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# Pictopairs: A Minimal Pair Portfolio

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PICTOPAIRS : A MINIMAL PAIR PORTFOLIO

Marks Greenberg  
November 28, 1978



PICTOPAIRS : A MINIMAL PAIR PORTFOLIO

This work, including related charts and photographic slides is submitted in partial fulfillment of the requirements for the Master of Arts in Teaching degree at the School for International Training, Brattleboro, Vermont.

December, 1977

By Marks Greenberg

Putney, Vermont

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This project by Marks Greenberg is accepted  
in its present form.

Date: 12/12/77

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## Abstract

Greenberg, Marks

Pictopairs: A Minimal Pair Portfolio

Descriptors: Curriculum Materials Development, ESL, English Language Education, English Language Pronunciation, Pronunciation Teaching, Teaching Pronunciation, Techniques for Teaching Pronunciation.

These materials provide a classroom tool for the teaching of English pronunciation through minimal pair contrast awareness. The work consists of illustrations representing the words that contain the contrasting sounds. There are six illustrations on each 18" X 24" chart, 54 charts in all. Supplementing these "Pictopairs" are corresponding printed "Wordpairs" and some suggested techniques for using the materials.

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### Charts

PICTOPAIRS: Initial Consonant Contrasts

PICTOPAIRS: Medial Vowel Contrasts

WORDPAIRS: Initial Consonant Contrasts

WORDPAIRS: Medial Vowel Contrasts

PROBLEM-CONTRAST LANGUAGE INDEX\*

\*Included as fold-out at the end of this paper.

The portfolio of Pictopairs and related materials is designed as a classroom tool for teaching pronunciation to students of ESL. Many of the ideas for minimal pair illustrations and the techniques for using them were tried out during my 10-week practice teaching in Acambaro, Guanajuato, Mexico this past winter. The pictopair charts, first drawn on wrapping paper which I bought by the kilo from a local grain and vegetable dealer, readily captured the attention of the class and made the ten minute pronunciation lesson an enjoyable part of each class day. In a feedback session at the end of the course, they were thought to be one of the most useful aspects of the course.

To make the system available to many ESL teachers it is necessary to find some way to conveniently reproduce and show the charts. Until enough of a demand makes it feasible to print the materials, I have opted to make a set of color slides for their presentation. This would not seem to be the ideal technique, however, necessitating the use of a projector for a relatively short lesson. There is obviously room for more thought and research in the use of this portfolio.

I want to thank Bob Carvutto, Liz Tannenbaum, Gwen Dyson y todos mis estudiantes de ingles in Acambaro for their suggestions and ideas. And to thank Linda Rubinstein and Walter Pence for their assistance with the illustrations.



Concept

The Pictopair portfolio is a set of charts illustrating "minimal pairs" or words that contrast by a single phoneme. The pairs depicted are typical "problem" contrasts for students of English as a second/foreign language. The charts are designed primarily for pronunciation exercises, but may also be used as a starting point for guided conversation or composition exercises. They will naturally be an aid to building vocabulary.

The system of pictopairs was developed to encourage students to rely on their own resources to discern sound contrasts in English. The consistent arrangement of the charts provides the student with a tool by which he or she may derive the pronunciation of an unfamiliar word by its relation to other, familiar words on the chart. Thus if

pea : bee

pack : back

pole : "x"

where "x" represents an unknown word, the student will learn to derive "x" = bowl, by combining the initial /b/ of column 2 with the environment /-owl/ from line 3. While the "code" determining the position of the words is arbitrary and not directly related to language in its normal environment, it focuses the student's attention on specific troublesome phonemes. Requiring the student to make this effort is an attempt to make the sounds more significant to him/her.

Another premise in the development of the pictopairs, is that it is beneficial to connect the spoken word directly with its referent (or as directly as possible) rather than conveying the meaning through translation. Hence the use of a small number of pictures for each sound contrast rather than a long list of obscure printed words or nonsense syllables. The sound distinctions will be reenforced in the learner's mind by the visual impressions of the two objects or actions. The contrast of a (bumble)bee and a (green) pea will be more meaningful to many students than the written words "pea" and "bee," particularly considering the inconsistencies of English spelling.

The final premise is that pronunciation exercises will be made more palatable--even enjoyable--by utilizing amusing cartoon-type illustrations and making the exercise something of a challenge.

#### Materials

The main component of the minimal pair portfolio is two sets of charts illustrating contrasting vowel pairs (in medial position) and contrasting consonant pairs (in initial position). Supplementary work might include charts for consonant pairs in medial and final positions. It was felt that the initial consonants were the most important and sufficient within the scope of this project.

For optional use with the pictopair charts is a set of wordpair charts which provide the written form of each pictopair.

While the wordpair page numbers correspond to the pictopair page numbers, the order of the words on the page has been intentionally shuffled so as to provide clues to the illustrations without giving them away.

The problem-contrast language index, derived largely from data in Nilsen & Nilsen's Pronunciation Contrasts in English, indicates which language-speakers may be expected to have trouble with which sound contrasts. Native Spanish-speakers will have difficulty with the /s-/ , /es-/ distinction; Japanese, with the /l/ , /r/ distinction, and so on. Some contrasts are problems to nearly all foreign students of English while others are difficult for only one or two major language groups. In the interest of time and space I have selected the contrasts typically problems for the following language groups: Arabic, French, German, Italian, Japanese, Korean, Persian, Polish, Spanish and Portuguese.

The index chart, notes, in addition, special problems of position or environment that a particular language speaker might have with any given phoneme contrast. Page references to the pictopair charts and to Nilsen & Nilsen are indicated for each phoneme contrast.

#### Explanatory notes for the charts

The order of the charts is arbitrary other than to place contrasts of a particular sound on adjacent pages where possible. On a given page, one of the contrasting pair of phonemes recurs

down the left column in three different environments, while the other is repeated down the right column. Horizontally, the key phonemes change while the environments remain constant. The page, then, depicts three examples of the phonemic pair.

Each column is respectively marked ① and ② for easy identification in the classroom. At the lower right of each page the phoneme pair is indicated in IPA symbols. The page number is at the far right. Pages are numbered so as to correlate with medial and final position consonant charts if they are later developed. Pages are omitted for contrasts which include initial /ŋ/ which does not occur in English.

The symbol Ⓟ is found on some illustrations to indicate a past tense form of a verb; ⓅⓅ to indicate a past participle. Color serves not only an esthetic function but sometimes highlights the referent in its spatial environment.

### Use of the Charts

The pictopair portfolio lends itself to use as a pronunciation module of an ESL course at any level. One contrasting pair presented with some short exercises at the beginning of each class will eventually expose the students to most of the difficult phoneme distinctions of English. Careful observation during the course will help to identify specific pronunciation problems for later attention.

I have found the charts to be most effective with a minimum of explanation by the teacher. I always presented the

illustrations first without the written words to give the students a chance to test their vocabulary. When they had looked the chart over, I pointed at one picture then another, eliciting the represented word from the class. I would encourage them to guess at unfamiliar words and usually the class, working cooperatively could figure out the entire page. If they were stuck, I brought out the printed words or wrote them on the board.

Once the drawing has been associated, clearly, with its form (in English) and meaning, the drawings can be tapped out (first down then across) with increasing speed. Pronunciation for the whole class can be sharpened by drawing attention to those students making the clearest distinctions between the key phonemes.

If the class has difficulty, at first, working out the pattern of sounds on the chart, suggest the order by asking: "What sound is common to column ①?" "What sound is common to column ②?" Once it is clear that the phonemes presented are indeed two distinct sounds, a variety of exercises can be used to practice pronunciation and comprehension. Some are suggested below.

### EXERCISES

#### 1. Minimal pair comprehension

The teacher says the paired words, randomly placed in groups of three; e.g. "pea, pea, bee," and asks the students from which columns they came—in this case, 1,1,2. An attempt should be made to reach consensus among the students. If they aren't sure, say the group again in the same order and try again.

## 2. Minimal phrase comprehension

Use one word of the pair in a phrase that is suitable with either of the paired words. E.g., "There's a pea/bee on the table." Is the word from column ① or column ②? For pairs that don't lend themselves to meaningful minimal phrases, there's always: "This is a \_\_\_\_/\_\_\_\_" or even "The word is \_\_\_\_/\_\_\_\_." Students can respond orally as a group, or individually with a written exercise.

## 3. Fill in the blank

Write a minimal phrase on the board leaving a blank for the key word; e.g. for pole/bowl, write: "I have a wooden \_\_\_\_." Have a student read the sentence, completing it, and the other students indicate whether the word was column ① or column ②.

## 4. Words in sequence

Use both paired words in a single sentence; e.g. "The bee is heavier than the pea" or "the crib is under the crab." Ask students if the word order was 1-2 or 2-1.

## 5. Combination sentences

Have students make up meaningful sentences using any two or three referents from the page. E.g. "There is a pea in the bowl," "Whales don't drink wine." Have the class discuss if the sentences are grammatically correct and if they are logical. This might be a written or oral exercise.

## 6. Conversation in context

Use the paired words as a takeoff for discussion to reinforce understanding of the vocabulary. "Have you ever been stung by a bee?" "Are whales an endangered species?"

## 7. Additional pairs

Supplement the pictopairs with portable objects, things in and around the classroom, parts of the body. Without speaking, demonstrate shoe/chew; share/chair; shin/chin. See how many the class can work out.

## 8. Sound classification

Divide the blackboard in two halves and ask students for other words with the same phonemes as depicted on the chart. Write all the suggestions down on respective sides of the board. Ask the class if they agree on each word. Underline wrong or disputed choices for later work.

## 9. Silent Way spelling

Have students locate letter combinations on the Silent Way Fidels.\* Have them locate the two columns on the fidel which represent the contrasting pair of the pictopair chart.

\*Gattegno, p.16 and others.

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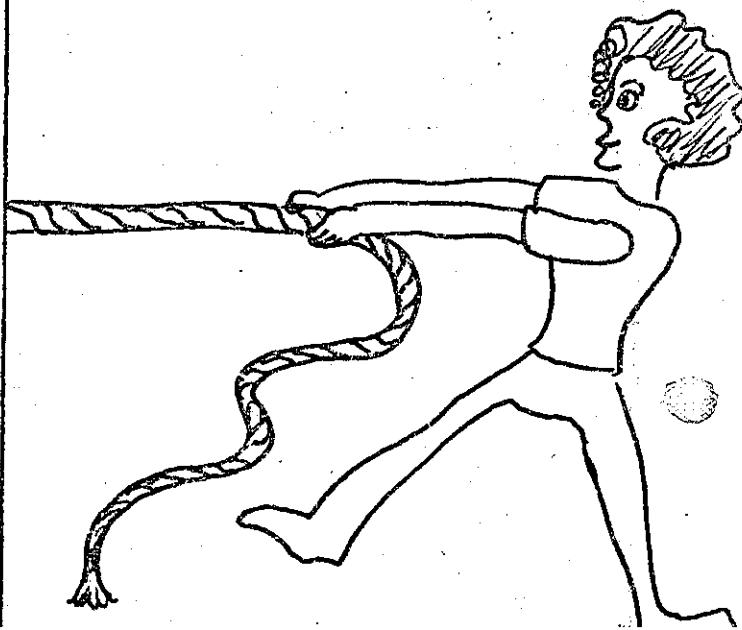
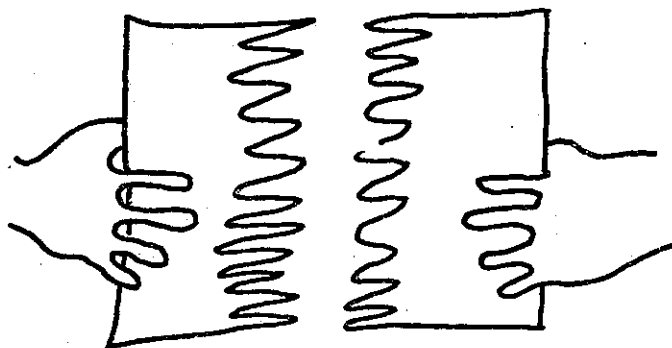
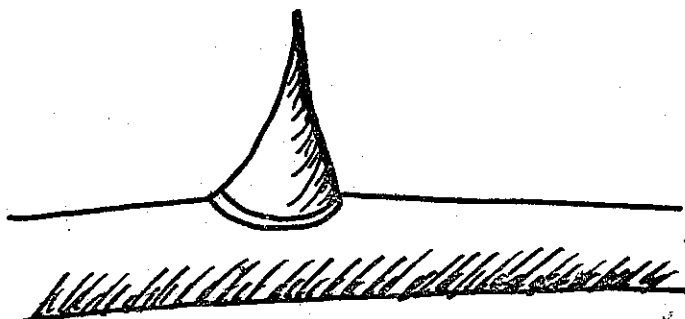


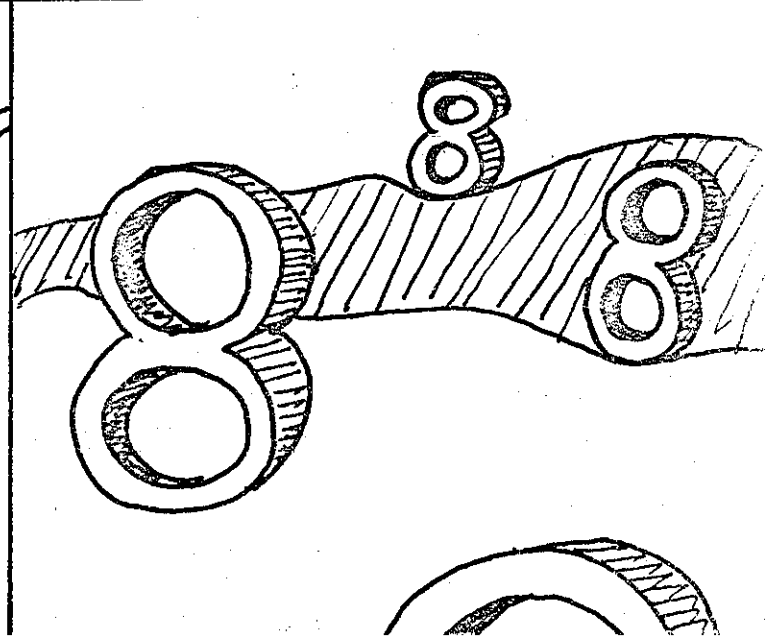
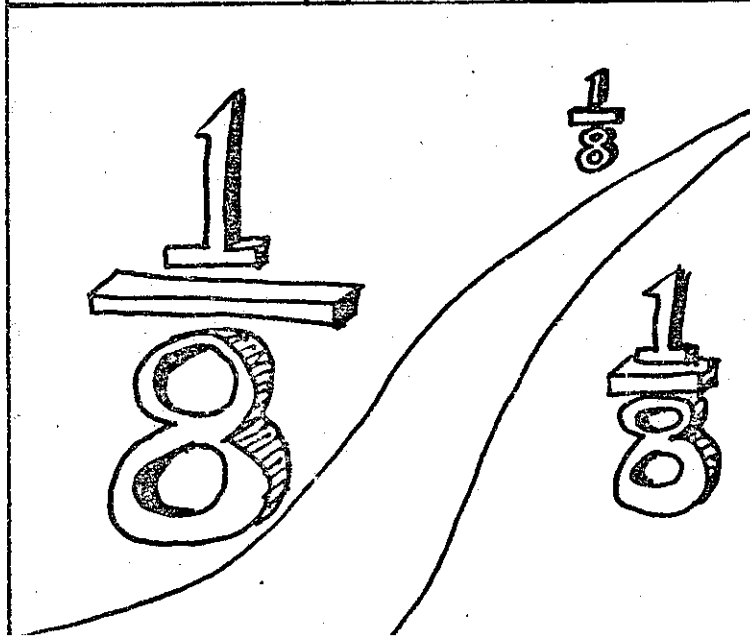
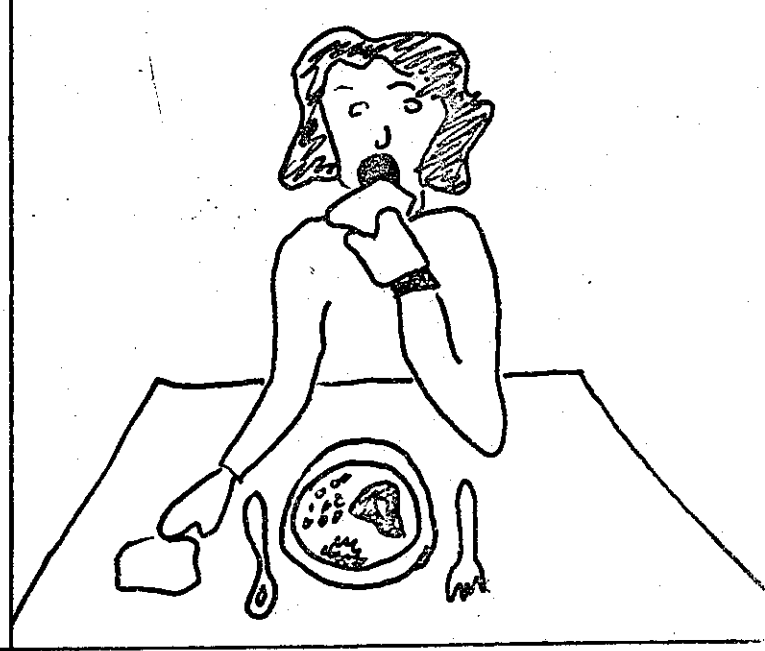
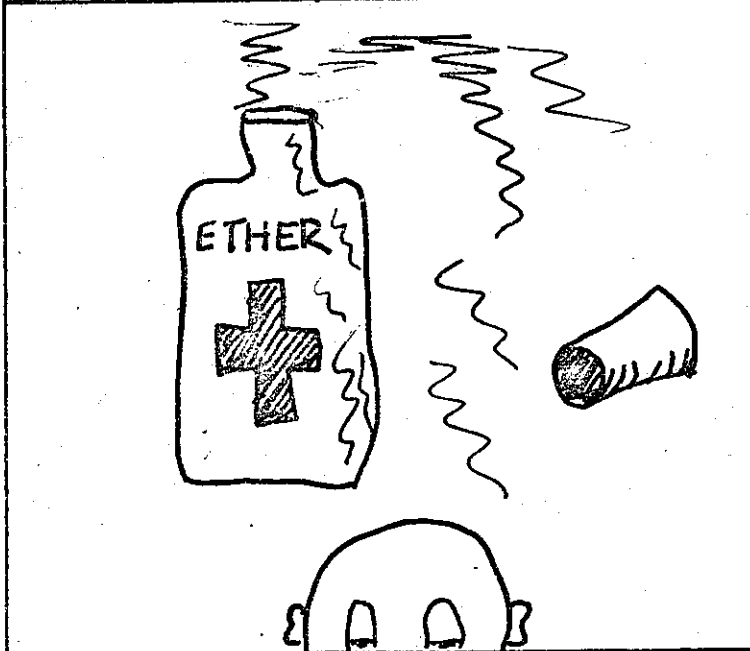
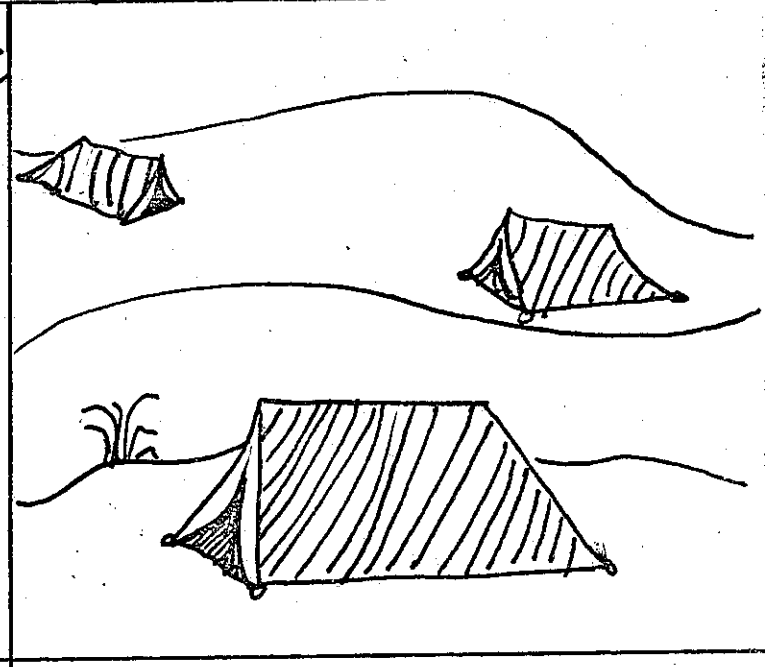
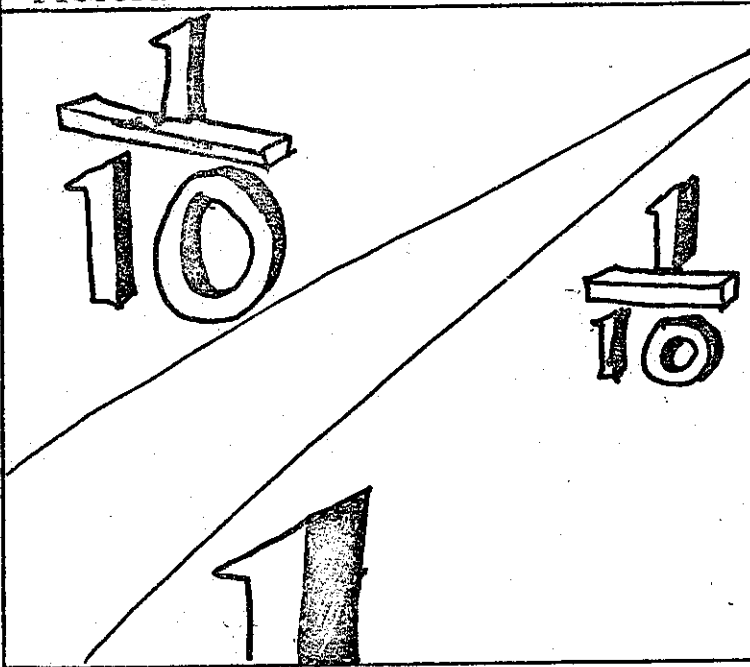
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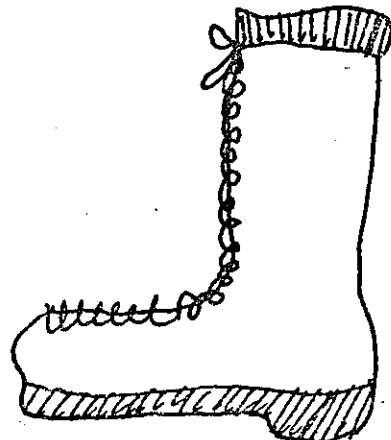
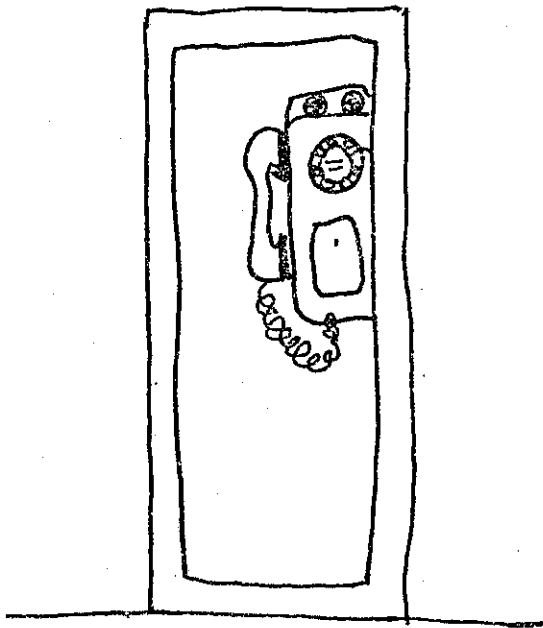
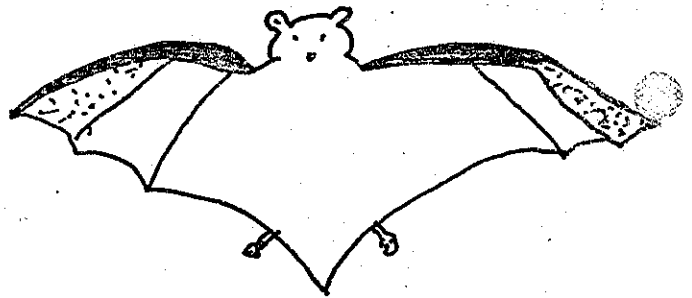
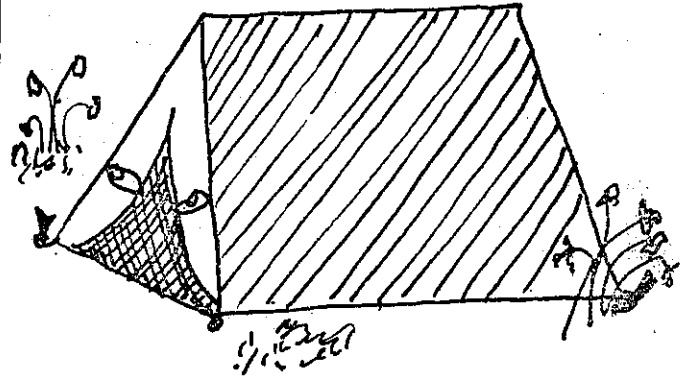
PICTOPAIRS: Reduced Sample

10.





1  
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10



# CONSONANTS

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51	52	53	54	55	56	58	59	60	63	64	65	-	66	67	68	69	71	
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ASTS IN ENGLISH, FOR NON-NATIVE SPEAKERS

## VOWELS

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CONTRASTS	m	p	p	f	w	w	w	f	f	f	f	v	b	v	θ	θ	θ	s	s	s	d	z	n	t	t	d	d	l	s	s	s	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ	ʃ

## DIFFICULT PHONOEME CONTRASTS IN ENGLISH, FOR NON-NATIVE SPEAKERS

### VOWELS

VOWELS																																				
	ɪ	ey	i	e	æ	ə	ey	e	ey	ə	e	ə	e	ə	æ	ə	æ	æ	ay	ə	ə	u	ə	ow	ə	ɔ	u	ə	ay	ə	eh	eh	ɪ	ə		
NILSEN REF	1	4	5	6	7	8	9	10	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	32										
CHART #	1	2	3	4	5	6	7	-	8	9	10	11	12	-	13	14	15	16	17	18	19	20	-	21	22	23										
ARABIC		✓	✓				✓			✓	✓	✓	✓		✓		✓	✓		✓																
FRENCH	✓																																			
GERMAN									✓	✓		✓	✓				✓	✓																		
ITALIAN	✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		✓																					
JAPANESE	✓						✓		✓	✓		✓	✓		✓						✓															
KOREAN	✓					✓	✓		✓	✓			✓		✓																					
PERSIAN	✓		✓						✓						✓																					
POLISH							✓	✓	✓	✓		✓	✓	✓		✓	✓	✓	✓		✓															
SPANISH	✓					✓	✓		✓	✓		✓	✓			✓	✓	✓																		
PORTUGUESE	✓								✓			✓	✓			✓	✓	✓			✓															

#### SYMBOLS

✓ DIFFICULTY FOR GIVEN LANGUAGE

• DIFFICULTY IN INITIAL POSITION

• DIFFICULTY IN MEDIAL POSITION

• DIFFICULTY IN FINAL POSITION

#### NOTES

- before /u/
- before /u/, /v/
- Lybian Arabic
- Amer. Spanish
- before /y/, /i/
- before /y/

#### VOWEL VALUES

- /i/ - bit
- /e/ - bet, merry
- /ɛ/ - bad, Mary
- /æ/ - bat, marry
- /ə/ - but, cut
- /a/ - cot, far
- /u/ - book
- /ɔ/ - caught, bawk
- /y/ - beet, beer
- /ey/ - bait, bare
- /oy/ - bight
- /oy/ - boy
- /aw/ - bough, cow
- /uw/ - boot, boor
- /ow/ - boat, poor
- /r/ - bird, mother

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