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# Phonetics

A reasonable grounding in articulatory phonetics is a prerequisite for the study of phonology, for the obvious reason that phonetics provides the substance that phonology organizes. Language sounds are basically divided into vowels and consonants, the latter in turn subdivided into obstruents and sonorants. The criterion for this division, and for its subdivisions, is that different types of sound hinder the exit of air to different degrees. Consonants are mutually kept apart by their place of articulation, their manner of articulation, the involvement or not of voice, and the involvement or not of nasality. In addition there are lateral and rhotic consonants. Vowels by definition do not obstruct the airflow in any way, but modulate it through the interaction of the tongue with the roof of the mouth, or palate. Voice is caused by the vibration of the vocal folds in the larynx, and nasality by the lowering of the velum. The ideal eight (or sixteen) basic vowels are known as the “cardinal vowels”. The vowels of some languages approximate to the cardinal vowels more than the vowels of other languages. For better or worse, the vowels of English are not very “cardinal”. Moreover, there is considerable variation in vowel realization throughout the English-speaking world. In order to study language sound we need to represent it in some durable medium. Spelling is often erratic, and language sounds are therefore conventionally encoded in phonetic symbols, of which the alphabet of the International Phonetic Association constitutes the standard and most widespread set.



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## EXERCISE 1:1 Articulation and Phonetic Symbols

a. Write down the IPA symbol which represents the following descriptions:

- A voiced alveolar affricate
- A voiceless palatal stop
- A voiced glottal fricative
- A voiced pharyngeal fricative
- A voiceless uvular fricative
- A voiceless dental fricative
- A voiceless uvular stop
- A voiced uvular fricative

b. Write down the description of the sound represented by the following IPA symbols:

[ϕ] [ʃ] [z] [j] [ʒ] [b] [g] [ɣ]

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## EXERCISE 1:2 Ghoti Words

In chapter 1 of *A Course in Phonology* we quote the remark by George Bernard Shaw (made in his spelling reformer capacity) that the word *fish* might equally be spelled as *ghoti* (i.e. *gh* as in *laugh*, *o* as in *women* and *ti* as in *nation*). By this token, the words listed below might each have been spelled in a number of different ways (in some cases, a large number of ways). First transcribe the words into IPA and then see how many possible spellings each could have, according to the apparent idiosyncracies of the English spelling system.

sheaf	qualm	note	sign	jape	choose
fusion	daughter	chief	keep	mighty	chest

# EXERCISE Incomplete Diagrams

## 1:3

The following illustrations are incomplete. Fill in the gaps in order to illustrate the sounds represented by the IPA symbols beneath each of them.

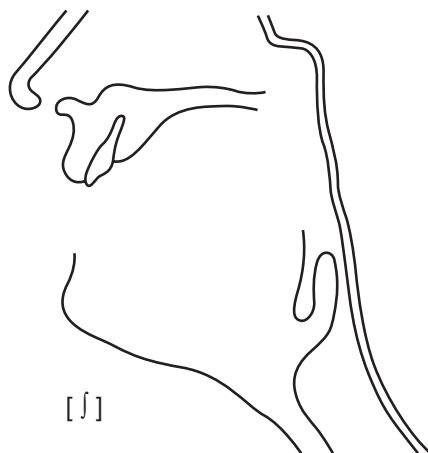
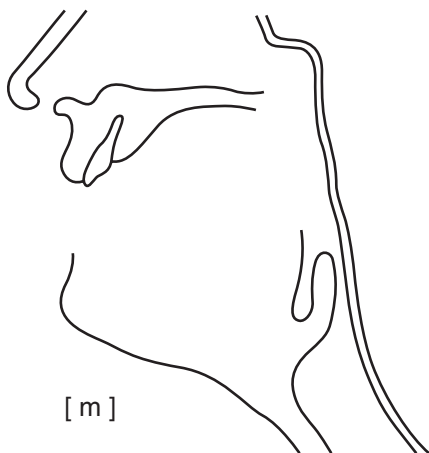
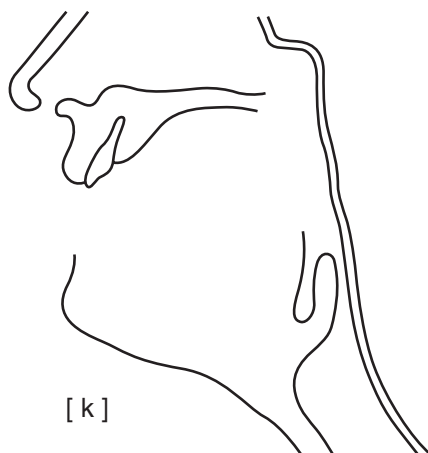
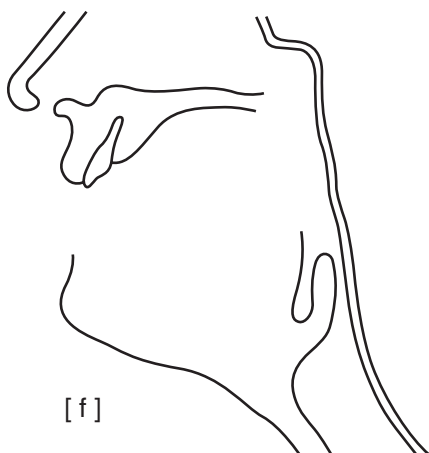


Figure 1:3

## EXERCISE 1:4 Place and Manner of Articulation

Identify the place and manner of articulation of the sounds illustrated in the diagrams below, and provide phonetic symbols for the sounds. (NB: no voicing is indicated in the diagrams, so two symbols will need to be provided for each diagram.)

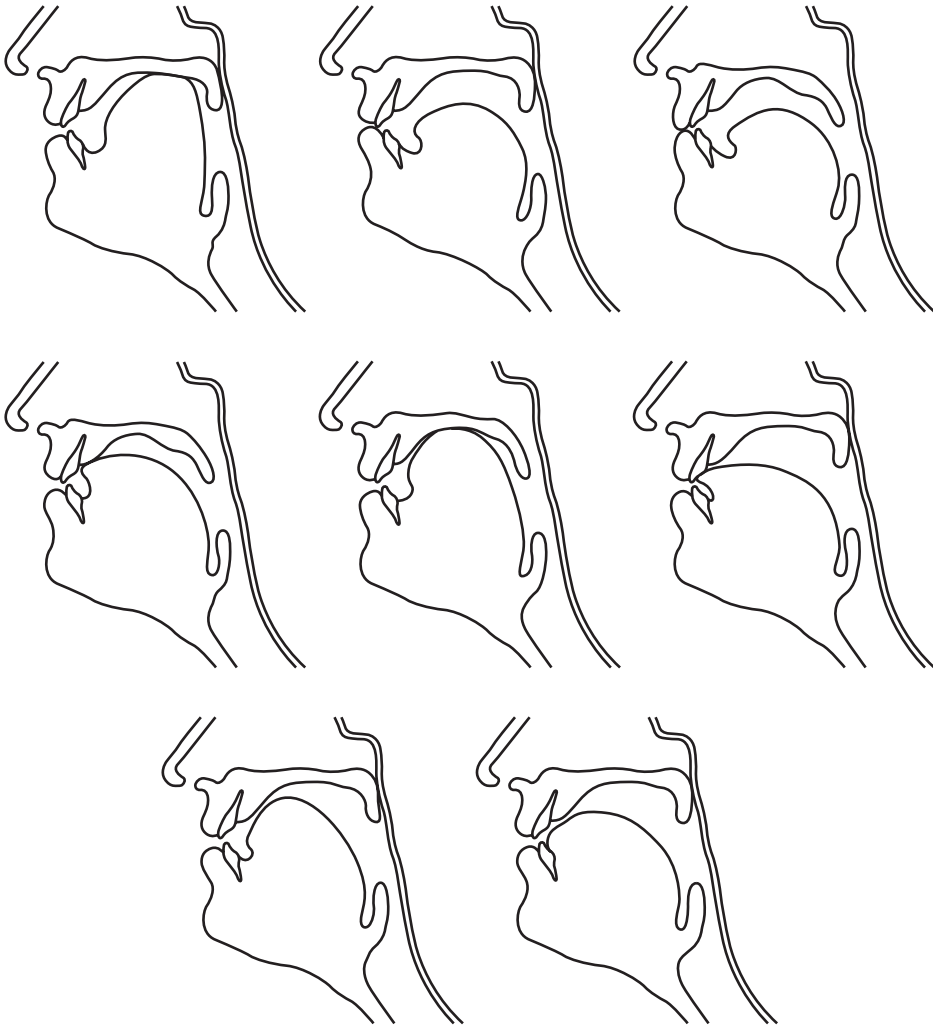


Figure 1:4

## EXERCISE **Glottal Stops and Flaps**

### 1:5

Read the list of words below and say which of the orthographic *ts* can be pronounced as [ʔ] (a glottal stop) or [ɾ] (an alveolar flap), either in your accent or in an accent you are familiar with (their distribution will obviously differ according to accent). Try to elucidate the relative positions in the word of those *ts* which may be pronounced as [ʔ], [ɾ] or [t].

Scotland	button	table	tatter	mistake
market	cater	curtail	attract	tent
content	winter	static	attic	atlas

## EXERCISE **Cardinal Vowels**

### 1:6

- (i) Give descriptions of the eight primary and eight secondary cardinal vowels in terms of the following criteria:

Frontness  
Backness  
Highness  
Lowness  
Midness  
Roundness

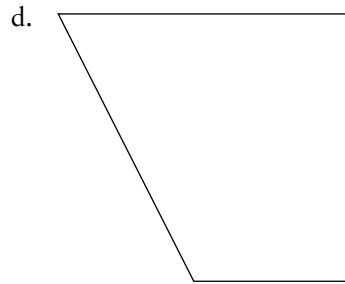
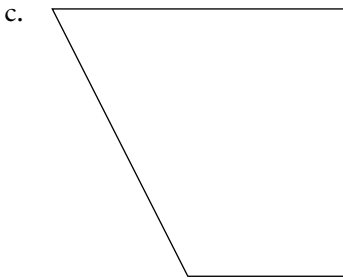
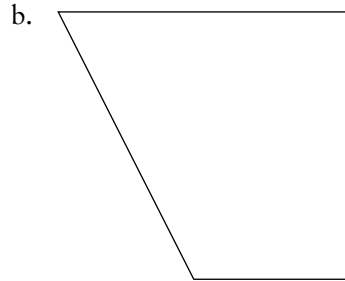
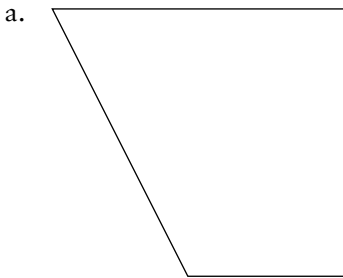
- (ii) Do these criteria distinguish all the vowels?
- (iii) Say what the difference is between the members of each of the following pairs relative to the criteria in (i):

a ~ e    o ~ ɔ    y ~ u    y ~ œ    y ~ i    i ~ ε    a ~ u    a ~ ʊ    ʌ ~ ɔ    ɒ ~ ɑ  
 ʌ ~ u    ɔ ~ ε    e ~ ʌ    i ~ ɑ    e ~ o    o ~ ʌ    a ~ ɑ    ø ~ e    ø ~ o    o ~ œ

# EXERCISE English Vowels

## 1:7

We present four trapezoids, like those used to display vowels in chapters 5 and 7 of *A Course in Phonology*. Your task is to plot onto these figures the set of primary cardinal vowels in (a), the set of secondary cardinal vowels in (b), and those vowels emboldened in the words listed below in (c) and (d).



c. bed look read bad soon big calm call gone bun

d. **sigh** how boy day **dough**

## EXERCISE Vowels

### 1:8

Provide IPA symbols and descriptions for the vowels highlighted in the following words in your own accent (e.g. [i] high front unrounded vowel):

rub	cook	Friday	cold	father
water	lake	tall	white	wide
loud	Jane	past	deep	bit
bet	bat	coat	late	choose
caught	cot	one	hour	bird
walk	dew	shore	sure	poor

## EXERCISE RP Phonetic Transcription

### 1:9

Transcribe the following passage into normal English orthography (the symbol ' indicates the beginning of a stressed syllable):

ʃi 'left ə 'mɒnjəmənt tʊ hə 'neim in sɪnsɪ'næti ʊs'haɪʊs ən eks'tɪævəɡnt 'bɪldɪŋ 'nɜːn tə ðə 'æzɪdnts əv ðə 'sɪti əz 'tʌləps 'fɒli ən'tɪl ðeɪ 'faɪnli dɪ'mɒlɪstɪtɪtɪn 'eɪtɪn'naɪnti'eɪt 'fɪfti ʤiəz 'leɪtə. ðɪ 'aʊtʃeɪdʒ ʃɪ pɪə'vʊktɪn 'evrɪ 'steɪt əv ə'meɪkə 'baɪ ðə 'bʊk ʃɪ 'ɪzʊt ə'baʊt ə'meɪkə 'aftə hə ɪ'tɜːn tʊ 'ɪŋɡlnd 'meɪd hə 'dʒest əz wɛl 'nɜːn. fə 'sevɪəl 'dekeɪdz 'pipl 'bɒt ðə 'bʊk in 'ɔdə tʊ en'dʒɔɪ ðə 'fjuːɪtɪ en'dʒendədɪn ðəm. wɛn ə'meɪkənɪ'dɪʃn 'paɪətɪd frəm ðɪ 'ɪŋɡlɪʃ pəbli'keɪʃn æz əv 'kɔs ɔlɪ'dɪʃnz 'wɜː hæd ə semi'hjʊmɪəs edɪ'tɔɪəl 'pɹɛfɪs 'daʊtɪŋ ðət ðə 'bʊk 'æktʃəli kʊd bɪ ðə pɪə'dekʃn əv ən 'ɪŋɡlɪʃ 'leɪdɪ. ðɪ 'ɪŋɡlɪʃ 'leɪdɪz ə 'nɒt wɒt aɪ bɪ'liv ðəm tə 'bɪɪf ðeɪ ɔɪ 'eni wɛn əv ðəm wʊd sʊ 'fə fə'get 'wɒt wɜː 'dʒu tə ðəm'selvz n ðə 'kæɪktəɪ əv ðeə 'kɛntɪ əz tʊ 'lənd ðeə 'neɪm n 'sæŋkʃn tʊ ə 'ɡɪʊs vɑː'leɪʃn əv ðə 'kɒmən dɪ'kɔɪmz əv 'laɪf. 'ðæt 'edɪtə wɜː 'ɹaɪtɪŋ wɪð 'teɪŋɪn 'ʃɪk 'beɪsɪkli bət ðeə wə 'θaʊznz hu 'ekʊd ðə 'sentɪmənt 'kwɑɪt 'sɪəɪsli. 'mɪsɪs 'tʌləp wɒt ə 'neɪm! ɪnɪt'self ən əfens! 'kʊdɪt bɪ 'tʊ? hu'evə ʃɪ 'wɒz wɜː 'sɜːtənli 'nɜː 'leɪdɪ.



## EXERCISE GA Phonetic Transcription

### 1:10

Transcribe the following passage into normal English orthography.

fɪ 'nevə 'tʌblɪd tə dʒʌstɪfaɪ hæ 'steɪrəs əz ə leɪdɪ tə ðɪ ə'meɪɪkənz. fɪ 'nevə dɪd 'mʌtʃ ə'pələdʒaɪzɪŋ ɔɪ eks'pleɪnɪŋ əl hæ 'laɪf 'lɑŋ. 'nɪðə dɪd fɪ ɹemə'nɪs ə'baut hæ 'laɪf ɪn aɹəʊbaɪ'ɑɡɪrəfi ɔɪ 'memwɔɪz. mʌt wəz 'pæst wəz 'pæst tə 'fæni 'tʌləp.

fɪ wəz 'bɔɪn ən ðə 'tenθ əv 'mʌtʃ 'sevntɪn eɪrɪ faɪv 'jɪz 'leɪtə ðən 'dʒeɪn 'ɑstən hʌm fɪ 'nevə 'nu 'mɔɪz ðə 'pɪrɪ sɪns ðeɪ 'boʊθ əb'zɜːvd 'mænəz wɪð ən aɹ'ɪnɪk aɪ. fɪ wəz ðə 'dɑːtə əv ðə 'rev.ɪnd 'wɪljəm 'mɪlɪn n hɪz 'waɪf hʌ wə 'lɪvɪŋ ət ðə 'taɪm ɪn ðə 'vɪlədʒ əv 'steɪplɪn 'nɪr 'bɪstəl. ðeɪ kɪsnd hæ ðeɪ 'seknd dɑːtə wɪð ə 'neɪm sou 'pɑpjələ dʌrɪŋ ðouz 'jɪz ðəɪ ɪt 'sɪmz 'hæf ðə 'gɜːl 'tʃɪldɪn əv 'ɪŋɡlənd ɪn ðə 'læst əv ðɪ 'eɪrɪnθ m bə'ɡɪnɪŋ əv ðə 'naɪntɪnθ 'sentʃɪ wə 'neɪmd 'frænsəs ŋ 'kald 'fæni.

'sʌn 'æftə hæ 'bɜːθ ðə 'rev.ɪnd 'mɪlɪn wəz ə'wɔɪdɪd ðə 'lɪvɪŋ ət 'hekɪld ɪn 'nɔɪθ 'hæmpʃə n 'sɪksti 'maɪlz frəm 'lɑndn. ə 'jɪr ɔɪ sou 'leɪtə ə 'sʌn 'hæri wəz 'bɔɪn n 'tʃɑtli ðeɪ'æftə ðə 'mʌðə əv 'meɪrɪ 'frænsəs n 'henrɪ 'daɪd.

## EXERCISE Transcription from

### 1:11 Orthography to Phonetics

Render the following sentences (i) in a broad phonetic transcription and (ii) into a narrow transcription of your own casual pronunciation. We suggest that you record yourself (or, alternatively, a friend with a similar accent) saying the sentences at a normal speech rate and attempt to write down exactly what you hear when you play back the tape. Say what accent you are transcribing.

- Did you happen to see my brother on your way here today?
- What are you going to do when you graduate?
- Are you likely to eat all that pasta on your plate?
- It's a lot later than I thought it was and we have to catch a train for London.
- This is the story of the different ways we looked for treasure, and I think when you read it you will see that we were not lazy about the looking.
- The mole had been working hard all morning spring-cleaning his little home.

Compare your two transcriptions, commenting on the differences between the broad and the narrow renderings.

## EXERCISE Nonsense Words

### 1:12

Read out the following nonsense words. Say which of them could be words of English and which could not (intermediate judgements are possible).

[slubəl]	[tsi:ɪtɪk]	[aɪblu]	[ɑpɪk]	[prouto]
[ftɪk]	[qako]	[keɪg]	[mekət]	[gnaʊgɔl]
[ptɒmtɪk]	[dulʊkɛ]	[ɔzɪbɪlɪn]	[naɪk]	[ŋægæ]
[æŋæŋ]	[huːlæk]	[pɹehɪp]	[ətaka]	[ʔtaka]
[kwækou]	[ʌpɛlə]	[zɔɪhɑp]	[fau]	[tʃɪndʒ]
[ʃɪʒu]	[zɪŋgʊ]	[ɪfʊkʊlə]	[dɪʊl]	[ðɛʒɔʔ]
[ʔɪpɛg]	[θɛʒɔʔ]	[dʌ]	[dʊt]	[dɛt]
[tyt]	[bœd]	[ødø]	[tʃɪʒɛ]	[xaha]

## EXERCISE GA Phonetic Transcription

### 1:13

The following passage has no word breaks or stressed syllables marked. Transcribe it into normal English orthography, including word breaks and punctuation.

gɹeɪtsɪrɪzəˌbɔɪnɒtmeɪdðəbɪldɪŋzwaɪdələɪrɪnðəskweɪzmpaɪksdətɪvɪzsoʊmɪfplezəˌθɪn  
 ətðəpɪɑdɪktəvntaʊnpɪənʃɪsɔʊfɪkənʃnɔɪvŋɡʊdɪznəsðəmənjʊməntsnspeɪsəwɪrətʔntʊɪ  
 ndeɪlɪtɪnɪndɪmzəˌðɪlɪnlaɪkɪɑfspɪŋəvsvɪləɪzɪfɪzɪmousetkɪstætɪkroumənsðəgɹændʒʊn  
 jənəvmɪnɪvænəɪ

## EXERCISE RP Phonetic Transcription

### 1:14

The following passage has no word breaks or stressed syllables marked. Transcribe it into normal English orthography, including word breaks and punctuation.

mɛnɪnvænətɪbɪltwɛstmɪnstəɹæbɪnsmɔɪzəkəθɪdrələɪdauθaɪdpakswɔmdɛpðɪɑɪftaʊəɪnɪɛ  
 ɪzdðəhɛlmzɪnðəkraɪzɪləbɪldɪŋzwpθəvðətɛɹəsɪzəvɪnæfɔðəsplɛndəzəvbaʊhaʊstədʊwɪdnəs  
 ɛsətiɪtɪzstəndətwɪnɪdbɪldɪŋznðətɪnsɛmɡrɛɪtsɪzɪlɪkɪnɪjuːkðzʊzɪldɪŋzməstɡzʊɛpɔdʒ

## EXERCISE **Faulty Transcription**

### 1:15

The transcription of the passage below is riddled with errors. You should identify these errors, correct them, and then transcribe the passage into normal orthography.

In ðiz lekʃəz ai wəd laik tʊ expləɪ ə ɫambəɪ əf ɪfuz ɹɪlatɪŋ tə hju:mən kɔgnətɪv kəpəsɪtɪz n ðə mentəl stɹɪktʃəs ðət sɜ:v əz vɪəklz fə ði eksəsaɪz əv θɪz kəpəsətɪz. pleɪnli ðɪs fɔmjuleɪfɪn əv ə pɹɔbləm ɛmbɔdɪz assaɪmfnz ðət ə fə frəm klɪə ənd ə haɪli kɔntɹɪvɜ:sl ɪnsoufaɪ əz ðeɪ a klɪə. ai wɪll traɪ tə meɪk ðəm klɪərə ənd ai hoʊp mɔ pləzɪbl əz ai pɹəsɪd. In ðɪ ɛnd ðə best weɪ tə klæɹɪfaɪ ðɪz asaɪmfnz ənd tʊ ɪvæljuate ðəm ɪz tə kənstɹɪkt spəsɪfɪk mɔdlz gaɪdɪd baɪ ðəm ɪn pətɪkjʊlər dəmeɪnz ðen tʊ ask haʊ ðɪz mɔdlz feə wen ɪntɹɹætɪd əz ɛkspɹənətɹi θiəɹɪz. ɪf ðə lɪdɪŋ aɪdɪəz əɹ əppɹoʊɹɪət ðeɪ wɪl bi ʃəpənd ən ɹɪstɪfaɪd baɪ θə saksɪs əv ɛkspɹənətɹi ðiəɹɪz θət ðɪvɛləp ðəm ɪn ə spəsɪfɪk weɪ. ai wɪl nɔt atempt ə sɪstəmatɪk pɹezəntetɪfɪn əv sɑ:k ə mɔdl hɪə bət wɪl dɪskʌs pɹɔpətɪz əv sɔm ðət ə bɪŋg ɪnvɛstɪgeɪtɪd ðoʊ ɪn te:kni:k stɑ:dɪz ðeɪ ə nɔt pɹezentɪd ɪn ðɪz termz wɪtʃ ai wɔnt tə sɑggest ə ði əpɹoʊɹɪət tɜ:mz. ðə kɔgnɪtɪv dəmeɪn ðət wɪl pɹɪmeɹɪli kənsən mi ɪz hju:mən læŋgwɪdʒ. ðə ɹɪzn fə ðəʃɔɪs ɪz ɪn pət pɜ:snl ɹɪlatɪŋ tə lɪmɪts əv maɪ oun ʌndɜ:stændɪŋ. ai θɪŋk ɪt feə tə seɪ hoʊevə ðət ði ɪfuz ə mɔɹ ɪzɪli fɔmjuleɪtɪd əm betə ʌndəstʊd ɪn kənɛkʃn wɪð hju:mən læŋgwɪdʒ θæn ʌðə dəmeɪnz əv hju:mən kɔgnɪfɪn – wɪtʃ ɪz nɔt tə seɪ ðət θeɪ a klɪəli fɔmjuleɪtɪd ɔ wɛl ʌndəstʊd. ðeɪ a sɑm hu wʊd vɜ:ʃəli aɪdentɪfaɪ ðə stɑ:di əv læŋgwɪdʒ n ðə stɑ:di ɔv maɪnd kwɑɪn fəɹ ɛgzɑmple. ðɪs ɪz nɔt maɪ oun vju.

