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THE ILLUSION OF NOT KNOWING IN METACOGNITIVE MONITORING: A BRIEF REVIEW

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Purpose. The paper is aimed to analyze some key features of the illusion of not knowing in metacognitive monitoring of the learning activity of university students. Among the main conceptions of the influence of the illusion of not knowing on metacognitive monitoring accuracy of the learning activity of university students we tend to study and to analyse different types of the learned information, as well as personal, cognitive, metacognitive, and individual psychological characteristics of students. Moreover, the study may allow to clarifying the phenomenon of the illusion of not knowing and its influence on metacognitive monitoring accuracy measures.

Methods. The theoretical and comparative practical methods of studying the illusion of not knowing in metacognitive monitoring of university students have been used in the study. The participants learned texts, statements and pairs of words in Ukrainian. They performed JOLs, aJOLs, RCJs, and aRCJs. Calibration procedure helped to define average indicators of both the illusion of knowing and the illusion of not knowing.

Results. The findings indicate that the illusion of not knowing as an error of metacognitive monitoring accuracy (alongside the illusion of knowing) can occur in all types of metacognitive judgments, especially in the prospective judgments of learning. The highest levels of the illusion of not knowing are shown in learning pairs of words, smaller texts of all styles, and in 'Yes'/'No'/'Do not know' questions. Moreover, the effects of personal, cognitive, metacognitive, and individual psychological characteristics are also allocated.

Conclusions. The paper provides an account of the effects of different types of information chosen for the experiment, and of personal, cognitive, metacognitive, and individual psychological characteristics of university students. The findings indicate the illusion of not knowing as an error of metacognitive monitoring accuracy alongside the illusion of knowing. These findings might help to solve the problem of metacognitive monitoring accuracy in the learning activity of university students.

Keywords: illusion of knowing, illusion of not knowing, metacognitive monitoring, learning activity, judgments, overconfidence, underconfidence.

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Августюк Марія. Ілюзія незнання в метакогнітивному моніторингу: короткий огляд.

Мета. Стаття зосереджена на аналізі деяких ключових особливостей ілюзії незнання в метакогнітивному моніторингу навчальної діяльності студентів. Серед основних концепцій впливу ілюзії незнання на метакогнітивний моніторинг точності навчальної діяльності студентів університету ми прагнемо вивчати й аналізувати різні типи вивченої інформації, а також особистісні, когнітивні, метакогнітивні та індивідуально-психологічні характеристики студентів. Більше того, дослідження може дозволити краще прояснити явище ілюзії незнання та його вплив на точність метакогнітивного моніторингу.

Методи. У дослідженні використані теоретичні та порівняльно-практичні методи вивчення ілюзії незнання в метакогнітивному моніторингу навчальної діяльності студентів університетів. Учасники вивчали тексти, висловлювання та пари слів українською мовою. Вони виконували JOL, aJOL, RCJ та aRCJ судження. Процедура калібрування допомогла визначити середні показники як ілюзії знання, так і ілюзії незнання.

Результати. Висновки полягають у тому, що ілюзія незнання як помилка точності метакогнітивного моніторингу (поряд з ілюзією знання) може мати місце у всіх типах метакогнітивних суджень, особливо в перспективних судженнях про вивчене. Найвищий рівень незнання проявляється у вивченні пар слів, менших текстів усіх стилів та в запитаннях «Так»/«Ні»/«Не знаю». Більше того, також вдалося виділити ефекти особистісних, когнітивних, метакогнітивних та індивідуально-психологічних характеристик студентів.

Висновки. У статті розглянуто вплив різних типів інформації, обраної для експерименту та запропонованої для вивчення, а також особистісних, когнітивних, метакогнітивних та індивідуально-психологічних особливостей студентів. Результати дослідження вказують на ілюзію незнання як помилку точності метакогнітивного моніторингу поряд з ілюзією знання. Ці спостереження можуть допомогти у вирішенні проблеми точності метакогнітивного моніторингу в навчальній діяльності студентів університетів.

Ключові слова: ілюзія знання, ілюзія незнання, метакогнітивний моніторинг, навчальна діяльність, судження, надмірна впевненість, недостатня впевненість.

Августюк Мария. Иллюзия знания в метакогнитивном мониторинге: краткий обзор.

Цель. Статья сосредоточена на анализе некоторых ключевых особенностей иллюзии незнания в метакогнитивном мониторинге учебной деятельности студентов. Среди основных концепций влияния иллюзии незнания на метакогнитивный мониторинг точности учебной деятельности студентов университета мы стремимся изучать и анализировать различные типы изученной информации, а также личностные, когнитивные, метакогнитивные и индивидуально-психологические характеристики

студентов. Исследование может позволить лучше прояснить явление иллюзии незнания и его влияние на точность метакогнитивного мониторинга.

Методы. В исследовании использованы теоретические и сравнительно-практические методы изучения иллюзии незнания в метакогнитивном мониторинге учебной деятельности студентов университетов. Участники изучали тексты, высказывания и пару слов на украинском языке. Они выполняли JOL, aJOL, RCJ и aRCJ суждения. Процедура калибровки помогла определить средние показатели как иллюзии знания, так и иллюзии незнания.

Результаты. Выводы заключаются в том, что иллюзия незнания как ошибка точности метакогнитивного мониторинга (наряду с иллюзией знания) может иметь место во всех типах метакогнитивных суждений, особенно в перспективных суждениях об изучении. Самый высокий уровень незнания проявляется в изучении пар слов, меньших текстов всех стилей и в вопросах «Да»/«Нет»/«Не знаю». Более того, также удалось выделить эффекты личностных, когнитивных, метакогнитивных и индивидуально-психологических характеристик студентов.

Выводы. В статье рассматривается влияние различных типов информации, выбранной для эксперимента и предложенной для изучения, а также личностных, когнитивных, метакогнитивных и индивидуально-психологических особенностей студентов. Результаты исследования указывают на иллюзию незнания как ошибку точности метакогнитивного мониторинга наряду с иллюзией знания. Эти наблюдения могут помочь в решении проблемы точности метакогнитивного мониторинга в учебной деятельности студентов.

Ключевые слова: иллюзия знания, иллюзия незнания, метакогнитивный мониторинг, учебная деятельность, суждения, сверхуверенность, недостаточная уверенность.

Introduction. Metacognitive monitoring is viewed as human evaluation of his/her own knowledge, knowledge of cognitive strategies, and knowledge of cognitions that affect the learning process in general (Valdez, 2013, etc.). This metacognitive notion is also seen as the way of examining students' cognitive activity and its role in the solution of certain cognitive tasks during learning (e.g., recalling answers, doing tests, reading texts, and memorizing information given, etc.) in particular (Avhustiuk, Pasichnyk, & Kalamazh, 2018; Avhustiuk, 2020).

It is stated that metacognitive monitoring accuracy is prone to two errors: the illusion of knowing (the IK) (overconfidence (Gigerenzer, Hoffrage, & Kleinbolting, 1991; Pulford, 1996, etc.) and cognitive optimism (Metcalfe, 1998) are used alongside) and the illusion of not knowing (the INK) (underconfidence) (Fajfar & Gurman, 2009, etc.). As Dunlosky and Rawson (2012) stated that overconfidence poses a major

threat to student learning and achievement, we can assume that underconfidence is also a significant threat in the learning activity of students.

Underconfidence or the INK can negatively affect metacognitive monitoring efficiency of students' learning and understanding. But the studies of the INK in the psychological literature are quite rare and few approaches have been suggested to solve the issue of metacognitive monitoring accuracy only by examining the IK phenomenon. That is why this notion is analysed with reviewing the main features of the IK. The coexistence of the IK and the INK in metacognitive monitoring we aim to show in Figure 1.

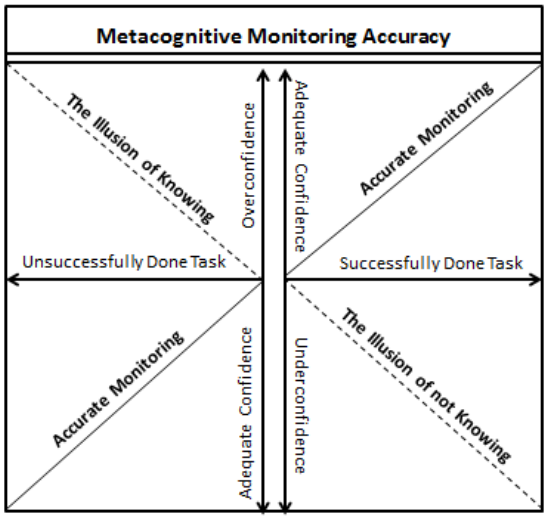

Figure 1. Metacognitive Monitoring Accuracy

An overview of the researches. The problem of identifying some key features of the phenomenon of the INK can be explained by the lack of its study. Several authors have attempted to define underconfidence effect, but as currently there is still no accepted study of the INK. The INK can be defined as an error of metacognitive monitoring and currently it is almost impossible to describe it apart from the IK.

In the existent studies underconfidence is explained as a bias of the cognitive process in the decision making (Fajfar & Gurman, 2009). It can dramatically increase whenever one's decision consequences are known and are regarded as a norm. Among some explanations of underconfidence there may be inaccurate methods used to evaluate upcoming results or larger amount of information that is confused with the less important. This can result in an inapt performance and lack of self-confidence (Fajfar &

Gurman, 2009; Griffin & Tversky, 1992; Avhustiuk, Pasichnyk, & Kalamazh, 2018; Ranalli, 2018).

As underconfidence is used in comparison with overconfidence, consequently, some studies of calibration highlighted that with comparatively easier items overconfidence is eliminated, while underconfidence occurs. People tend to overconfidence when strength is higher and weight is lower and to underconfidence when weight is higher and strength is lower (Griffin & Tversky, 1992, etc.).

Moore and Healy (2008) try to investigate when and why people underestimate (and overestimate as well). According to the results of the study, people are underconfident when a task is easier than expected, thus, confidence performance can depend on the ease of the task.

Fajfar and Gurman (2009) regard underconfident behaviour as a norm stating that uncertainty in successful performance of simple tasks tend to lead to a situation when a person spends much more time mastering already learned material, and much less time and efforts learning the issues that really require more attention (a hard-easy effect takes place). At the same time, the researchers try to prove that the underconfidence effect is not a potential threat in the process of learning, as it rather tends to provoke people into control and repetition of the learned material.

Similarly to overconfidence, underconfidence can also depend on *how* (the nature of the questions), *what* (different domains of questions), and *whom* we ask (individual differences) (Klayman, Soll, Gonzalez-Vallejo, & Barlas, 1999). Consequently, there are some important issues that aim at revealing the concept of the INK (underconfidence).

Thus, the **aim** of the paper is to examine some key features of the INK in metacognitive monitoring of the learning activity of university students. Among the main conceptions of the influence of the INK on metacognitive monitoring accuracy of the learning activity of university students we tend to study and to analyse different types of the learned information, as well as personal, cognitive, metacognitive, and individual psychological characteristics of students. Moreover, the study may allow to clarifying the phenomenon of the INK and its influence on metacognitive monitoring accuracy measures.

Methods and techniques of the research. Participants. 262 Ukrainian students from the National University of Ostroh Academy (Ukraine) (M = 19.5, SD = 1.87) participated in the study voluntarily and free of charge.

Materials. The study consisted of three stages. In the first, diagnostic stage, the participants answered different questionnaires aiming to ascertain psychological characteristics of students. In the second, laboratory experiment stage, the same participants were asked to read 6 texts of different style (the scientific prose, the newspaper and the belletristic styles) and of different length (25-30 sentences and 10-15 sentences each), 18 statements, and 18 pairs of words in Ukrainian served as a stimuli material. The quantitative data were divided into 9 groups depending on such factor as the task type: open-answer questions, 'Yes'/'No'/'Do not know' questions, and multiple-choice questions for texts, statements, and word pairs accordingly.

Procedure. The participants learned texts, statements and pairs of words in Ukrainian. They performed JOLs (prospective metacognitive judgments of learning about confidence), aJOLs (prospective metacognitive judgments about the number of correct answers), RCJs (retrospective metacognitive judgments of learning about confidence), and aRCJs (retrospective metacognitive judgments about the number of correct answers). Calibration procedure helped to define average indicators of both the IK, the results of which were presented in our previous papers (Avhustiuk, Pasichnyk, & Kalamazh, 2018; Pasichnyk, Kalamazh, & Avgustiuk, 2017, etc.), and the INK, the results of which are under the scope of our current review.

Analysis. All the data were processed by *IBM SPSS Statistics 20* program, and the calculations were done by *Excel* program. Data were administered by means of *ANOVA*, *T*-test, Goodman-Kruskal correlation coefficient, Spearman rank of correlation, Pearson linear correlation, *O/U* and calibration indexes, etc.

Results. The results of the study are labelled according to metacognitive monitoring accuracy factors (different types of information, and personal, cognitive, metacognitive, and individual psychological characteristics of the students).

The results of the study show that 59.4% of the participants committed errors in JOLs, and 28.1% of them showed underconfidence in performance correctness; 50% of the students committed metacognitive monitoring errors in aJOLs, and 14.1% of them showed underconfidence in task performance correctness. In aJOLs and aRCJs the proportion of underestimation of the number of correctly performed tasks was significantly lower. However, among the participants who underestimated

the number of correctly performed tasks, the indicators of the INK were the highest (M_{aJOL} = -.37, *SD* = .41, and M_{aRCJ} = -.33, *SD* = .48) ($p \leq .05$).

Before tasks performance among the students who showed underestimation of the possible number of correctly performed tasks the degree of the INK was the highest (M_{aJOL} = -.37, *SD* = .41, *p* = .05). After tasks performance the accuracy of the judgments significantly increased. In retrospective judgments of both types metacognitive monitoring accuracy was higher. In general, the students showed higher underestimation in aJOLs (M_{aJOL} = -.37, *SD* = .41, *p* = .05) than in aRCJs (M_{aRCJ} = -.33, *SD* = .48, *p* = .05) if to compare with JOLs (M_{JOL} = -.27, *SD* = .18, *p* = .05) and RCJs (M_{aRCJ} = -.24, *SD* = .2, *p* = .05). However, the average results of the INK in aRCJs and RCJs were slightly lower.

The highest levels of underconfidence were shown while learning pairs of words (*M* = 4.21, *SD* = 1.9, *p* < .001). Significantly lower confidence was shown while reading smaller texts (*M* = 3.5, *SD* = 1.88, *p* = .05). Students were more underconfident in their judgments of reading smaller texts of the belletristic style (*M* = 3.73, *SD* = 1.7, *p* = .05), also while learning smaller texts of the scientific style (*M* = 4.02, *SD* = 1.9, *p* = .05) and of the newspaper style (*M* = 4.32, *SD* = 2.8, *p* = .05). The participants showed the least levels of confidence in 'Yes'/'No'/'Do not know' questions (*M* = 4.28, *SD* = 1.69, *p* = .03). The comparable results of the IK can be seen in Avhustiuk, Pasichnyk, and Kalamazh (2018).

Average results of the INK in metacognitive monitoring of the learning activity of university students from the spectrum of personal, cognitive, and metacognitive characteristics are shown in Table 1.

Importantly, the highest number of those students who performed underconfidence (24.6%) showed quite high levels of underconfidence in aJOLs from the spectrum of learning motivation (*M* = -.47, *SD* = .3, *p* = .05). As the learning motivation is characterized by learning process, age, gender, intellect, self-assessment, etc., the reasons of the learning successes and failures can be explained by internal and external factors. It is substantiated (Kroll & Ford, 1992), that those individuals who are regulated by inner motives such as self-orientation and orientation to master a profession, usually show underconfidence, whereas those regulated by external motives (getting diploma) more often show overconfidence.

Table 1.

Average Results of the INK in Metacognitive Monitoring

	***M* (*SD*)**							
	Personal Characteristics			**Cognitive Characteristics**		**Metacognitive Characteristics**		
Levels	**Learning Motivation**	**Self-Confidence**	**Reflexivity**	**Intellect**	**Self-Efficacy**	**Meta-cognitive Knowledge**	**Meta-cognitive Activity**	**Meta-cognitive Awareness**
aJOLs								
High	-.47 (.3)	-.54 (.33)	-.74 (.27)	-.37 (.25)	-.59 (.35)	-.40 (.29)	-	-.40 (.26)
Middle	-.42 (.28)	-.34 (.25)	-.42 (.22)	-.53 (.21)	-.35 (.25)	-.50 (.31)	-.46 (.30)	-.50 (.32)
Low	-.18 (.16)	-.29 (.20)	-.47 (.17)	-.29 (.19)	-.53 (.12)	.18 (.11)	-.54 (.33)	-.39 (.16)
aRCJs								
High	-.02 (.19)	-.50 (.31)	-.72 (.41)	-.33 (.23)	-.55 (.34)	-.50 (.33)	-	-.50 (.31)
Middle	-.53 (.32)	-.47 (.3)	-.49 (.31)	-.55 (.18)	-.41 (.26)	-.53 (.32)	-.53 (.32)	-.51 (.30)
Low	-.18 (.16)	.19 (.09)	-.47 (.28)	-.35 (.23)	-.52 (.25)	-	-.20 (.18)	-.35 (.15)
JOLs								
High	-.3 (.23)	-.32 (.24)	-.30 (.21)	-.27 (.22)	-.33 (.25)	-.30 (.26)	-.15 (.13)	-.30 (.25)
Middle	-.32 (.24)	-.31 (.24)	-.29 (.23)	-.33 (.26)	-.29 (.23)	-.30 (.23)	-.33 (.25)	-.30 (.21)
Low	-.15 (.14)	-.21 (.19)	-.33 (.26)	-.29 (.20)	-.28 (.21)	-.26 (.20)	-.24 (.21)	-.27 (.11)
RCJs								
High	-.29 (.22)	-.33 (.23)	-.30 (.24)	-.24 (.20)	-.32 (.24)	-.30 (.24)	-.16 (.17)	-.30 (.22)
Middle	-.35 (.24)	-.26 (.22)	-.29 (.22)	-.33 (.24)	-.27 (.20)	-.30 (.22)	-.33 (.23)	-.38 (.25)
Low	-.16 (.14)	-.26 (.21)	-.35 (.24)	-.36 (.23)	-.34 (.22)	-.31 (.23)	-.20 (.20)	-.27 (.08)

The data of the scale ‘self-confidence’ – ‘self-underconfidence’ showed a tendency towards underconfidence as well as to overestimation of the accuracy of tasks performance. Underconfidence can provoke hesitation in performing and decisions making, whereas overconfidence makes people more courageous reducing the adequate critics in metacognitive judgments that can lead to different errors in metacognitive monitoring negatively affecting its accuracy in general. The results showed underconfidence (17.3%) in a JOLs (M = -.54, SD = .33, p = .05).

Higher reflexive students showed higher underconfidence (M = -.74, SD = .27, p = .01) if compared with the participants with middle (M = -.42, SD = .22, p = .01) and lower reflexivity (M = -.47, SD = .17, p = .01). In JOLs, on contrary to aJOLs, there were almost not observed high rates of the INK. In RCJs the number of those students who showed inadequate metacognitive monitoring, the level of those with underconfidence (24%, 25%, and 35% in higher, middle, and lower levels each) induced the level of overconfident students (8%, 22.6%, and 20.3 % in the listed above levels respectively).

According to the results of the inner-group differences in the average values of intellect, in a JOLs and aRCJs the rates of underconfidence were ruled by the rates of overconfidence. Thus, higher underconfidence in

aJOLs showed the students with the average levels of changeable intellect (M = -.53, SD = .21, p = .01) (18.4%), as well as in aRCJs (M = -.55, SD = .18, p = .01) (21.8%).

The participants with lower levels of self-efficacy were less accurate in prospective and retrospective metacognitive judgments of learning in comparison with more accurate students with middle and higher levels of self-efficacy. Thus, the students with lower levels of self-efficacy demonstrated the INK. But the proportion of underconfidence in aJOLs (10%) and in aRCJs (14.3%) was much lower than the same proportion of overconfidence (37% and 37.6% respectively). Moreover, the underconfidence of lower levels of students' self-efficacy (55%) in JOLs was comparatively higher (M = -.53, SD = .12, p = .01). Interestingly, the INK was more common for the students with higher levels of academic achievements, if compared with the students with lower results that tended to the IK in performing the tasks.

The highest rates of the INK were observed in the middle levels of metacognitive knowledge (M = -.50, SD = .31, p = .01) and metacognitive activity (M = -.53, SD = .32, p = .01), as well as in metacognitive awareness (M = -.51, SD = .3, p = .01) in aRCJs.

It should be also noted that statistically significant differences between the IK and the INK and gender differences [$F(2, 56) = .013$, p = .99] were not found. Nevertheless, we noticed that women showed overconfidence in JOLs and RCJs if compared with men, though these levels were not very high, whereas men tended more towards underconfidence.

ANOVA showed statistically significant differences in age peculiarities between the indicators of the IK and the INK ($F_{aJOL}(2, 56) = 9.43$, $F_{aRCJ}(2, 56) = 13.03$, $F_{JOL}(2, 56) = 4.44$, $F_{RCJ}(2, 56) = 6.95$, $p < .001$). According to the results, the students of the age group of 20-22 tended towards underconfidence (M = -.41, SD = .47, $p < .001$) rather than the students of younger age group of 17-19 who showed overconfidence (M = .06, SD = .19, $p < .001$).

Average results of the INK in metacognitive monitoring from the spectrum of individual psychological characteristics (gender differences and age peculiarities) are presented in Table 2.

Discussion. This paper highlights the problem of metacognitive monitoring accuracy focusing on the study of the INK. The research is aimed to allocate factors that influence metacognitive monitoring accuracy

of university students' learning activity such as different types of information (texts, statements, and pairs of words), as well as of personal (learning motivation, self-confidence, and reflexivity), cognitive (intellect, self-efficacy, and academic achievements), metacognitive (metacognitive knowledge, activity, and awareness), and individual (gender differences and age peculiarities) psychological characteristics.

Table 2.

Average Results of the INK in Metacognitive Monitoring from the Spectrum of Gender Differences and Age Peculiarities

Gender							
aJOLs	***M* (*SD*)**	**aRCJs**	***M* (*SD*)**	**JOLs**	***M* (*SD*)**	**RCJs**	***M* (*SD*)**
Female	-.47 (.29)	Female	-.50 (.31)	Female	-.31 (.23)	Female	-.31 (.23)
Male	-.23 (.22)	Male	-.24 (.23)	Male	-.53 (.23)	Male	-.43 (.21)
Age							
aJOLs	***M* (*SD*)**	**aRCJs**	***M* (*SD*)**	**JOLs**	***M* (*SD*)**	**RCJs**	***M* (*SD*)**
17	-.20 (.20)	17	-.25 (.21)	17	-.30 (.25)	17	-.30 (.24)
18	-.40 (.26)	18	-.59 (.36)	18	-.30 (.23)	18	-.22 (.01)
19	-.35 (.25)	19	-.30 (.22)	19	-.40 (.29)	19	-.40 (.27)
20	-.74 (.40)	20	-.72 (.40)	20	-.20 (.15)	20	-.40 (.25)
21	-.58 (.35)	21	-.50 (.29)	21	-.40 (.28)	21	-.34 (.22)
22	-.77 (.45)	22	-.76 (.42)	22	-.40 (.29)	22	-.56 (.35)

Our findings seem to demonstrate that the INK, as well as the IK, can take place in all types of metacognitive judgments. Thus, it was the highest in the prospective judgments of learning, and average results of the INK in aRCJs and RCJs were slightly lower.

The highest underconfidence was shown in pairs of words; lower confidence rates appeared while learning smaller texts. Students were more underconfident in the judgments for smaller texts of all styles and showed the least levels of confidence in 'Yes'/'No'/'Do not know' questions. If to compare, the IK was also more evident in prospective judgments, and the highest levels of overconfidence were noted in the learned statements (Avhustiuk, Pasichnyk, & Kalamazh, 2018). These results support the idea that metacognitive monitoring accuracy can be influenced by logical context of information and the hard-easy effect (Hacker, Bol, & Bahbahani, 2008, etc.).

Considerable insight has been gained with regard to find out the effects of personal, cognitive, metacognitive, and individual psychological characteristics on metacognitive monitoring accuracy measures. In general, the findings highlight a role of inner motives (self-orientation and orientation to master a profession), self-underconfidence in prospective judgments of learning, higher reflexivity rates, average levels of

changeable intellect, lower levels of self-efficacy, higher levels of academic achievements, middle levels of metacognitive knowledge, activity, and awareness in a RCJs, etc. in the occurrence of the INK. Men showed higher tendency to underconfidence. The students of the senior age group of 20-22 tended to underconfidence, whereas those of the younger age group of 17-19 showed overconfidence.

Despite some implications, our work clearly has some limitations. Thus, the data presented were completed as the laboratory experiment, so it is not quite clear whether in the natural learning process it would be possible to receive the same results. There is also a need to study other social groups, not only students, which will broaden age limitations. These will assist in thorough theoretical analysis of the interaction of two illusions, and will make it possible to draw some effective ways to help to improve metacognitive monitoring accuracy as the picture is still incomplete (e.g., it is not quite known which illusion of the two has more harmful effect on metacognitive monitoring accuracy of the learning activity).

Worth mentioning, a number of controversial points need to be considered. First, if we regard the INK as underconfidence in knowing, can it be assumed that it is overconfidence in not knowing? Similarly, if the IK or overconfidence is defined by some of the authors as metacognitive optimism (Metcalfe, 1998; Griffin & Tversky, 1992), can we also define the term of the INK as metacognitive pessimism? Griffin and Tversky (1992) noted that overconfidence – like optimism – is adaptive as it arises positive feelings and forces people to do things they would not have done otherwise. The question is whether underconfidence or the INK arises worse feelings or it just lessens negative influence of overconfidence helping in annihilating the IK. Moreover, is the existence of these illusions just simple ignorance of students (as well as teachers) and can the realization of metacognitive monitoring errors commitment lead to future occurrence of the illusions? Consequently, is it possible to have accurate metacognitive monitoring judgments not influenced by the illusions? Furthermore, it seems to us as an interesting and important issue to analyse the nature of the illusions, and to find out whether their nature stems from lack of knowledge, simple ignorance of errors, or over/underconfidence.

In conclusion, it should be pointed that despite some studies of the issue, there is no evidence in the psychological literature about the feelings

of people when they commit metacognitive monitoring errors. Thus, the scope for future studies may take place in revealing the nature of people's feelings when they make overconfident or underconfident judgments, and when metacognitive judgments are accurate ("What does it feel like to be wrong/right?"). Consequently, do these illusions provide any transformations of the individuals' characters? If they really transform people, how does this happen and do they transform them for better? Thus, in our next studies we will try to find answers to some of the questions raised.

Conclusions and final remarks. The paper provides a brief analysis of the investigation of the INK in metacognitive monitoring of the learning activity of university students. The findings indicate that the INK as an error of metacognitive monitoring accuracy (alongside the IK) can occur in all types of metacognitive judgments, especially in the prospective judgments of learning. The highest levels of the INK are shown in learning pairs of words, smaller texts of all styles, and in 'Yes'/'No'/'Do not know' questions. Moreover, the effects of personal, cognitive, metacognitive, and individual psychological characteristics are also allocated. These findings might help to solve the problem of metacognitive monitoring accuracy in the learning activity of university students.

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