

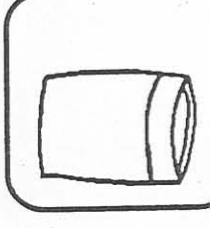
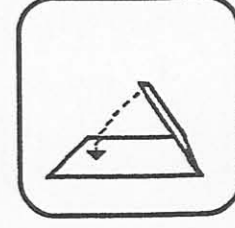
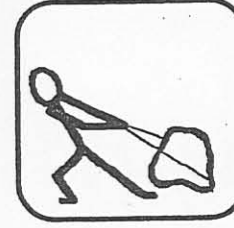
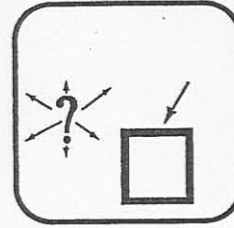
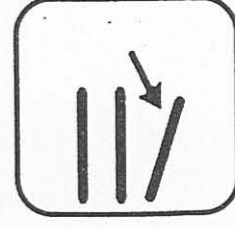
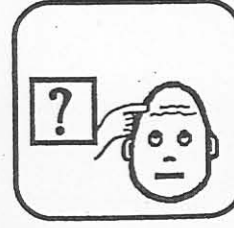
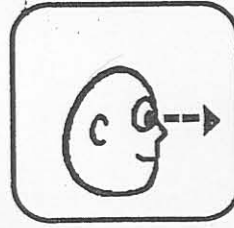
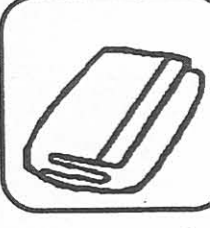
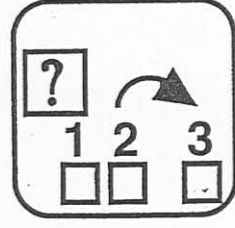
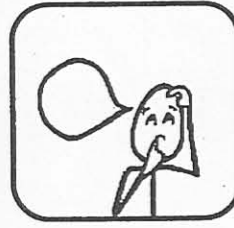
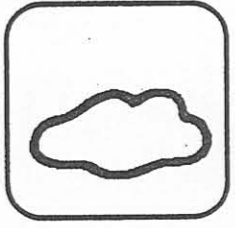
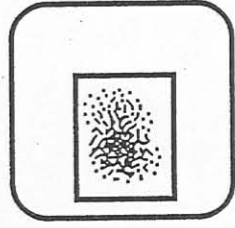
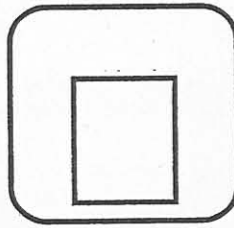
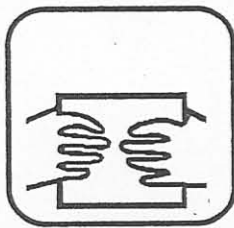
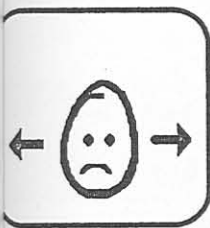
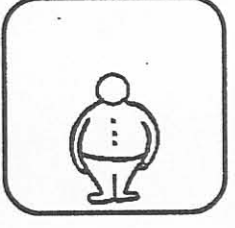
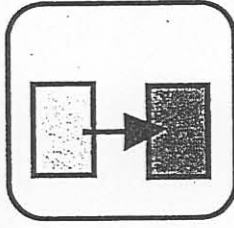
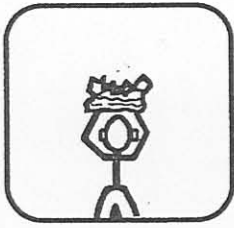
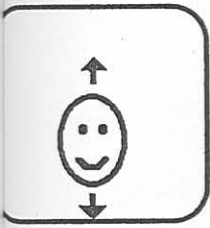
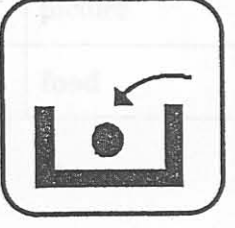
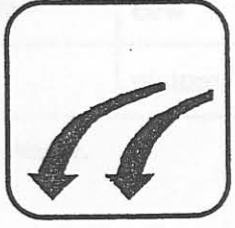
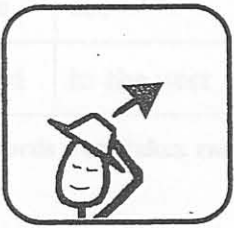
Appendix A: Communication overlay as used in the study

Numbers were randomly assigned as follows:

33	9	24	28	21	26
29	17	4	13	25	27
3	35	8	22	2	12
15	14	6	1	30	16
31	20	7	10	36	18
5	19	11	23	34	32

Appendix B: Training overlay to used in study

picture	ball	the crown	trash	perfect	picture
cloud	picture	why	is the hotel	picture	grandmother
eat	mother	teacher	pinch	morning	grass
play	picture	wake	empty	toes	rais



Appendix B: Training overlay as used in study

picture	ball	the crowd	brush	protect	picture
cloud	picture	ugly	in the kraal	picture	grandmother
goat	mothers	teacher	picture	morning	green
play	picture	woke	pretty	loosen	cake
home	see	want	picture	cow	picture
sinned	in the nest	picture	come	picture	food

The words were taken randomly from a grade one reader.

Appendix C: First, Second and Final Questions

English Word	First Question	Second Question	Final Question
What is a frog?	What is a frog?	What is a frog?	What is a frog?
What is a pair of glasses?	What is a pair of glasses?	What is a pair of glasses?	What is a pair of glasses?
What is a pair of scissors?	What is a pair of scissors?	What is a pair of scissors?	What is a pair of scissors?
What is a chair?	What is a chair?	What is a chair?	What is a chair?
What is a hand?	What is a hand?	What is a hand?	What is a hand?
What is a snake?	What is a snake?	What is a snake?	What is a snake?
What is a tree?	What is a tree?	What is a tree?	What is a tree?
What is a face?	What is a face?	What is a face?	What is a face?



ibhola

besixuku

xubha

vikela

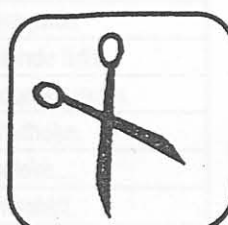


amafu



elibi

esibayeni

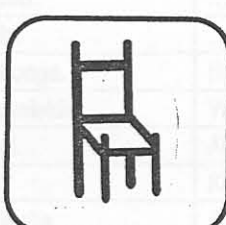


ukhulu

imbuzi

omama

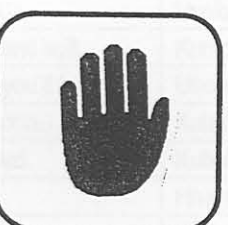
uthisha



ekuseni

oluhlaza

dlala



vukile

omuhle

xegisa

ikhekhe

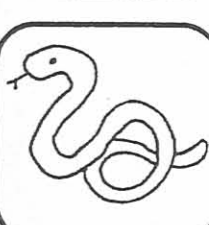
ekhaya

bona

ufuna



inkomo

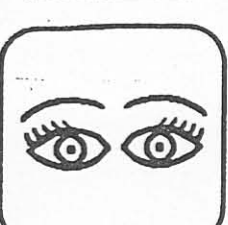


sonile

esidlekeni



woza



ukudla

Appendix C: First, Second and Final Consensus

English phrase	First Consensus	Second Consensus	Final Consensus
What a mess!	Kwaze kwangcola!	Kwaze kwangcola!	Kwaze kwangcola!
It looks like a bomb went off!	Sengathi kuqhume ibhomu!	Sengathi kuqhume ibhomu!	Sengathi kuqhume ibhomu!
It is dirty.	Kungcolile.	Kungcolile.	Kungcolile.
You need to change them.	Udinga ukuwashintsha.	Udinga ukuwashintsha.	Udinga ukuwashintsha.
Let us take it off.	Asikususe.	Asikususe.	Asikususe.
Help me, please.	Ngicela ungisize.	Ngicela ungisize.	Ngicela ungisize.
It is finished.	Kuphelile.	Kuphelile.	Kuphelile.
What is next?	Kulandelani?	Kulandelani?	Kulandelani?
Put it in the tub.	Faka kubhavu.	Faka kubhavu.	Faka kubhavu.
Let us make the bed.	Asendlale umbhede.	Asendlale umbhede.	Asendlale umbhede.
Hold this, please.	Ngicela ubambe lokhu.	Ngicela ubambe lokhu.	Ngicela ubambe lokhu.
You need to pull.	Udinga ukudonsa.	Udinga ukudonsa.	Udinga ukudonsa.
It is crooked.	Kugwegwile.	Kugwegwile.	Kugwegwile.
Let us do it again.	Asiphinde futhi.	Asiphinde futhi.	Asiphinde futhi.
Fold it back.	Kugoqele emuva.	Kugoqele emuva.	Kugoqele emuva.
Tuck it in.	Kushutheke.	Kushutheke.	Kushutheke.
Let us put on...	Maseleke...	Masendlale...	Maseleke...
...the sheets	...amashidi.	...amashidi.	...amashidi.
...the blanket	...ingubo.	...ingubo.	...ingubo.
...the pillowcase	...iphilo.	...iphilo.	...iphilo.
Thank you.	Ngiyabonga.	Ngiyabonga.	Ngiyabonga.
You are welcome.	Wamukelekile.	Wamukelekile.	Wamukelekile.
Let me...	Ake ngi...	Ake ngi...	Ake ngi...
Where is it?	Kuphi?	Kuphi?	Kuphi?
Put it here.	Beka lapha.	Beka lapha.	Beka lapha.
Puff it up.	Uvokomalise.	Khukhumalisa.	Khukhumalisa.
It is nice and soft.	Kuntofontofo.	Kuntofontofo.	Kuntofontofo.
What do you think?	Ubona kanjani?	Ubona kanjani?	Ubona kanjani?
It looks good.	Kubukeka kahle.	Kubukeka kahle.	Kubukeka kahle.
It looks bad.	Kubukeka kabi.	Kubukeka kabi.	Kubukeka kabi.
Whoops!	Hhayi bo!	We!	We!
Look at this.	Buka lokhu.	Buka lokhu.	Buka lokhu.
We forgot.	Sikhohliwe.	Sikhohliwe.	Sikhohliwe.
Yes.	Yebo.	Yebo.	Yebo.
No.	Cha.	Cha.	Cha.
It is nice and clean.	Kuhlanzeke kahle.	Kuhlanzeke kahle.	Kuhlanzeke kahle.

Appendix D: Test protocol

Test protocol in isiZulu

Basic instructions for training:

(research assistant augmented where necessary)

Sizodlala umdlalo ngamagama nangezithombe. Nansi-ke incwadi yalowo nalowo, kanye nepeni. Akesibheke ikhasi lokuqala. Ngizobala kawu-30 ngenkathi nibukisisa kahle amagama kanye nezithombe ezikuleli khasi, bukisisani kahle (time passes).

Siphelile isikhathi! Ibani nivula amapeni izivalo nizifake ngemuva, zishiyeni kanjalo izivalo nize niqede.

Lalela-ke: ngizosho igama elilodwa ngesikhathi. Cinga igama noma isithombe qede udwebe isiphambano egameni elihmbisana nalokho engikushoyo. Fihla umsebenzi wakho ukuze umakhelwani wakho engakopeli. Uzobhekisisa kahle esikweleni lelo gama noma isithome. Bekani uMiss Haupt. Kanje:

1. Elibi

Vula ikhasi elilandelayo

Umangithi 'OK', bhalani masinya ngoba sengizodlulela phambili. Yenzo isiphambano esisodwa ekhasisni.

2. Ukudla

OK, vula ikhasi elilandelayo

3. Umlilo

OK, vula ikhasi elilandelayo

Zama-ke manje nawe:

4. Sonile

OK, vula ikhasi elilandelayo

5. Isikele

OK, vula ikhasi elilandelayo

6. Isandla

OK, vula ikhasi elilandelayo

Precise instructions for test:

(research assistant read instructions strictly according to protocol)

Manje asibheke iphepha lesibili, kodwa-ke lona linezithombe zodwa. Ngizobala kawu-30 lapho wena ubukisisa kahle izithombe. Ningenzi lutho ngizonishela uma sekudinga nibhale (time passes).

Siphelile-ke isikhathi. Kulokhu-ke kunzinyana kunokokuqala, kanti futhi uzozenzela wedwa ngaphandle kosizo. Ngakho bukisisa kahle usiqonde futhi sihambisane nengizokusho. Buka isithombe ngasinye ngasinye ngaphambi kokukhetha. Fihla umsebenzi wakho ukuze umakhelwani wakho engakopeli. Sengizosho amagama-ke. Wena thola isithombe esihambisana negama engilishoyo bese udweba isiphambano ngepeni lakho ungubukeli komunye. Bheka kahle zonke izithombe ungakakhethi:

1. Kulandelani?

OK, phenya ikhasi

2. Kuntfontofo.

OK, phenya ikhasi

3. Cha.

OK, phenya ikhasi – page 4

- OK, phenya ikhasi
4. Udinga ukuwashintsha.
OK, phenya ikhasi
- OK, phenya ikhasi
5. We!
OK, phenya ikhasi
- OK, phenya ikhasi
6. Sikhohliwe.
OK, phenya ikhasi
- OK, phenya ikhasi
7. Ubona kanjani?
OK, phenya ikhasi – page 8
- OK, phenya ikhasi
8. Kuhlangezeka kahle.
OK, phenya ikhasi
9. Asikususe.
OK, phenya ikhasi
- OK, phenya ikhasi
10. Kugwegwile.
OK, phenya ikhasi
- OK, phenya ikhasi
11. Udinga ukudonsa.
OK, phenya ikhasi – page 12
- OK, phenya ikhasi
12. Faka kubhavu.
OK, phenya ikhasi
- OK, phenya ikhasi
13. Kuphelile.
OK, phenya ikhasi
- OK, phenya ikhasi
14. Asendlale umbhede.
OK, phenya ikhasi
- OK, phenya ikhasi
15. Ngiyabonga.
OK, phenya ikhasi – page 16
16. ...ingubo.
OK, phenya ikhasi
17. Maseleke...
OK, phenya ikhasi
18. ...amashidi.
OK, phenya ikhasi
19. Kuphi?
OK, phenya ikhasi – page 20
20. Buka lokhu.
OK, phenya ikhasi
21. Kushutheke.
OK, phenya ikhasi
22. Kungcolile.
OK, phenya ikhasi
23. Kugoqele emumva.
OK, phenya ikhasi – page 24
24. Ngicela ungisize.
OK, phenya ikhasi
25. Khukhumalisa.
OK, phenya ikhasi
26. Kwaze kwangcola!
OK, phenya ikhasi
27. Sengathi kuqhume ibhomu!
OK, phenya ikhasi – page 28
28. Asiphinde futhi.

OK, phenya ikhasi

29. Yebo.

OK, phenya ikhasi

30. Beka lapha.

OK, phenya ikhasi

31. Wamukelekile.

OK, phenya ikhasi – page 32

32. ...iphilo.

OK, phenya ikhasi

33. Ake ngi....

OK, phenya ikhasi

34. Kubukeka kabi.

OK, phenya ikhasi

35. Ngicela ubambe lokhu.

OK, phenya ikhasi – page ukugcina

36. Kubukeka kahle.

Ngibonga kakhulu! Bekumnandi. Nansi inkanyezi yakho. Unayo imibuzo? Uthisha wakho uzokuchazela ukuthi lezi zithombe zisetshenziselwani. Usuku oluhle

Prompts for use during test when necessary:

(Research assistant and researcher used these reminders in between test items when they saw fit. No more than one reminder was allowed between any two test items.)

1. Nenza kahle qhubekani.
2. Ningakopeli.
3. Khetha isithombe obona kuyisona esihambisana nengikushoyo.
4. Buka zonke izithombe kuqala unakhakhethi.
5. Ungasikhetha isithombe kabili uma ucabanga ukhuthi sihambisana nengikushoyo.

Test protocol in English

Basic instructions for training:

(research assistant augmented where necessary)

We are going to play a game with words and pictures. Here is a book and a pen for each one. Let us look at the first page. I will count to 30 while you look carefully at the words and pictures on this page. Look carefully! (time passes).

Time is up! Take the cap off your pen, put it at the back of your pen and leave it there until we have finished. Now listen: I am going to read one word at a time. Look on the paper for the word or picture that goes the best with the word I say, and draw a cross over it. Hide your work so that your neighbour cannot copy. Look carefully at every square. Look at Miss Haupt, like this:

1. ugly

Turn to the next page

When I say 'OK', you must quickly make a cross because time is running out.

2. food

OK, turn to the next page

3. fire

OK, turn to the next page

Now you try alone:

4. sinned

OK, turn to the next page

5. scissors

OK, turn to the next page

6. hand

OK, turn to the next page

Precise instructions for test:

(research assistant read instructions strictly according to protocol)

Let us now look at this page. It has pictures only. I am going to count up to 30 while you look carefully at all the pictures. Do not write anything until I tell you to. (time passes).

Time is up! This is a bit more difficult than the previous pages and you are going to work on your own. Therefore look very carefully before you choose the picture that goes the best with what I say. Look at each picture one by one before you choose. Hide your work so that your neighbour cannot copy. I will again say some words. You must find a picture that goes with the word I said, and draw a cross over it with your pen. Do not look at anyone else's work. Look at all the pictures carefully before you choose:

1. What is next?

OK, turn the page

2. It is nice and soft.

OK, turn the page

3. No.

OK, turn the page – page 4

4. You need to change them.

OK, turn the page

5. Whoops!
OK, turn the page

6. We forgot.
OK, turn the page

7. What do you think?
OK, turn the page – page 8

8. It is nice and clean.
OK, turn the page

9. Let us take it off.
OK, turn the page

10. It is crooked.
OK, turn the page

11. You need to pull.
OK, turn the page – page 12

12. Put it in the tub.
OK, turn the page

13. It is finished.
OK, turn the page

14. Let us make the bed.
OK, turn the page

15. Thank you.
OK, turn the page – page 16

16. ...blanket.
OK, turn the page

17. Let us put on...
OK, turn the page

18. ...the sheets.
OK, turn the page

19. Where is it?
OK, turn the page – page 20

20. Look at this.
OK, turn the page

21. Tuck it in.
OK, turn the page

22. It is dirty.
OK, turn the page

23. Fold it back.
OK, turn the page – page 24

24. Help me, please.
OK, turn the page

25. Puff it up.
OK, turn the page

26. What a mess!
OK, turn the page

27. It looks like a bomb went off!
OK, turn the page – page 28

28. Let us do it again.
OK, turn the page

29. Yes.

OK, turn the page

34. It looks bad.

OK, turn the page

30. Put it here.

OK, turn the page

35. Hold this, please.

OK, turn the page - last page

31. You are welcome.

OK, turn the page – page 32

37. It looks good.

32. ...pillow case.

OK, turn the page

Thank you very much! It was enjoyable. Here is a star for you. Does anyone have any questions? Your teacher will tell you how these pictures are used. Have a nice day.

33. Let me....

OK, turn the page

Reminders for use during test when necessary:

(Research assistant and researcher used these reminders in between test items when they saw fit. No more than one reminder was allowed between any two test items.)

1. You are doing well, keep it up.
2. Don't copy from your neighbour.
3. Choose the picture that goes with what I'm saying.
4. Look at all the pictures before you choose.
5. You can choose a picture twice if you think it goes with what I say.

Appendix E: Checklist for determining consistency across sessions

Name of the school:

Session number:

- Manje asibheke iphepha lesibili, kodwa-ke lona linezithombe zodwa.
- Ngizobala kawu-30 lapho wena ubukisisa kahle izithombe.
- Ningenzi lutho ngizonishela uma sekudinga nibhale.
- Siphelile-ke isikhathi. Kulokhu-ke kunzinyana kunokokuqala, kanti futhi uzozenzela wedwa ngaphandle kosizo.
- Ngakho bukisisa kahle usiqonde futhi sihambisane nengizokusho.
- Buka isithombe ngasinye ngasinye ngaphambi kokukhetha.
- Fihla umsebenzi wakho ukuze umakhelwani wakho engakopeli.
- Sengizosho amagama-ke.
- Wena thola isithombe esihambisana negama engilishoyo bese udweba isiphambano ngepeni lakho ungubukeli komunye.
- Bheka kahle zonke izithombe ungakakhethi

Appendix F: First translations

Nr	First translation by TR	First translation by WM	First translation by FC
1.	Kungcole kangaka!	Nansi inkanankana!	Hawu lobu hliphihliphi!
2.	Umshini!	Sengathi kuqhuma ibhomu!	Kubukeka njengebhomu liqhuma!
3.	Zingcolile.	Bangcolile.	Zingcolile.
4.	Udinga ukuzishintsha.	Thatha okunye.	Kufanele sibashintshe.
5.	Asikhumule lokhu.	Masikususe.	Asisuse lokhu.
6.	Ngicela ungisize.	Ngicela ungisize.	Ngicela ungisize.
7.	Kuphelile.	Ngiqedile.	Kuphelile.
8.	Kulandelani?	Yini elandelayo?	Ikuphi okulandelayo?
9.	Faka kubhavu.	Kufake kubhasikidi.	Faka kubhasikidi.
10.	Asindlule umbhede	Masendlule umbhede.	Asindlale umbhede.
11.	Awubambe lapha.	Ngicela ubambe lokhu.	Ngicela ubambe lapha.
12.	Udinga ukudonsa.	Kumelwe ukudonse	Kufanele udonse.
13.	Kuqobile.	Kugwegwile.	Kugwegwile.
14.	Asiphinde futhi.	Masiphinde sikwenze.	Asiphinde senze futhi.
15.	Kugoqe / kusonge futhi.	Kugoqe kuye emuva.	Kufanele ukugoqe ngemuva.
16.	Kushutheke.	Kumelwe ukushutheke.	Kufanele ushutheke phakathi.
17.	Asigqoke.../ Asimbathe.../ Asifake...	Masikubeke ngaphezulu...	Asibeke phezulu...
18.	...amashidi.	...kwamashidi.	...amashidi.
19.	...izingubo	...kwengubo.	...ingubo.
20.	...iphilo.	...kweziqamelo	...isikhwama somcamelo.
21.	Ngiyabonga.	Ngiyabonga.	Ngiyabonga.
22.	Wemukelekile.	Wamukelekile.	Umukelekile.
23.	Ngivumele	No translation	Ake ngi...
24.	Ikuphi?	Kuphi?	Ikuphi?
25.	Yibeke lapha.	Kubeke lapha.	Beka lapha.
26.	Yikhuluphalise.	Kumelwe ukunonise.	Kufanele ikhuluphaliswe.
27.	Ithambe kamnandi	Kuthambe kahle.	Imnandi futhi ithambile.
28.	Ucabangani?	Ubona kanjani?	Ucabangani?
29.	Ibukeka kahle.	Kubukeka kahle.	Kubukeka kahle.
30.	Ibukeka kabi.	Kubukeka kabi.	Kubukeka kabi.
31.	Ncinci	Nakhuya!	Hawu!
32.	Buka nje.	Buka lokhu.	Buka lokhu.
33.	Sikhohliwe / Silibele.	Sikhohliwe.	Sikhohliwe.
34.	Yebo	Yebo.	Yebo.
35.	Cha	Cha.	Cha.
36.	Kuhlangezke kahle.	Kuhlangezke kahle.	Kuhle futhi kuhlangezke.

Appendix G: Original and modified source phrases

Original source phrase	Modified source phrase
What a mess!	What a mess!
Looks like a bomb went off!	It looks like a bomb went off!
They're dirty.	It is dirty.
Need to change them.	You need to change them.
Let's take this off.	Let us take it off.
Help me, please.	Help me, please.
Finished.	It is finished.
What's next?	What is next?
Put it in the hamper.	Put it in the tub.
Let's get the bed made.	Let us make the bed.
Hold this, please.	Hold this, please.
Need to pull it.	You need to pull.
It's crooked.	It is crooked.
Let's do it again.	Let us do it again.
Have to fold it back.	Fold it back.
Got to tuck it in.	Tuck it in.
Let's put on...	Let us put on...
...the sheets	...the sheets
...the blanket	...the blanket
...the pillow case	...the pillow case
Thank you.	Thank you.
You're welcome.	You are welcome.
Let me.	Let me...
Where is it?	Where is it?
Put it here.	Put it here.
Have to make it fat.	Puff it up.
Nice and soft.	It is nice and soft.
What do you think?	What do you think?
Looks good.	It looks good.
Looks bad.	It looks bad.
Whoops!	Whoops!
Look at this.	Look at this.
We forgot.	We forgot.
Yes.	Yes.
No.	No.
Nice and clean.	It is nice and clean.

Appendix H: First back translations

* indicates where translator reported use of a dictionary.

Bold type marks problem phrases

Source	Translator 4	Translator 5	Translator 6
What a mess!	How dirty it has become!	My, it's dirty!	How dirty it has become!
It looks like a bomb went off!	It's as if a bomb has exploded!	It is as if a bom has exploded!	It is as if a bom has exploded!
It is dirty.	It is dirty / filthy.	It's dirty.	It is dirty.
You need to change them.	You need to change them.	You need to change them	You need to change them
Let us take it off.	Let us / you remove it.	Let us remove it	Let us remove it.
Help me, please.	Please help me.	Please help me?	Could you please help me?
It is finished.	It is finished / completed	It's finished.	It is finished
What is next?	What follows?	What follows / what comes next?	What is next?
Put it in the tub.	Put it in the bath.	Put it in the bath.	Put it in the bath.
Let us make the bed.	Let us make the bed.	Let's make the bed.	Let us make the bed.
Hold this, please.	Please hold this.	Please hold this.	Could you please hold this?
You need to pull.	You need to pull.	You need to pull.	You need to pull.
It is crooked.	It is crooked	It's crooked	It is crooked.
Let us do it again.	Let us repeat again	Let's do it again Let's try again.	Let us repeat it.
Fold it back.	Fold it back.	Fold it behind.	Fold it up at the back. / put it on top.
Tuck it in.	Put it inside / under.	Put it underneath / away.	Put it inside.
Let us put on...	?	?	*Let us cover it
...the sheets	...sheets	...sheets	...sheets
...the blanket	...blanket	...blanket / dress	...blanket / clothing
...the pillowcase	...pillow	...pillow	...pillow
Thank you.	Thank you..	Thank you.	Thank you
You are welcome.	You are accepted.	You are welcome	You are welcome.
Let me...	Let me	Let me.	Let me..
Where is it?	Where?	Where is it?	Where?
Put it here.	Put it here	Look here.	Put it here
Puff it up.	?	?	*Puff it up.
It is nice and soft.	It is soft.	It is comfortable	It is comfortable / soft
What do you think?	How do you see it? / What is your opinion?	How do you see it?	How do you see it?
It looks good.	It looks good.	It looks good.	It looks good.
It looks bad.	It looks bad.	It looks bad / terrible	It looks bad.
Whoops!	No! / uh oh!	Oh no! (not only in negative sense).	Exclamation of disapproval
Look at this.	Look at this	Look at this.	Look at this.
We forgot.	We have forgotten.	We forgot.	We forgot.
Yes.	Yes.	Yes.	Yes.
No.	No.	No.	No.
It is nice and clean.	Clean it well.	It's nice and clean.	It is nicely clean

Appendix I: Second back translations

Source	Translator 7	Translator 8
What a mess!	What a mess!	It is now dirty!
It looks like a bomb went off!	It looks like a bomb has exploded!	It seems like a bomb explosion.
It is dirty.	It is dirty.	It is dirty.
You need to change them.	You need to change them.	You need to change them.
Let us take it off.	Let us remove it.	Let us take it away.
Help me, please.	Please help me.	Please help me.
It is finished.	It is finished.	It is finished.
What is next?	What is next?	What is next?
Put it in the tub.	Put in the tub.	Put it in the bath.
Let us make the bed.	Let us make the bed.	Let us make the bed.
Hold this, please.	Please hold this.	Please hold this.
You need to pull.	You need to pull.	You need to pull.
It is crooked.	It is skew / cooked.	It is crooked.
Let us do it again.	Let us repeat again.	Let us repeat it.
Fold it back.	Roll it backwards.	Fold it toward the back.
Tuck it in.	Push it in.	Put it in.
Let us put on...	Let us pile... / Let us cover (smth) with...	Let us put...
...the sheets	...the sheets	...the sheets
...the blanket	...a blanket / rug	...blanket
...the pillowcase	...the pillowcase	...pillowcase
Thank you.	Thank you.	Thanks.
You are welcome.	You are welcome.	You are welcome.
Let me...	Let me...	Let me...
Where is it?	Where?	Where?
Put it here.	Put it here.	Put it here.
Puff it up.	Rise.	Make it rise up.
It is nice and soft.	It is soft.	It is soft.
What do you think?	What do you say? / What is your opinion?	How do you see it?
It looks good.	It looks nice / wonderful.	It looks good.
It looks bad.	It looks bad / disgusting.	It looks bad.
Whoops!	(of contempt / surprise / denial)	Wow!
Look at this.	Look at this.	Look at this.
We forgot.	We forgot.	We have forgotten.
Yes.	Yes.	Yes.
No.	No.	No.
It is nice and clean.	It is scrupulously clean.	It is well cleaned.

Appendix J: Letter to Kwazulu-Natal Department of Education and Culture

Mr V. J. Dumakude
SEM: Kranskop East Circuit
The Lodge
116 Loop Street
Pietermaritzburg
3201
19 May 2001

Mr. Dumakude

Research into the iconicity of symbols

I am a part-time student at the University of Pretoria and I am busy with my Masters studies in the field of Alternative and Augmentative Communication. This is a branch of speech therapy where people who are severely disabled and cannot learn to speak or take long to do so, are provided with alternative means of communication. One strategy would be to make a communication board containing picture-like symbols to represent ideas. The individual then points to these pictures to indicate what he or she wants to communicate.

The iconicity of a symbol is the degree to which the symbol visually represents its referent. If a symbol is highly iconic, it is easy for individuals to learn to use it. Most of the symbol sets currently in use in South Africa were developed in the United States of America. This is a dilemma since iconicity is culture bound: people from different cultures will view the same symbol differently. We therefore cannot simply use the American symbols without taking into account the many different cultures in our country.

I am planning to investigate the iconicity of a certain set of symbols, the Picture Communication Symbols, for Zulu speaking children aged ten.

Herewith I ask permission to conduct the research in certain primary schools in the Kranskop area. All information gathered in the process will be seen as confidential, and the results of the study would be available to you if you so wish.

Thank you for your time

Lize Haupt

Appendix K: Letter to judges

Dear

Thank you very much for being prepared to help me with my study. I want to assure you from the outset that all information gathered by me will be treated confidentially and that you will not be identified in any publication.

I am studying the iconicity of certain communication symbols for rural Zulu children. Iconicity is the degree to which a symbol visually represents its referent. I am planning to show 36 line drawings on a communication overlay to each child, say the labels for the pictures in isiZulu and have the child point to the drawing he / she thinks represents each phrase the best.

I would like to make sure that all the drawings on the communication overlay represent concepts that will not be foreign to a rural Zulu child. Therefore I need you to examine communication overlays to tell me which of the 36 concepts or ideas on each overlay might be foreign to such a child. The children who will be tested all live in the area of Kranskop. So please try to judge the overlays with ten-year-olds from the Kranskop area in mind.

I have included five sets of phrases and a questionnaire with this letter. Please fill in the questionnaire before you start. Then look at the 36 concepts contained in each set individually, and decide whether you think a rural Zulu child, aged ten, will know it. Please mark all the concepts that you think will be foreign. The aim is to find one overlay that contains no foreign concepts at all.

Two other isiZulu speakers are also helping me with this. When all three of you have finished we will come together and briefly discuss your findings. In that meeting we will choose one overlay that all agree has got no foreign concepts.

Thank you very much for your willingness!

Regards

Lize Haupt

Appendix L: Letter to first translators

Dear

Thank you very much for your willingness to participate in my study. I want to assure you from the outset that all information gathered by me will be treated confidentially.

I am studying the iconicity of certain communication symbols for rural Zulu children. Iconicity is the degree to which a symbol visually represents its referent. I am planning to show 36 line drawings on a communication overlay to children, say the labels for the pictures in isiZulu and have each child point to the drawing he / she thinks represents each word the best.

I have included the 36 concepts that are represented on the communication overlay, as well as a questionnaire with this letter. Please fill in the questionnaire before you start translation. While translating the concepts please keep in mind that your audience will be ten-year-old rural isiZulu-speaking children from the Kranskop area. I will have a Zulu research assistant who will read the phrases.

A panel of three translators, including yourself, will do the first translation into isiZulu. The translators will work independently, but a meeting might be necessary to discuss discrepancies between translations should they occur. I can only accept a translation if all three translators agree on it. Please do not consult with any of the other translators, however, during the first translation.

Then all 36 concepts will be translated back into English by another panel of three translators. This is to see whether the translation into isiZulu is indeed valid. If some discrepancies occur here, both panels of translators will have to meet. Otherwise, the translation will be accepted.

Therefore once you have finished, please let me know so that I can collect the translation and compare it to that of the other translators. I will let you know as soon as possible whether a meeting will be necessary.

Thanks once again for your support!

Regards

Lize Haupt

Appendix M: Letter to second and third translators

Appendix M: Summary of results of phase two of Pilot Study

Dear

Thank you very much for your willingness to participate in my study. I want to assure you from the outset that all information gathered by me will be treated confidentially.

I am studying the iconicity of certain communication symbols for rural Zulu children. Iconicity is the degree to which a symbol visually represents its referent. I am planning to show 36 line drawings on a communication overlay to children, say the labels for the pictures in isiZulu and have each child point to the drawing he / she thinks represents each word the best.

A panel of three translators translated the 36 phrases into isiZulu. Next, all 36 concepts need to be translated back into English by a second panel of three translators, including yourself. This is to see whether the translation into isiZulu is indeed valid. If some discrepancies occur here, both panels of translators will have to meet. Otherwise, the isiZulu translation will be accepted.

I have included the 36 isiZulu phrases, as well as a questionnaire with this letter. Please fill in the questionnaire before you start translation. Then translate all the phrases to English.

Once you have finished, please let me know so that I can collect the translation and compare it to that of the other translators. I will let you know as soon as possible whether a meeting will be necessary.

Thanks once again for your support!

Regards

Lize Haupt

Appendix N: Summary of results of phase two of Pilot Study

Question	Correct		Popular error 1		Popular error 2		Others	
	Sess 1 %	Sess 2 %	Sess 1 %	Sess 2 %	Sess 1 %	Sess 2 %	Sess 1 %	Sess 2 %
1	20	20	40	10	20	20	20	50
2	10	30	20	20	30	10	40	40
3	0	20	50	40	10	20	40	20
4	10	20	50	30	10	10	30	40
5	50	50	30	20	0	10	20	20
6	20	30	30	20	20	20	30	30
7	10	0	30	20	30	20	30	60
8	40	50	10	10	10	10	40	30
9	0	0	40	50	20	20	40	30
10	20	20	30	20	20	20	30	40
11	80	90	10	0	0	10	10	0
12	70	70	20	20	10	10	0	0
13	20	20	60	50	10	20	10	10
14	90	100	10	0	0	0	0	0
15	10	30	60	50	10	0	20	20
16	50	60	10	20	10	10	30	10
17	0	0	40	50	40	40	20	10
18	0	0	40	20	20	30	40	50
19	0	0	30	50	0	30	70	20
20	70	60	10	20	10	10	10	10
21	0	10	30	10	20	20	50	60
22	70	50	10	10	10	10	10	30
23	30	20	20	20	20	20	30	40
24	20	10	30	20	10	20	40	50
25	40	50	10	20	10	10	40	20
26	40	40	20	20	20	10	20	30
27	60	70	10	10	10	0	20	20
28	0	0	20	20	10	20	70	60
29	40	70	20	0	10	10	30	20
30	0	0	50	0	10	10	40	90
31	40	50	20	10	10	10	30	30
32	80	70	10	10	10	10	0	10
33	0	0	30	30	20	20	50	50
34	20	10	10	30	20	10	50	50
35	10	20	10	30	10	10	70	40
36	0	0	40	50	20	10	40	40

Appendix O: Information to Teachers

Dear Teacher

The children in your class viewed a collection of line drawings today. These are used as a means of communication by people who cannot use functional speech.

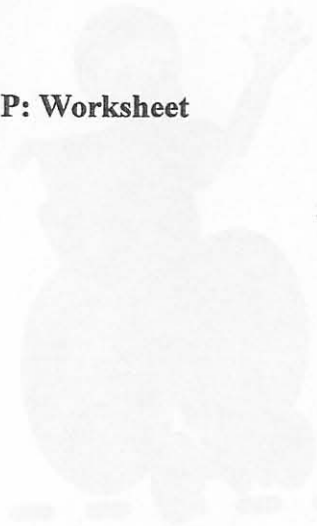
There are many people who, for various reasons, cannot speak. Some of the causes include lack of oxygen during birth, brain damage sustained in accidents, or strokes in older people. The lack of speech is not a disease or illness that you can 'catch' like the flu. It can happen to any person regardless of gender, race or social background. Therefore it is unnecessary to be scared or ashamed of people who cannot speak.

With the new policy of inclusion in South Africa it can happen that you have children with this problem in your class one day. It is very important that our children learn about disability and how to communicate with other children with disabilities. This worksheet was designed to introduce the children in your class to people with no speech.

Please explain to your children that these line drawings they saw today are only one of the options available to people who cannot speak. There are many more, like sign language and computers with voice output, where the computer 'speaks' when you press a button. All of these methods are collectively called Alternative and Augmentative Communication.

There is a centre in Pretoria where people who cannot speak are helped to find the best alternative means of communication. Please explain to your children that they can phone the numbers on the worksheet if they have family members who cannot speak or communicate in any other way.

Appendix P: Worksheet



My name is
Wanda. As you can
see, I cannot walk -
but because you I
speak with my
hands I will tell
that way. I am
now taking some
lessons going to
school and my
friends say I tell the
best jokes.

There are some
people who, like me,
cannot speak with
their mouths. Some
of them use their
hands to speak.
I use pictures - as I
cannot see you I
speak pictures
language.

Circle the tick if the sentence is true, and the cross if the sentence is not true.

Wanda is stupid.

I would like to speak to Wanda.

Wanda must be a boring friend.

When Wanda comes into our class,
she can sit next to me.

How would you feel if you could
not speak? Colour in the face
that tells.



Here is something you can do to feel
what it must feel like: wrap your
fingers in toilet paper, grab your
tongue, and greet someone!

How would
you like to
speak picture
language?
Colour in the
face that
tells.



Girls

Thanks

If you know any person who finds it
difficult to speak, you can phone
(02) 426 4756 or (02) 420 2092 for
more information.



Hi! My name is Ntando. As you can see, I cannot walk – but neither can I speak with my mouth! I was born that way. I am nevertheless clever. I enjoy going to school and my friends say I tell the best jokes!

There are many people who, like me, cannot speak with their mouths. Some of them use their hands to speak. I use pictures – so I suppose one can say I speak picture language!

Circle the tick if the sentence is true, and the cross if the sentence is not true.

Ntando is stupid.

I would like to speak to Ntando.

Ntando must be a boring friend.

When Ntando comes into our class, she can sit next to me

How would you feel if you could not speak? Colour in the face that tells.



Here is something you can do to feel what it must feel like: wrap your fingers in toilet paper, grab your tongue, and greet someone!

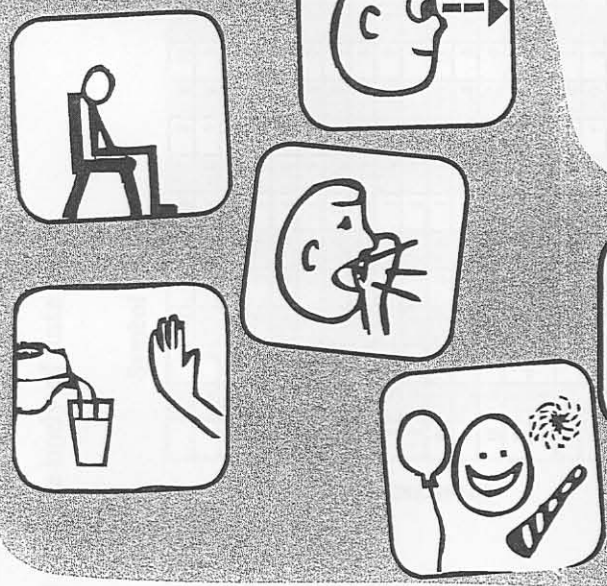
How would you like to speak picture language? Colour in the face that tells.



Try to tell your friend a joke using only your hands!



Use these pictures to speak to your friend.



Two of the squares are blank. Draw your own pictures there that will go with the words.

Gifts

Thanks

If you know any person who finds it difficult to speak, you can phone (012) 420 4728 or (012) 420 2001 for more information.

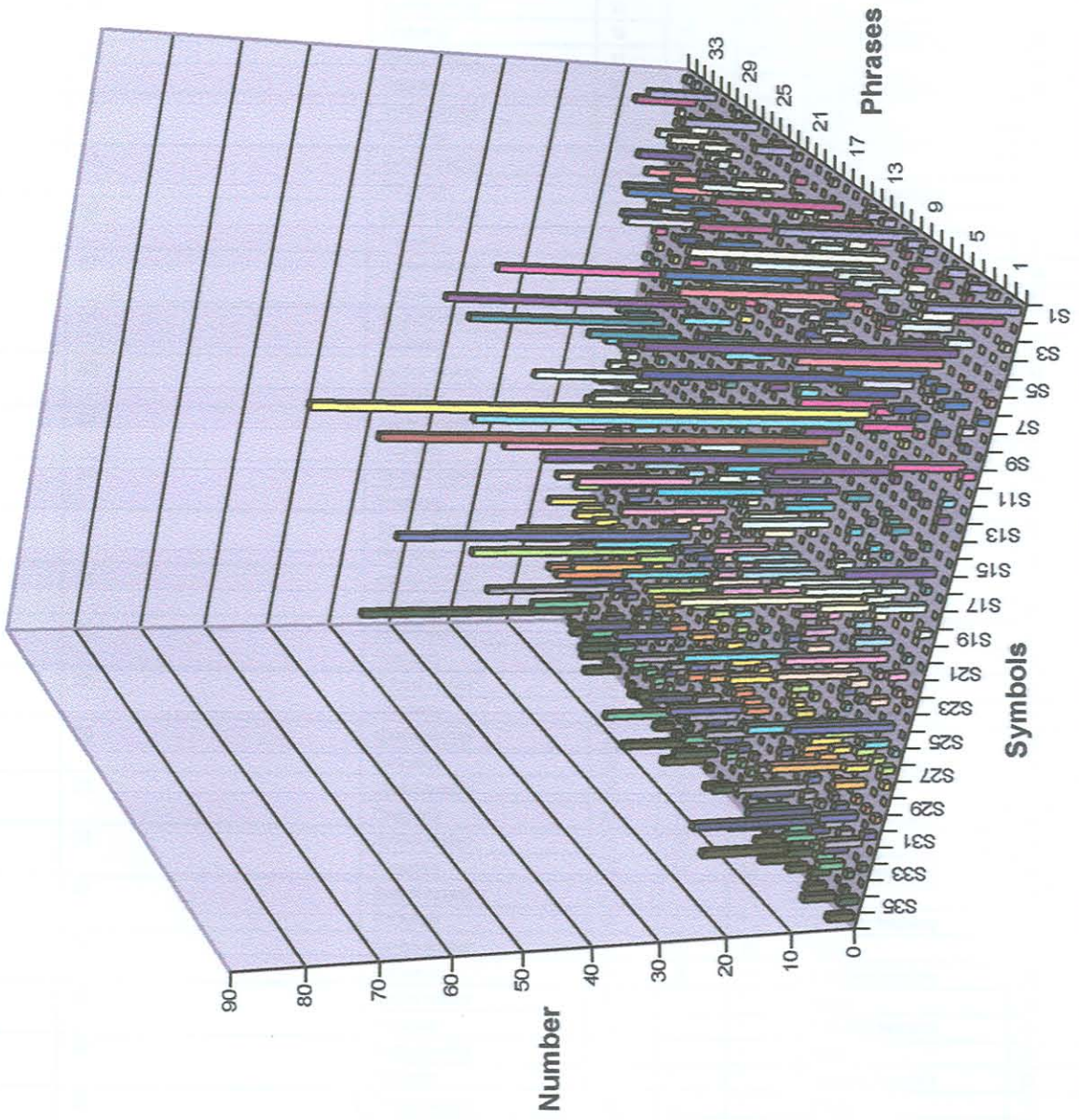
Appendix Q: Entire body of data

Symbol number

Symbol number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
1	14	0	1	3	1	3	0	0	2	3	21	0	2	3	1	0	0	0	1	0	0	0	1	6	2	0	0	12	1	1	0	0	11	0	1	1			
2	0	7	0	0	1	0	2	0	3	0	1	0	3	28	8	2	0	20	0	0	0	2	0	0	0	0	0	0	0	0	1	2	0	0	10	3	2		
3	1	0	0	0	7	5	1	1	3	1	0	0	30	0	3	0	0	0	2	3	0	1	0	8	0	1	0	0	1	0	2	5	9	0	3	4	0	1	3
4	0	0	0	4	0	8	5	1	1	0	4	6	7	19	0	1	4	4	1	2	0	1	0	0	2	10	0	0	1	2	2	1	2	1	2	1	5	0	4
5	0	0	0	0	46	7	1	0	5	0	1	0	6	1	8	0	1	0	1	0	0	0	0	0	0	0	0	0	2	3	0	0	9	0	1	5	0	6	
6	1	0	1	0	0	22	12	0	0	0	2	1	1	3	27	0	2	0	1	1	0	0	0	0	0	1	1	0	0	0	7	0	4	7	0	0	6		
7	2	0	4	0	2	2	13	0	2	0	0	0	0	0	4	0	1	0	0	22	0	0	0	0	0	7	0	0	0	2	4	6	0	11	10	1	1	7	
8	0	2	0	0	1	1	0	8	0	0	1	18	2	4	4	2	3	6	0	0	0	11	0	2	2	3	1	0	0	0	13	0	5	1	4	0	8		
9	0	1	0	2	0	2	4	0	8	3	36	1	4	7	2	0	3	0	0	1	0	0	2	1	0	0	1	0	0	2	4	0	0	0	8	2	9		
10	2	11	0	0	0	1	8	0	3	13	1	0	3	1	0	1	1	0	0	0	1	0	1	2	3	0	0	36	0	3	1	0	0	0	2	0	10		
11	0	0	0	0	0	0	1	0	3	0	81	0	0	0	0	0	0	0	0	0	1	0	0	2	0	1	0	0	1	1	0	0	0	2	0	0	11		
12	0	2	0	0	0	0	0	0	0	0	57	0	1	0	3	2	0	0	0	0	8	1	8	0	8	0	0	0	0	0	0	0	0	0	1	1	0	1	12
13	0	2	0	1	1	0	1	18	0	0	0	0	6	0	1	0	0	0	3	1	0	0	2	5	0	5	0	0	1	1	39	5	0	0	0	1	13		
14	0	0	0	0	0	0	0	0	0	0	0	0	0	67	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14		
15	0	0	0	1	0	3	2	1	0	4	0	0	3	2	11	0	2	0	4	0	0	4	0	2	0	0	2	0	0	1	15	0	32	5	5	0	15		
16	0	14	0	1	0	0	1	0	0	1	0	0	11	0	9	1	40	4	2	0	0	2	0	0	0	1	0	0	0	0	0	8	0	0	0	0	16		
17	0	1	0	0	0	1	2	0	2	0	0	8	4	25	0	1	10	16	2	2	1	1	1	1	0	1	0	1	0	1	1	0	1	0	0	6	1	17	
18	0	8	0	4	0	0	1	1	0	0	0	14	1	5	0	18	3	5	0	0	0	7	1	0	0	1	0	0	0	0	0	21	1	0	2	1	18		
19	2	0	1	2	4	12	14	0	3	1	0	0	1	0	8	0	0	0	0	6	0	0	0	1	1	0	0	0	3	7	12	0	3	8	2	3	19		
20	0	0	0	0	2	9	29	0	5	0	0	0	0	0	5	0	1	0	2	5	3	0	1	0	1	0	1	0	0	2	13	0	10	0	1	4	20		
21	0	1	0	6	1	3	1	1	10	0	0	12	8	10	2	0	3	0	1	1	1	0	3	1	3	9	0	1	0	0	4	3	1	0	3	4	21		
22	0	3	0	16	0	2	0	0	2	1	0	7	3	1	0	0	9	0	1	1	0	17	1	1	0	19	1	0	0	3	0	0	2	0	0	2	22		
23	1	1	0	1	0	4	0	0	5	1	3	0	3	11	1	9	4	0	1	1	2	0	3	0	2	4	0	0	1	9	15	0	7	1	2	24			
24	0	0	3	0	13	3	0	4	0	2	0	0	1	14	0	0	3	0	0	2	0	0	3	4	0	47	2	2	0	0	1	9	15	0	7	1	25		
25	0	16	0	0	1	2	0	0	0	1	2	1	0	0	0	1	0	8	0	0	1	2	0	3	0	2	2	0	0	1	0	2	0	1	2	26			
26	1	4	0	19	0	1	0	0	0	0	18	0	0	0	1	0	3	1	1	2	2	14	0	1	2	14	4	0	0	1	2	0	0	1	0	1	26		
27	2	2	3	1	5	8	1	0	1	3	0	1	0	0	1	2	0	3	5	1	10	1	10	1	0	0	6	32	0	0	0	1	0	1	0	1	27		
28	1	0	4	0	3	5	4	0	3	2	1	0	8	2	5	2	3	0	1	2	0	2	4	5	1	1	2	1	2	5	0	2	4	6	4	8	28		
29	0	5	0	12	3	4	0	6	0	0	0	0	0	0	8	0	0	0	1	4	0	0	0	5	4	0	0	0	12	2	5	0	7	15	0	1	29		
30	1	1	0	1	0	1	0	5	2	1	0	1	0	4	3	2	8	0	4	1	1	0	3	1	1	1	1	1	0	0	13	13	1	3	3	13	2	30	
31	2	0	6	2	1	0	2	1	0	2	0	4	0	13	1	1	0	0	3	3	0	1	10	3	1	10	3	1	2	0	3	9	0	4	5	11	2	31	
32	0	6	2	3	0	1	2	11	0	5	0	0	0	8	0	8	3	4	1	0	0	3	8	0	1	1	2	1	0	0	1	21	0	1	0	1	32		
33	1	0	4	0	3	20	10	0	7	2	0	0	1	2	4	0	3	0	1	8	0	1	2	0	1	0	1	0	1	0	8	3	1	0	3	6	0	2	33
34	0	1	4	3	2	5	3	4	6	0	0	1	1	1	2	0	6	1	0	15	2	1	2	2	3	3	1	5	2	0	1	10	1	1	2	34			
35	3	1	0	3	0	4	2	0	9	2	1	0	6	0	0	0	7	0	0	1	0	0	4	0	0	0	0	1	0	0	6	4	0	0	0	37	2	35	
36	4	0	5	3	1	3	6	14	4	1	0	0	0	4	0	1	7	2	11	1	3	1	2	1	2	1	2	1	4	2	1	2	1	2	1	0	36		

Presentation number

The iconicity value for each symbol is denoted in bold.



Appendix R: Analysis of error patterns per label

Presentation number	Frequency of incorrect responses	Breakdown of incorrect responses chosen by more than ten participants				Remainder of incorrect responses	
		Symbol number	11	28	33	Range	
1	77	Frequency	21	12	11	Collective frequency	33
		Symbol number	14	18	35	Range	11
2	86	Frequency	28	20	10	Collective frequency	28
		Symbol number	13	*	*	Range	19
3	91	Frequency	30	*	*	Collective frequency	61
		Symbol number	14	26	*	Range	21
4	90	Frequency	19	10	*	Collective frequency	61
		Symbol number	*	*	*	Range	14
5	48	Frequency	*	*	*	Collective frequency	48
		Symbol number	15	7	*	Range	14
6	72	Frequency	27	12	*	Collective frequency	33
		Symbol number	20	33	34	Range	13
7	81	Frequency	22	11	10	Collective frequency	38
		Symbol number	12	31	22	Range	17
8	86	Frequency	18	13	11	Collective frequency	44
		Symbol number	11	*	*	Range	18
9	86	Frequency	36	*	*	Collective frequency	50
		Symbol number	28	2	*	Range	16
10	81	Frequency	36	11	*	Collective frequency	34
		Symbol number	*	*	*	Range	10
11	13	Frequency	*	*	*	Collective frequency	13
		Symbol number	*	*	*	Range	11
12	37	Frequency	*	*	*	Collective frequency	37
		Symbol number	31	8	*	Range	14
13	87	Frequency	39	18	*	Collective frequency	30
		Symbol number	18	*	*	Range	*
14	24	Frequency	24	*	*	Collective frequency	*
		Symbol number	33	31	*	Range	14
15	83	Frequency	32	15	*	Collective frequency	36
		Symbol number	2	12	*	Range	9
16	54	Frequency	14	11	*	Collective frequency	29
		Symbol number	14	18	*	Range	20
17	84	Frequency	25	16	*	Collective frequency	43
		Symbol number	32	16	12	Range	13
18	89	Frequency	21	18	14	Collective frequency	36
		Symbol number	7	31	6	Range	17
19	94	Frequency	14	12	12	Collective frequency	56
		Symbol number	7	31	33	Range	12
20	88	Frequency	29	13	10	Collective frequency	36
		Symbol number	12	9	14	Range	22
21	93	Frequency	12	10	10	Collective frequency	61
		Symbol number	26	4	*	Range	16
22	76	Frequency	19	16	*	Collective frequency	41
		Symbol number	33	14	*	Range	21
23	91	Frequency	22	11	*	Collective frequency	58
		Symbol number	31	15	6	Range	15
24	92	Frequency	15	14	13	Collective frequency	50
		Symbol number	2	*	*	Range	15
25	47	Frequency	16	*	*	Collective frequency	31
		Symbol number	4	12	22	Range	16
26	79	Frequency	19	18	14	Collective frequency	28
		Symbol number	22	*	*	Range	20
27	62	Frequency	10	*	*	Collective frequency	52
		Symbol number	*	*	*	Range	28
28	92	Frequency	*	*	*	Collective frequency	92
		Symbol number	34	5	*	Range	13
29	82	Frequency	15	12	*	Collective frequency	55
		Symbol number	31	35	*	Range	25
30	81	Frequency	13	13	*	Collective frequency	55
		Symbol number	15	35	24	Range	21
31	85	Frequency	13	11	10	Collective frequency	51
		Symbol number	8	*	*	Range	20
32	73	Frequency	11	*	*	Collective frequency	62

33	91	Symbol number	6	7	*	Range	20
		Frequency	20	10	*	Collective frequency	61
34	84	Symbol number	20	*	*	Range	28
		Frequency	15	*	*	Collective frequency	69
35	57	Symbol number	*	*	*	Range	17
		Frequency	*	*	*	Collective frequency	57
36	94	Symbol number	8	20	*	Range	26
		Frequency	14	11	*	Collective frequency	69