- Fiske, S.T., Cuddy, A.J.C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from status and competition. *Journal of Personality and Social Psychology*, 82, 878–902.
- Gleason, H.A. (1961). *An Introduction to Descriptive Linguistics*. Toronto: Holt, Rinehart and Winston.
- Haman, E. (2003). Early productivity in derivation. A case study of diminutives in the acquisition of Polish. *Psychology of Language and Communication*, 7, 1, 37–56.
- Hayes, A.F. (2013). *Introduction to mediation, moderation and conditional process analysis: A regression-based approach*. New York, NY, US: Guilford Press.
- Jurafsky, D. (1996). Universal Tendencies in the Semantics of the Diminutive. *Language* 72, 533–578.
- Królak, E., & Rudnicka, K. (2006). Selected aspects of directives in Polish. *Revista Española de Lingüística Aplicada*, 19, 129–142.
- Lenneberg, E.H. (1967). *Biological foundations of language*. New York: Wiley.
- Levin, D.T., & Banaji, M.R. (2006). Distortions in the Perceived Lightness of Faces: The Role of Race Categories. *Journal of Experimental Psychology: General*, 135, 501–512.
- Loftus, E.F., & Palmer, J.C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Learning Behavior*, 13, 585–589.
- Lupyan, G., Thompson-Schill, S.L., & Swingle, D. (2010). Conceptual penetration of visual processing. *Review of Philosophy and Psychology*, 21, 682–691.
- Mantonakis, A., Schwarz, N., Wudarszewski, A., Yoon, C. (2017). Malleability of taste perception: Biasing effects of rating scale format on taste recognition, product evaluation, and willingness to pay. *Marketing Letters*, 28, 293–303.
- Nęcka, E. (2007). *Psychologia poznawcza [Cognitive Psychology]*. Wydawnictwo Naukowe PWN.
- Parzuchowski, M., Bocian, K., & Pascal, G. (2016). Sizing Up Objects: The Effect of Diminutive Forms on Positive Mood, Value, and Size Judgments. *Frontiers in Psychology*, 7, 1452.
- Roberson, D., & Jules, D. (2000) The categorical perception of colors and facial expressions: The effect of verbal interference. *Memory and Cognition*, 28, 977–986.
- Roberson, D., Davidoff, J., & Braisby, N. (1999) Similarity and categorisation: Neuropsychological evidence for a dissociation in explicit categorisation tasks. *Cognition*, 71, 1–42.
- Rosch, E., Mervis, C.B., Gray, W.D., Johnson, D.M., & Boyes-Braem, P. (1976). Basic objects in natural categories. *Cognitive Psychology*, 8, 382–439.
- Sapir, E. (1994). Grading, A Study in Semantics. *Philosophy of Science*, 11, 93–116.
- Spelke, E.S., Breinlinger, K., Macomber, J., & Jacobson, K. (1992). *Origins of knowledge*. *Psychological Review*, 99, 605–632.
- Tversky, A., & Kahneman, D. (1986). Rational choice and the framing of decisions. *The Journal of Business*, 59, 251–278.
- Whorf, B.L. (1956). *Language, Thought and Reality. Selected Writings*. Ed.: J.B. Carroll. MIT, New York: J.Wiley/London: Chapman & Hall.
- Wojciszke, B. (2005a). Affective concomitants of information on morality and competence. *European Psychologist*, 10, 60–70.
- Wojciszke, B., & Abele, A.E. (2008). The primacy of communion over agency and its reversals in evaluations. *European Journal of Social Psychology*, 38, 1139–1147.