

## BIOMECHANICS

NOORZALIZA OSMAN<sup>1(ABCDEFG)</sup>, ERNIE LEONG YEN LEE<sup>2(ACDEF)</sup>,  
NOR FAZILA ABD MALEK<sup>3(ACDEF)</sup>, ABDUL MUIZ NUR AZMI<sup>4(ABCDE)</sup>,  
NURUL FADHILAH ABDULLAH<sup>5(ACDEF)</sup>, ALI MD NADZALAN<sup>6(ABCDEFG)</sup>

1 ORCID: 0000-0003-1437-0486

Sultan Idris Education University, Faculty of Sports Science and Coaching, Tanjong Malim (Malaysia)

2 ORCID: 0000-0002-7973-8870

Sultan Idris Education University, Faculty of Sports Science and Coaching, Tanjong Malim (Malaysia)

3 ORCID: 0000-0001-8998-228X

Sultan Idris Education University, Faculty of Sports Science and Coaching, Tanjong Malim (Malaysia)

4 ORCID: 0000-0002-2405-1369

Universiti Malaysia Sabah, Faculty of Psychology and Education, Kota Kinabalu (Malaysia) Malaysia

5 ORCID: 0000-0002-9816-629X

Sultan Idris Education University, Faculty of Sports Science and Coaching, Tanjong Malim (Malaysia)

6 ORCID: 0000-0002-0621-2245

Sultan Idris Education University, Faculty of Sports Science and Coaching, Tanjong Malim (Malaysia)

Corresponding author: Ali Md Nadzalan, Sultan Idris Education University, Faculty of Sports Science and Coaching, Sultan Azlan Shah Campus, Proton City, 35900 Tanjong Malim, Perak, Malaysia.

e-mail: ali.nadzalan@fsskj.upsi.edu.my, phone: +60195608644

## The effects of instructional and motivational self-talk on axe kick performance in taekwondo

Submission: 16.11.2022; acceptance: 30.12.2022

**Key words:** *taekwondo*, kicking, self-talk, cue, performance

### Abstract

**Background.** Self-talk has been proven to be an effective method in helping athletes improve performance. As many types of self-talk can be performed by athletes, it is important to know the effectiveness of different variations of self-talk.

**Problem and aim.** The lack of studies has been done comparing the effectiveness of motivational and instructional self-talk among Taekwondo athletes. Thus, it is the aim of this study to identify the effects of instructional and motivational self-talk on axe kick performance in taekwondo.

**Material and methods.** Thirty (N=30) black belt taekwondo athletes (mean age = 22.21 years old) were recruited as participants in this study. Participants were asked to attend three testing sessions separated by three days between sessions, each session with different self-talk; i) instructional, ii) motivational and ii) no self-talk. The kinematics of the kicking was analyzed and compared between the three types of self-talk using one-way repeated measure analysis of variances.

**Results.** Results showed performing motivational self-talk produced significantly greater maximum kick height, the angle between thighs during maximal kick height, maximal hip, knee and foot velocity than instructional and no self-talk. No significant differences were found between instructional self-talk and a control condition.

**Conclusions.** The findings showed the importance of cues during self-talk training for the athletes in order to enhance their performance. Motivational self-talk was found to be more effective for gross skills execution as an athlete could fully focus on performing the best performance rather than instructional self-talk which will cause athlete to give focus on following the instruction that they have in their mind.

## Introduction

Taekwondo is a kind of unarmed combat and martial art that has lasted for decades. The term 'taekwondo' was established in 1955, while the arts' Korean roots date back to 2,300 century [Mailapalli *et al.* 2015]. The term 'Taekwondo was formed from the Korean terms in which 'Tae' means foot, 'kwon' which means fist, and 'do' which means path. Hence, 'taekwondo' literally means 'the way of the foot and fist', in which the essential techniques of this sport include kicking and punching [Mailapalli *et al.* 2015]. However, taekwondo awards more points for kicks in competition, thus the kick method is more prominent than the punch techniques [Barnamehei *et al.* 2017; Paramitha *et al.* 2020].

There had been many previous studies were conducted on taekwondo using various techniques and approaches to explore the best approaches in order to archive the greatest performance. Some previous studies analysed the kinematics during kicking style [Barnamehei *et al.* 2017; Wasik, Shan, 2014; Falco *et al.* 2011]. Some other studies compared the different skill levels to fine motor training approaches [Barnamehei *et al.* 2018; Moreira *et al.* 2016]. Apart from these, psychological skills are well known as one of the methods to improve performance in sports [Hunt *et al.* 2020; Jabbari *et al.* 2019; Latinjak *et al.* 2019; Lim, O'Sullivan 2016; Chroni *et al.* 2007].

Self-talk is one of the psychological skills that improves physical performance by influencing and organizing athlete's perceptions [Bellomo *et al.* 2020]. Instructional self-talk refers to performance facilitation by triggering the desired movement through correct intentional focus and technique. Meanwhile, motivational self-talk is to assist performance by increasing confidence and effort by creating a positive mood [Hardy 2006]. Therefore, self-talk can influence a variety of psychological processes related to athletic performance [Van Raalte *et al.* 2016], such as attention and motivation [Galanis *et al.* 2016].

It could be argued that self-talk might serve different functions depending on the content of self-talk cues and the characteristics of the task [Theodorakis *et al.* 2000; Antonis, 2006; Shukri *et al.* 2019]. According to De Matos *et al.* [2020], the motivational group significantly increased their swimming pace and maintained the same perception of effort level when compared between pre- and post-intervention. Shukri *et al.* [2019] on the other hand revealed that the greatest number of repetitions was recorded when performing motivational self-talk compared to control condition (no self-talk) during bench press exercise. Surprisingly, instructional self-talk was found to decrease performance during the bench press exercise.

However, there were also findings demonstrating the effectiveness of instructional self-talk. The study by

Theodorakis *et al.* [2000] compared the effects of motivational versus instructional self-talk on improving motor performance. Their finding revealed the instructional self-talk strategy was more effective in the task requires fine motor movements, whereas when the task requires predominantly strength and endurance, both motivational and instructional strategies are effective. Besides that, in a study involving basketball players, Abdoli *et al.* [2018] revealed that when compared to baseline conditions, instructional self-talk resulted in higher shot accuracy and lower movement coordination variability, but motivational self-talk resulted in no changes.

Until now, there is a lack of studies about self-talk conducted in taekwondo. When performing kicking moves in Taekwondo, a fighter must have both power and speed to be successful [Wasik, Shan 2014]. Power is generally defined as the ability to deliver enough force to knock an opponent off balance or out. Speed was defined as rapid foot movement and reaction. Good Taekwondo athletes should be able to perform a fast and high axe kick, in order to increase the chance to hit the opponents, especially against the taller opponent. Thus, the purpose of this study was to analyse the influence of instructional and motivational self-talk on Taekwondo axe kick performance through the peak height and kicking velocity performance.

## Material and methods

### Participants

A sample of thirty (n=30) black belt taekwondo athletes (mean age = 22.21 years old) were recruited as participants in this study. At the time of the study, all were in a good physical condition and reported no injuries or pain. Each of them had at least 3 years of training experience. Participants were required to complete informed consent forms as part of the study. All participants were informed that their participation in this study is voluntary and they are free to withdraw from the study at any time. This study has been approved by the researchers from the University Human Research Ethics Committee [Code: UPSI/PPPI/PYK/ETIKA(M)/014(164)]

### Procedure

#### Self-talk cue

Self-talk cue was designed by the researchers after referring to the previous study [Hatzigeorgiadis 2006]. The content of the motivational self-talk intervention was; 'Go, I can kick the fastest and highest' while the instructional self-talk was; 'Push and lift the leg straight up and down in front of the body'. Participants were given the cues that were written on a paper. They were instructed to first read the cues, and after they were able to remember the cues, they were free to speak it without any control

of the loudness. However, it is compulsory for the self-talk to be heard by researchers to ensure they did not change the script.

#### *Axe kick*

Axe kick was executed by raising the kicking leg in a circular motion and bringing the heel straight down (like a downward action of an axe) at the peak height [Barnamehei *et al.* 2020; Mailapalli *et al.* 2015]. Participants were asked to kick as fast and as high as possible, assuming there is a tall opponent in front of them. No target was put in front of them as a way to know their maximal ability to kick as high as possible. The movement of the axe kick was started with participant getting ready in a fighting stance position, one leg in front (supporting leg) and one leg behind (kicking leg). Then participant would lift the rear leg and kick into the air as high as they could. In this movement, rear leg was straight up and when reaches at maximum height, participant then would swing down the heel to strike the target and at the same time started the downward phase. During downward movement, participant quickly would drive forward the heel downward and back to a normal fighting stance position.

#### **Data collection**

Participants were asked to attend four testing sessions separated by three days between sessions. The first day was allocated for briefing and familiarization session. The second, third and fourth were allocated for axe kick test, each session with different self-talk approaches; i) instructional, ii) motivational and ii) no self-talk. During the warm-up time prior to each session, participants were given and practiced using the self-talk phrases to allow them to get better familiarizes with their cues and enhance the effectiveness of the intervention.

Six infra-red cameras motion analysis systems (Vicon T10s, Oxford Metrics, UK) were used to collect kinematics data, sampled at 100 Hz. Based on the Plug-in-Gate Marker Set, reflective markers were attached to participant's body at the second metatarsal, lateral malleolus, calcaneus, lateral shank, lateral femoral epicondyle, lateral thigh and anterior superior iliac spine at both sides of body. Analysis of data was conducted using standard plug in gait filtering of kinematic data (butterworth filter) with cut off frequency at 6 Hz. Data is filtered after the data collection using the Vicon Nexus software. The kinematic model of the lower body consisted of the shank, thigh, pelvis and foot of the kicking leg. The joint displacement and movement time were obtained through tracking the reflective makers automatically. Velocity is computed using the Vicon polygon software where the data of the segment markers is interpreted. Maximal velocity is chosen from each graph using the vicon polygon software where the maximal velocity of segment or marker is detected and reported.

## **Statistical Analysis**

Descriptive statistics was conducted to determine the mean and standard deviation of participants' age, height, body mass and kicking parameters. The kicking parameters of the kicking leg were analyzed and compared between the three types of self-talk using one-way repeated measure analysis of variances (ANOVA). All statistical analyses were run using Statistical Package for Social Science (SPSS) version 23.

## **Results**

**Table 1.** Demographic of participants

Variables	Mean $\pm$ SD
Age (years old)	22.21 $\pm$ 1.47
Body Mass (kg)	60.36 $\pm$ 4.16
Height (cm)	168.06 $\pm$ 2.91
Experience in Taekwondo (years)	5.00 $\pm$ 1.65

Table 1 showed the demographic of participants involved in this study.

**Table 2.** Score mean and standard deviation

Parameters	Motivational	Instructional	Control
Maximum kick height (cm)	185.38 $\pm$ 8.46 <sup>bc</sup>	180.72 $\pm$ 7.02 <sup>a</sup>	179.34 $\pm$ 12.49 <sup>a</sup>
Angle between thighs during maximal kick height (°)	149.82 $\pm$ 6.83 <sup>bc</sup>	144.74 $\pm$ 8.19 <sup>a</sup>	145.71 $\pm$ 7.99 <sup>a</sup>
Maximum hip velocity (m/s)	6.81 $\pm$ 0.59 <sup>bc</sup>	6.74 $\pm$ 0.68 <sup>a</sup>	6.71 $\pm$ 0.70 <sup>a</sup>
Maximum knee velocity (m/s)	6.73 $\pm$ 0.59 <sup>bc</sup>	6.62 $\pm$ 0.68 <sup>a</sup>	6.61 $\pm$ 0.70 <sup>a</sup>
Maximum ankle velocity (m/s)	6.72 $\pm$ 0.83 <sup>bc</sup>	6.53 $\pm$ 0.79 <sup>a</sup>	6.52 $\pm$ 0.41 <sup>a</sup>
Maximum toe velocity (m/s)	6.69 $\pm$ 0.58 <sup>bc</sup>	6.48 $\pm$ 0.72 <sup>a</sup>	6.45 $\pm$ 0.71 <sup>a</sup>

<sup>a</sup> = significantly different from Motivational

<sup>b</sup> = significantly different from Instructional

<sup>c</sup> = significantly different from Control

Table 2 showed the mean and standard deviation of kinematics data. Analysis showed significant effects for all the kinematic variables investigated in all loadings: i) maximum kick height,  $F(2,58) = 501.24$ ;  $p < 0.001$ , ii) angle between thighs,  $F(2,58) = 312.51$ ;  $p < 0.05$ , iii) maximum hip velocity,  $F(2,58) = 538.83$ ;  $p < 0.001$ , iv) maximum knee velocity,  $F(2,58) = 424.38$ ;  $p < 0.001$ , v) maximum ankle velocity,  $F(2,58) = 389.65$ ;  $p < 0.001$ , v) maximum toe velocity,  $F(2,58) = 413.56$ ;  $p < 0.001$ . Pairwise comparison then was conducted to compare specifically between all the variables between loads. It was found that all the variables were shown to be greater during motivational self-talk compared to instructional

self-talk and control conditions. No significant differences were found between instructional self-talk and control conditions.

## Discussion

As it has been proven that self-talk is beneficial in helping to improve the performance of athletes [Nam *et al.* 2022; Sato *et al.* 2017; Bingol, Yildiz 2021], this study aims to compare how different cues during the self-talk affect the performance of Taekwondo athletes during kicking execution. Axe kick was chosen as the skill tested due to its nature that requires maximal speed and peak height that definitely would make participants to produce their best effort to achieve great performance.

The cues used were designed based on previous studies [Hatzigeorgiadis 2006]. Motivational self-talk cue was designed so that it enhanced motivation of participants to produce the best kicks while instructional self-talk cue was designed so that participants had in their minds the steps to produce the best kick by thinking of the movement of their body.

As the results showed, motivational self-talk produced significantly greater peak height and kick velocity than instructional and no self-talk. No significant differences were found between instructional self-talk and no self-talk, showing that there are no positive or negative effects of directing someone to focus on the movement of the body during skill execution.

Motivational self-talk was perceived as a significant aid for their concentration and confidence [Chroni *et al.* 2007]. With just focusing on what to achieve, the performer might have less to think about, thus concentration could be attributed to just do whatever he should achieve the best performance. This was reflected by the movement produced by the participant, in which the maximal hip, knee, ankle and toe velocity were shown to be the fastest during motivational self-talk. As participants already have faster hip and knee, this later brought to faster foot and subsequently more peak height is achieved. Thus, having athletes motivated by the cues while at the same time did not have to think of the body movement are important to ensure their movements are produced more naturally.

In contrast, instructional self-talk could interfere with the performer's mind that bring up to the body's natural movement. The mechanism of instructional self-talk could be related to the theory of constraint action hypothesis [Vidal *et al.* 2017], as the instructional self-talk in this study also contains the element of internal focus condition where participants need to focus on the movement or technique. Thus, they are performing the movement with concentration given to follow the cues given and this later affect their best movement. Slower hip, knee and ankle velocity were later followed by slower

toe velocity, thus reducing momentum to achieve better maximal height. So, it can be seen here that instructional self-talk appeared to not be a suitable approach to be given to athletes.

The findings of the current study were in line with what has been found by De Matos *et al.* [2020], in which the motivational group significantly increased swimming pace after intervention. Besides, Shukri *et al.* [2019] also found the more effectiveness of motivational self-talk during bench press exercise.

However, the findings of the current study were not in line with Theodorakis *et al.* [2000] that found instructional self-talk strategy was more effective in the task required fine motor movements. Besides that, Abdoli *et al.* [2018] found instructional self-talk to be more effective in improving shot accuracy and lower movement coordination variability in basketball. The contrast findings could be contributed by the factors that the current study was a gross movement, and the greatest level of effort was needed.

## Conclusions

The findings showed the importance of cues during self-talk training for the athletes in order to enhance their performance. It is recommended for individuals to use motivational self-talk during gross movement such as axe kick as it produces greater performance compared to instructional and no self-talk. Further study suggested to be done on many more self-talk approaches on different sport/skill performance to provide a clear picture of cues to be used based on specific types of skills. However, it is important to be noted that this study involved participants with at least three years of experience of being involved in Taekwondo. Studies should also be looked into the effects of instructional self-talk on novice Taekwondo athletes as instructional self-talk might be useful for this group of participants that are still learning to master the techniques.

## References

1. Abdoli B., Hardy J., Riyahi J.F., Farsi A. (2018), *A closer look at how self-talk influences skilled basketball performance*, "Sport Psychologist", vol. 32, pp. 9–15.
2. Barnamehei H., Kharazi M., Safaei M. (2017), *Kinematics comparison of two common different guard in taekwondo Ap Dollio Chagi*, "ISBS Proceedings Archive", vol. 35, p. 13.
3. Barnamehei H., Khazae F., Safaei M.A., Jabari H., Golfeshan N., Barnamehei M., Rezaei A., Kharazi, M.R., Naghavi N. (2020), *Motor learning and training strategy effect on motor control; Comparison between Taekwondo and Karate front kick (Ap Chagi and Mae Geri)*, "International Journal of Martial Arts", vol. 6, pp. 48-65.

4. Barnamehei H., Razaghi M., Panahi S., Modabberibejandi M., Lashgari M., Safaei M. A., Rezaei A. (2018), *Identification and quantification of modular control during Roundhouse kick executed by elite Taekwondo players*, "International Iranian Conference on Biomedical Engineering (ICBME)", pp. 1-6.
5. Bellomo E., Cooke A., Gallicchio G., Ring C., Hardy J. (2020), *Mind and body: Psychophysiological profiles of instructional and motivational self-talk*, "Psychophysiology", vol. 57, pp. 13586.
6. Bingol E., Yildiz S.M. (2021), *An empirical investigation of the relationships between motivation and athlete performance mediated by self-talk: Evidence from combat sports*, "Spor Bilimleri Araştırmaları Dergisi", vol. 6, pp. 13-23.
7. Chroni S., Perkos S., Theodorakis Y. (2007), *Function and preferences of motivational and instructional self-talk for adolescent basketball players*, "Athletic Insight", vol. 9, pp. 19-31.
8. de Matos L.F., Bertollo M., Stefanello J.M.F., Pires F.O., da Silva C.K., Nakamura F.Y., Pereira G. (2021), *Motivational self-talk improves time-trial swimming endurance performance in amateur triathletes*, "International Journal of Sport and Exercise Psychology", vol. 19, pp. 446-459.
9. Falco C., Estevan I., Vieten M. (2011), *Kinematical analysis of five different kicks in taekwondo*, "In ISBS-Conference Proceedings Archive", pp. 219-222.
10. Galanis E., Hatzigeorgiadis A., Zourbanos N., Theodorakis Y. (2016), *Why Self-Talk Is Effective? Perspectives on Self-Talk Mechanisms in Sport*, "Sport and Exercise Psychology Research", pp. 181-200.
11. Hardy J. (2006), *Speaking clearly: A critical review of the self-talk literature*, "Psychology of Sport and Exercise", vol. 7, pp. 81-97.
12. Hatzigeorgiadis A. (2006), *Instructional and motivational self-talk: An investigation on perceived self-talk functions*, "Hellenic Journal of Psychology", vol. 3, pp. 164-175.
13. Hunt M.Q., Novak C.E., Madrigal L.A., Vargas T.M. (2020), *Strategies for Developing Mental Toughness in High School Athletes*, "Strategies", vol. 33, pp. 14-19.
14. Jabbari E., Charbaghi Z., Dana A. (2019), *The Effects of Instructional and Motivational Self-Talk on Overt and Covert Levels of Motor Performance*, "Journal of Humanities Insights", vol. 3, pp. 37-44.
15. Latinjak A.T., Torregrossa M., Comoutos N., Hernandez-Gimeno C., Ramis, Y. (2019), *Goal-directed self-talk used to self-regulate in male basketball competitions*, "Journal of Sports Sciences", vol. 37, pp. 1429-1433.
16. Lim T., O'Sullivan D.M. (2016), *Case Study of Mental Skills Training for a Taekwondo Olympian*, "Journal of Human Kinetics", vol. 50, pp. 235-245.
17. Mailapalli D.R., Benton J., Woodward T.W. (2015), *Bio-mechanics of the taekwondo axe kick: a review*, "Journal of Human Sport and Exercise", vol. 10, pp. 141-149.
18. Moreira P.V.S., Goethel M.F., Gonçalves M. (2016), *Neuromuscular performance of Bandal Chagui: Comparison of subelite and elite taekwondo athletes*, "Journal of Electromyography and Kinesiology", vol. 30, pp. 55-65.
19. Nam J.H., Kim E.J., Cho E.H. (2022), *Sport psychological skill factors and scale development for taekwondo athletes*, "International Journal of Environmental Research and Public Health", vol. 19, pp. 3433.
20. Paramitha S.T., Rosadi T.Y., Ramadhan M.G., Suwanta D.M. (2020), *The influence of flexibility training on the accuracy of the dollyo chagi kick in taekwondo martial arts*, "In 4<sup>th</sup> International Conference on Sport Science, Health, and Physical Education (ICSSHPE 2019)", pp. 317-320.
21. Sato N., Khan T.K.A., Jusoh N. (2017), *The effects of combined self-talk, imagery and video-modelling interventions on anaerobic performance, heart rate response and self-efficacy*, "Jurnal Sains Sukan & Pendidikan Jasmani", vol. 6, pp. 1-10.
22. Shukri N.S.M., Abdullah M.F., Japilus S.J.M., Azmi S.H., Mustafa M.A., Nadzalan A.M. (2019), *Electromyographical analysis and performance during bench press exercise: The influence of self-talk*, "International Journal of Recent Technology and Engineering", vol. 8, pp. 1279-1281.
23. Theodorakis Y., Weinberg R., Natsis P., Douma I., Kazakas P. (2000), *The effects of motivational versus instructional self-talk on improving motor performance*, "Sport Psychologist", vol. 14, pp. 253-271.
24. Van Raalte J.L., Vincent A., Brewer B.W. (2016), *Self-talk: Review and sport-specific model*, "Psychology of Sport and Exercise", vol. 22, pp. 139-148.
25. Vidal A., Wu W., Nakajima M., Becker J. (2018), *Investigating the constrained action hypothesis: a movement coordination and coordination variability approach*, "Journal of Motor Behavior", vol. 50, pp. 528-537.
26. Wasik J., Shan G. (2014), *Factors influencing the effectiveness of axe kick in taekwon-do*, "Archives of Budo", vol. 10, pp. 29-36.

## Wpływ instruktazowego i motywacyjnego monologu wewnętrznego na wykonanie kopnięcia axe-kick w taekwondo

**Słowa kluczowe:** taekwondo, kopnięcie, autotalk, wskazówka, wykonanie

### Streszczenie

Tło. Udowodniono, że monolog wewnętrzny (self-talk) jest skuteczną metodą pomagającą sportowcom w poprawieniu wyników. Ponieważ wiele rodzajów monologu wewnętrznego, który może być wykonywanych przez sportowców, ważne jest, aby poznać skuteczność jego różnych odmian.

Problem i cel. Brakuje badań porównujących skuteczność motywacyjnego i instruktazowego monologu wewnętrznego wśród zawodników Taekwondo. Dlatego też celem niniejszej pracy było określenie wpływu instruktazowego i motywacyjnego monologu wewnętrznego na wydajność kopnięcia axe kick w taekwondo.

Materiał i metody. Trzydziestu (N=30) zawodników taekwondo z czarnym pasem (średnia wieku = 22,21 lat) zostało zrekrutowanych do badania. Uczestnicy zostali poproszeni

o wzięcie udziału w trzech sesjach testowych oddzielonych trzema dniami pomiędzy sesjami, każda sesja z innym monologiem wewnętrznym; i) instruktażowym, ii) motywacyjnym i iii) bez monologu wewnętrznego. Kinematyka kopnięć była analizowana i porównywana pomiędzy trzema rodzajami monologu wewnętrznego przy użyciu jednokierunkowej analizy wariancji.

Wyniki. Wyniki wykazały, że wykonywanie motywacyjnej rozmowy z samym sobą powodowało istotnie większą maksymalną wysokość kopnięcia, kąt między udami podczas maksymalnej wysokości kopnięcia, maksymalną prędkość bioder, kolan i stóp niż w czasie instruktażowego monologu wewnętrznego i braku monologu wewnętrznego. Nie stwierdzono istotnych

różnic pomiędzy monologiem wewnętrznym instruktażowym a stanem kontrolnym.

Wnioski. Wyniki pokazały znaczenie wskazówek podczas treningu monologu wewnętrznego dla sportowców w celu zwiększenia ich wydajności. Motywacyjny monolog wewnętrznym okazał się być ogólnie bardziej efektywny w przypadku wykonania aktywności, ponieważ sportowiec może w pełni skupić się na wykonaniu najlepszego zadania, niż w przypadku instruktażowego monologu wewnętrznego, który powoduje, że sportowiec skupia się na wykonaniu instrukcji, którą ma w głowie.