

# Unit 4

## The syllable margins in the material world

restricting the airflow to produce contoids

Slides for the session of

*Phonetics with Listening Practice (British)*

held on

le quintidi 15 brumaire an CCXXXIII

(5 November 2024)

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

Robert Spence  
{ English Department | LangSciTech }  
Saarland University

[ˈɪŋ.gəlɪf fə.ˈnet.ɪks ˈjuːn.ɪtʰ ˈfə:]

φων

**The syllable margins  
in the material world**

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪʃ fə.'net.ɪks 'ju:n.ɪt̩ 'fə:]  
English Phonetics: Unit 4:

φων

**The syllable margins  
in the material world**

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪʃ fə.'net.ɪks 'ju:n.ɪt̩ 'fə:]  
English Phonetics: Unit 4:

[ðə 'sɪl.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mæ.'tʰɪɒl.i.əl 'wɜ:ɪd]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

[ˈɪŋ.ɡlɪʃ fə.ˈnet.ɪks ˈjuːn.ɪt ˈfəː]

English Phonetics: Unit 4:

[ðə ˈsɪl.əb.ɪ ˈmɑːdʒɪnz ɪn ðə mə.ˈtɪəri.əl ˈwɜːld]

The syllable margins in the material world

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪf fə.'net.ɪks 'ju:n.ɪtʰ 'fə:]  
English Phonetics: Unit 4:

[ðə 'sɪ.l.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tʰɪ.ɔ̩.i.ət 'wɜ:ɪd]  
The syllable margins in the material world

[aɪ.'stʌkt.ɪŋ ði 'e̩.fləʊ tə pʌ,'dʒu:s 'kʰɒnt.ɔ̩ɪdz]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.gəlɪf fə.'net.ɪks 'ju:n.ɪtʰ 'fə:]

English Phonetics: Unit 4:

[ðə 'sɪl.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tʰɪɔ̩.l.i.ət 'wɜ:ɪd]

The syllable margins in the material world

[aɪ.'stɪkt.ɪŋ ði 'e̩.fləʊ tə pɾə,'dʒu:s 'kʰɒnt.ɔ̩ɪdz]

restricting the airflow to produce contoids

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪf fə.'net.ɪks 'ju:n.ɪt̩ 'fə:]

English Phonetics: Unit 4:

[ðə 'sɪl.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tɪəʊ.i.əl 'wɜ:ld]

The syllable margins in the material world

[aɪ.'stɪkt.ɪŋ ði 'eə.fləʊ tə pʌ,'dʒu:s 'kʰɒnt.əɪdz]

restricting the airflow to produce contoids

['ʌb.ət 'spens]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



[ˈɪŋ.ɡlɪʃ fə.ˈnet.ɪks ˈjuːn.ɪt ˈfəː]

English Phonetics: Unit 4:

[ðə ˈsɪl.əb.ɪ ˈmɑːdʒɪnz ɪn ðə mə.ˈtɪəri.əl ˈwɜːld]

The syllable margins in the material world

[aɪ.ˈstɪkt.ɪŋ ði ˈeə.fləʊ tə pɾə,ˈdʒuːs ˈkɒnt.ɔɪdʒ]

restricting the airflow to produce contoids

[ˈɹɒb.ət ˈspens]

Robert Spence

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

[ˈɪŋ.ɡlɪʃ fə.ˈnet.ɪks ˈjuːn.ɪt ˈfə:]  
English Phonetics: Unit 4:

[ðə ˈsɪl.əb.ɪ ˈmɑːdʒɪnz ɪn ðə mə.ˈtɪəri.əl ˈwɜːld]  
The syllable margins in the material world

[aɪ.ˈstɪkt.ɪŋ ði ˈeə.fləʊ tə pɾəˈdʒuːs ˈkɒnt.ɔɪdʒ]  
restricting the airflow to produce contoids

[ˈɪnb.ət ˈspens]  
Robert Spence

[lə kɛ.ti.di kɛz bɪy.mɛːɪ ã dø.sã.tɪãt.dø]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪf fə.'net.ɪks 'ju:n.ɪtʰ 'fə:]

English Phonetics: Unit 4:

[ðə 'sɪl.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tɪəɪ.i.əl 'wɜ:ld]

The syllable margins in the material world

[ɪ.'stɪkt.ɪŋ ði 'eə.fləʊ tə pɾə,'dʒu:s 'kʰɒnt.əɪdz]

restricting the airflow to produce contoids

['ɹɒb.ət 'spens]

Robert Spence

[lə kɛ̃.ti.di kɛ̃z brʏ.mɛ:ɹ̥ ã dø.sã.tʁãt.dø]

le quintidi 15 brumaire an CCXXXIII

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪf fə.'net.ɪks 'ju:n.ɪtʰ 'fə:]  
English Phonetics: Unit 4:

[ðə 'sɪl.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tɪɹi.əl 'wɜ:ld]  
The syllable margins in the material world

[aɪ.'stɹɪkt.ɪŋ ði 'eə.fləʊ tə pɹə,'dʒu:s 'kʰɒnt.ɔɪdz]  
restricting the airflow to produce contoids

['ɹɒb.ət 'spens]  
Robert Spence

[lə kɛ̃.ti.di kɛ̃z bɹy.mɛ:ɹ ã dø.sã.tɹãt.dø]  
le quintidi 15 brumaire an CCXXXIII

['tju:z.deɪ ðə 'fɪfθ əv nə(v)'.vem.bə 'tʷent.i.'tʷent.i.'fə:]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

['ɪŋ.ɡlɪf fə.'net.ɪks 'ju:n.ɪtʰ 'fə:]  
English Phonetics: Unit 4:

[ðə 'sɪ.l.əb.ɪ 'mɑ:dʒɪnz ɪn ðə mə.'tɪ.əɪ.i.ət 'wɜ:ɪd]  
The syllable margins in the material world

[ɪ.'stɑɪkt.ɪŋ ði 'eə.fləʊ tə pɹə,'dʒu:s 'kʰɒnt.ɔɪdz]  
restricting the airflow to produce contoids

['ɹɒb.ət 'spens]  
Robert Spence

[lə kɛ̃.ti.di kɛ̃z bɹy.mɛ:ɹ̥ ã dø.sã.tɹãt.dø]  
le quintidi 15 brumaire an CCXXXIII

['tʃu:z.deɪ ðə 'fɪfθ əv nə(v)'.vem.bə 'twɛnt.i.'twɛnt.i.'fə:]  
(Tuesday 5 November 2024)

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

- This unit's subtitle in the previous iteration of the course was:

φωv

**The syllable margins  
in the material world**

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do *you* find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

- This unit's subtitle in the previous iteration of the course was:

- [ə.'pʊəʃtʃ.ɪŋ 'kʰʊn(t)s.(ə)n(.)ən(t)s |vɑ(ɪ)(.)əʊ \_ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətʃ.i fə.'net.ɪks]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

- This unit's subtitle in the previous iteration of the course was:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰɒn(t)s.(ə)n(.)ən(t)s |vɑ(ɪ)(.)ə̃ \_ ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- which is shorthand for either:



- This unit's subtitle in the previous iteration of the course was:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊn(t)s.(ə)n(.)ən(t)s |vɑ:(ɪ)(.)ə \_ ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- which is shorthand for either:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊnts.ən.ənts |vɑ:(ɪ).ə \_ ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]

- This unit's subtitle in the previous iteration of the course was:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊn(t)s.(ə)n(.)ən(t)s |vɑɪ̯.ə̯ ə.'næt.əm.i ɹ̩ ]  
a:.'tʰɪk.jʊl.ət̩.i fə.'net.ɪks]
- which is shorthand for either:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊnts.ən.ənts |vɑɪ̯.ə̯ ə.'næt.əm.i ɹ̩ ]  
a:.'tʰɪk.jʊl.ət̩.i fə.'net.ɪks]
- or:

- This unit's subtitle in the previous iteration of the course was:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊn(t)s.(ə)n(.)ən(t)s |vɑɪ̯(.)ə̯ ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- which is shorthand for either:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊnts.ən.ənts |vɑɪ̯.ə̯ ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- or:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊns.nəns |vɑ̯ ə.'næt.əm.i \_ŋ \_ɑ:.'tʰɪk.jʊl.ətɹ̩.i  
fə.'net.ɪks]

- This unit's subtitle in the previous iteration of the course was:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊn(t)s.(ə)n(.)ən(t)s ,vɑ(ɪ)(.)ə ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- which is shorthand for either:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊnts.ən.ənts ,vɑɪ.ə ə.'næt.əm.i \_ŋ \_  
ɑ:.'tʰɪk.jʊl.ətɹ̩.i fə.'net.ɪks]
- or:
- [ə.'pɹəʊtʃ.ɪŋ 'kʰʊns.nəns ,vɑə ə.'næt.əm.i \_ŋ \_ɑ:.'tʰɪk.jʊl.ətɹ̩.i  
fə.'net.ɪks]
- or something in-between.

## Dedication (1)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



Image source: Obituary for John C. (Ian) Catford <https://www.legacy.com/obituaries/>

John Cunnison (Ian) CATFORD  
26.03.1917–06.10.2009

## Dedication (2)



Image source: Jacket design by David Rowley, from: Richard Dawkins: *The Ancestor's Tale*. London:

Weidenfeld and Nicolson, 2004. Image flipped L-R for phonetic reasons.

The animal that we (and mice, and elephants, and whales, ...) were before that asteroid gave us our big chance. Note that we had a dorsal surface above and a ventral surface below. In describing the tongue, we use the same terms: dorsal and ventral. In this picture, where is “anterodorsal”? and where is “posterodorsal”?

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Places of articulation

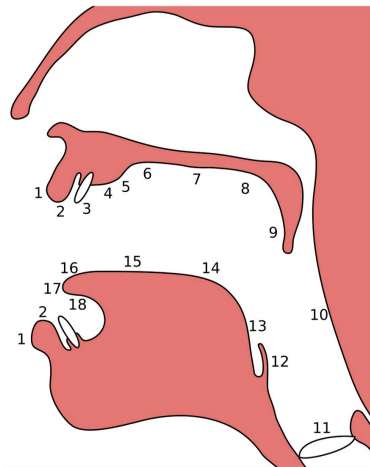


Image: [https://commons.wikimedia.org/wiki/File:Places\\_of\\_articulation.svg](https://commons.wikimedia.org/wiki/File:Places_of_articulation.svg)

Pronounce the adjectives that relate to the places of articulation as indicated.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do *you* find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① Initial Margin + Nucleus + Final Margin
  - ② Onset + Rhyme  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① Initial Margin + Nucleus + Final Margin
  - ② Onset + Rhyme  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**
- Phonologically: **vowels** (typically occur at Nucleus) vs **consonants** (typically occur at margins).

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**
- Phonologically: **vowels** (typically occur at Nucleus) vs **consonants** (typically occur at margins).
- Phonetically: **vocoids** (unobstructed central airflow through mouth) and **contoids** (all other sounds).

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**
- Phonologically: **vowels** (typically occur at Nucleus) vs **consonants** (typically occur at margins).
- Phonetically: **vocoids** (unobstructed central airflow through mouth) and **contoids** (all other sounds).
- Nucleus **more sonorant** (=“*sounds*” more) than margins; cf. dt. *Selbstlaute* (vowels), *Mitlaute* (consonants).

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**
- Phonologically: **vowels** (typically occur at Nucleus) vs **consonants** (typically occur at margins).
- Phonetically: **vocoids** (unobstructed central airflow through mouth) and **contoids** (all other sounds).
- Nucleus **more sonorant** (=“*sounds*” more) than margins; cf. dt. *Selbstlaute* (vowels), *Mitlaute* (consonants).
- / s t r e ŋ θ s /

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The syllable in the material world: which model?

- Two possible models of the structure of syllables:
  - ① **Initial Margin + Nucleus + Final Margin**
  - ② **Onset + Rhyme**  
(Nucleus + Coda)
- In **phonology**, more *interactions* occur between the Nucleus and the Final than between the Initial and the Nucleus.
- At the levels of **phonetics** and **material reality** the simpler model will do:
  - **Initial Margin + Nucleus + Final Margin**
- Phonologically: **vowels** (typically occur at Nucleus) vs **consonants** (typically occur at margins).
- Phonetically: **vocoids** (unobstructed central airflow through mouth) and **contoids** (all other sounds).
- Nucleus **more sonorant** (=“*sounds*” more) than margins; cf. dt. *Selbstlaute* (vowels), *Mitlaute* (consonants).
- / s t r e ŋ θ s /
- [ s̥ t̪ r̩ e̞ ŋ̩ k̪ θ̩ s̩ ]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do *you* find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk
  - see the handout: [http://spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/01\\_dawkinsetc\\_new.pdf](http://spence.saar.de/phonetics/unit04_20242/B__Handout/01_dawkinsetc_new.pdf)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk
  - see the handout: [http://spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/01\\_dawkinsetc\\_new.pdf](http://spence.saar.de/phonetics/unit04_20242/B__Handout/01_dawkinsetc_new.pdf)
- Are you afraid of the IPA?

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk
  - see the handout: [http://spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/01\\_dawkinsetc\\_new.pdf](http://spence.saar.de/phonetics/unit04_20242/B__Handout/01_dawkinsetc_new.pdf)
- Are you afraid of the IPA?
  - Keep your chart handy: [http://www.spence.saar.de/phonetics/unit01\\_20242/D\\_\\_IPA\\_Chart/](http://www.spence.saar.de/phonetics/unit01_20242/D__IPA_Chart/)

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk
  - see the handout: [http://spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/01\\_dawkinsetc\\_new.pdf](http://spence.saar.de/phonetics/unit04_20242/B__Handout/01_dawkinsetc_new.pdf)
- Are you afraid of the IPA?
  - Keep your chart handy: [http://www.spence.saar.de/phonetics/unit01\\_20242/D\\_\\_IPA\\_Chart/](http://www.spence.saar.de/phonetics/unit01_20242/D__IPA_Chart/)
  - Only learn as many symbols as you need.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (1)

- Phonetics is the only part of language that interfaces with material reality ...
- ... studying phonetics = ‘getting too close and personal’ ...
- ... and it forces you to confront unsettling ideas.
- Even a brief glance at the human vocal tract confirms that it is not the result of conscious design; it is pure *Bastelarbeit*:
  - lungs were originally buoyancy tanks
  - only humans can speak
  - only humans can choke on their food
  - so speaking must be worth the risk
  - see the handout: [http://spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/01\\_dawkinsetc\\_new.pdf](http://spence.saar.de/phonetics/unit04_20242/B__Handout/01_dawkinsetc_new.pdf)
- Are you afraid of the IPA?
  - Keep your chart handy: [http://www.spence.saar.de/phonetics/unit01\\_20242/D\\_\\_IPA\\_Chart/](http://www.spence.saar.de/phonetics/unit01_20242/D__IPA_Chart/)
  - Only learn as many symbols as you need.
  - You probably already produce way more sounds than you're aware of.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):
    - *I don't like their vowels* = 'I don't like their values'.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):
    - *I don't like their vowels* = 'I don't like their values'.
  - **Allophones**: many phonemes have more than one phonetic realisation, depending on the surrounding sounds and/or the speech style: *thRough*, *veRy*; *aeSthetic*, *calliSthenics*, *StrengthS*

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):
    - *I don't like their vowels* = 'I don't like their values'.
  - **Allophones**: many phonemes have more than one phonetic realisation, depending on the surrounding sounds and/or the speech style: *thRough*, *veRy*; *aeSthetic*, *calliSthenics*, *StrengtHs*
  - **Other first-world Englishes**: (AuE) [ˈɹaɪt̪ɹə] for ⟨writer⟩ **or** ⟨rider⟩; (Irish) [t̪ʰɪn] for ⟨thin⟩ vs [t̪ʰɪn] for ⟨tin⟩; (Scottish) /r/ realised as [r]; joke-telling(?)

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):
    - *I don't like their vowels* = 'I don't like their values'.
  - **Allophones**: many phonemes have more than one phonetic realisation, depending on the surrounding sounds and/or the speech style: *thRough*, *veRy*; *aeSthetic*, *calliSthenics*, *StrengthS*
  - **Other first-world Englishes**: (AuE) [ˈɹaɪt̪ɹə] for <writer> **or** <rider>; (Irish) [t̪ʰɪn] for <thin> vs [tʰɪn] for <tin>; (Scottish) /r/ realised as [r̪]; joke-telling(?)
  - **Third-world Englishes** (retroflex [ɳ̠ t̪ɖ̪ ʒ̪ ɻ̪ l̪]) in Indian English).

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## Words of warning and encouragement (2)

- Why bother to learn to produce all possible consonant sounds?
  - **Negative stereotypes** that involve (perceived) ethnicity involve (unexamined, misunderstood) sounds: (Chinese; Arabic)
  - Wrong **consonants** are more associated with foreignness:
    - Are you sure you want to sound foreign?
  - Wrong **vowels** are more associated with social inferiority/superiority (class) and non-standardness/standardness (region):
    - *I don't like their vowels* = 'I don't like their values'.
  - **Allophones**: many phonemes have more than one phonetic realisation, depending on the surrounding sounds and/or the speech style: *thRough*, *veRy*; *aeSthetic*, *calliSthenics*, *StrengthS*
  - **Other first-world Englishes**: (AuE) [ˈɹaɪt̪ɹə] for <writer> **or** <rider>; (Irish) [t̪ʰɪm] for <thin> vs [tʰɪm] for <tin>; (Scottish) /r/ realised as [r]; joke-telling(?)
  - **Third-world Englishes** (retroflex [ɳ̠ ʈ̪ ɖ̪ ʂ̪ ʐ̪ ɻ̪]) in Indian English).
  - **Non-native beginners** and **speakers with speech defects**: understanding the 'wrong' sounds they're making.

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

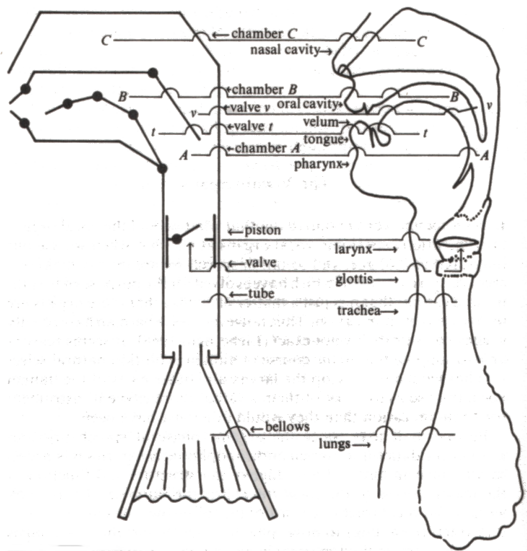
(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

# The human vocal tract (after Catford)



**Figure:** The vocal tract as a machine

(J.C. Catford, *Fundamental Problems of Phonetics*, Bloomington: Indiana University Press, 1977)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume 'pulmonic')

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume 'pulmonic')
  - VOICING

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume 'pulmonic')
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**
    - bilabial, **labio**dental, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**
    - bilabial, **labio**dental, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal
    - more delicately: **apico-/apical**-alveolar, **lamino-/laminar**-alveolar, **(antero)dorsal**-palatal, **(postero)dorsal**-velar, etc.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**
    - bilabial, **labio**dental, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal
    - more delicately: **apico-/apical**-alveolar, **lamino-/laminar**-alveolar, (**antero**)dorsal-palatal, (**postero**)dorsal-velar, etc.
  - MANNER of articulation (the “vertical”) dimension

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**
    - bilabial, **labio**dental, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal
    - more delicately: **apico-/apical**-alveolar, **lamino-/laminal**-alveolar, **(antero)dorsal**-palatal, **(postero)dorsal**-velar, etc.
  - MANNER of articulation (the “vertical”) dimension
    - plosive, nasal, trill, tap or flap, fricative, lateral fricative, approximant, lateral approximant (make sure you understand what each of these terms means; note Eckert and Barry’s way of classifying these into “obstruents” and “sonorants” [E&B: 36–39]; and don’t forget to add affricate = plosive+fricative)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## (Pulmonic) Consonants: dimensions of articulation

- Consonants (contoids) can be looked at in terms of their articulation, their acoustics, or their auditory perception
- Their articulation can be described in terms of:
  - AIRFLOW (for the moment, we assume ‘pulmonic’)
  - VOICING
    - voiceless [stimmlos] or voiced [stimmhaft]
  - PLACE of articulation (the “horizontal” dimension) specifying upper (passive) and (if necessary, also:) **lower (active) articulators**
    - bilabial, **labio**dental, dental, alveolar, postalveolar, **retroflex**, palatal, velar, uvular, pharyngeal, glottal
    - more delicately: **apico**-/**apical**-alveolar, **lamino**-/**laminal**-alveolar, (**antero**)dorsal-palatal, (**postero**)dorsal-velar, etc.
  - MANNER of articulation (the “vertical”) dimension
    - plosive, nasal, trill, tap or flap, fricative, lateral fricative, approximant, lateral approximant (make sure you understand what each of these terms means; note Eckert and Barry’s way of classifying these into “obstruents” and “sonorants” [E&B: 36–39]; and don’t forget to add affricate = plosive+fricative)
- Check out: Glossika Phonics  
<https://www.youtube.com/channel/UCFu0FZ0wFoHK2deKfLdaLGA>  
(for the diagrams; some of the pronunciations are strange...)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## Which English consonants do you find difficult?

p			t			k
b			d			g
					tʃ	
					dʒ	
	f	θ		s	ʃ	h
	v	ð		z	ʒ	
m			n			ŋ
			l		r	
w						j

pit			to			cod
bit			do			god
					chin	
					gin	
	fin	thin		sin	shin	hit
	van	the		zoo	vision	
man			not			sing
			lay		ray	
wet						yet

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## The most important thing to practise:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

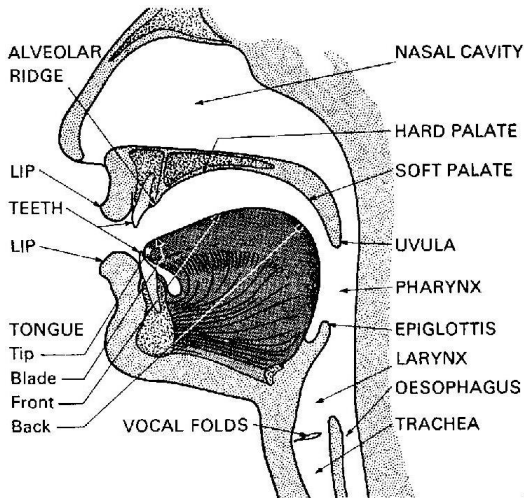
We are mammals and  
have mammalian reflexes

obstruents	voiceless plosives	p t k
	voiced plosives	b d g
	voiceless affricates	tʃ
	voiced affricates	dʒ
	voiceless fricatives	f θ s ʃ h
	voiced fricatives	v ð z ʒ
sonorants	voiced approximants	w l ɹ j
	voiced nasals	m n ŋ

← turbulent airflow

← smooth airflow

## You can make any consonant you want



φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## You can make any consonant you want

### THE INTERNATIONAL PHONETIC ALPHABET (revised to 2005)

CONSONANTS (PULMONIC)

© 2005 IPA

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			ʀ					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

- Keep your copy of the **IPA chart** handy.
- You have received the **description** of a **consonant** sound to produce (**voicing**, and **place** and **manner** of articulation).
- **Read out** the description aloud.
- **Pronounce** the sound.
- Hint: If the sound seems difficult, move **up and down the column** and **back and forth along the row**, until you have situated it in relation to other possible consonants.

φωv

The syllable margins in the material world

Did you do your homework?

The syllable in the material world: which model?

Words of warning and encouragement

How we make sounds

(Pulmonic) Consonants: dimensions of articulation

Which English consonants do you find difficult?

You can make any consonant you want

We are mammals and have mammalian reflexes

## You can make any consonant you want

- Use **voicing** as well as **place** and **manner** of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## You can make any consonant you want

- Use **voicing** as well as **place** and **manner** of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

- < th is na ti on has enou gh f i sh to feed itself >

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## You can make any consonant you want

- Use **voicing** as well as **place** and **manner** of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

- < **th** is na **ti** on has enou**gh** **f** i **sh** to feed itself >

- [ m **m** eməri ə **v** ɔ:l wɪmɪn rɛɪ **p** t m ɔ:l **w** ɔ:z ]

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## You can make any consonant you want

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

- Use **voicing** as well as **place** and **manner** of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:

- < th is na ti on has enou gh f i sh to feed itself >

- [ m m eməri ə v ɔ:l wɪmɪn ɪr p t m ɔ:l w ɔ:z ]

- Read Eckert and Barry pp 36–39 on manner of articulation and on the voiceless/voiced opposition

http:

[//spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/](http://spence.saar.de/phonetics/unit04_20242/B__Handout/)

## You can make any consonant you want

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

- Use **voicing** as well as **place** and **manner** of articulation to describe the consonant sounds indicated by the framed graphemes or by the framed IPA symbols:
  - < **th** is na **ti** on has enou **gh** **f** i **sh** to feed itself >
  - [ m **m** emæri ə **v** ɔ:l wɪmɪn ɪɹ **p** t m ɔ:l **w** ɔ:z ]
- Read Eckert and Barry pp 36–39 on manner of articulation and on the voiceless/voiced opposition  
http:  
[//spence.saar.de/phonetics/unit04\\_20242/B\\_\\_Handout/](http://spence.saar.de/phonetics/unit04_20242/B__Handout/)
- We'll follow Eckert and Barry in talking about **fortis** consonants (stronger, like **[p]**) and **lenis** consonants (weaker, like **[b]**)

## What is this baby hominid doing?



φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down
- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes



## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down
- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down
- 'Neither / u / nor / i /' is / ə /.

φωv

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes

## We are mammals and have mammalian reflexes

- One of the first things a mammal does ...
- ... after trying out its lungs ...
- ... is ...
- ... to suck!
- (If it doesn't, it dies.)
- What does your mouth do when you suck?
- There are two basic 'postures' — / u / and / i /
- For / u / the oral cavity is long and thin, the lips are rounded, the back of the tongue is up, and the front of the tongue is down
- For / i / the oral cavity is short and wide, the lips are spread, the front of the tongue is up, and the back of the tongue is down
- 'Neither / u / nor / i /' is / ə /.
- What is 'both / u / and / i /'?

φων

The syllable margins  
in the material world

Did you do your  
homework?

The syllable in the  
material world: which  
model?

Words of warning and  
encouragement

How we make sounds

(Pulmonic) Consonants:  
dimensions of  
articulation

Which English  
consonants do you find  
difficult?

You can make any  
consonant you want

We are mammals and  
have mammalian reflexes