



The Relations Vertical Larynx Abdominal W



Literature

to monitor peer-reviewed research
with special focus on articles link

Quantitative

Literature

Literature Review

A low VLP necessary for

(Mainka, et al., 2015; Sundberg, 1974; Ship
Guzman, et al., 2013; Herbst, et al., 2015, Echte

Literature Review

Low V

- Yawn met

(Mainka, et al., 2015; Guzman, et al., 2013; Story, et

-Strap mu

(Echternach, et al., 2016; H

Literature Review

"Belly o and diaphragma

The bulging out of the abdominal wall occurs
(Sundberg & Leanderson, 1988)

The positioning of the abdominal wall (A

Literature Review

Belly o

- keeps the abdominal wall expanded
- pressure outwards

Belly i

- keeps abdominal wall in an inward

Literature Review

Belly in-strategies in

(Hixon, et al., 1973; Watson & Hixon, 1985; Wa
Watson, et al., 1990; Thorpe, et al., 20
Salomoni, et al., 2016; Petters

"This is how opera singer

Literature Review

Possible to artificially
induce a non-habitual break

(Salomoni et al., 2005)

"Sing with and without

(Sonninen, et al., 2005; Griffin, et al., 2001)

"Sing with and without

Literature Review

Possible to artific
a non-habitual brea

(Salomoni et al

"Sing with and with

(Sonninen, et al., 2005; Griffin, et al.,

"Sing with and with

Literature Review

Collyer et al

"No support for the pedagogy of
the abdomen-out directive
perceptibly lower stan

Experiment

Literature Review

Possible link between breathing
Possible link between breathing

(Traser, et al.,

Non-linear interaction of

Experimental Study Hypothesis

AW-expansion should

AW-expansion should a

Experimental Study Research Questions

Is there a difference in vertical larynx position
with and without abdominal wall exercise?

Is phonatory quality affected when

Experimental Study Method

Respira
EGG

Acceleror



Experimental Study Method

Voice quality measure
(Cepstral Peak Prominence)

Experimental Study Method

- Triads in a mid-low range on the vowel
- Triads in a mid-high range on the vowel
- 5-scale *piano* and *forte* on the vowel
- 5-scale repeated until all air is expelled
- Octave leaps on the vowel /a/ on various

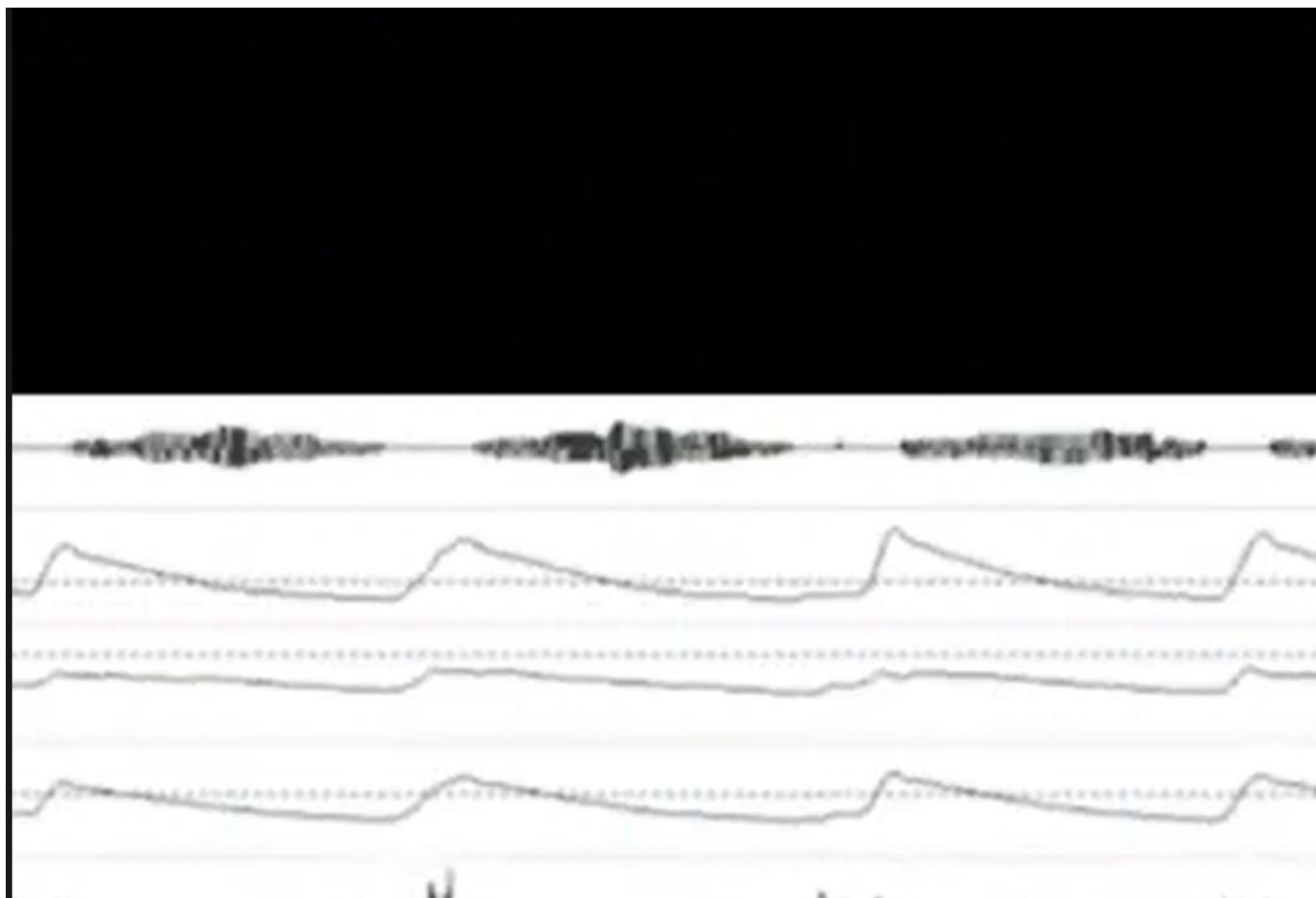




Experimental Study Method

Exp1 - without A

Exp2 - with AV





Name	Age	Voice Fach	Level/Background
BN	66	Baryton	Professional opera
HP	23	Baryton	4:th year of soloist conservatory.
MS	57	Baryton	Professional opera
CF	50	Soprano	Professional class
SS	54	Soprano	Amateur classical
LS	25	Mezzosoprano	Amateur classical pre-college level.
JS	18	Soprano	3:d year of musica
LE	28	Soprano	Professional CCM- classical training.
LC	42	Soprano	Amateur classical

Experimental Study Method

Ethical approval from UWTSD.
Consent form for all participants.
Special considerations due to tea

Experimental Study Method

Survey 1 - preexperim
Survey 2 - between e
Survey 3 - postexperi

Experimental Study
Results

Analysis

Overall an

VLP - Overview

1,200

1,000

0,800

0,600

0,400

0,200

Experimental Study Results

Overall re

VLP-values hig

Octaves: VLP Std Dev All

1,800
1,600
1,400
1,200
1,000
0,800
0,600
0,400



MS_Oktaves_VLF

1,500

1,000

0,500

0,000

0

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

Octaves: VLP Median Va

0,500

0,400

0,300

0,200

0,100



Octaves: VLP Mean Va

0,400
0,350
0,300
0,250
0,200
0,150
0,100



Octaves: VLP Std Dev All



MS_Oktaves_VLP



LS_Octaves_VLP_Me

1,800

1,600

1,400

1,200

1,000

0,800

0,600

0,400



HP_Octaves_VLP_



CF_Octaves_VLP

0,200

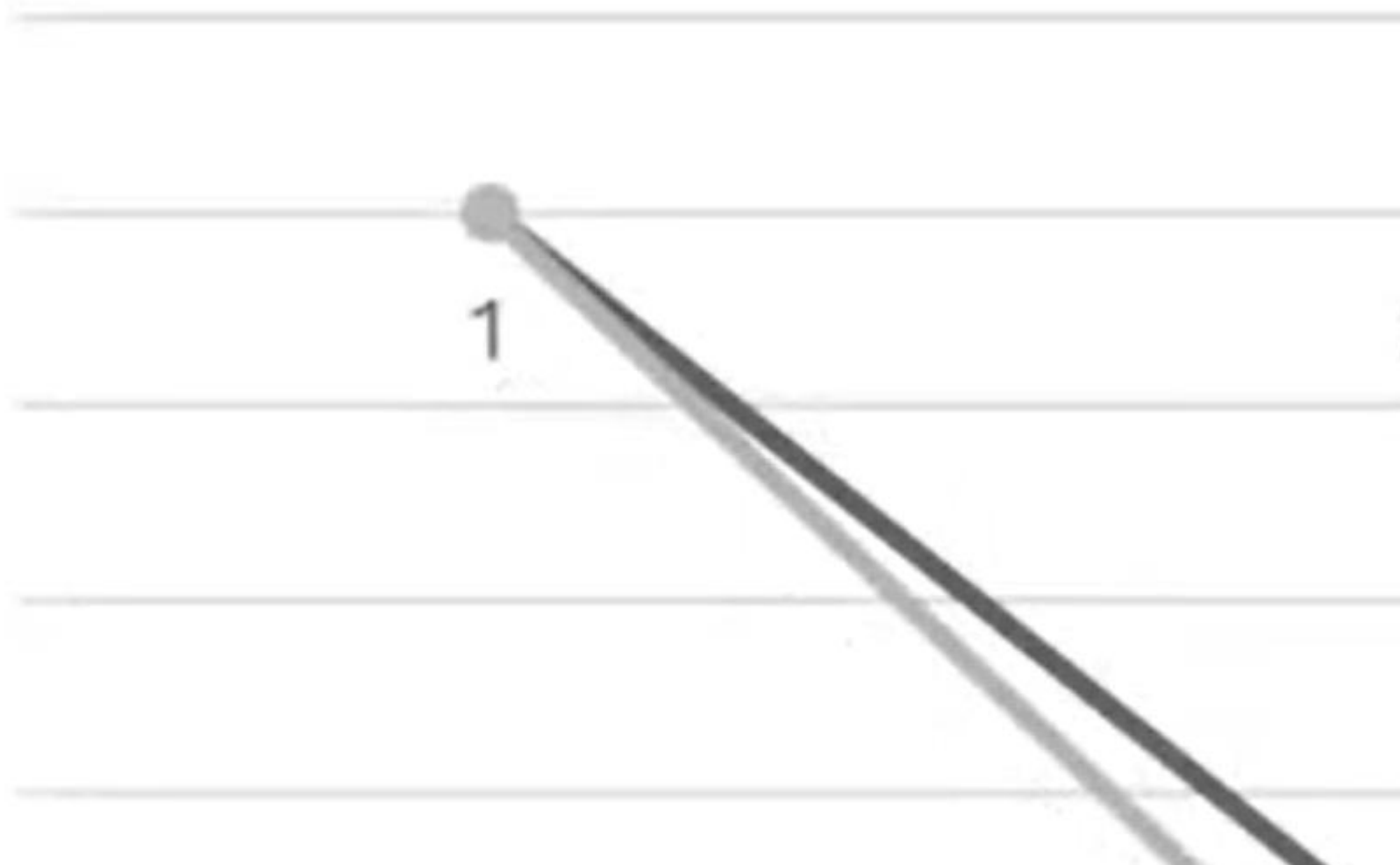
0,000

-0,200

-0,400

-0,600

1



LC_Octaves_VLP

0,000

-0,200

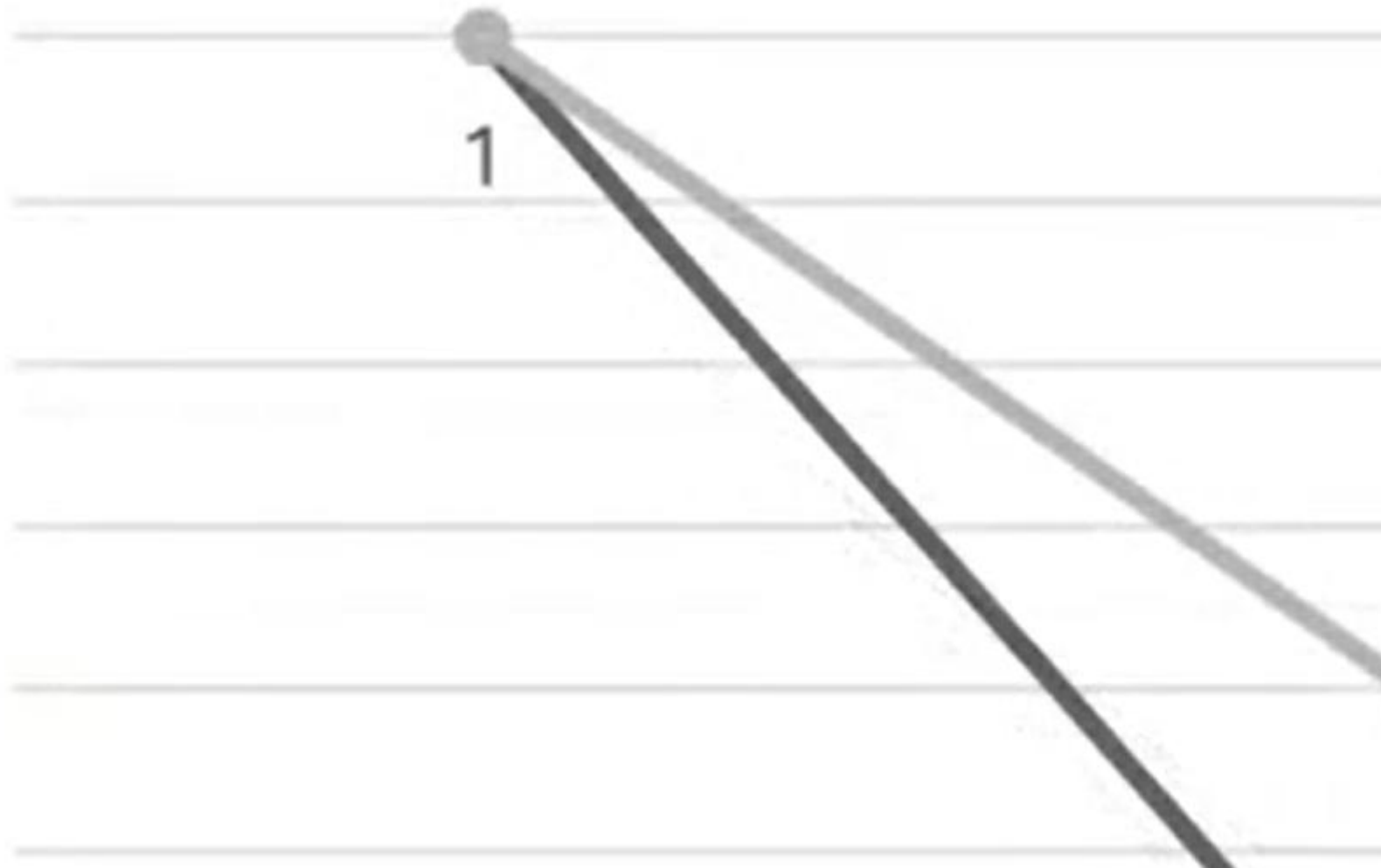
-0,400

-0,600

-0,800

-1,000

1



SS_Octaves_VLP

1,000

0,500

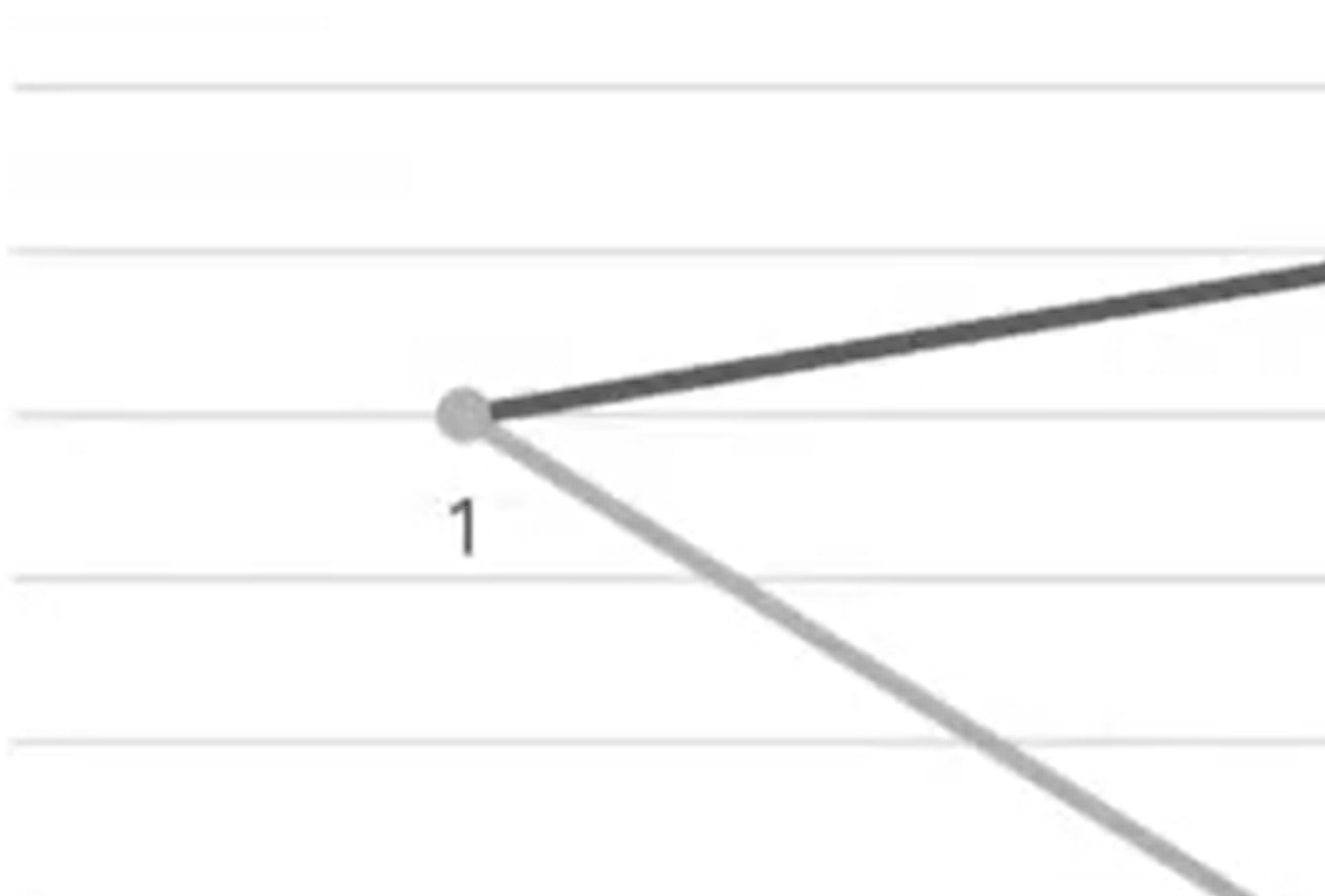
0,000

-0,500

-1,000

-1,500

1



Experimental Study

Discussion

5-6/9 singers describe their break
Results might have varied with sin
However - unexperienced singer

Experimental Study Conclusion

In a majority of t
the larynx moved upwards mo
or downwards less
when abdominal wall expa

My gratitude

Debbie Winter, all teachers and
Marcin Wlodarczak, the Lin
Stockholm U
all colleagues and students p
and my partner and mer

