

# Realization of intonation structures in reading attempt and spontaneous speech in the elderly

## *Realizacja struktur intonacyjnych w próbie czytania i mowie spontanicznej u osób starszych*

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**Key words:** speech intonation structure, speech prosody, speech test program.

**Słowa kluczowe:** struktura intonacyjna wypowiedzi, prozodia mowy, program do badania mowy.

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### Abstract

**Introduction:** The articulation activities of respondents with healthy physiological aging of the brain structures is a significant differentiating factor because slight changes occur on the suprasegmental plane of the language. In the linguistic prosody, the most important elements of the act of utterance emerge in the foreground, which relates to lexical stress (the syllable in a word is stressed), emphatic stress (the word in a sentence is stressed), and intonation (chanting in a sentence, questions, statements). The indicated elements are directed by the part of the right hemisphere of the brain that is responsible for processing and understanding speech prosody, i.e. the posterior cortex in the area of the Sylvius sulcus and the lower part of the right frontal lobe.

**Aim of the research:** Identifying suprasegmental features of language on the example of selected read texts and spontaneous oral statements.

**Material and methods:** The study was conducted in a group of healthy seniors attending classes organized by clubs and retirement homes. The spectrographic method was used, including the Praat speech program. The graphic version is presented in the form of intonograms.

**Results:** Minor disturbances in the rhythmic-intonation structure were found in the subjects without concomitant speech organ dysfunctions and without previous neurological episodes that could affect the implementation of intonation structures.

**Conclusions:** The realization of particular intonation structures is influenced by the speaker's emotions, intentions, and attitude towards the interlocutor. This means that intonation is of great importance in the process of not only realizing certain levels of language organization, but also in the communicative situation, and thus in the implementation of grammatical and semantic functions.

### Streszczenie

**Wprowadzenie:** W obszarze realizacji czynności artykulacyjnych badanych, u których znaczącym czynnikiem różnicującym jest zdrowe, fizjologiczne starzenie się struktur mózgowych, dochodzi do nikłych zmian na płaszczyźnie suprasegmentalnej języka. W przypadku prozodii językowej (lingwistycznej) wyłaniają się na pierwszy plan nieodzowne elementy aktu wypowiedzi, które dotyczą: akcentu leksykalnego (akcentowana jest sylaba w słowie), akcentu emfaticznego (akcentowane jest słowo w zdaniu) oraz intonacji (intonowanie w zdaniu rozkazu, pytania, twierdzenia). Z badań klinicznych wynika natomiast, że wskazanymi elementami kieruje ta część prawej półkuli mózgu, która odpowiada za przetwarzanie i rozumienie prozodii mowy, tj. tylna kora w okolicy bruzdy Sylwiusza oraz dolna część prawego płata czołowego.

**Cel pracy:** Wyodrębnienie cech suprasegmentalnych języka na przykładzie wybranych tekstów czytanych i spontanicznych wypowiedzi ustnych.

**Materiał i metody:** Badanie przeprowadzono w grupie zdrowych seniorów, uczęszczających na zajęcia organizowane przez kluby i domy seniora. Wykorzystano metodę spektrograficzną, w tym programu do badania mowy Praat. Wersję graficzną przedstawiono w postaci intonogramów.

**Wyniki:** U badanych bez współistniejących dysfunkcji w zakresie narządu mowy oraz bez przebytych wcześniej epizodów neurologicznych, które mogą wpłynąć na realizację struktur intonacyjnych, stwierdzono drobne zakłócenia w strukturze rytmiczno-intonacyjnej.

**Wnioski:** Na realizację poszczególnych struktur intonacyjnych wpływają emocje, intencje mówiącego, a także stosunek do interlocutora. Oznacza to, że intonacja ma ogromne znaczenie w procesie nie tylko realizacji określonych poziomów organizacji języka, lecz także w przebiegu sytuacji komunikacyjnej oraz realizowaniu funkcji gramatycznych i semantycznych.

## Introduction

The issues presented in this article take into account the description of speech prosody in Polish on the example of the elderly. Prosody is a multidimensional phenomenon that is difficult to analyse. Describing intonation courses is a challenge for contemporary speech therapists dealing with this aspect in the communication process. Prosody includes elements such as accent, intonation, tempo, and rhythm of speech. These are factors necessary in the context of conveying meanings and building consistency of expression. If the researcher undertakes the description of communication behaviours and the diagnosis of prosodic skills (e.g. in the context of future therapeutic activities), it is necessary to refer to all the elements together, because they form a coherent whole dealing with the prosody of human speech.

## Aim of the research

The article aims to present the prosodic features of speech characteristics of older people (components of the suprasegmental level of language), which accompany natural organic changes in the respiratory, phonation, and articulation apparatus. Attention was paid mainly to the dependence of the intoned words and phrases at the moment of changing semantic concentration and to the phonation power put into the production of a spontaneous utterance and reconstruction of the read text.

## Material and methods

This article shows the results of research carried out based on observation of speech performance in the elderly in terms of creating statements, which translates into the receptive aspect (understanding) of the content. The analysis covered selected oral material from 32 Dictaphone recordings of women and men over 60 years of age.

To distinguish the prosodic features of speech, the research material was analysed using the *Praat* program by Paul Boersma and David Weenink, which was used to analyse speech in terms of phonetics at the segmental and suprasegmental levels. Due to the length of the audio material, only parts of the statements were selected from individual recordings, and then they were described in terms of the following variants, the separation of which was made possible by the program mentioned, i.e. intonation structures (the so-called intonation contour), intensity of speech, and the effort involved in producing sounds. The graphic version is presented in the form of intonograms.

Spectral analysis with the *Praat* speech test program involved first loading the entire speech (e.g. a 57-minute recording) into the *Praat Objects* window and using the *extract part* command to *extract the time span* of only those issues that were intended for tests. Then, in the *Praat Picture* window, using the *View* or *View & Edit* commands, the speech properties visible on the spectrogram were obtained.

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**Table 1.** Fragment of text used in an attempted reading

Original version of the text	
Chapter III	Rozdział III
AGREEMENT	UMOWA
<p>– Good morning! – said Jan Dolittle, when he finally got to her. – How perfect and healthy you look, Sarah.</p> <p>– What does it mean, John? – said Sarah sternly. Please tell me, what exactly does it mean you hang around the stage like a clown? Were you not fed up with wasting best medical practice in the entire neighborhood over white mice, frogs, and the like? Have you no shame at all? What are you looking for?</p> <p>– What happened to you, darling? – He asked.</p> <p>– Lancelot, Sarah said weakly – this is my brother, John Dolittle. Janie, this is His Revered, Lancelot Dingle, the parish priest of Grimbleton, my spouse. Janie, you've never been able to be decent. To join the circus, what a disgrace! You're kidding! And who is this person? – She added, when Mateusz Mugg came up and joined the company.</p> <p>– This is Mateusz Mugg – answered the doctor. – You remember him, don't you?</p> <p>– Pfe! Rat catcher! Sarah exclaimed, and closed her eyes in terror.</p>	<p>– Dzień dobry! – powiedział Jan Dolittle, gdy się wreszcie do niej dostał. – Jak doskonale i zdrowo wyglądasz, Saro.</p> <p>– Co to znaczy, Janie? – powiedziała Sara surowo. – Bądź łaskaw i powiedz mi, co to właściwie ma znaczyć, że się tutaj wałęsasz po scenie jak kłown? Czy nie dość ci było, że zmarnowałeś najlepszą praktykę lekarską w całej okolicy z powodu białych myszy, żab i tym podobnych stworzeń? Czy wcale nie masz wstydu? Czego tu szukasz?</p> <p>– Co ci się stało, kochanie? – zapytał.</p> <p>– Lancelocie – powiedziała Sara słabym głosem – to jest mój brat, Jan Dolittle. Janie, to jest Jego Wielebność, Lancelot Dingle, proboszcz w Grimbleton, mój małżonek. Janie, nigdy nie potrafisz zachowywać się przyzwoicie. Wstąpić do cyrku, co za hańba! Żartujesz chyba! A cóż to za osoba? – dodała, gdy Mateusz Mugg podszedł i przyłączył się do towarzystwa.</p> <p>– To Mateusz Mugg – odpowiedział doktor. – Przypominasz go sobie przecież, prawda?</p> <p>– Pfe! Łapacz szczurów! – zawołała Sara i zamknęła oczy z przerażenia.</p>

**Table 2.** Proposed issues for opening the statement, allowing the presupposed views to be expressed

<b>KWESTIONARIUSZ ANKIETOWY</b>	
The performance of the task is voluntary and anonymous. When recording your speech, please provide your age. The task consists of three parts:	Wykonanie zadania jest dobrowolne i anonimowe. W trakcie nagrywania wypowiedzi proszę o podanie wieku. Zadanie składa się z trzech części:
Part I: Reading an excerpt from the book „Doctor Dolittle’s Circus”	Część I: Czytanie fragmentu tekstu książki pt. „Cyrk Doktora Dolittle”
Part II: Statement on: „What does a fulfilled life mean for you?”	Część II: Wypowiedź na temat: „Co oznacza dla Pana (Pani) spełnione życie?”;
Part III: Discussion on values in life.	Część III: Dyskusja na temat wartości w życiu.
Gender <input type="checkbox"/> Woman <input type="checkbox"/> Man	Płeć <input type="checkbox"/> Kobieta <input type="checkbox"/> Mężczyzna
Age 60–65 <input type="checkbox"/> 66–70 <input type="checkbox"/> 71–75 <input type="checkbox"/> 76–80 <input type="checkbox"/> 81–85 <input type="checkbox"/> 86–90(+) <input type="checkbox"/>	Wiek 60–65 <input type="checkbox"/> 66–70 <input type="checkbox"/> 71–75 <input type="checkbox"/> 76–80 <input type="checkbox"/> 81–85 <input type="checkbox"/> 86–90(+) <input type="checkbox"/>
Issues related to part III:	Zagadnienia do części III:
1. What do You understand by typical vital values? Please complete the following sentences:	1. Co rozumie Pan (Pani) przez typowe wartości witalne? Proszę o dokończenie następujących zdań:
a) Life is for me ... My life is as follows ... The most important values in life are ...	a) Życie stanowi dla mnie... Moje życie wygląda następująco... Najważniejsze wartości w życiu to...
b) Health means to me ... My health condition ...	b) Zdrowie oznacza dla mnie... Mój stan zdrowia...
c) For me, vital force means ... I am strong when ... I lack strength in situations ...	c) Siła witalna oznacza dla mnie... Jestem silny (silna), gdy... Brakuje mi sił w sytuacjach...
d) Work was/is for me ... At work, I realized myself through...	d) Praca była/jest dla mnie... W pracy realizowałem (realizowałam) się poprzez...
e) For me, talent means ...	e) Talent oznacza dla mnie...
f) Cleverness and resourcefulness mean for me ... Resourcefulness is revealed in situations ...	f) Spryt, zaradność oznaczają dla mnie... Zaradność ujawnia się w sytuacjach...
g) Money and property are for me ... I have experienced career, fame ...	g) Pieniądze, majątek stanowią dla mnie... Kariery, sławy doświadczyłem (doświadczyłam)...
h) I treat power ... I have experienced power in circumstances	h) Władzę traktuję... Władzy doświadczyłem (doświadczyłam) w okolicznościach...
i) I realize the aspect of fun and joy through ...	i) Aspekt zabawy, radości realizuję poprzez...
j) My family ...	j) Moja rodzina...
k) Tolerance means to me ... I tolerate .../I do not tolerate ...	k) Tolerancja oznacza dla mnie... Toleruję.../nie toleruję...
l) I express patriotism through ...	l) Patriotyzm wyrażam przez...
m) Solidarity means for me ...	m) Solidarność oznacza dla mnie...
2. What values do you associate with human spirituality? Please complete the sentences:	2. Jakie wartości łączy Pan (Pani) z duchowością człowieka? Proszę o dokończenie zdań:
– God is for me ...	– Bóg jest dla mnie...
– I see God in ...	– Dostrzegam Boga w...
– Holiness (once and today) means to me - I treat the soul ...	– Świętość (kiedyś a dziś) oznacza/oznaczała dla mnie...
– I understand salvation by ...	– Duszę traktuję...
– Good and evil are for me ...	– Zbawienie rozumiem przez...
– For me truth and lies mean ...	– Dobro a zło stanowią dla mnie...

### Description of the research procedure

Using an original questionnaire, the prosodic-intonation character of the utterance was assessed based on a fragment of a selected reading text (Table 1), and a spontaneous statement in the form of a discussion or response to life values (Table 2) was taken into account.

### Symbols of the GAT 2 convention used in the analysis of oral statements

Intonation: [↗] rising intonation (ascending intonation contour/so-called anti-cadence), characteristic of questions requiring longer answers; [↘] falling intonation (falling intonation contour/so-called cadence), characteristic of declarative sentences; [↑] intonation

slightly rising; denotes a slight upward pitch in intonation; 'intonation rising in expressive accent; 'intonation falling in a word accent; - uniform intonation in the word accent.

Pauses: [-] short pause; [-] medium pause; [.] micropause.

Other conventions: h° short exhale; : short vowel extension; ::: extension of vowels with a longer duration (1–2 s); = quick transition to the next notice.

The pace of speech: <<acc> > accelerating (*accelerando*); <<all> > fast (*allegro*) <<rall> > slowing down (*rallentando*).

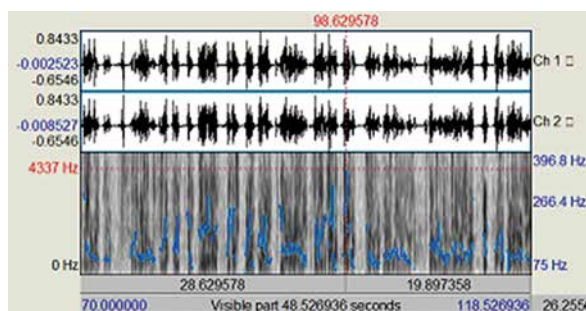
**Results**

**Reading attempt**

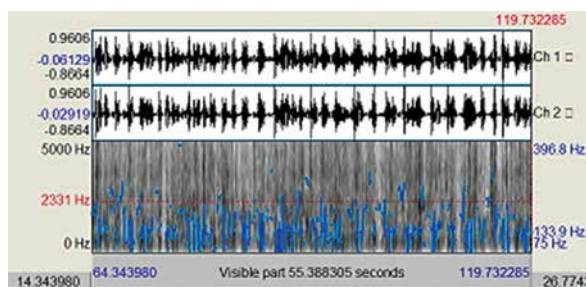
In the further part of the article, the material will be presented (Figures 1, 2) showing the semantic inaccuracies concerning particular types of utterances, i.e. the affirmative, interrogative, or imperative (Tables 3, 4).

Characteristic ascending-descending contour (anticadence/ cadence) for the first sentence. Intonation inaccuracies appear later in the text being read. In places where there should be at least a short pause, either missing or too long (1 second here) was noted, e.g. 'Pfe (---) Rat catcher'. There was also a pause of up to two seconds; here marked with the symbol (0.5). However, it appeared in front of the hard-topronounce surname 'Dingle', and therefore can only testify to the participant's reflection on how to read this name. In places where an ascending contour should occur (anti-cadence), because the sentence is presented in an ascending intonation, for example: 'And who is this person?', the subject uttered the sentence in a descending key.

Characteristic are numerous, short or medium-length pauses appearing in various places of the text being read. There was a break in the continuity of the sentence, for example, 'This is (--) my brother' or there is no break where it should be: 'Jan, you've never been



**Figure 1.** Intonogram of a text read by an 86-year-old man; visible intonation contour of the sound produced



**Figure 2.** Intonogram of a text read by a 71-year-old man

able..' (no pause). In addition, there was a pause at the intonation point increasing in the exclamation point sentence, i.e. 'Pfe (--) rat catcher (-)'. The statement, 'Join the circus, what a shame!' 'You are kidding!' presents anticadence as the intonation increases, but the subject chants the question instead of the exclamation. There were also short vowel extensions [i] and [e] in the words 'Grace' and 'Grimbledon'.

**Spontaneous speech attempt**

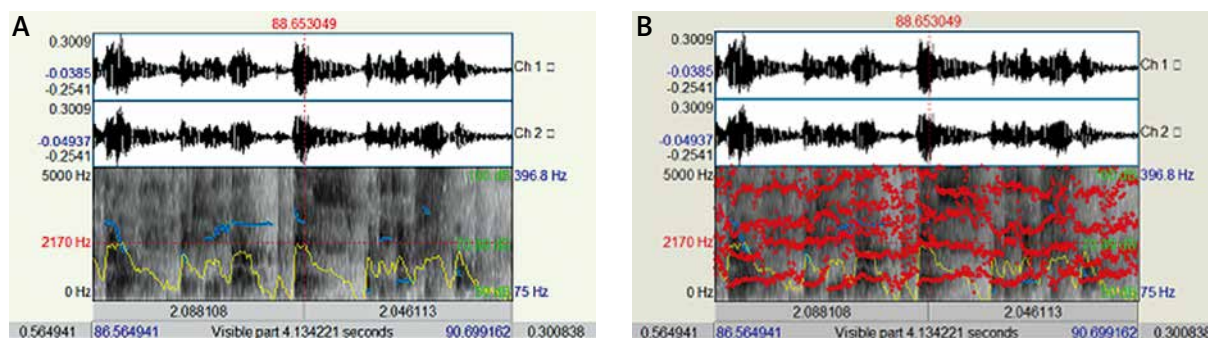
Subsequently, a different character of utterances was analysed, i.e. phrases and sentences uttered in a spontaneous/narrative speech, i.e. emotionally charged by

**Table 3.** Graphic description (Figure 1); only places in phrases and utterances where deviations were

lancelocie (no pause) sara said weakly ↘ this is my brother (---) jan dolittle janie this is his reverence lancelot (0.5) dingle parish priest in grimbledon my spouse ↗ jan, you have never been able to be decent to join a circus ↗ what a disgrace ↗ you're kidding ↗ and who is this person (no pause) she added ↘ pfe (---) rat catcher ↘ sarah exclaimed and closed her eyes in terror	lancelocie (brak pauzy) powiedziała sara słabym głosem ↘ to jest mój brat (---) jan dolittle janie to jest jego wielbność lancelot (0.5) dingle proboszcz w grimbledon mój małżonek ↗ janie nigdy nie potrafiłeś zachowywać się przyzwoicie wstąpić do cyrku ↗ co za hańba ↗ żartujesz chyba ↗ a cóż to za osoba ↘ (brak pauzy) dodała pfe (---) łapacz szczyrów ↘ zawołała sara i zamknęła oczy z przerażenia
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**Table 4.** Graphic description (Figure 2)

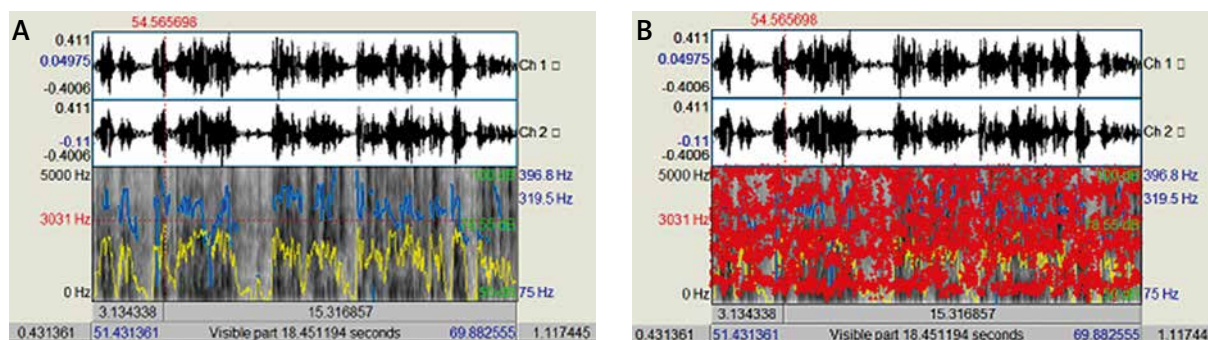
what happened to you (-) darling asked this is (-) my brother ↑ jan dolittle jan this is his reverence lancelot (-) dingle (-) parish priest in grimbl:don (---) my spouse (-) jan (no pause) you have never been able to be decent (-) to join the circus what a disgrace you're kidding, unless mateusz (-) mugg came and joined the company you remember him (-) don't you pfe (-) rat catcher (-) sarah exclaimed and closed her eyes in terror	co ci się stało (--) kochanie zapytał to jest (--) mój brat ↑ jan dolittle janie to jest jego wi:lebność lancelot (--) dingle (--) proboszcz w grimbl:don (---) mój małżonek (--) janie (brak pauzy) nigdy nie potrafiłeś zachowywać się przyzwoicie (-) wstąpić do cyrku co za hańba żartujesz chyba ↗ gdy mateusz (--) mugg podszedł i przyłączył się do towarzystwa przypominasz go sobie przecież (-) prawda pfe (--) łapacz szczyrów (-) zawołała sara i zamknęła oczy z przerażenia
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**Figure 3.** Intonogram of the spontaneous statement ‘Health at the moment is also everything after children’ (pol. „Zdrowie w tej chwili to też po dzieciach wszystko”) (W, 70 years old). **A** – Intonation contour and sound intensity, **B** – Distribution of formants

Graphic of representation

health ↘ (.) at the moment is (–) [<<rall> ^ALSO>] (–) after [^CHILDREN] [<<rall> ^EVERYTHING>] ↘  
 zdrowie ↘ (.) w tej chwili to (–) [<<rall> ^TEŻ>] (–) po [^DZIECIACH] [<<rall> ^WSZYSTKO>] ↘



**Figure 4.** Intonogram of the spontaneous statement ‘Ja, wie pani, jestem człowiekiem wojennym, byłam w obozie. To to życie takie chciałoby się żyć, nie patrzyło się, że kule lecą, że Niemcy, że jest się pod bronią. Ale się chciało żyć..’; ‘I am, you know, a man of war, I was in the camp. It’s like one would like to live, one would not watch the bullets fly, that the Germans, that you were under arms. But you wanted to live..’ (W, 87). **A** – Intonation contour and sound intensity, **B** – distribution of formants

ja (–) wie pani jestem człowiekiem [<<len> wojennym>] ↘ byłam w obozie ↘ to to życie takie (.) chciałoby się żyć ↘ nie patrzyło się że kule lecą że Niemcy że jest się pod [^BR:::NIA] ale się chciało żyć ↘  
 i am (–) you know a man of [<<len> war>] ↘ i was in the camp it’s like (.) one would like to live ↘ one would not watch the bullets fly that the Germans that you were under [^:::RMS] but you wanted to live ↘

assumption, the accent (logical and emphatic) of which may turn out to be variable in terms of semantic concentration. Therefore, the following intonograms provide information on the intonational course of utterances. Similarly, properties such as the intensity of the sounds uttered at each stage of the speech (marked with a yellow line on the oscillogram) and the distribution of formants (red points), i.e. the energy that the examined person puts during the production of phonation, are also taken into account, which is also the result of vibrations generated in various places in the oral cavity (Figure 3).

The utterances were analysed in terms of the intonation contour, the intensity of the spoken sound, i.e. the volume, as well as the variable pace of the spoken words. The participant of the study used micro-pauses (.) and short pauses (–) before words stressed in even intonation [^ALSO], [^CHILDREN] and [^EVERY-

THING], before which the pace of speech slowed down: [<<rall> ^ALSO>], [<<rall> ^EVERYTHING>]. You can see a clear contour falling after the noun ‘health’ (blue line), then, depending on the rate at which the words are pronounced, an ascending-descending contour. The point of intersection of the red lines marks the highest value of the intensity of the sound, which is 70.89 dB and takes place when the conjunction “też” is pronounced. The values of the formants during a recording lasting more than 4 s (4.134221 s) are 1029.147573 Hz (for the first control – F1), 2032.658064 Hz (for the second control – F2), 2951.473680 Hz (for the third formant – F3), and 4342.825825 Hz (for the fourth formant – F4), which means that the energy increases with successively articulated sounds (Figure 4).

Ascending-descending contour. The speech was kept at an unchanged pace, only the Polish word ‘wojennym’ was spoken slower (<<len>>). There were

a micro pause and an extension of the vowel [o] in the word 'bronia', the accent of which was kept in a falling key (').

## Discussion

In linguistic communication, the prosody of speech is considered to be an indispensable, highly significant element for the evaluation of the entire communication process. There is a need to describe prosodic phenomena in the field of speech therapy because of its integral importance for the process of linguistic communication. "Intonational structures can be analysed on several levels: acoustic, acousto-phonetic, perceptual-phonetic, and phonological" [1–5]. In the area of articulation activities of the respondents, with healthy, physiological aging of the brain structures is a significant differentiating factor, slight changes occur on the suprasegmental plane of the language.

The intonation reveals the emotional character of the statement, conditioned by the current mental state of the respondent. In this matter, the representation of the so-called emotional speech is related to the activity of the right hemisphere of the brain, and the non-verbal character of the act of communication significantly affects the process of communication [6]. The semantic function, which ultimately determines the consistency of the statement, plays a significant role here. Intonation has an impact on the functional character of the meaning expressed in the sentence, and above all on the logical connection of the topic and the rheme in the sentence [4, 7]. Therefore, both functionally and structurally, in spontaneous utterances and narrative speech, inductive thinking is preserved in the thematic-rhematic structure, which on the example of the respondents serves to maintain the conversational character. Emotional utterances are sometimes characterized by a change in semantic concentration in a given phrase, which is related to a changing logical or emphatic accent and a root melody in the phrase [7–12]. "An important aspect of language communication is the control of vocalization processes and the emotional characteristics of voice." [13].

In the aspect of linguistic prosody, the most important elements of the act of utterance emerge in the foreground, which relates to lexical stress (the syllable in a word is stressed), emphatic stress (the word in a sentence is stressed), and intonation (chanting in a sentence, questions, statements) [14]. However, clinical studies [14] show that the indicated elements are directed by the part of the right hemisphere of the brain that is responsible for processing and understanding speech prosody, i.e. the posterior cortex in the area of the Sylvius sulcus and the lower part of the right frontal lobe.

The analysis of intonation structures has shown that intonation, rhythm, melody, and stress are inte-

gral elements of the suprasegmental level of utterance and make up the human prosodic profile. Their implementation is influenced by the emotions, intentions of the speaker, and the attitude towards the interlocutor. This means that intonation is of great importance in the process of not only realizing individual levels of language organization, but also in the course of the communicative situation, and thus in the implementation of grammatical and semantic functions.

The Praat program – mentioned in the *Material and methods* section – was used for spectrographic analysis. The comprehensive version of the program can be downloaded from the websites [15, 16]. Despite many other, more advanced functions of the program, used, for example, to analyse various phonetic errors and even linguistic behaviour [17–19] – as mentioned previously – the focus was only on showing the properties of the intonation structures of utterances. Wysocka, for example, referred to the issue of intonation in more detail, distinguishing the most important intonation structures in terms of communication, such as a falling contour (cadence) – characteristic, among others for declarative sentences, commands, orders; increasing contour (anti-cadence) – relating, among others, to questions requiring resolution; and a constant contour (progreliance) – assigned to changes in pitch of the voice of fewer than 4 semitones [4, 20–26]. Moreover, the graphic elements of the GAT2 convention, developed in Germany, for the transcription and analysis of speech (German Gesprächsanalytisches Transkriptionssystem), which allows for speech analysis at several levels: minimum, basic, and detailed, were used to record prosodic phenomena. Only the graphical symbols corresponding to the features of the statements found in the presented research material were compared. The symbols were taken from the comparison between Mela and Schulte [27, 28].

In a dozen or so people who agreed to record their statements, differences were noticed at the linguistic level between the implementation of reading statements and spontaneous statements. The subjects tried to recreate the intonation phenomena of the passage being read [29] by putting more energy at the very beginning. In the course of reading, however, their focus shifted to the conscious maintenance of pace and appropriate volume, instead of the meaning aspect. Hence, minor inaccuracies, such as a flat intonation contour in utterances with an ascending intonation course, pauses breaking the contour's continuity, or lengthening of vowels in words that are difficult to articulate.

Inaccuracies in the linguistic perspective concerning spontaneous utterances on a given topic, when the respondent started and ended his/her thought, e.g. in a questioning way that intuitively requires ending in a falling key, may activate the emotional sphere of an elderly person to such an extent that certain life events will be reported with a feeling of agitation, suffering,

joy, excitement, etc. in a flat or slightly increased tone. Such a topic that evoked various emotions at the outset was the category of a “fulfilled life” activating different reactions, as a result of which statements reported from the perspective of a suffering person in life or the one who, in turn, talked about fulfilment in every sphere of life, showed, for example, a different accent in the structure sentences. A dozen or so recordings of the narrative speech were listened to, in which the emphasis was more concentrated on the terms and objects characterizing the subject him/herself when he/she spoke about sad or very unpleasant things. On the other hand, people reporting from the perspective of the fulfilment of positive events more often emphasized the activities they performed concerning themselves or the environment. Nevertheless, this should not be taken as a rule.

### Conclusions

Due to its general nature, the melody turned out to be a significant factor in the statements as regards the gender category. In men it was a melody with a falling structure, so a statement was more matter of fact than effusive with a raised intonation structure. These types of factors significantly affect the course of linguistic communication.

There was a tendency in women’s speech to fluctuate prosody when an emotional factor appeared. At this point, the emphasis was on the lexeme which referred to the raised semantic register.

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### Conflict of interest

The authors declare no conflict of interest.

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