

## Appendix A – Stimulus sentences

Target words (short/long) appear in capitals following by stimulus sentences in the following order: (a) short word test stimuli (Experiments 1 and 2), (b) long word test stimuli (Experiments 1 and 2), (c) short word control prime stimuli (Experiment 2), (d) long word control prime stimuli (Experiment 2), (e) short word test prime with mismatching continuation (Experiments 3 and 4). Critical words are emphasised.

### 1. ANT/ANTLER

- a. It is because the **ant** lived under the rocks that it survived the explosion.
- b. It is because the **antler** is fully grown that you can tell the deer is male.
- c. It is because the **horn** was so loud that we all jumped.
- d. It is because the **trumpet** was so loud that we all jumped.
- e. It is because the **ant** found its way into the kitchen that we had to fumigate.

### 2. BAN/BANDAGE

- a. Mike explained that the **ban** dates from the late 1930s.
- b. Mike explained that the **bandage** was very tight in order to stop the bleeding.
- c. Mike explained that the **arch** had been built by the Romans.
- d. Mike explained that the **cabbage** always tasted horrible.
- e. Mike explained that the **ban** solved the drinking problem.

### 3. BILL/BUILDING

- a. It was agreed that the **bill** doesn't have to be paid immediately.
- b. It was agreed that the **building** doesn't have to be pulled down immediately.
- c. It was agreed that the **name** of the ship would be the Titanic.
- d. It was agreed that the **program** me was hardly worth watching.
- e. It was agreed that the **bill** for food should be paid immediately.

### 4. BOWL/BOULDER

- a. We were lucky that the **bowl** didn't break when it hit the floor.
- b. We were lucky that the **boulder** didn't crush us to death when it rolled down the hillside.
- c. We were lucky that the **rope** didn't break with our combined weight.
- d. We were lucky that the **hammer** was kept in the toolbox.
- e. We were lucky that the **bowl** matched the one that we'd broken earlier.

## 5. BRAN/BRANDY

- a. Susan claimed that the **bran** didn't taste nearly so bad.
- b. Susan claimed that the **brandy** tasted much nicer.
- c. Susan claimed that the **chrome** would never tarnish.
- d. Susan claimed that the **cupboard** was much cheaper in the sale.
- e. Susan claimed that the **bran** tasted much nicer.

## 6. CAN/CANTEEN

- a. Opening the **can** takes a long time with a rusty penknife.
- b. Opening the **canteen** was the cooks first job in the morning.
- c. Opening the **barn** let the sheep out into the field.
- d. Opening the **hostel** on a Sunday was a good idea.
- e. Opening the **can** shouldn't take long with the right tool.

## 7. CAP/CAPTAIN

- a. The soldier saluted the flag with his **cap** tucked under his arm.
- b. The soldier saluted the flag with his **captain** looking on.
- c. The soldier saluted the flag with his **palm** facing forwards.
- d. The soldier saluted the flag with his **rifle** by his side.
- e. The soldier saluted the flag with his **cap** looking slightly crumpled

## 8. CHAP/CHAPLAIN

- a. During the speech, the **chap** laughed at all the jokes.
- b. During the speech, the **chaplain** started snoring really loudly.
- c. During the speech, the **hum** died down.
- d. During the speech, the **platform** started creaking alarmingly.
- e. During the speech, the **chap** shut his eyes and went to sleep.

## 9. CREW/CRUSADE

- a. It was unfortunate that the **crew** celebrated their victory so loudly.
- b. It was unfortunate that the **crusade** was so violent.
- c. It was unfortunate that the **fog** was so thick.
- d. It was unfortunate that the **garage** was closed at weekends.
- e. It was unfortunate that the **crew** veered into the bank at the start of the race.

## 10. CROW/CROQUET

- a. After the lawn was mowed the **crow** could continue looking for food.
- b. After the lawn was mowed the **croquet** match could begin.

- c. After the lawn was mowed the **weeds** could be seen more clearly than ever.
- d. After the lawn was mowed the **picnic** could take place.
- e. After the lawn was mowed the **crow** gave up looking for worms.

#### 11. CRY/CRISIS

- a. Everyone was worried as the **cry** seemed to come from the attic.
- b. Everyone was worried as the **crisis** was getting worse by the minute.
- c. Everyone was worried as the **exam** was much harder than expected.
- d. Everyone was worried as the **engine** had started making loud noises.
- e. Everyone was worried as the **cry** didn't sound like it came from the TV.

#### 12. DEN/DENTIST

- a. At the end of a hard day, the **den** tends to be the place I choose to relax.
- b. At the end of a hard day, the **dentist** needed somewhere to relax.
- c. At the end of a hard day, the **chores** are the last thing I want to do.
- d. At the end of a hard day, the **washing** up is the last thing I want to do.
- e. At the end of a hard day, the **den** should be an ideal place to relax.

#### 13. DOCK/DOCTOR

- a. On Saturdays the **dock** teemed with people.
- b. On Saturdays the **doctor** was always very busy.
- c. On Saturdays the **ducks** are usually very well fed.
- d. On Saturdays the **circus** is fully booked.
- e. On Saturdays the **dock** should be fairly quiet.

#### 14. DOLL/DOLPHIN

- a. The children thought the **doll** felt softer than usual.
- b. The children thought the **dolphin** was beautiful.
- c. The children thought the **clown** was very funny.
- d. The children thought the **museum** was very boring.
- e. The children thought the **doll** could be fun to play with.

#### 15. FAN/FANCY

- a. Everyone agreed that the **fan** suited Catherine's new outfit.
- b. Everyone agreed that the **fancy** clothes suited Catherine.
- c. Everyone agreed that the **bait** should be suitable for catching rats.
- d. Everyone agreed that the **rations** were inadequate for adults.
- e. Everyone agreed that the **fan** should be left on during the afternoon.

## 16. GIN/GINGER

- a. A splash of **gin** just about makes the drink perfect.
- b. A splash of **ginger** makes whiskey taste really good.
- c. A splash of **soup** ruined my outfit.
- d. A splash of **curry** ruined my outfit.
- e. A splash of **gin** tastes really good with ice and lemon.

## 17. GREY/GRAVY

- a. Some time later, the **grey** van was all that people talked about.
- b. Some time later, the **gravy** was all that people talked about.
- c. Some time later, the **feast** began to get livelier.
- d. Some time later, the **dagger** was found.
- e. Some time later, the **grey** car was all that people talked about.

## 18. HAM/HAMSTER

- a. During the summer it is best if the **ham** stays in the fridge.
- b. During the summer it is best if the **hamster** stays in the shade.
- c. During the summer it is best if the **shrubs** are watered regularly.
- d. During the summer it is best if the **moped** is kept in the garage.
- e. During the summer it is best if the **ham** never gets left out of the fridge.

## 19. HELL/HELMET

- a. The soldiers thought that **hell** might be more comfortable than their barracks.
- b. The soldiers thought that **helmets** would save their lives.
- c. The soldiers thought that **tents** wouldn't stay dry if it rained.
- d. The soldiers thought that **aeroplanes** were the best way to travel.
- e. The soldiers thought that **hell** tormented the souls of their enemies.

## 20. JUNK/JUNCTION

- a. It was obvious that the **junk** should be moved somewhere else.
- b. It was obvious that the **junction** was dangerous to drive around.
- c. It was obvious that the **gems** weren't worth very much money.
- d. It was obvious that the **cider** was much stronger than usual.
- e. It was obvious that the **junk** made the house look less tidy.

## 21. KID/KIDNEY

- a. We were concerned when the **kid** knocked over the priceless vase.
- b. We were concerned when the **kidney** infection hadn't got any better.

- c. We were concerned when the **flight** was delayed by a couple of hours.
- d. We were concerned when the **bouquet** of flowers didn't arrive.
- e. We were concerned when the **kid** laughed at violent movies.

## 22. LAWN/LAUNDRY

- a. On sunny days, the **lawn** dried out leaving large brown patches.
- b. On sunny days, the **laundry** was hung out in the garden to dry.
- c. On sunny days, the **bay** was crowded with holidaymakers.
- d. On sunny days, the **canyon** was filled with haze.
- e. On sunny days, the **lawn** tends to be covered with people sunbathing.

## 23. NAP/NAPKIN

- a. Taking a **nap** can help you to stay up later
- b. Taking a **napkin** from the restaurant was a good idea.
- c. Taking a **dip** in the sea is very nice during the summer.
- d. Taking a **hostage** allowed the robbers to make their escape.
- e. Taking a **nap** tends to help me stay up later.

## 24. PAIN/PAINTING

- a. John replied that the **pain** tempted him to abort the climb.
- b. John replied that the **painting** was very colourful.
- c. John replied that the **songs** were quite good.
- d. John replied that the **record** was quite good.
- e. John replied that the **pain** wouldn't stop him climbing.

## 25. PAN/PANTRY

- a. Although he was an experienced cook, the **pan** transformed Bruce's cooking.
- b. Although he was an experienced cook, the **pantry** contained ingredients Bruce had never seen before.
- c. Although he was an experienced cook, the **sauce** was a real challenge to get right.
- d. Although he was an experienced cook, the **onions** still made him cry when he chopped them.
- e. Although he was an experienced cook, the **pan** saved Bruce a lot of trouble.

## 26. PEN/PENSION

- a. We all noticed that the **pen** shook when the young man signed the form.
- b. We all noticed that the **pension** payments were worth less and less each month,

- c. We all noticed that the **skirt** didn't match Annes blouse.
- d. We all noticed that the **trousers** didn't match Peters jacket.
- e. We all noticed that the **pen** changed Phillip's handwriting for the better.

## 27. PIG/PIGMENT

- a. Because of its odd appearance, the **pig** made everyone gasp with astonishment.
- b. Because of its odd appearance, the **pigment** was rejected by Dulux.
- c. Because of its odd appearance, the **tie** attracted attention.
- d. Because of its odd appearance, the **bicycle** was never stolen.
- e. Because of its odd appearance, the **pig** never got sold at market.

## 28. PILL/PILGRIM

- a. They hoped that the **pill** granted them immunity from the disease.
- b. They hoped that the **pilgrim** would save them.
- c. They hoped that the **hint** would be understood.
- d. They hoped that the **basement** would not get flooded by the storm.
- e. They hoped that the **pill** didn't have any unpleasant side effects.

## 29. POLE/POULTRY

- a. As we climbed over the farm gate, the **pole** tripped us up.
- b. As we climbed over the farm gate, the **poultry** ran away from us.
- c. As we climbed over the farm gate, the **heel** on my shoe came loose.
- d. As we climbed over the farm gate, the **orchard** could be seen.
- e. As we climbed over the farm gate, the **pole** didn't support our weight.

## 30. SHELL/SHELTER

- a. Although badly battered, the **shell** tempted the collector.
- b. Although badly battered, the **shelter** was warm and dry.
- c. Although badly battered, the **yacht** was still watertight.
- d. Although badly battered, the **vessel** was still watertight.
- e. Although badly battered, the **shell** might still be valuable.

## 31. SPY/SPIDER

- a. We had to be careful that the **spy** didn't overhear our conversations.
- b. We had to be careful that the **spider** didn't crawl into our sleeping bags.
- c. We had to be careful that the **jeans** were washed inside out.
- d. We had to be careful that the **ferry** was on time.
- e. We had to be careful that the **spy** listened to the fake recording.

## 32. STAY/STATION

- a. They thought that the **stay** became boring after a while.
- b. They thought that the **stable** would cost more than the house to heat.
- c. They thought that the **kiln** was hot enough to fire the pots.
- d. They thought that the **pistol** belonged to the criminal.
- e. They thought that the **stay** ceased being interesting after the first week.

## 33. TRACK/TRACTOR

- a. When it reached the house, the **track** turned north towards the forest.
- b. When it reached the house, the **tractor** came to a halt.
- c. When it reached the house, the **cat** was offered a saucer of milk.
- d. When it reached the house, the **parcel** remained unopened for several days.
- e. When it reached the house, the **track** got more difficult to follow.

## 34. TRAY/TRAITOR

- a. After a while, the **tray** tempted him too much and he started to eat.
- b. After a while, the **traitor** became careless and he was caught.
- c. After a while, the **flag** was raised to the top of the flagpole.
- d. After a while, the **kettle** came to the boil.
- e. After a while, the **tray** should have been returned to the kitchen.

## 35. TREE/TREATY

- a. For the last fifty years there has been a **tree** towering above this house.
- b. For the last fifty years there has been a **treaty** between England and Germany.
- c. For the last fifty years there has been a **race** to see who could climb the hill fastest.
- d. For the last fifty years there has been a **butchers** in the high street.
- e. For the last fifty years there has been a **tree** standing on this spot.

## 36. TRY/TRIFLE

- a. We were disappointed that the **try** failed to win the match.
- b. We were disappointed that the **trifle** hadn't been touched.
- c. We were disappointed that the **queen** didn't come to visit the school.
- d. We were disappointed that the **princess** didn't come to visit the school.
- e. We were disappointed that the **try** very nearly lost us the match.

## 37. WALL/WALNUT

- a. A severe storm left the **wall** nearest the house badly damaged.

- b. A severe storm left the **walnut** tree badly damaged.
- c. A severe storm left the **town** with a large bill for the clear-up operation.
- d. A severe storm left the **locals** with a large bill for the clear-up operation.
- e. A severe storm left the **wall** teetering on the brink of collapse.

## 38. WELL/WELCOME

- a. In the village, the **well** can't cope with this summers drought.
- b. In the village, the **welcome** given to tourists is very friendly.
- c. In the village, the **fumes** from the factory are unbearable.
- d. In the village, the **parson** is very friendly.
- e. In the village, the **well** might not cope with this summers drought.

## 39. WIN/WINTER

- a. After a bad start to the season, the **win** turned the teams fortunes around.
- b. After a bad start to the season, the **winter** became much milder than usual.
- c. After a bad start to the season, the **drought** was eased by the arrival of the monsoon.
- d. After a bad start to the season, the **public** stopped attending the matches.
- e. After a bad start to the season, the **win** helped our team to avoid relegation.

## 40. WIT/WITNESS

- a. Everyone thought Tom's **wit** nearly deserved a prize.
- b. Everyone thought Tom's **witness** was the least convincing.
- c. Everyone thought Tom's **socks** were a horrible colour.
- d. Everyone thought Tom's **jacket** made him look very smart.
- e. Everyone thought Tom's **wit** made him an ideal companion for the trip.



## Appendix B – Supplementary analyses

### B.1. Experiment 2b

Two three-way analyses of variance on participants and items were carried out on response times with the factors of prime type (short test word, long test word, control word) and target length (short word, long word) as well as the between groups factor of version or item group. There was a main effect of target length ( $F_1[1,43]=13.98$ ,  $p<.001$ ;  $F_2[1,33]=5.68$ ,  $p<.05$ ) with faster responses to shorter visual targets. Participants also responded faster to word targets following related primes as reflected in a significant main effect of prime type both ( $F_1[2,86]=11.64$ ,  $p<.001$ ;  $F_2[2,66]=13.86$ ,  $p<.001$ ). There was also a significant interaction between these two factors ( $F_1[2,86]=5.91$ ,  $p<.005$ ;  $F_2[2,66]=5.38$ ,  $p<.01$ ) suggesting that the magnitude of the priming effect differed depending on the identity of both the prime and target word.

Analyses on arcsine transformed error rates showed a similar pattern of results to those found in the response time data. There was a main effect of prime type ( $F_1[2,86]=4.45$ ,  $p<.05$ ;  $F_2[2,66]=5.04$ ,  $p<.1$ ) as well as a marginal effect of target length ( $F_1[1,43]=3.54$ ,  $p<.1$ ;  $F_2[1,33]=3.37$ ,  $p<.1$ ). There was also a significant interaction between prime type and target length ( $F_1[2,86]=3.62$ ,  $p<.05$ ,  $F_2[2,66]=4.06$ ,  $p<.05$ ).

### B.2. Experiment 2c

Analysis of variance showed significant main effects of both target type ( $F_1[1,51]=17.79$ ,  $p<.001$ ;  $F_2[1,33]=5.66$ ,  $p<.05$ ) and prime type ( $F_1[2,102]=13.96$ ,  $p<.001$ ;  $F_2[2,66]=10.55$ ,  $p<.001$ ) as well as a significant interaction between these factors ( $F_1[2,102]=11.70$ ,  $p<.001$ ;  $F_2[2,66]=10.14$ ,  $p<.001$ ). A similar pattern is found in the analysis of arcsine transformed error rates with a main effect of target type ( $F_1[1,51]=7.49$ ,  $p<.01$ ;  $F_2[1,33]=4.61$ ,  $p<.05$ ) and of prime type ( $F_1[2,102]=3.98$ ,

$p < .05$ ;  $F_2[2,66]=5.50$ ,  $p < .01$ ). The interaction between prime and target type in error rates was only marginally significant by participants and items ( $F_1[2,102]=2.92$ ,  $p < .1$ ;  $F_2[2,66]=3.13$ ,  $p < .1$ ).

### **B.3. Experiment 2d**

Response times were analysed with two three-way ANOVAs using the factors prime type, target type and an additional factor of version or item group. This showed significant main effects of prime type ( $F_1[2,82]=7.01$ ,  $p < .01$ ;  $F_2[2,66]=5.43$ ,  $p < .01$ ) and of target type ( $F_1[1,41]=26.41$ ,  $p < .001$ ;  $F_2[1,33]=11.58$ ,  $p < .01$ ) as well as an interaction between these factors ( $F_1[2,82]=13.68$ ,  $p < .001$ ;  $F_2[2,66]=15.47$ ,  $p < .001$ ). This interaction between prime type and target type was also shown in anova on the arcsine transformed error rates in each condition ( $F_1[2,82]=3.47$ ,  $p < .05$ ;  $F_2[2,66]=3.29$ ,  $p < .05$ ) though neither of the main effects of prime type ( $F_1 < 1$ ;  $F_2 < 1$ ) and target type ( $F_1[1,41]=1.33$ ,  $p > .1$ ;  $F_2[1,33]=1.17$ ,  $p > .1$ ) were significant in this analysis.

### **B.4. Experiment 4a**

Analysis of variance carried out on the response time data showed the expected effect of target type ( $F_1[1,42]=111.66$ ,  $p < .001$ ;  $F_2[1, 33]=37.28$ ,  $p < .001$ ) and of prime type ( $F_1[2,84]=4.13$ ,  $p < .05$ ;  $F_2[2,66]=4.45$ ,  $p < .05$ ) indicating that responses were faster to short word targets and to targets preceded by related test primes. The interaction between prime and target type was significant by participants and not by items ( $F_1[2,84]=3.91$ ,  $p < .05$ ;  $F_2[2,66]=1.35$ ,  $p > .1$ ). Analyses of arc-sine transformed error proportions showed an effect of target type ( $F_1[1,42]=14.97$ ,  $p < .001$ ;  $F_2[1,33]=9.04$ ,  $p < .01$ ) indicating that error rates were also lower for shorter targets. However, there were no effects of prime type on error rate, either as a main effect ( $F_1[2,84]=2.15$ ,  $p > .1$ ;  $F_2[2,66] < 1$ ) or by interaction with target type ( $F_1[2,84]=1.11$ ,  $p > .1$ ,  $F_2[2,66] < 1$ ).

## B.5. Experiment 4b

Analysis of variance on response time data showed a highly significant main effect of target type. This indicates that lexical decision responses were again faster to short words than to long words ( $F_1[1,41]=102.29, p<.001$ ;  $F_2[1,33]=25.91, p<.001$ ). Unlike in previous experiments there was no main effect of prime type in these analyses ( $F_1[2,82]<1, F_2[2,66]<1$ ) although the interaction between prime and target type was significant ( $F_1[2,82]=3.56, p<.05$ ;  $F_2[2,66]=3.96, p<.05$ ). Analysis of error rates showed a marginally significant effect of target type by participants but not by items ( $F_1[1,41]=3.78, p<.1$ ;  $F_2[1,33]=2.27, p>.1$ ) and a marginally significant effect of prime type, again by participants but not by items ( $F_1[2,82]=2.60, p<.1$ ;  $F_1[2,66]=2.04, p>.1$ ). There was no significant interaction between these factors, in analyses with either participants or items as the random factor ( $F_1[2,82]=1.28, p>.1$ ;  $F_2[2,66]=1.82, p>.1$ ).