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THE USE OF THE PASSIVE VOICE IN ENGLISH AND POLISH MEDICAL RESEARCH ARTICLES

Abstract

Introduction and aim: The passive voice has recently been claimed to be excessively used in medical research papers making them less clear and for some people difficult to understand. Still, it is thought that the passive voice used in scientific writing contributes to an objective presentation of the subject matter, it emphasizes the action rather than the doer of the action and it also acts as a means of impersonalization. The aim of the paper is to investigate the frequency of occurrence of the passive voice in English and Polish medical research articles.

Material and methods: The study is based on five medical research articles taken from The British Medical Journal and one article in manuscript and their Polish translations. It is a contrastive analysis of the use of the passive voice in English and Polish medical research articles.

Results: The frequency of occurrence of the passive voice in English and Polish medical research articles is roughly the same (an average of 30% of all the finite verbs). The passive with an expressed agent is rare in the analysed articles. The passive voice in English is translated into Polish mainly by means of the *-no*, *-to* constructions.

Conclusions: The frequency of occurrence of the passive voice in medical research articles is high both in English and in Polish. It is due to the nature and function of scientific writing, by means of which scientists aim to give an impersonal, objective and factual account of their research.

Keywords: Passive voice, scientific writing, medical research articles.

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UŻYCIE STRONY BIERNEJ W ANGIELSKICH I POLSKICH ARTYKUŁACH MEDYCZNYCH

Streszczenie

Wstęp i cel: Twierdzi się ostatnio, że strona bierna jest nadmiernie używana w artykułach medycznych czyniąc je mniej jasnymi i dla niektórych ludzi trudnymi do zrozumienia. Jednakże sądzi się, iż strona bierna używana w stylu naukowym przyczynia się obiektywnego przedstawienia przedmiotu badań, kładzie nacisk na czynność, a nie na sprawcę czynności, a także umożliwia ich bezosobowy opis. Celem pracy jest zbadanie częstotliwości występowania strony biernej w angielskich i polskich artykułach medycznych.

Materiał i metody: Badanie oparte jest na pięciu artykułach medycznych zaczerpniętych z *The British Medical Journal* i na jednym artykule w formie manuskryptu oraz na ich polskich tłumaczeniach. Jest to kontrastowna analiza zastosowania strony biernej w angielskich i polskich artykułach medycznych.

Wyniki: Częstotliwość występowania strony biernej w angielskich i polskich artykułach medycznych jest mniej więcej taka sama (średnio 30% wszystkich czasowników w formie osobowej). Strona bierna z wyrażonym agensem występuje w badanych artykułach rzadko. Strona bierna jest przetłumaczona na język polski głównie za pomocą konstrukcji *-no*, *-to*.

Wnioski: Częstotliwość występowania strony biernej w artykułach medycznych jest duża, zarówno w języku angielskim, jak i polskim. Wpływa na to natura i funkcja stylu naukowego, przy pomocy którego naukowiec przedstawia wyniki swoich badań w sposób bezosobowy, obiektywny i rzeczowy.

Słowa kluczowe: Strona bierna, styl naukowy, artykuły medyczne.

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1. Introduction

The passive voice is regarded as an important stylistic feature in scientific writing, which should be “precise, accurate and detached from individual impulse” (Ahmad 2012:47). The tendency to use the passive rather than the active voice serves the purpose of giving an impression of neutral, objective, factual reporting or an objective interpretation of scientific facts and findings. Using the passive voice, science writers avoid the first person (I) since in a sense it might be impolite and by doing so create an objective tone in their research papers. Moreover, passive constructions in such papers focus on the action or the result of an action rather than on the scientist who performed the action. Lastly, it “conforms to the style with which medical peers are most familiar” (Amdur/Kirwan/Morris 2010:98).

The main objective of this paper is to examine the frequency of occurrence of the passive voice and the frequency of occurrence of the passive constructions with an expressed agent in English medical research articles and their Polish translations. It also addresses the problem of translation of the instances of the passive voice used in the English papers into Polish to find whether the passive voice is retained in the translation or whether a different construction is used instead.

2. The use of the passive voice in scientific writing

Voice as a grammatical category expresses the relationship between the surface structure subject and the surface structure verb and it refers to some semantic and formal distinctions (Wołczyńska-Sudół 1976:153). Passive constructions are normally perceived in opposition to active constructions. The term “passive” is used to indicate constructions in which the passive subject corresponds to an active direct object, and the active subject, if overt, is expressed in the form of an agentive adjunct. As far as a semantic role is concerned the active subject usually corresponds to the actor/agent (the active participant), and the passive subject to the patient/undergoer (the passive participant). The NPs in the two constructions are usually regarded as having the same semantic roles (Siewierska 1984:1988).

Let us look at an English example:

- (1) a. John shot the tiger .
 SUBJECT OBJECT
 AGENT PATIENT
- b. The tiger was shot by John .
 SUBJECT AGENT
 PATIENT

In the above example, sentence (1a) is considered the unmarked member of the pair, and is said to be in the active voice, while sentence (1b), constituting the marked one, is in the passive voice.

Both active and passive constructions in most instances express the same propositional content, but they differ in the pragmatic function of the agent and patient. The agent is usually *the topic*, i.e. the element that states what the clause is primarily about and establishes the distinctive framework within which the sentence holds. It appears in initial position in the sentence and in most cases bears *given* information. In a passive clause the patient is the topic while the agent, if expressed, represents *new* information and carries the main information focus indicated by tonic stress (Siewierska 1984:3). Thus one of the main reasons for using the passive voice is thematization.

Another main reason for choosing the passive is when we want to avoid mentioning the agent. In such a case the agent is often unknown, irrelevant or not important or can be derived from the context, either linguistic or situational (Bache/Davidsen-Nielsen 1997:207).

Such agentless passive sentences are often employed by scientists in research articles. In scientific writing the passive voice has the advantage over the active voice in its ability to place the experiment at the beginning of the sentence and either to move the doer/performer of the experiment to the end of the sentence expressing it by means of the *by* - phrase or to create an agentless construction. In this way the experiment becomes linguistically highlighted.

Scientific texts often describe natural processes whose causes may be unknown, and the human agent is involved only as an observer, e.g.:

(2) At greater altitudes only a part of the energy is deposited locally in this way.

But even if the writer depicts a procedure devised and performed by himself, he opts for impersonal presentation of his subject matter because the attention is focused on the things described, besides there is a convention that the author should not be exposed too much. Thus the following locutions are commonly found:

- (3) a. It has been pointed out ...
b. It has been observed ...
c. The study was performed ...

instead of:

- (4) a. I have pointed out ...
b. I have observed ...
c. We have performed the study ...

Scientific writing also tends to apply the pattern topic-event relating to it, instead of using the construction agent-action, mostly found in the style of conversation, e.g.:

(5) Similar changes were not observed in those whose atrial fibrillation persisted.

Still, the tendency to employ impersonal presentation of the subject matter, which results in the construction topic-event relating to it, is especially obvious where the topic functioning as the subject is non-thematic (it also carries new information). Although the construction agent-action would facilitate the choice of a thematic subject, the impersonal passive is used instead, e.g.:

(6) There was no consistent change in the left-ventricular end-diastolic pressure, and no correlation was noted between the character of the 'A' wave and the cardiac output or left-ventricular end-diastolic pressure.

(Grzegorek 1984: 63-64 ; Dušková 1971: 129-131 ; Siewierska 1984: 237)

In scientific writing in Polish, like in English, there is a tendency not to express the agent, as the subject matter is preferred to be presented in an impersonal way. Thus agentless passives are favoured to active sentences in the language of science and journalism. The omitted agent is often the author himself. An active sentence with an expressed agent *ja* has the same word order and the same proposition as a passive one, but it is more 'elegant' to use the latter, e.g.:

- (7) a. *Rozkaz określony był* wyżej jako szczególny przypadek wypowiedzi funkcjonalnej.
b. *Rozkaz określiłem* wyżej jako szczególny przypadek wypowiedzi funkcjonalnej.

(Grzegorek 1984: 116-124).

3. The analysis of the use of the passive voice in English and Polish medical research articles

3.1. Data and methodology

In what follows we examine the use of the passive voice in English and in Polish scientific articles from the field of medicine. Our corpora comprise five English medical articles taken from The British Medical Journal and their Polish translations that come from the Polish edition of that periodical. One article and its Polish translation (both in manuscript) come from the Fertility and Andrology Department at University School of Medicine in Lublin. The articles are marked and will be referred to later as E1, E2, E3, E4, E5, E6 and P1, P2, P3, P4, P5, P6 papers respectively. Papers E1 - E5 and P1 - P5 come from the following editions of the British Medical Journal (Polish translations of the articles come from the Polish editions of the BMJ):

- E1, P1 - *BMJ* 1995; 310: 1165-9,
- E2, P2 - *BMJ* 1996; 313: 404-6,
- E3, P3 - *BMJ* 1994; 309: 1689,
- E4, P4 - *BMJ* 1996; 312: 658,
- E5 - *BMJ* 1996; 313: 63-64,
- P5 - *BMJ* Wydanie polskie. Luty 1997: 11-12.

Articles E6 and P6, entitled *Laparoscopic resection of pyosalpinx in early pregnancy / Laparoskopowe usunięcie ropnego jajowodu we wczesnej ciąży*, are a manuscript written by Grzegorz Jakiel MD, Paweł Wiczorek MD, Szymon Bakalczuk MD, Michał Bokinić MD, PhD at the Fertility and Andrology Department, University School of Medicine in Lublin, Poland.

The main objective of the study is to compare the use of the passive voice in English medical research texts and in their Polish translations. What we take into consideration are the following areas of interest:

- I. The frequency of occurrence of the passive voice in English medical research articles and in their Polish translations
- II. The frequency of occurrence of the passive voice with an expressed agent in these articles
- III. The translation of the English passives into Polish

I. In this part we count the passives in all the articles, compare the percentage of the passives in English with the percentage of the passives in Polish. We also count the percentage of occurrence of the passive constructions in Polish, such as the periphrastic passive, the *-no* , *-to* constructions, and the reflexive constructions. As the last step we calculate the percentage of occurrence of the passive in the individual sections of the English and Polish articles (in Abstract, Introduction, Methods, Results, Discussion).

The calculation is done in the following way. All the finite verbs and all the finite passives are counted and the percentage of occurrence of the passives is calculated. As far as the Polish passive constructions are concerned, the percentage of occurrence of those individual constructions are counted taking all the passives in a given article as the base.

II. The calculation is conducted in the following way. All the finite passives and all the finite passives with an expressed agent are counted and next the percentage of occurrence of the latter is calculated.

III. This section addresses the issue of translating the passive in English into Polish. We analyse the translation in order to check whether the same or a different construction was used in it. We also focus on the instances of constructions in English other than the passive that were rendered into Polish as the passive.

3.2. Results

I. The frequency of occurrence of the passive voice in English medical research articles and in their Polish translations.

After having counted the percentage of all the finite passives in our corpora, we have attained the following findings presented in the table 1 below.

Tab. 1. The percentage of the passive constructions in English and Polish medical articles

<i>Article</i>	<i>English</i>	<i>Polish</i>
E1 / P1	24 %	23,23 %
E2 / P2	38 %	34 %
E3 / P3	26,9 %	23,5 %
E4 / P4	27,59 %	10,7 %
E5 / P5	20,45 %	20,7 %
E6 / P6	57,24 %	57,15 %

Source: Elaboration of the Author

The data show that in almost all the articles, except E4/P4, the number of the passives in English and in Polish is roughly the same. The passive constructions constitute an average of 30% of all the finite verbs in both the English and Polish articles, which proves the thesis that the frequency of occurrence of the passive voice in scientific writing is high.

As far as the Polish articles are concerned, we have come across the following constructions: the periphrastic passive, the *-no*, *-to* constructions, and the reflexive constructions. Table 2 shows the percentage of occurrence of those constructions in the Polish articles.

Tab. 2. The percentage of passive constructions in Polish medical articles

<i>Article</i>	<i>Periphrastic passive</i>	<i>No / To constructions</i>	<i>Reflexive constructions</i>
P1	16,3 %	65,3 %	18,4 %
P2	20,4 %	77,6 %	2 %
P3	6,7 %	93,3 %	0 %
P4	0 %	100 %	0 %
P5	33,3 %	55,6 %	11,1 %
P6	7,7 %	90,4 %	1,9 %

Source: Elaboration of the Author

As we can see, the *-no*, *-to* constructions are prevalent and constitute an average of 80% of all the passive constructions. The reason is that they are impersonal constructions which exclude both the speaker and the addressee, thus the account can be conveyed without the need to mention the agent, which is irrelevant in scientific writing. The report is written in an impersonal, objective manner.

As far as the sections of the articles are concerned, the distribution of the passive differs. Table 3 shows the percentage of the passive in the Abstract, the Introduction, the Methods, the Results and the Discussion. We analysed only E1, E2, E6 and P1, P2, P6 articles since only these were clearly divided into such parts.

Tab. 3. The percentage of the passive in the sections of the English and Polish articles

Article	English					Polish				
	A	I	M	R	D	A	I	M	R	D
E1 / P1	0,9	1,3	9,3	3,6	8,9	0,5	1,4	10,4	2,4	8
E2 / P2	3,7	2,2	23,1	3	6	2	1,4	23,6	2,8	4,2
E6 / P6	8,8	1,1	38,5	0	9,9	8,8	0	39,6	0	8,8

Source: Elaboration of the Author

From the above data we can conclude that the passive prevails in the Methods part. This is the case because in this part we describe the procedure of medical research, we present the subject matter in an impersonal way, which is achieved by means of abstraction from the person of the writer and concentration on what is being described. We are aware that the agent must be a certain group of researchers, and mentioning that piece of information is redundant.

II. The frequency of occurrence of the passive voice with an expressed agent in the analysed medical articles

Table 4 shows the percentage of all the passives with an expressed agent in the English and Polish medical research articles.

Tab. 4. The percentage of agented passives in the English and Polish medical articles

Article	English	Polish
E1 / P1	5,5 %	0 %
E2 / P2	5,9 %	8,2 %
E3 / P3	0 %	0 %
E4 / P4	10,34 %	0 %
E5 / P5	27,8 %	5,5 %
E6 / P6	13,2 %	1,9 %

Source: Elaboration of the Author

What can be inferred from the above data is that the passive with an expressed agent is rare in medical research articles, but if it is used, the agented passive can be expressed by animate and inanimate *by-agent*.

In our study we have encountered only 4 passives with an expressed animate *by-agent* in English and 1 in Polish.

- E. (8) Sheep were first cloned in 1986 *by Sten Willadsen ...* (E4)
 (9) The review was done *by experienced epidemiologists ...* (E5)
 (10) First oral contraceptives are used mainly *by fertile women ...* (E5)
 (11) The finding was supported *by Klatsky and Armstrong ...* (E1)
- P. (12) Po pierwsze, doustne środki antykoncepcyjne są stosowane głównie *przez płodne kobiety ...* (P5)

As far as the passives with an expressed inanimate *by-agent* are concerned, we can quote a few examples.

- E. (13) ... mortality could be explained almost exclusively *by the effect of drinking wine*. (E1)
(14) Surgery is most often necessitated *by appendicitis* and, secondly, *by symptomati cholelithiasis*. (E6)
(15) ... hemostasis was ensured *by bipolar coagulation*, ... (E6)
(16) Recent attempts ... were hindered *by doubts*. (E6)
(17) ... the large differences ... can be explained *by the results* ... (E2)
(18) Results are given ... and stratified *by different patterns* ... (E5)
(19) The resulting cells were induced to quiesce *by serum starvation* then fused with enucleated eggs *by a tiny spark of electricity*. (E4)
- P. (20) ... próby hamowane były *przez wątpliwości* ... (P6)
(21) Jajowód prawy skoagulowano *kleszczykami bipolarnymi* ... (P6)
(22) ... zasadnicza część zabiegu została w obu przypadkach przeprowadzona *drogą laparotomii*. (P6)
(23) Jak dotąd *nową metodą* stworzono 5 jagniąt ... (P4)
(24) ... łączono z pozbawioną jądra komórką jajową *za pomocą małego ładunku elektrycznego*. (P4)
(25) - *wzrastająca umieralność* ... - może być wytłumaczona głównie *efektem picia mocnych trunków*. (P1)
(26) Dwudziestoczerogodzinny pomiar ... dokonywany był *przy użyciu aparatury* ... (P2)
(27) Obraz krzywej ... spowodowany był *istnieniem fałszywego dodatniego przypadku*, ... (P2)
(28) Różnice w wartości ciśnienia krwi były oceniane *testami t* ... (P2)

Some of the above examples, both in English and Polish, are the passives with “Janus - agents”. These are passives with an expressed inanimate *by* - element, or other prepositional element, and they allow two interpretations, agential or instrumental. Let us consider an example from an English article (19) and a Polish one (28), and transform them into the active voice in order to show the two interpretations:

- E. (29) *Someone* induced the resulting cells to quiesce by serum starvation and then fused them with enucleated eggs by a tiny spark of electricity.
(agential interpretation - indefinite animate agent)
Serum starvation induced the resulting cells to quiesce and then *a tiny spark of electricity* fused them with enucleated eggs.
(instrumental interpretation)
- P. (30) *Ktoś* oceniał różnice w wartości ciśnienia krwi testami *t* ...
(agential interpretation - indefinite animate agent)
Testy t oceniały różnice w wartości ciśnienia krwi ...
(instrumental interpretation)

III. The translation of the English passives into Polish

We have looked at the translation of the passive constructions from English into Polish. In most cases the English periphrastic passive is translated into the Polish *-no*, *-to* constructions, e.g.:

- (31) was doubled - podwajano
(32) were recorded - rejestrowano

In some cases the English passive constructions were translated into Polish by employing other forms, e.g.: the active voice (examples 33, 34), a modifier (examples 35, 36), a prepositional phrase (examples 37 - 39), the impersonal verb form 'można' (examples 40 - 43), the impersonal verb form 'należy' (example 44).

❖ *E. the passive - P. the active*

- (33) E. Intake of neither beer nor spirits *was associated* with
P. Powstrzymywanie się od picia piwa i napojów spirytusowych *więzało się* z ...
(E1/P1)
- (34) E. This finding *was supported* by Klatsky and Armstrong.
P. Tę obserwację *poparli* Klatsky i Armstrong. (E1/P1)

❖ *E. relative clause in the passive - P. a modifier*

- (35) E. ... the embryonic human cells *that would be needed* for the Roslin methods ...
P. ... komórek ludzkich zarodków, *potrzebnych* do zastosowania metody ... (E4/P4)
- (36) E. ... the results were not dependent on the cut-off values *that were used*.
P. ... wyniki pomiarów nie wykazywały zależności od *przyjętych* wartości progowych.
(E2/P2)

❖ *E. a clause in the passive - P. a prepositional phrase*

- (37) E. At the time when the studies *were done*, ...
P. W okresie wykonywania omawianych badań ... (E5/P5)
- (38) E. ... after results *were pooled* ...
P. ... po połączeniu wyników badań. (E5/P5)
- (39) E. ... when the patient *is seated*.
P. ... w pozycji siedzącej. (E2/P2)

❖ *E. a modal verb and a passive infinitive - P. impersonal verb form "można"*

- (40) E. ... withdrawal of medication *can be considered* ...
P. *Można* brać pod uwagę możliwość ... (E2/P2)
- (41) E. ... the possible importance ... *cannot be excluded*.
P. *Nie można* jednak wykluczyć prawdopodobnego wpływu ... (E5/P5)
- (42) E. The finding of more localised cancers ... *may be explained* ...
P. Stwierdzanie bardziej ograniczonych postaci raka sutka ... *można* wyjaśnić ...
(E5/P5)
- (43) E. The validity of self-reported alcohol intake *may be questioned*, ...
P. *Można* kwestionować prawdziwość danych ... (E1/P1)

❖ *E. the passive - P. impersonal verb form "należy"*

- (44) E. Use of hormonal contraceptives ... *is expected to increase* ...
P. ... *należy* się spodziewać ich jeszcze powszechniejszego stosowania ... (E5/P5)

What is worth noting here is the fact that we have encountered some instances of the active voice (examples 45-49) and an adjective (examples 50, 51) in English translated into the *-no*, *-to* constructions (examples 45-50) and the passive (example 51) in Polish.

❖ E. the active - P. *-no*, *-to* constructions

- (45) E. The patient *remained* under observation ...
P. Obserwację ciąży *prowadzono* ... (E6/P6)
- (46) E. The review *did not find* a decreased risk ...
P. *Nie zaobserwowano* zmniejszenia ryzyka ... (E5/P5)
- (47) E. The review *examined* various patterns of use ...
P. W przeglądzie *poddano* badaniu różne formy używania ... (E5/P5)
- (48) E. When patients *were receiving* treatment ...
P. W czasie, kiedy *stosowano* leczenie ... (E2/P2)
- (49) E. Table 3 *shows* ...
P. W tabeli 3 *wykazano* ... (E2/P2)

❖ E. an adjective - P. *-no*, *-to* constructions / the passive

- (50) E. The information was *available* for only a small number of studies.
P. Takie informacje *podano* tylko w małej liczbie badań. (E5/P5)
- (51) E. It is *reasonable* to assume ...
P. *Uzasadnione jest* przypuszczenie ... (E2/P2)

3.3. Discussion of the results

I. The findings in this part prove the thesis that the passive voice is often used in scientific articles in both English and Polish. The percentage of the passives in the English articles was the same as in the Polish ones and the passives comprised about 30% of all the finite verbs. The only exception were articles E4/P4, in which the passive constituted 27,6% of all the finite verbs in English and only 10,7% in Polish.

As far as the sections constituting the articles are concerned, the highest number of passives appeared in the Methods part as in this very part we describe the process itself, the procedure of the research. The average percentage of the passives in this part was 24%.

All the English passive constructions were periphrastic, while the Polish passive was expressed by the following constructions: the periphrastic passive, the *-no*, *-to* constructions, and the reflexive constructions. Our study indicated that the *-no*, *-to* constructions constituted the overwhelming majority, namely around 80% of all the passive constructions.

The high frequency of the use of the passive voice in medical research articles can be attributed to the fact that science writers strive for an objective and impersonal presentation of their findings without too much focus on themselves.

II. The agented passives were rather rare in the articles. They constituted no more than about 10% of all the passives in English. In Polish the number was even lower; the average percentage of the agented passives was around 2,5%. The discrepancy between these outcomes can be explained by the wide use of the *-no*, *-to* constructions in Polish, which are an impersonalizing strategy that excludes both the speaker and the addressee.

All in all, the common tendency in scientific writing is that the author should not be exposed too much. Thus the author describing his/her procedure wants to stand aside so as to draw the reader's attention to what has been done, and not to the person who has done it.

However, sometimes the agent needs to be expressed. This is the case when the agent is, first of all, relevant to the content, he/she is not the author himself, and, according to the functional sentence perspective, the agent is new information, while the patient is given information.

III. Apart from the most frequent translation of the English passive into the Polish *-no, -to* impersonal constructions, we encountered other ways of rendering this grammatical construction into Polish, e.g.: the English passive was realized by the Polish active voice, a modifier, a prepositional phrase, and the impersonal verb forms *można, należy*. In some examples the situation was quite the reverse, namely in some cases an adjective and the active voice in English were realized by Polish *-no, -to* constructions or the passive voice.

On the whole, the passive voice in one language analysed in this study does not have to be rendered as the passive in the other language, other grammatical constructions can be used instead to express a given proposition.

4. Conclusions

- In the analysed medical articles in English and Polish the overall number of the passives was high, with roughly the same number of the passives used in English medical articles and in their Polish translations.
- As far as the Polish articles are concerned, the passive construction mostly used was the *-no, -to* constructions.
- From the individual parts of the articles the methods part was where the frequency of occurrence of the passive was the highest.
- It was also proved that the agent was rarely expressed in the passive, both in English and Polish medical articles.
- On the subject of translation, the English periphrastic passive was mostly translated into the Polish *-no, -to* constructions.

Sources

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