

CUE TEST 4 SPECIFICATIONS

(updated 6/09/2006)

What type of information is learned during cued-recall tests, as opposed to re-study opportunities, that contributes to better long-term retention?

Task: Learn English-Swahili pairs → cued-recall test vs. re-study → final test over all items.

Stimuli: 43 English-Swahili word pairs. Found in *CueTestList.xls*

English word is cue, and Swahili word is target. For each subject, randomly assign each item to Trial (e.g., Test or Study, as below) and Final Test (e.g., Forward or Backward or Day 1 Test, as below) conditions.

Item #	English	Swahili	Trial	Final Test
1	army	jeshi	Test	Forward
2	art	kazi	Test	Forward
3	ball	pumba	Test	Forward
4	battle	vita	Test	Forward
5	chain	riza	Test	Forward
6	cut	pengo	Test	Forward
7	device	zana	Test	Forward
8	dog	kelb	Test	Forward
9	ear	sikio	Test	Forward
10	empire	miliki	Test	Forward
11	family	wakina	Test	Backward
12	fire	moto	Test	Backward
13	grave	tuta	Test	Backward
14	guard	baba	Test	Backward
15	hand	kofi	Test	Backward
16	head	kogo	Test	Backward
17	ice	barafu	Test	Backward
18	iron	chuma	Test	Backward
19	jacket	jezi	Test	Backward
20	knee	goti	Test	Backward
21	lake	jito	Study	Forward
22	lock	kitasa	Study	Forward
23	man	bwana	Study	Forward
24	mud	tope	Study	Forward
25	net	wavu	Study	Forward
26	night	leli	Study	Forward
27	oil	mafuta	Study	Forward
28	paper	laha	Study	Forward
29	pot	dumu	Study	Forward

30	quarter	robo	Study	Forward
31	report	kisa	Study	Backward
32	root	shina	Study	Backward
33	shirt	juba	Study	Backward
34	sister	dada	Study	Backward
35	tool	samani	Study	Backward
36	town	kaya	Study	Backward
37	village	tongo	Study	Backward
38	water	maji	Study	Backward
39	wave	wimbi	Study	Backward
40	yard	uga	Study	Backward
41	skin	gamba	Test	Day 1 Test
42	wife	ahali	Test	Day 1 Test
43	floor	chini	Test	Day 1 Test

Design:

- 2 within-subjects trial conditions:
 - (1) Test: Present **English** → subject attempts retrieval of **Swahili** + feedback
 - (2) Study: Present **English** and **Swahili** together
- 3 within-subjects final test conditions:
 - (1) Forward: Recall **Swahili** from **English**
 - (2) Backward: Recall **English** from **Swahili**
 - (3) Day 1 Test: Randomly assign 3 of the Test items to be tested at the end of Day 1, and never seen again.

Presentation phase: Present all 43 pairs, for 6 sec each (6 sec x 43 pairs = 4.3 min).

English: **Swahili:**

Sky	Hewa
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Test phase: Present 23 pairs with **English** only for 4 sec, with instructions to covertly recall **Swahili** word. Then, present **English + Swahili** for 2 more sec (6 sec per pair total x 23 pairs = 2.3 min). For the first 4 seconds, put blank white box under “**Swahili:**” as shown below.

English: **Swahili:**

Sky	
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Study phase: Present the other 20 pairs with **English + Swahili** for 6 sec, with instructions to re-study **English and Swahili** words (6 sec per pair x 20 pairs = 2 min).

English: Swahili:

Sky	Hewa
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Present test and study phases in **blocked** fashion. For half of subjects, first 23 pairs are Test and second 20 pairs are Study, and for the other half of subjects, first 20 pairs are Study and second 23 pairs are Test.

Repeat Test phase and Study phase 2 more times. The same 23 word pairs are assigned to Test, and the same 20 word pairs are assigned to Study. Each time Test and Study phases are repeated, present the word pairs in a new random order. So, there are 3 repetitions of Test and Study phases. Each repetition is presented in the same **blocked** fashion, where for half of the subjects, the first 23 pairs are Test and second 20 pairs are Study, and for the other half of subjects, first 20 pairs are Study and second 23 pairs are Test.

Day 1 Test: Randomly choose 3 items, and repeat Test phase, but this time requiring subjects to type in their answer. No time limit for retrieval, and no feedback. These 3 items are never seen again in the experiment.

Final test: 24 hours after test/study phase. Out of the 20 word pairs that were assigned to Test Trials on Day 1 (23 word pairs, minus 3 for Day 1 Test, leaves 20), 10 of these are given the Forward Test and 10 are given the Backward Test on Day 2. Out of the 20 items that were assigned to Study Trials on Day 1, 10 of these are given the Forward Test and 10 are given the Backward Test on Day 2.

- *Forward Test:* Present **English** words one at a time in new random order, and require subject to type in **Swahili** word. No time limit for retrieval, and no feedback. (≈ 5 sec for retrieval of each target x 20 targets = 1.67 min). Put blank white box under "**Swahili,**" as shown below, and allow subjects to type their answers into this box

English: Swahili:

Sky	
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- *Backward Test:* Present **Swahili** words one at a time in new random order, and require subject to type in **English** word. No time limit for retrieval, and no feedback. (≈ 5 sec for retrieval of each cue x 20 cues = 1.67 min). Put blank white box under "**Swahili,**" as shown below, and allow subjects to type their answers into this box.

English: Swahili:

Hewa

Total time to complete: 3 min for consent and instructions + Presentation phase (4.3 min) + [[Test phase (3.38 min) + Study phase (3.33 min)] x 3 = 12.9 min] + Final test (1.67 x 2 = 3.34 min) = 16.24 min.

Subjects: 40 UCSD undergrads.

Data: Keep track of the following for each individual subject:

- 1) Which word pairs were assigned to Test and Study Trials on Day 1
- 2) Which word pairs were assigned to Day 1 Test on Day 1
- 3) Accuracy of response for the 3 word pairs tested on the Day 1 Test
- 4) Accuracy of responses for the Final Test
 - Number of words correct that were assigned to Test Trials on Day 1 and Forward Test on Day 2.
 - Number of words correct that were assigned to Study Trials on Day 1 and Forward Test on Day 2.
 - Number of words correct that were assigned to Test Trials on Day 1 and Backward Test on Day 2.
 - Number of words correct that were assigned to Study Trials on Day 1 and Backward Test on Day 2.

Instructions:

Instructions 1:

In this experiment we are going to try and teach you some Swahili words. You will learn the meaning of several Swahili words by seeing them next to their English translations, as in the example below:

English: Swahili:

Sky

Hewa

The word pairs will be presented one at a time, for 6 seconds each. When you see each word pair, try to associate the Swahili word with the English word in order to remember them.

Press the spacebar to begin.

Instructions for Test and Study: (after all word pairs are presented)

Now things are going to get more interesting! We are going to present the word pairs again, only this time they will be presented differently.

For some of the word pairs, you will see both the English word and Swahili word again for 6 seconds. Again, we would like you to try and associate the Swahili word with the English word in order to remember them.

For other word pairs, you will see only the English word for 4 seconds (Sky: _____), and we would like you to try and remember the correct Swahili word that goes with it (Hewa). You do not have to type anything in. Just try to recall in your mind the correct Swahili word that goes with the English word. After the English word is presented alone for 4 seconds, the correct Swahili word will be presented for an additional 2 seconds, so you can see whether you remembered correctly.

At the end of today's Session, we will test your memory for 3 of these word pairs. You will be paid \$2.00 for each word pair you remember, so please try your best to learn ALL of the word pairs you are about to see.

Press the spacebar to begin.

Instructions before repeating Test and Study phase the second time:

Now we are going to show you the same word pairs again. If you see the **English and Swahili** words together, try to associate the Swahili word with the English word in order to remember them. If you see the **English word alone (Sky: _____)**, please try to remember the correct **Swahili** word that goes with it.

At the end of today's Session, we will test your memory for 3 of these word pairs. You will be paid \$2.00 for each word pair you remember, so please try your best to learn ALL of the word pairs you are about to see.

Instructions before repeating Test and Study phase the third time:

Now we are going to show you the same word pairs again, for one last time. If you see the **English and Swahili** words together, try to associate the Swahili word with the English word in order to remember them. If you see the **English word alone (Sky: _____)**, please try to remember the correct **Swahili** word that goes with it.

At the end of today's Session, we will test your memory for 3 of these word pairs. You will be paid \$2.00 for each word pair you remember, so please try your best to learn ALL of the word pairs you are about to see.

Instructions for Day 1 Test: (after Test and Study phases)

Now we will test your memory for 3 of the word pairs you just learned. On the next screen, you will see **an English** word by itself. Try to remember the **Swahili** word that goes with it, and type this word into the empty box.

Press the spacebar to begin.

Instructions for end of Day 1: (after Day 1 Test)

This completes Session 1. Please be sure to return at your scheduled time tomorrow to complete Session 2 and receive credit.

Instructions for final test: (Day 2)

Now we are going to quiz you over what you learned yesterday. For some of the word pairs, the **English** word will be presented, and we would like you to type in the correct **Swahili** word that goes with it.

For example, you will see **an English** word by itself like the one below:

English:	Swahili:
Sky	

For this **English** word, you would type in the correct **Swahili** word, which is **Hewa**. This is the same type of test you completed yesterday.

For other word pairs, you will receive a different type of test. The **Swahili** word will be presented, and we would like you to type in the correct **English** word that goes with it.

For example, you will see **a Swahili** word by itself like the one below:

English:	Swahili:
	Hewa

For this **Swahili** word, you would type in the correct **English** word, which is **Sky**.

You have unlimited time to complete this test. Although some of the words might be difficult to remember, please try your best, and enter a response even if you are uncertain.

Press the spacebar to begin.