Children's knowledge of indefinite and definite reference

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Key:
a / A - Indefinite
the / THE - Definite
pro / PRO - Pronominal

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3 TO 5 YEARS								
		FIRST MENTION						
		S1	S2	S3	S4	S5	S6	S7	S8
LISTENER	PAIR	MAN	BIRD	MAN	MAN	GIRL	CAT	GIRL	GIRL
	1,2	the	PRO	pro	pro	A	the	THE	PRO
	3,4	the	PRO	a	the	PRO	THE	a	PRO
LK	5,6	pro	PRO	PRO	pro	pro	A	THE	pro
	7,8	A	pro	a	the	A	THE	pro	THE
	9,10	PRO	PRO	the	THE	pro	pro	PRO	the
	11,12	a	PRO	A	a	a	A	pro	PRO
	13,14	A	a	a	THE	A	THE	a	a
LI	15,16	A	pro	pro	a	A	THE	A	pro
	17,18	PRO	a	A	a	the	THE	the	PRO
	19,20	the	a	THE	A	A	a	A	a
		SECOND MENTION							
	1,2	the	PRO	pro	pro	PRO	the	THE	THE
	3,4	the	PRO	pro	pro	THE	THE	pro	PRO
LK	5,6	pro	PRO	PRO	pro	pro	PRO	PRO	the
	7,8	THE	pro	pro	the	THE	THE	pro	PRO
	9,10	PRO	THE	the	THE	pro	pro	PRO	the
	11,12	the	PRO	THE	the	the	THE	pro	PRO
	13,14	THE	the	pro	PRO	PRO	PRO	pro	the
LI	15,16	PRO	pro	pro	the	PRO	THE	PRO	pro
	17,18	THE	the	THE	the	the	THE	the	PRO
	19,20	the	the	THE	THE	PRO	pro	PRO	the

Table A.2 Determiners used by 6-7 year olds for reference to the main character

6 TO 7 YEARS		FIRST MENTION							
		S1	S2	S3	S4	S5	S6	S7	S8
LISTENER	PAIR	MAN	BIRD	MAN	MAN	GIRL	CAT	GIRL	GIRL
	1,2	A	A	a	A	a	A	a	a
	3,4	A	a	A	a	a	a	A	A
LK	5,6	a	A	a	a	A	A	a	A
	7,8	A	A	a	A	a	a	A	a
	9,10	a	a	A	A	A	a	a	A
	11,12	a	a	A	a	a	A	A	THE
	13,14	a	A	a	A	A	a	A	the
LI	15,16	A	A	a	a	a	A	a	A
	17,18	THE	a	the	A	a	THE	a	A
	19,20	THE	A	THE	a	A	a	a	a
		SECOND MENTION							
	1,2	THE	THE	the	THE	the	THE	the	the
	3,4	PRO	the	THE	the	the	the	THE	THE
LK	5,6	the	THE	the	the	THE	PRO	the	PRO
	7,8	PRO	THE	the	PRO	the	the	THE	the
	9,10	the	pro	THE	PRO	THE	pro	the	THE
	11,12	the	pro	THE	the	the	THE	THE	THE
	13,14	the	THE	the	THE	THE	the	THE	the
LI	15,16	PRO	THE	the	the	pro	THE	the	THE
	17,18	THE	pro	the	THE	pro	THE	pro	THE
	19,20	THE	THE	THE	pro	PRO	the	the	the

Table A.3 Determiners used by 8-9 year olds for reference to the main character

8 TO 9 YEARS		FIRST MENTION							
LISTENER	PAIR	S1 MAN	S2 BIRD	S3 MAN	S4 MAN	S5 GIRL	S6 CAT	S7 GIRL	S8 GIRL
	1,2	a	the	THE	THE	a	the	A	A
	3,4	A	A	the	A	the	the	a	THE
LK	5,6	the	A	THE	a	A	A	a	the
	7,8	THE	the	the	THE	the	A	THE	the
	9,10	a	a	THE	the	THE	the	THE	THE
	11,12	a	A	A	a	A	A	a	a
	13,14	A	A	a	a	a	A	A	a
LI	15,16	A	a	a	A	a	a	A	A
	17,18	a	A	A	A	A	a	a	a
	19,20	A	a	A	A	a	a	a	A
		SECOND MENTION							
	1,2	the	the	THE	THE	the	the	THE	THE
	3,4	THE	THE	the	THE	the	the	the	THE
LK	5,6	the	THE	THE	the	THE	THE	the	the
	7,8	THE	the	the	THE	the	PRO	PRO	the
	9,10	the	the	THE	the	THE	the	THE	THE
	11,12	the	THE	THE	the	THE	THE	the	the
	13,14	THE	THE	the	the	the	THE	THE	the
LI	15,16	THE	the	the	THE	the	the	THE	THE
	17,18	the	THE	THE	THE	THE	the	the	the
	19,20	THE	the	THE	THE	the	the	the	THE

Table A.4 Determiners used by 10-11 year olds for reference to the main character

10 TO 11 YEARS			FIRST MENTION						
		S1	S2	S3	S4	S5	S6	S7	S8
LISTENER	PAIR	MAN	BIRD	MAN	MAN	GIRL	CAT	GIRL	GIRL
	1,2	a	A	a	A	a	the	THE	A
	3,4	a	a	THE	A	a	THE	a	A
LK	5,6	A	a	a	A	THE	a	THE	a
	7,8	the	the	A	the	A	A	A	the
	9,10	THE	A	THE	a	a	A	the	a
	11,12	a	A	the	A	a	a	THE	THE
	13,14	the	the	A	THE	THE	A	the	the
LI	15,16	THE	the	THE	the	a	A	the	THE
	17,18	a	a	THE	the	A	the	A	A
	19,20	THE	the	the	A	THE	the	THE	a
			SECOND MENTION						
	1,2	the	THE	the	THE	the	the	THE	THE
	3,4	the	the	THE	THE	the	THE	the	THE
LK	5,6	THE	the	the	THE	THE	the	THE	the
	7,8	the	the	THE	the	THE	THE	THE	the
	9,10	THE	THE	THE	the	the	THE	the	the
	11,12	the	THE	the	THE	the	the	THE	THE
	13,14	the	the	THE	THE	THE	THE	the	the
LI	15,16	THE	the	THE	the	the	THE	the	THE
	17,18	the	the	THE	the	THE	the	THE	THE
	19,20	THE	the	the	THE	THE	the	THE	the

Table A.5 Determiners used by 3-5 year olds for reference to the subsidiary character - first mention only

3 TO 5 YEARS LISTENER	PAIR	S1 boy	S2 boy	S3 boy	S4 man	S5 man	S6 boy	S7 girl	S8 girl
	1,2	a	PRO	pro	the	A	the	THE	PRO
	3,4	a	THE	a	the	THE	THE	a	THE
LK	5,6	pro	PRO	THE	pro	pro	PRO	PRO	pro
	7,8	A	the	a	the	PRO	A	the	THE
	9,10	A	PRO	the	PRO	pro	the	A	the
	11,12	a	THE	A	a	the	A	the	A
	13,14	PRO	a	a	A	A	THE	a	a
LI	15,16	A	a	pro	a	A	THE	A	pro
	17,18	PRO	a	A	a	the	THE	the	PRO
	19,20	the	a	THE	THE	PRO	a	A	a

Table A.6 Determiners used by 6-7 year olds for reference to the subsidiary character - first mention only

6 TO 7 YEARS LISTENER	PAIR	S1 boy	S2 boy	S3 boy	S4 man	S5 man	S6 boy	S7 girl	S8 girl
	1,2	PRO	A	the	A	a	A	a	a
	3,4	A	a	THE	a	a	a	A	A
LK	5,6	a	A	a	a	A	A	pro	A
	7,8	A	A	the	A	a	a	A	the
	9,10	a	a	A	A	A	a	a	A
	11,12	a	a	A	a	a	A	A	THE
	13,14	a	A	a	A	A	a	A	the
LI	15,16	A	A	a	a	a	A	a	A
	17,18	THE	a	the	A	a	A	a	A
	19,20	A	A	THE	a	THE	a	a	a

Table A.7 Determiners used by 8-9 year olds for reference to the subsidiary character - first mention only

8 TO 9 YEARS LISTENER	PAIR	S1 boy	S2 boy	S3 boy	S4 man	S5 man	S6 boy	S7 girl	S8 girl
	1,2	a	the	THE	THE	a	the	A	A
	3,4	A	A	the	A	the	the	a	THE
LK	5,6	a	A	THE	a	A	A	a	the
	7,8	THE	the	the	THE	the	A	THE	the
	9,10	a	a	THE	the	THE	the	A	THE
	11,12	a	THE	A	a	A	A	a	a
	13,14	A	A	a	a	a	A	A	a
LI	15,16	A	a	a	A	the	the	A	A
	17,18	a	A	A	A	A	a	a	a
	19,20	THE	a	A	A	the	a	a	A

Table A.8 Determiners used by 10-11 year olds for reference to the subsidiary character - first mention only

10 TO 11 YEARS LISTENER	PAIR	S1 boy	S2 boy	S3 boy	S4 man	S5 man	S6 boy	S7 girl	S8 girl
	1,2	a	A	a	A	a	the	THE	A
	3,4	the	a	A	A	a	THE	a	A
LK	5,6	A	a	a	A	THE	a	THE	a
	7,8	the	the	A	the	A	A	A	the
	9,10	THE	A	THE	a	the	THE	the	a
	11,12	a	A	a	A	a	a	A	A
	13,14	the	the	A	A	A	A	the	the
LI	15,16	THE	a	THE	a	a	A	the	A
	17,18	a	a	A	the	A	the	A	A
	19,20	A	a	the	A	A	the	THE	a

Table A.9 Reference to the main character for the four age groups

AGE	LISTENER	FIRST MENTION A	FIRST MENTION THE	FIRST MENTION PRO	SECOND MENTION A	SECOND MENTION THE	SECOND MENTION PRO
3-5	LK	7	13	20	0	16	24
	LI	24	8	8	0	22	18
TOTAL		31	21	28	0	38	42
6-7	LK	40	0	0	0	32	8
	LI	33	7	0	0	32	8
TOTAL		73	7	0	0	64	16
8-9	LK	16	24	0	0	38	2
	LI	40	0	0	0	40	0
TOTAL		56	24	0	0	78	2
10-11	LK	27	13	0	0	40	0
	LI	16	24	0	0	40	0
TOTAL		43	37	0	0	80	0

Table A.10 Reference to the subsidiary character for the four age groups

AGE	LISTENER	A	THE	PRO
3-5	LK	10	16	14
	LI	23	11	4
TOTAL		33	27	18
6-7	LK	34	4	2
	LI	34	6	0
TOTAL		68	10	2
8-9	LK	18	22	0
	LI	35	5	0
TOTAL		53	27	0
10-11	LK	25	15	0
	LI	28	12	0
TOTAL		53	27	0

Table A.11 Analysis-of-variance summary table looking at indefinite verses definite reference on first mention of main character.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
age	0.02	3	0.01	1.0	n.s
LI/LK	0.01	1	0.01	1.0	n.s
age X LI/LK	0.02	3	0.01	1.0	n.s
error	0.45	72	0.01		
Within Subjects					
indefinite/definite	47.31	1	47.30	32.12	<.001
age X indef/def	95.32	3	31.77	21.57	<.001
LI/LK X indef/def	12.66	1	12.66	8.59	<.005
age X LI/LK X ind/def	89.17	3	29.72	20.18	<.001
error	106.05	72	1.47		

Table A.12 Analysis-of-variance summary table looking at form of definite reference on first mention of main character for the 3 to 5 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
LI/LK	7.23	1	7.23	17.94	<.001
error	7.25	18	0.40		
Within Subjects					
def.article/pronoun	1.23	1	1.23	0.79	n.s
age X def.a/pronoun	1.23	1	1.23	0.79	n.s
error	28.05	18	1.56		

Table A.13A Analysis-of-variance summary table looking at form of definite reference on second mention of main character.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
def.article/pronoun	250.00	1	250.00	258.62	<.001
age X def.a/pronoun	112.40	3	37.47	38.76	<.001
LI/LK X def.a/pronoun	1.60	1	1.60	1.66	n.s
age X LI/LK X d.a/pro	2.40	3	0.80	0.83	n.s
error	69.60	72	0.97		

Table A.13B Studentised Newman-Keuls multiple range test showing the effects of age on pronominal use on second mention to the main character.

		Age Group			
		10-11	8-9	6-7	3-5
mean	age group				
.0	10-11				
.1	8-9				
.8	6-7	*	*		
2.1	3-5	*	*	*	

Table A.14 Analysis-of-variance summary table looking at definite reference on first verses second mention of main character.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
age	23.35	3	7.78	21.15	<.001
LI/LK	3.03	1	3.03	8.22	<.005
age X LI/LK	22.03	3	7.34	19.95	<.001
error	26.50	72	0.37		
Within Subjects					
first/second	260.10	1	260.10	706.69	<.001
age X first/sec.	23.35	3	7.78	21.15	<.001
LI/LK X first/sec.	3.03	1	3.03	8.22	<.005
age X LI/LK X 1st/2nd	22.03	3	7.34	19.95	<.001
error	26.50	72	0.37		

Table A.15 Analysis-of-variance summary table looking at indefinite reference for main verses subsidiary referent on first mention.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
age	76.23	3	25.41	16.97	<.001
LI/LK	19.60	1	19.60	13.09	<.005
age X LI/LK	47.75	3	15.92	10.63	<.001
error	107.80	72	1.50		
Within Subjects					
main/subsid.	0.10	1	0.10	0.43	n.s
age X main.sub.	3.35	3	1.12	4.79	<.005
LI/LK X main/sub.	0.63	1	0.63	2.68	n.s
age X LI/LK Xmain/sub	7.13	3	2.38	10.18	<.001
error	16.80	72	0.23		

APPENDIX B

EXPERIMENT 2: The effects of using the experimenter as the listener and comparing story-telling with discussions about real-life experiences.

DATA

Table B.1 — Reference on first and second mention in the 'story', 'playroom' and 'birthday' conditions.

Table B.2 — First and Second mention total scores in the 'story', 'playroom' and 'birthday' conditions.

key:

A	-	Indefinite	STORY: S
THE	-	Definite article	PLAYROOM: P
PRO	-	Pronoun	BIRTHDAY: B
N	-	Null	
POSS	-	Possessive pronoun	
NAME	-	Proper noun	
X	-	No reference	

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Table B.3 — Cochran test comparing 'story', 'playroom' and 'birthday' conditions for indefinites/other reference on first mention.

Table B.4 — Cochran test comparing 'story', 'playroom' and 'birthday' conditions for definites/other reference on first mention.

Table B.5 — Cochran test comparing 'story', 'playroom' and 'birthday' conditions for definite article / other definite reference on second mention.

Table B.1 Reference in story(S), playroom(P) and birthday(B) conditions

SUBJECT	FIRST MENTION S	FIRST MENTION P	FIRST MENTION B	SECOND MENTION S	SECOND MENTION P	SECOND MENTION B
1	the	the	a	the	the	poss
2	pro	the	a	pro	the	the
3	the	the	poss	the	n	poss
4	a	the	a	pro	the	the
5	pro	pro	a	pro	pro	x
6	name	n	a	the	pro	the
7	the	the	poss	the	the	poss
8	pro	n	name	pro	pro	n
9	name	the	a	pro	the	poss
10	the	the	a	the	the	the
11	the	the	a	the	the	poss
12	name	the	name	pro	x	x

Table B.2 Total scores in each condition

COND.	FIRST MENTION A	THE	PRO	N	POSS	NAME	X	SECOND MENTION A	THE	PRO	N	POSS	NAME	X
STORY	1	(5	3)	0	0	3	0	0	(6	6)	0	0	0	0
PLAY.	0	(9	1)	2	0	0	0	0	(7	3)	1	0	0	1
B'DAY	8	(0	0)	0	2	2	0	0	(4	0)	1	5	0	2
TOTALS	9	(14	4)	2	2	5	0	0	(17	9)	2	5	0	3

Table B.3 Cochran test comparing indefinite verses other reference on first mention across conditions.

Cochran Q Test		
Indefinite	Other	Condition
1	9	STORY
0	10	PLAYROOM
8	2	BIRTHDAY

Cases	Cochran Q	df	p	
10	14.25	2	<.001	

Table B.4 Cochran test comparing definite verses other reference on first mention across conditions.

Cochran Q Test		
Definite	Other	Condition
9	1	STORY
8	2	PLAYROOM
2	8	BIRTHDAY

Cases	Cochran Q	df	p	
10	9.6	2	<.01	

Table B.5 Cochran test comparing definite article verses other definite reference on second mention across conditions.

Cochran Q Test		
Def.article	Other def	Condition
5	3	STORY
7	11	PLAYROOM
4	4	BIRTHDAY

Cases	Cochran Q	df	p	
8	2.0	2	n.s	

APPENDIX C

EXPERIMENT 3: The effect of story context on children's sensitivity to the listener's perception of referents.

DATA

Tables C.1 - C.4 Determiners on first mention for referent in picture 2 in the LI and LK conditions

Tables C.5 - C.8 Determiners on first mention for referents in picture 1 in the LI and LK conditions

Table C.9 Indefinite and definite scores for referents in picture 2 in all four age groups.

Table C.10 Indefinite and definite scores for each referent in picture 2 in all four age groups.

Key:

A	-	Indefinite
THE	-	Definite article
PRO	-	Pronoun
NAME	-	Proper noun (for animate referents only)
-	-	No reference

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Table C.11 Analysis-of-variance summary table comparing 'context definites' and 'other' scores for referents in P2.

Table C.12A Analysis-of-variance summary table showing the effects of age group on context definites for referents in P2.

Table C.12B Studentised Newman-Keuls test of multiple comparisons for the effects of age group on context definites for referents in P2.

Table C.13 Analysis-of-variance summary table showing the effects of age group and LI/LK on context definites to P2.

Table C.14-C.17 Cochran tests comparing context definites across the four types of context referent (each age group analysed separately).

Table C.18 Analysis-of-variance summary table comparing age group, LI/LK conditions and indefinite/definite scores for referents in P1.

Table C.1 Determiners of 3-5 year olds to picture 2

3 TO 5 YEARS

sub.	LOCAT. shelf	ENTAIL. lid	UNIV. sun	SETT. sandpit	s.	LOCAT. table	ENTAIL. door	UNIV. queen	SETT. waiter
L. KNOWLEDGEABLE									
1	the	the	the	the	2	the	the	the	the
3	the	the	the	the	4	the	the	the	pro
5	the	the	the	a	6	the	the	the	the
7	the	the	the	the	8	the	the	the	pro
9	the	the	the	the	10	the	the	the	-
L. IGNORANT									
11	the	a	the	a	12	the	the	the	the
13	the	the	the	the	14	the	the	the	the
15	the	the	the	the	16	the	pro	the	pro
17	the	the	the	the	18	a	the	the	-
19	the	the	the	a	20	the	the	the	-

Table C.2 Determiners of 6-7 year olds to picture 2
6 TO 7 YEARS

sub.	LOCAT. shelf	ENTAIL. lid	UNIV. sun	SETT. sandpit	s.	LOCAT. table	ENTAIL. door	UNIV. queen	SETT. waiter
L. KNOWLEDGEABLE									
1	a	the	the	a	2	the	the	the	the
3	the	the	the	the	4	a	the	the	a
5	the	the	the	the	6	the	the	the	the
7	the	the	the	the	8	the	the	the	the
9	the	a	the	a	10	the	the	the	the
L. IGNORANT									
11	the	the	the	the	12	a	the	the	-
13	the	the	the	a	14	the	the	the	the
15	the	a	the	a	16	a	the	the	-
17	the	the	the	the	18	the	a	the	-
19	the	the	the	the	20	the	the	the	the

Table C.3 Determiners of 8-9 year olds to picture 2
8 TO 9 YEARS

sub.	LOCAT. shelf	ENTAIL. lid	UNIV. sun	SETT. sandpit	s.	LOCAT. table	ENTAIL. door	UNIV. queen	SETT. waiter
L. KNOWLEDGEABLE									
1	the	the	the	the	2	a	a	the	-
3	the	a	the	a	4	a	the	the	-
5	the	the	the	the	6	the	the	the	the
7	the	the	the	a	8	the	the	the	the
9	the	the	the	the	10	the	the	the	the
L. IGNORANT									
11	the	the	the	the	12	the	the	the	a
13	a	a	the	a	14	a	the	the	-
15	a	the	the	a	16	a	the	the	-
17	the	the	the	a	18	the	a	the	-
19	the	the	the	the	20	the	the	the	a

Table C.4 Determiners of 10-11 year olds to picture 2

10 TO 11 YEARS

sub.	LOCAT. shelf	ENTAIL. lid	UNIV. sun	SETT. sandpit	s.	LOCAT. table	ENTAIL. door	UNIV. queen	SETT. waiter
L. KNOWLEDGEABLE									
1	the	a	the	a	2	the	a	the	-
3	the	a	the	a	4	the	the	the	a
5	the	the	the	a	6	a	a	the	-
7	the	the	the	the	8	a	the	the	-
9	a	the	the	a	10	a	the	the	-
L. IGNORANT									
11	the	the	the	the	12	a	the	the	a
13	the	the	the	a	14	a	the	the	-
15	a	the	the	the	16	a	the	the	-
17	the	the	the	the	18	the	the	the	the
19	the	the	the	the	20	the	the	the	-

Table C.5 Determiners of 3-5 year olds to picture 1

3 TO 5 YEARS

PAIR	S.	GP1. boy, book, lady, tin, man, umbrella, girl, park GP2. man, box, lady, car, boy, crowd, lady, cafe							
a 1		1	the	the	the	the	the	the	the	the
a 2		2	the	the	pro	the	pro	the	the	the
b 3		1	the	the	the	the	the	the	the	the
b 4		2	the	the	the	the	the	the	the	the
c 5	LK	1	the	the	the	the	the	the	the	the
c 6		2	the	the	the	the	a	a	a	a
d 7		1	the	the	the	the	the	the	the	the
d 8		2	the	a	the	a	a	a	the	pro
e 9		1	the	the	a	a	the	the	the	the
e 10		2	the	the	the	the	the	the	the	the
f 11		1	the	the	a	a	the	the	a	a
f 12		2	a	a	a	a	a	a	the	the
g 13		1	a	a	a	a	a	a	a	a
g 14		2	a	the	a	a	the	a	a	a
h 15	LI	1	the	a	the	a	a	the	the	a
h 16		2	a	a	a	a	a	a	a	a
i 17		1	a	a	the	a	the	a	a	a
i 18		2	a	a	the	the	the	the	the	the
j 19		1	the	a	the	a	the	the	a	a
j 20		2	a	a	a	the	the	the	a	the

Table C.6 Determiners of 6-7 year olds to picture 1

6 TO 7 YEARS

PAIR	S.	GP1. boy, book, lady, tin, man, umbrella, girl, park GP2. man, box, lady, car, boy, crowd, lady, cafe							
a 1		1	the	a	a	the	a	the	the	a
a 2		2	a	a	a	a	a	the	a	the
b 3		1	a	a	a	a	a	a	a	a
b 4		2	a	a	the	the	the	the	the	a
c 5	LK	1	the	a	a	a	the	a	a	a
c 6		2	the	a	the	the	a	a	a	a
d 7		1	a	the	the	a	a	a	a	a
d 8		2	a	a	a	a	a	a	a	a
e 9		1	the	the	a	a	the	the	a	a
e 10		2	the	a	the	the	the	a	a	a
f 11		1	a	a	a	a	a	a	a	a
f 12		2	a	a	the	a	a	a	a	the
g 13		1	a	a	a	the	a	a	a	a
g 14		2	a	a	a	a	a	a	a	a
h 15	LI	1	a	a	a	a	a	a	a	a
h 16		2	the	the	the	the	the	the	the	the
i 17		1	a	the	a	a	the	a	a	a
i 18		2	a	a	a	a	a	a	a	a
j 19		1	the	a	a	a	a	the	a	a
j 20		2	a	the	the	the	the	a	a	a

Table C.7 Determiners of 8-9 year olds to picture 1

8 TO 9 YEARS

PAIR	S.	GP1. boy, book, lady, tin, man, umbrella, girl, park GP2. man, box, lady, car, boy, crowd, lady, cafe							
a 1		1	the	the	a	the	the	the	the	the
a 2		2	a	a	a	a	the	the	the	the
b 3		1	the	the	a	a	the	the	a	a
b 4		2	a	a	the	the	a	a	a	a
c 5	LK	1	the	a	a	the	the	the	the	a
c 6		2	the	the	a	the	the	the	a	the
d 7		1	the	the	the	the	the	the	the	a
d 8		2	a	the	the	the	the	a	the	a
e 9		1	the	the	a	the	the	a	a	a
e 10		2	the	the	a	the	the	the	a	the
f 11		1	a	a	the	the	the	a	the	a
f 12		2	a	a	a	a	a	a	a	a
g 13		1	the	a	the	a	a	the	a	the
g 14		2	a	a	the	a	the	a	a	a
h 15	LI	1	the	the	a	a	the	the	the	the
h 16		2	a	a	a	a	the	the	a	a
i 17		1	a	a	a	the	the	a	the	a
i 18		2	the	the	a	a	the	the	a	a
j 19		1	the	a	the	a	a	a	a	a
j 20		2	a	a	a	a	a	a	the	a

Table C.8 Determiners of 10-11 year olds to picture 1

10 TO 11 YEARS

PAIR	S.	GP1. boy, book, lady, tin, man, umbrella, girl, park GP2. man, box, lady, car, boy, crowd, lady, cafe							
a 1		1	a	a	a	a	a	the	a	a
a 2		2	the	a	the	a	the	the	a	a
b 3		1	the	the	a	a	the	the	a	a
b 4		2	a	a	a	a	a	a	a	a
c 5	LK	1	name	a	a	the	a	a	name	a
c 6		2	a	a	a	a	the	the	a	a
d 7		1	the	a	the	a	the	the	the	the
d 8		2	a	a	a	a	a	a	a	a
e 9		1	a	a	the	the	a	a	a	a
e 10		2	a	a	the	the	the	the	a	a
f 11		1	the	the	the	the	the	a	a	the
f 12		2	the	a	the	the	the	the	the	a
g 13		1	the	the	a	the	a	the	the	a
g 14		2	a	a	the	the	the	the	a	a
h 15	LI	1	a	a	the	a	a	a	a	the
h 16		2	a	a	the	the	a	the	a	the
i 17		1	a	the	a	the	the	a	a	a
i 18		2	a	a	a	a	a	a	a	a
j 19		1	a	the	a	the	the	the	a	the
j 20		2	the	a	the	a	a	the	the	the

Table C.9 Indefinite and definite scores for picture 2 in all four age groups

AGE	LISTENER IGNORANT INDEF.	DEF.	LISTENER KNOWLEDGEABLE INDEF.	DEF.
3-5	4	34	1	38
6-7	6	31	6	34
8-9	11	26	6	32
10-11	6	31	13	23
TOTALS	27	122	26	137

Table C.10 Indefinite(a) and definite(d) scores for each referent in picture 2 in all four age groups

	LOCATIVE				ENTAILED				UNIVERSAL				SETTING			
	shelf		table		lid		door		sun		queen		sandpit		waiter	
AGE	a	d	a	d	a	d	a	d	a	d	a	d	a	d	a	d
3-5	0	10	1	9	2	8	0	10	0	10	0	10	3	7	0	7
6-7	1	9	3	7	2	8	1	9	0	10	0	10	4	6	1	6
8-9	2	8	4	6	2	8	2	8	0	10	0	10	5	5	2	3
10-11	2	8	6	4	2	8	2	8	0	10	0	10	5	5	2	1
TOT.	5	35	14	26	8	32	5	35	0	40	0	40	17	23	5	17

Table C.11 Analysis-of-variance summary table comparing 'context definites' and 'other' scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	6.98	79			
age	0.28	3	0.09	1.03	n.s
LI/LK	0.10	1	0.10	1.13	n.s
age X LI/LK	0.20	3	0.07	0.75	n.s
error	6.40	72	0.09		
Within Subjects	357.01	80			
context def/other	240.10	1	240.10	188.31	<.001
age X c.def/other	15.00	3	5.00	3.92	<.05
LI/LK X c.def/other	0.23	1	0.23	0.18	n.s
age X LI/LK X c.def/other	9.88	3	3.30	2.58	n.s
error	91.80	72	1.28		

Table C.12A Analysis-of-variance summary table showing the effects of age group on context definites.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	36380.39	79			
age	4763.64	3	1587.88	3.82	<.05
error	31616.75	76	416.01		

Table C.12B Studentised Newman-Keuls test showing effects of age group on context definites.

		Age Group			
		10-11	8-9	6-7	3-5
mean	age group				
73.4	10-11				
76.3	8-9				
83.8	6-7				
93.4	3-5	*	*		

Table C.13 Analysis-of-variance summary table showing the effects of age group and listener knowledge on context definite scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	36380.54	79			
age	4763.63	3	1587.88	4.02	<.05
LI/LK	11.99	1	11.99	0.03	n.s
age X LI/LK	3130.04	3	1043.35	2.64	n.s
error	28474.88	72	395.48		

Table C.14 Cochran test comparing context definites across each type of context for the 3-5 year olds

Cochran Q Test		
Context def	Other	Condition
17	0	LOCATIVE
15	2	ENTAILED
17	0	UNIVERSAL
14	3	SETTING

Cases	Cochran Q	df	p	
17	6.23	3		n.s

Table C.15 Cochran test comparing context definites across each type of context for the 6-7 year olds

Cochran Q Test		
Context def	Other	Condition
15	2	LOCATIVE
15	2	ENTAILED
17	0	UNIVERSAL
12	5	SETTING

Cases	Cochran Q	df	p	
17	8.05	3		>.05

Table C.16 Cochran test comparing context definites across each type of context for the 8-9 year olds

Cochran Q Test		
Context def	Other	Condition
13	2	LOCATIVE
13	2	ENTAILED
15	0	UNIVERSAL
8	7	SETTING

Cases	Cochran Q	df	p	
15	13.96	3		>.005

Table C.17 Cochran test comparing context definites across each type of context for the 10-11 year olds

Cochran Q Test		
Context def	Other	Condition
10	3	LOCATIVE
11	2	ENTAILED
13	0	UNIVERSAL
6	7	SETTING

Cases	Cochran Q	df	p	
13	11.14	3		>.05

Table C.18 Analysis-of-variance summary table showing indefinite and definite scores for referents in picture one

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	942.0	80			
indefinite/def.	27.22	1	27.22	3.79	n.s
age X ind/def	147.68	3	49.23	6.85	<.001
LI/LK X ind/def	81.23	1	81.23	11.29	<.001
age X LI/LK X indef/def	168.07	3	56.03	7.79	<.001
error	517.80	72	7.19		

APPENDIX D

EXPERIMENT 4: The effect of the status of the referents in the immediate context.

DATA

Table D.1	Referring expressions of adults for singletons and identical items in LI and LK conditions.
Tables D.2-D.3	Referring expressions of children for singletons and identical items in LI and LK conditions.

Key:

a	-	Indefinite
the	-	Definite
t 1st	-	Definite plus 'first' modifier
t 2nd	-	Definite plus 'second/other/last'modifier

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Table D.4 (adults)	Mann-Whitney test showing the effects of LI/LK conditions on indefinite scores for first identical referents.
Table D.5 (adults)	Mann-Whitney test showing the effects of LI/LK conditions on indefinite scores for second identical referents.
Table D.6 (adults)	Analysis-of-variance summary table comparing LI/LK conditions with indefinite/definite scores for singletons
Tables D.7-D.8 (children)	Wilcoxen tests comparing indefinite and definite article + noun scores for first identical referents in the LI condition.
Tables D.9-D.10 (children)	Wilcoxen tests comparing indefinite and definite article + noun scores for first identical referents in the LK condition.
Tables D.11-D.12 (children)	Mann-Whitney tests showing the effects of LI/LK conditions on indefinite scores for first identical referents.
Tables D.13-D.14 (children)	Mann-Whitney tests showing the effects of age group on indefinite scores for first identical referents.
Tables D.15-D.16 (children)	Wilcoxen tests comparing indefinite and definite article + noun scores for second identical referents in the LI condition.
Tables D.17-D.18 (children)	Wilcoxen tests comparing indefinite and definite article + noun scores for

	second identical referents in the LK condition.
Tables D.19-D.20 (children)	Mann-Whitney tests showing the effects of LI/LK conditions on definite scores for second identical referents.
Tables D.21 (children)	Analysis-of-variance summary table comparing age group, LI/LK conditions and indefinite/definite scores for singletons.

Table D.1 Referring expressions of adults

	SINGLETONS				IDENTICALS			
sub.	tree	ball	b-stop	key	1st candle	brick	2nd candle	brick
L. KNOWLEDGEABLE								
1	the	the	the	the	a	a	t 2nd	t 2nd
2	the	the	the	the	a	a	t 2nd	t 2nd
3	the	the	the	the	a	a	t 2nd	t 2nd
4	the	a	a	the	a	a	the	t 2nd
5	the	the	the	the	a	the	the	t 2nd
L. IGNORANT								
6	a	a	a	a	a	a	a	a
7	a	a	a	a	a	a	a	a
8	a	a	a	a	a	a	a	a
9	a	a	a	a	a	a	a	a
10	a	a	a	a	a	a	a	a

Table D.2 Referring expressions of 3 to 5 year olds

3 to 5 yrs.	SINGLETONS				IDENTICALS			
sub.	tree	ball	b-stop	key	1st candle	brick	2nd candle	brick
L. KNOWLEDGEABLE								
1	the	the	the	the	the	a	the	the
2	the	the	the	the	the	the	the	the
3	the	the	the	the	the	the	the	the
4	the	the	the	the	the	the	the	the
5	the	the	the	the	the	the	the	the
6	the	the	the	the	the	the	the	the
L. IGNORANT								
7	a	a	a	a	a	a	a	a
8	a	a	a	a	a	the	a	a
9	a	the	a	a	a	a	a	a
10	a	a	a	a	a	a	t 2nd	t 2nd
11	a	a	a	a	a	a	a	a
12	a	a	a	the	a	a	the	a

Table D.3 Referring expressions of 6 to 8 year olds

6 to 8 yrs.	SINGLETONS				IDENTICALS			
sub.	tree	ball	b-stop	key	1st candle	brick	2nd candle	brick
L. KNOWLEDGEABLE								
1	the	the	the	the	the	the	a	the
2	a	a	a	a	a	a	a	a
3	the	the	the	the	the	t 1st	the	t 2nd
4	the	the	the	the	the	the	the	the
5	the	the	the	the	t 1st	the	the	a
6	the	the	the	the	the	the	the	a
L. IGNORANT								
7	a	a	a	a	a	a	a	a
8	a	a	a	a	t 1st	a	a	a
9	a	a	a	a	a	a	a	t 2nd
10	a	a	a	a	a	a	the	the
11	a	a	a	a	a	t 1st	a	a
12	a	a	a	a	a	a	a	a

Table D.4 Mann-Whitney test comparing listener condition for indefinite scores to first identical referents for the adult subjects.

Mann-Whitney U test					
Rank means	cases	conditions			
6.0	5	LK			
5.0	5	LI			
total=10					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
10.0	30.0	n.s	-1.0	n.s	

Table D.5 Mann-Whitney test comparing listener condition for indefinite scores to second identical referents for the adult subjects.

Mann-Whitney U test					
Rank means	cases	conditions			
3.0	5	LK			
8.0	5	LI			
total=10					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
0.0	15.0	<.01	-3.0	<.005	

Table D.6 Analysis-of-variance summary table looking at indefinite and definite scores for singletons for the adult subjects.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	72.00	10			
indefinite/def	0.80	1	0.80	1.0	n.s
LI/LK X ind/def	64.80	1	64.80	81.0	<.001
error	6.40	8	0.80		

Table D.7 Wilcoxen test comparing indefinite and definite article + noun scores for first identical referents in the LI condition for the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
3.0	5	- ranks (DA + noun < indefinite)
0.0	0	+ ranks (DA + noun > indefinite)
	1	ties (DA + noun = indefinite)
total=	6	

Z = -2.02 2-tailed p <.05

Table D.8 Wilcoxen test comparing indefinite and definite article + noun scores for first identical referents in the LI condition for the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
3.5	6	- ranks (DA + noun < indefinite)
0.0	0	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -2.20 2-tailed p <.05

Table D.9 Wilcoxen test comparing indefinite and definite article + noun scores for first identical referents in the LK condition for the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (DA + noun < indefinite)
3.0	5	+ ranks (DA + noun > indefinite)
	1	ties (DA + noun = indefinite)
total=	6	

Z = -2.02 2-tailed p <.05

Table D.10 Wilcoxen test comparing indefinite and definite article + noun scores for first identical referents in the LK condition for the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
4.5	1	- ranks (DA + noun < indefinite)
3.3	5	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -1.26 2-tailed p n.s

Table D.11 Mann-Whitney test comparing listener condition for indefinite scores to first identical referents in the 3-5 year old group.

Mann-Whitney U test					
Rank means	cases	conditions			
3.58	6	LK			
9.42	6	LI			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
0.5	21.5	<.005	-3.03	<.005	

Table D.12 Mann-Whitney test comparing listener condition for indefinite scores to first identical referents in the 6-8 year old group.

Mann-Whitney U test					
Rank means	cases	conditions			
4.17	6	LK			
8.83	6	LI			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
4.0	25.0	<.05	-2.42	<.05	

Table D.13 Mann-Whitney test comparing age group for indefinite scores to first identical referents in the LI condition.

Mann-Whitney U test					
Rank means	cases	conditions			
7.0	6	3-5 yrs			
6.0	6	6-8 yrs			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
15.0	42.0	n.s	-0.64	n.s	

Table D.14 Mann-Whitney test comparing age group for indefinite scores to first identical referents in the LK condition.

Mann-Whitney U test					
Rank means	cases	conditions			
6.42	6	3-5 yrs			
6.58	6	6-8 yrs			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
17.5	38.5	n.s	-0.12	n.s	

Table D.15 Wilcoxen test comparing indefinite and definite article + noun scores for second identical referents in the LI condition for the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
2.5	4	- ranks (DA + noun < indefinite)
0.0	0	+ ranks (DA + noun > indefinite)
	2	ties (DA + noun = indefinite)
total=	6	

Z = -1.83 2-tailed p n.s

Table D.16 Wilcoxen test comparing indefinite and definite article + noun scores for second identical referents in the LI condition for the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
3.4	5	- ranks (DA + noun < indefinite)
4.0	1	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -1.36 2-tailed p n.s

Table D.17 Wilcoxen test comparing indefinite and definite article + noun scores for second identical referents in the LK condition for the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (DA + noun < indefinite)
3.5	6	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -2.20 2-tailed p <.05

Table D.18 Wilcoxen test comparing indefinite and definite article + noun scores for second identical referents in the LK condition for the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
2.5	1	- ranks (DA + noun < indefinite)
1.8	2	+ ranks (DA + noun > indefinite)
	3	ties (DA + noun = indefinite)
total=	6	

Z = -0.27 2-tailed p n.s

Table D.19 Mann-Whitney test comparing listener condition on definite scores to second identical referents in the 3-5 year old group.

Mann-Whitney U test					
Rank means	cases	conditions			
9.5	6	LK			
3.5	6	LI			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
0.0	57.0	<.005	-3.21	<.005	

Table D.20 Mann-Whitney test comparing listener condition on definite scores to second identical referents in the 6-8 year old group.

Mann-Whitney U test					
Rank means	cases	conditions			
8.2	6	LK			
4.8	6	LI			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
8.0	49.0	n.s	-1.75	n.s	

Table D.21 Analysis-of-variance summary table looking at indefinite and definite scores for singletons.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	179.99	24			
indefinite/def	0.33	1	0.33	0.23	n.s
age X ind/def	3.00	1	3.00	2.05	n.s
LI/LK X ind/def	147.00	1	147.00	100.23	<.001
age X LI/LK X ind/def	0.33	1	0.33	0.23	n.s
error	29.33	20			

APPENDIX E

EXPERIMENT 5: The effects of increasing the salience of referents in the immediate context.

DATA

Tables E.1 - E.2 Reference used for singletons and identical items on the context salient and object salient task.

Key:
a - Indefinite
the - Definite
tnth - Definite plus first, (CS task: second, third)etc.
tlast - Definite plus last, other (CS task: second)

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Table E.3 Analysis-of-variance summary table comparing age group, type of task and indefinite/definite article + noun scores for non-specific items.

Tables E.4-E.5 Wilcoxen tests showing effects of indefinite verses definite article + noun scores on the object salient task for last identical items.

Tables E.6-E.7 Wilcoxen tests showing effects of indefinite verses definite article + noun scores on the context salient task for last identical items.

Tables E.8-E.9 Mann-Whitney tests showing the effects of age group on scores in the object salient task for last identical items.

Tables E.10-E.11 Mann-Whitney tests showing the effects of age group on scores in the context salient task for last identical items.

Table E.12 Analysis-of-variance summary table comparing age group, type of task and indefinite/definite scores for singletons.

Tables E.13-E.14 Wilcoxen tests comparing singletons and non-specific indefinite scores on the object salient task.

Tables E.15-E.16 Wilcoxen tests comparing singletons and non-specific indefinite scores on the context salient task.

Table E.1 Referring expressions of the 3-5 year olds

3 TO 5 YEARS:

	SINGLETONS		IDENTICALS							
			1st		2nd		3rd		4th(last)	
	tree	ball	candle	brick	candle	brick	candle	brick	candle	brick
CONTEXT SALIENT TASK										
1	the	the	the	the	a	a	the	a	the	the
2	the	the	the	a	the	the	the	the	the	a
3	the	the	a	a	the	the	a	the	a	the
4	the	the	a	a	a	the	a	the	the	the
5	the	the	the	a	the	the	a	a	the	a
6	the	the	a	the	a	a	the	a	the	the

	SINGLETONS				IDENTICALS					
					1st			2nd(last)		
	tree	ball	b-stop	key	candle	brick	star	candle	brick	star
OBJECT SALIENT TASK										
7	the	the	the	the	a	the	the	the	the	the
8	the	the	the	the	the	the	the	the	the	the
9	the	the	the	the	the	the	the	the	the	the
10	the	the	the	the	the	the	the	the	the	the
11	the	the	the	the	the	the	the	the	the	the
12	the	the	the	the	the	the	the	the	the	the

Table E.2 Referring expressions of the 6-8 year olds

6 TO 8 YEARS:

	SINGLETONS		IDENTICALS							
			1st		2nd		3rd		4th(last)	
	tree	ball	candle	brick	candle	brick	candle	brick	candle	brick
CONTEXT SALIENT TASK										
1	the	the	a	a	the	a	a	the	the	tlast
2	the	the	a	a	tnth	a	a	a	a	tlast
3	the	the	a	a	a	a	a	a	tlast	a
4	the	the	a	a	the	a	the	a	the	the
5	the	the	a	a	a	a	a	tnth	a	tlast
6	the	the	a	a	a	a	a	a	the	the

	SINGLETONS				IDENTICALS					
					1st			2nd(last)		
	tree	ball	b-stop	key	candle	brick	star	candle	brick	star
OBJECT SALIENT TASK										
7	the	the	the	the	the	the	the	the	the	a
8	a	a	a	a	a	the	a	a	a	a
9	the	the	the	the	the	tnth	the	the	tlast	the
10	the	the	the	the	the	the	the	the	the	the
11	the	the	the	the	tnth	the	the	the	the	a
12	the	the	the	the	the	the	the	the	a	the

Table E.3 Analysis-of-variance summary table comparing indefinite and definite article + noun scores for non-specific items.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	28.66	23			
age	0.33	1	0.33	5.0	<.05
task	27.00	1	27.00	405.00	<.001
age X task	0.0	1	0.0	0.0	n.s
error	1.33	20	0.07		
Within Subjects	117.99	24			
ind/def.A + noun	0.08	1	0.08	0.06	n.s
age X ind/DA + noun	18.75	1	18.75	13.24	<.005
task X ind/D + noun	60.75	1	60.75	42.88	<.001
age X task X ind/ DA + noun	10.08	1	10.08	7.12	<.05
error	28.33	20	1.42		

Table E.4 Wilcoxen test comparing indefinite and definite article + noun scores for last identical objects on the object salient task in the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (DA + noun < indefinite)
3.5	6	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -2.20 2-tailed p <.05

Table E.5 Wilcoxen test comparing indefinite and definite article + noun scores for last identical objects on the object salient task in the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
5.5	1	- ranks (DA + noun < indefinite)
3.1	5	+ ranks (DA + noun > indefinite)
	0	ties (DA + noun = indefinite)
total=	6	

Z = -1.05 2-tailed p n.s

Table E.6 Wilcoxen test comparing indefinite and definite article + noun scores for last identical objects on the context salient task in the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (DA + noun < indefinite)
2.0	3	+ ranks (DA + noun > indefinite)
	3	ties (DA + noun = indefinite)
total=	6	

Z = -1.60 2-tailed p n.s

Table E.7 Wilcoxen test comparing indefinite and definite article + noun scores for last identical objects on the context salient task in the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
2.0	2	- ranks (DA + noun < indefinite)
3.7	3	+ ranks (DA + noun > indefinite)
	1	ties (DA + noun = indefinite)
total=	6	

Z = -0.94 2-tailed p n.s

Table E.8 Mann-Whitney test showing the effects of age group on indefinite scores for last identical items in the object salient task.

Mann-Whitney U test					
Rank means	cases	conditions			
4.5	6	3-5 yrs			
8.5	6	6-8 yrs			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
6.0	27.0	n.s	-2.31	<.05	

Table E.9 Mann-Whitney test showing the effects of age group on definite article + noun scores for last identical items in the object salient task.

Mann-Whitney U test					
Rank means	cases	conditions			
15.3	12	3-5 yrs			
9.8	12	6-8 yrs			
total= 24					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
39.0	183.0	n.s	-1.99	<.05	

Table E.10 Mann-Whitney test showing the effects of age group on indefinite scores for last identical items in the context salient task.

Mann-Whitney U test					
Rank means	cases	conditions			
6.5	6	3-5 yrs			
6.5	6	6-8 yrs			
total=12					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
18.0	39.0	n.s	0.0	n.s	

Table E.11 Mann-Whitney test showing the effects of age group on definite article + noun scores for last identical items in the context salient task.

Mann-Whitney U test					
Rank means	cases	conditions			
15.3	12	3-5 yrs			
9.8	12	6-8 yrs			
total= 24					
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
39.0	183.0	n.s	-1.99	<.05	

Table E.12 Analysis-of-variance summary table comparing indefinite and definite scores for singletons.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	120.00	24			
indef/definite	85.33	1	85.33	64.00	<.001
age X ind./def.	1.33	1	1.33	1.00	n.s
task X ind./def.	5.33	1	5.33	4.00	n.s
age X task X ind./ def.	1.33	1	1.33	1.00	n.s
error	26.67	20	1.33		

Table E.13 Wilcoxen test comparing singletons and non-specific indefinite scores on the object salient task in the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (non-specific < singleton)
1.0	1	+ ranks (non-specific > singleton)
	5	ties (non-specific = singleton)
total=	6	

Z = -1.00 2-tailed p n.s

Table E.14 Wilcoxen test comparing singletons and non-specific indefinite scores on the object salient task in the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
1.0	1	- ranks (non-specific < singleton)
0.0	0	+ ranks (non-specific > singleton)
	5	ties (non-specific = singleton)
total=	6	

Z = -1.00 2-tailed p n.s

Table E.15 Wilcoxen test comparing singletons and non-specific indefinite scores on the context salient task in the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (non-specific < singleton)
3.5	6	+ ranks (non-specific > singleton)
	0	ties (non-specific = singleton)
total=	6	

Z = -2.20 2-tailed p <.05

Table E.16 Wilcoxen test comparing singletons and non-specific indefinite scores on the context salient task in the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
0.0	0	- ranks (non-specific < singleton)
3.5	6	+ ranks (non-specific > singleton)
	0	ties (non-specific = singleton)
total=	6	

Z = -2.20 2-tailed p <.05

APPENDIX F

EXPERIMENT 6: Expressions used in a story-telling task as a function of social and comparative factors.

DATA

Table F.1 — Referring expressions on first mention in LI and LK conditions.

Table F.2 — Referring expressions on second mention in LI and LK conditions.

Table F.3 — Reference scores for animate and inanimate referents in LI and LK conditions on first and second mention.

Key:

Animates -
- IND - Indefinite
- DEF - Definite articles and/or pronouns
- OTH - Definite plus 'other' modifier
- MOD - Definite plus disciminative modifier ie. first/second or relative clause
- NULL - No article

Inanimates -
- a - Indefinite
- the - Definite article
- pro - Pronoun
- poss - Possessive pronoun
- null - No article
- \- - Indeterminate

THE(NC) - Definite articles that are not context definites
THE(C) - Definite articles that are context definites

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Table F.4 — Wilcoxen test comparing indefinite and definite expressions on first mention in the LI condition for animate referents.

Table F.5 — Wilcoxen test comparing indefinite and definite expressions on first mention in the LK condition for animate referents.

Table F.6 — Mann-Whitney test comparing LI and LK conditions in the use of indefinites on first mention for animate referents.

Table F.7 — Analysis-of-variance summary table comparing LI/LK conditions and indefinite/definite scores on first mention for inanimate referents.

Table F.8 — Analysis-of-variance summary table

Table F.1 Referring expressions on first mention

PAIRS		STORY 1			STORY 2			STORY 3			STORY 4		
SUB.		men,	road,	car	ladies,	pot,	table	girls,	teddy,	ball	girls,	pole,	flag
a1		IND	the	a	IND	a	the						
a2								IND	a	poss	IND	a	a
b3		IND	the	a				DEF	poss	poss			
b4					IND	a	the				IND	a	a
c5								IND	poss	poss	IND	the	a
c6		SIN	the	poss	SIN	poss	the						
d7								IND	poss	poss	IND	a	a
d8	LI	IND	a	a	IND	a	a						
e9								DEF	the	the	IND	a	the
e10		IND	the	a	OTH	a	the						
f11		IND	the	poss				IND	a	a			
f12					IND	poss	the				IND	the	a
g13		IND	a	a				SIN	poss	a			
g14					IND	a	the				IND	a	a
h15					IND	a	a	IND	a	the			
h16		IND	the	poss							IND	the	a

Table F.1 cont.... Referring expressions on first mention

PAIRS		STORY 1			STORY 2			STORY 3			STORY 4		
SUB.		men,road,car			ladies,pot,table			girls,teddy,ball			girls,pole,flag		
i17		DEF	a	the				DEF	the	the			
i18					DEF	the	the	DEF	poss	poss			
j19		IND	the	a	OTH	the	the						
j20								OTH	the	the	DEF	the	the
k21		OTH	the	the	OTH	the	the						
k22								DEF	poss	-	DEF	the	the
l23								IND	poss	poss	IND	the	the
l24	LK	DEF	the	the	DEF	the	the						
m25		IND	a	the	DEF	the	the						
m26								IND	the	the	IND	the	the
n27								OTH	the	poss	OTH	the	the
n28		IND	a	the	SIN	the	a						
o29					DEF	the	the	DEF	the	the			
o30		OTH	the	the							DEF	the	the
p31		DEF	the	the				DEF	the	the			
p32					OTH	poss	the				OTH	the	the

Table F.2 Referring expressions on second mention

PAIRS		STORY 1			STORY 2			STORY 3			STORY 4		
SUB.		men	road	car	ladies	pot	table	girls	teddy	ball	girls	pole	flag
a1		DEF	the	the	DEF	the	the						
a2								DEF	the	the	DEF	pro	null
b3		IND	the	the				OTH	the	the			
b4					NULL	a	a				OTH	the	the
c5								IND	pro	poss	DEF	pro	pro
c6		OTH	the	the	OTH	null	the						
d7								IND	the	poss	IND	the	a
d8	LI	NULL	pro	pro	DEF	the	the						
e9								MOD	the	the	DEF	null	the
e10		IND	the	poss	OTH	the	the						
f11		IND	the	the				DEF	pro	pro			
f12					OTH	the	the				DEF	the	the
g13		OTH	the	the				NULL	pro	pro			
g14					IND	the	the				OTH	the	the
h15					OTH	a	the	DEF	the	the			
h16		IND	the	the							IND	null	null

Table F.2 cont..... Referring expressions on second mention

PAIRS		STORY 1			STORY 2			STORY 3			STORY 4		
SUB.		men,	road,	car	ladies,	pot,	table	girls,	teddy,	ball	girls,	pole,	flag
i17		DEF	pro	a				DEF	the	the			
i18					DEF	the	the	DEF	the	the			
j19		OTH	a	a	DEF	the	the						
j20								OTH	the	the	DEF	the	the
k21		OTH	the	the	OTH	pro	the						
k22								DEF	pro	pro	DEF	pro	the
l23								OTH	a	the	DEF	the	the
l24	LK	DEF	the	the	OTH	the	the						
m25		DEF	the	the	DEF	the	the						
m26								OTH	the	the	OTH	the	the
n27								OTH	pro	the	OTH	pro	the
n28		DEF	the	the	DEF	the	the						
o29					DEF	the	the	DEF	a	the			
o30		OTH	the	the							OTH	pro	the
p31		DEF	a	the				DEF	the	the			
p32					OTH	the	the				DEF	the	the

Table F.3 Reference scores in each condition

ANIMATE REFERENTS

	FIRST MENTION			SECOND MENTION				
LISTENER	IND	DEF	SIN	IND	DEF	OTH	MOD	-
LI	26	3	3	9	9	10	1	3
LK	7	24	1	0	19	15	0	0
TOTALS	33	27	4	9	28	25	1	3

INANIMATE REFERENTS

	FIRST MENTION					SECOND MENTION				
LISTENER	A	PRO	THE(NC)	THE(C)	POSS	A	THE	PRO	POSS	NULL
LI	32	0	4	15	13	4	42	10	3	5
LK		0	38	14	7	6	50	8	0	0
TOTALS	32	0	42	29	20	10	92	18	3	5

Table F.4 Wilcoxen test comparing indefinite and definite scores on first mention in the LI condition for animate referents.

Wilcoxen test		
Rank means	cases	
6.5	11	- ranks (definite < indefinite)
6.5	1	+ ranks (definite > indefinite)
	4	ties (definite = indefinite)
	total= 16	

Z = -2.55 2-tailed p <.05

Table F.5 Wilcoxen test comparing indefinite and definite scores on first mention in the LK condition for animate referents.

Wilcoxen test		
Rank means	cases	
7.0	2	- ranks (definite < indefinite)
7.0	11	+ ranks (definite > indefinite)
	3	ties (definite = indefinite)
	total=16	

Z = -2.20 2-tailed p <.05

Table F.6 Mann-Whitney test comparing LI and LK conditions in the use of indefinites on first mention for animate referents.

Mann-Whitney U test					
Rank means	cases	conditions			
22.28	16	LI			
10.72	16	LK			
total=	32				
			Corrected for Ties		
U	W	Exact 2-tailed p	z	2-tailed p	
35.5	356.5	<.0005	-3.74	<.0005	

Table F.7 Analysis-of-variance summary table looking at indefinite and definite scores on first mention for inanimate referents.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	18.74	31			
LI/LK	0.56	1	0.56	0.92	n.s
error	18.38	30	0.61		
Within Subjects	88.00	32			
indef/def.	0.56	1	0.56	0.62	n.s
LI/LK X ind/def	60.06	1	60.06	65.82	<.001
error	27.38	30	0.91		

Table F.8 Analysis-of-variance summary table looking at the effects of listener condition on appropriate scores on first mention for inanimate referents.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	14.00	31			
LI/LK	0.0	1	0.0	0.0	n.s
error	14.00	30	0.47		

Table F.9 Analysis-of-variance summary table looking at indefinite and definite scores on second mention for inanimate referents.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	4.00	31			
LI/LK	1.00	1	1.00	10.00	<.005
error	3.00	30	0.10		
Within Subjects	179.00	32			
indef/def.	156.25	1	156.25	208.33	<.001
LI/LK X ind/def	0.25	1	0.25	0.33	n.s
error	22.50	30	0.75		

Table F.10 Analysis-of-variance summary table looking at first verses second mention scores for animate + inanimate referents.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	13.18	31			
LI/LK	2.26	1	2.26	6.20	<.05
error	10.92	30	0.36		
Within Subjects	622.75	96			
first/second	11.88	1	11.88	35.05	<.001
LI/LK X 1st/2nd	0.20	1	0.20	0.58	n.s
error	10.17	30	0.34		
indef/def	168.82	1	168.82	74.09	<.001
LI/LK X ind/def	122.07	1	122.07	53.57	<.001
error	68.36	30	2.28		
1/2 X ind/def	150.95	1	150.95	97.68	<.001
LI/LK X 1st/2nd X ind/def	43.95	1	43.95	28.44	<.001
error	46.36	30	1.55		

EXPERIMENT 7: Using information for unambiguous reference 1.

DATA

Tables G.1-G.4 — Referring expressions and discriminative scores in 'physical' and 'episodic' conditions on first and second mention.

Table G.5 — Expressions used for all four age groups in the 'physical' and 'episodic' conditions on first and second mention.

Table G.6 — Type of discriminative expressions used in the 'episodic' condition for all age groups.

Key:
Distractors
ind - Indefinite
def - Definite

Experimental
ind - Indefinite
one - Definite/ refer to one individual
two - Definite/ refer to both individuals
mix - mixed indefinite and definite
DIS - Discriminate on basis of physical characteristics
EPI - Discriminate by mentioning episodic information
REL - Discriminate by using relative clause to mention episodic information
SPA - Discriminate by using spatio-temporal features

DISC - Any form of discriminative expression

Table G.7-G.10 — Picture choices, judgements, blame and listener intervention in 'physical' and 'episodic' conditions.

Table G.11 — Picture choices, judgements, blame and listener intervention in 'physical' and 'episodic' conditions in all four age groups.

Key:
DISTRACTORS
cor - Correct (single)
do - Double referents
dx - Double referents and wrong objects
EXPERIMENTALS
cor - Correct (double)
opp - Opposite
sin - Single referent

JUDGEMENTS
A - Alike
D - Different

FAULT
L - Listener when speaker's fault
S - Speaker when speaker's fault
N - Neither when speaker's fault
l - Listener when listener's fault
s - Speaker when listener's fault
n - Neither when listener's fault

INTERVENTION
NSsin/cor/opp/do/dx - Non-specific request
Ssin/cor/opp/do/dx - Specific request

ANALYSES

Table G.12	Analysis-of-variance summary table comparing age group, physical/episodic conditions and discriminative/ non-discriminative scores.
Table G.13	Cochran test comparing discriminative scores over trials in the 'physical' condition.
Table G.14	Cochran test comparing discriminative scores over trials in the 'episodic' condition.
Table G.15	Analysis-of-variance summary table comparing age group, first/second mention and indefinite/definite scores.
Table G.16	Analysis-of-variance summary table comparing age group and correct/incorrect choices by the listener in the 'physical' condition.
Table G.17	Analysis-of-variance summary table comparing age group and correct/incorrect choices by the listener in the 'episodic' condition.
Table G.18	Analysis-of-variance summary table comparing age group, physical/episodic conditions and correct/incorrect choices by the listener.
Tables G.19-G.20	Spearman correlations between discriminative scores and correct listener choices in the 'physical' condition.
Tables G.21-G.23	Spearman correlations between

	discriminative scores and correct listener choices in the 'episodic' condition.
Tables G.24-G.27	Wilcoxen tests comparing correct and incorrect choices by the listener for distractor stories.

Table G.1 Referring expressions and discriminative scores for the 3-5 year old group.

3-5 yrs	FIRST MENTION					SECOND MENTION				
	DISTRACTOR		EXPERIMENTAL			DISTRACTOR		EXPERIMENTAL (order)		
PAIR	Boy	Girl	Clowns	Boys	Men	Boy	Girl	Clowns	Boys	Men
PHYSICAL CONDITION										
1	ind	ind	ind	two	ind	def	def	two 1	DIS 2	one 3
2	ind	def	ind	ind	ind	def	def	one 2	one 3	two 1
3	ind	ind	two	ind	two	def	def	two 3	two 1	one 2
4	ind	ind	two	two	ind	def	def	ind 1	DIS 3	DIS 2
5	def	ind	ind	ind	ind	def	def	ind 2	DIS 1	DIS 3
6	ind	ind	ind	mix	one	def	def	one 3	DIS 2	DIS 1
7	def	def	ind	ind	ind	def	def	two 1	DIS 2	one 3
8	def	def	two	ind	ind	def	def	one 2	ind 3	ind 1
9	ind	ind	ind	ind	ind	def	def	ind 3	ind 1	DIS 2
10	ind	ind	one	ind	one	def	def	two 1	one 3	one 2
EPISODIC CONDITION										
11	ind	ind	mix	mix	two	def	def	two 1	one 2	two 3
12	ind	ind	ind	ind	mix	def	def	two 2	two 3	two 1
13	ind	def	two	two	two	def	def	two 3	one 1	one 2
14	def	def	two	ind	two	def	def	ind 1	one 3	two 2
15	def	ind	ind	ind	ind	def	def	EPI 2	two 1	EPI 3
16	ind	def	two	ind	ind	def	def	two 3	two 2	two 1
17	def	def	ind	one	ind	def	def	one 1	two 2	ind 3
18	ind	ind	ind	ind	ind	def	def	two 2	two 3	two 1
19	def	ind	ind	two	two	def	def	ind 3	one 1	ind 2
20	ind	ind	ind	ind	one	def	def	two 1	two 3	one 2

Table G.2 Referring expressions and discriminative scores for the 6-8 year old group.

6-8 yrs	FIRST MENTION					SECOND MENTION				
	DISTRACTOR		EXPERIMENTAL			DISTRACTOR		EXPERIMENTAL		(order)
PAIR	Boy	Girl	Clowns	Boys	Men	Boy	Girl	Clowns	Boys	Men
PHYSICAL CONDITION										
1	ind	ind	ind	ind	ind	def	def	DIS 1	DIS 2	DIS 3
2	ind	ind	ind	ind	mix	def	def	DIS 2	DIS 3	DIS 1
3	ind	ind	ind	ind	ind	def	def	DIS 3	DIS 1	DIS 2
4	ind	ind	two	two	ind	def	def	DIS 1	DIS 3	DIS 2
5	ind	ind	ind	two	mix	def	def	DIS 2	DIS 1	DIS 3
6	def	def	ind	ind	ind	def	def	ind 3	DIS 2	DIS 1
7	ind	ind	ind	ind	ind	def	def	ind 1	DIS 2	DIS 3
8	ind	ind	ind	ind	ind	def	def	DIS 2	DIS 3	DIS 1
9	ind	ind	ind	ind	ind	def	def	DIS 3	DIS 1	DIS 2
10	ind	ind	ind	ind	two	def	def	ind 1	ind 3	ind 2
EPISODIC CONDITION										
11	ind	ind	ind	one	ind	def	def	EPI 1	ind 2	ind 3
12	ind	ind	ind	ind	ind	def	def	EPI 2	two 3	two 1
13	ind	ind	ind	ind	ind	def	def	EPI 3	EPI 1	EPI 2
14	ind	def	ind	ind	one	def	def	EPI 1	EPI 3	EPI 2
15	ind	ind	two	two	ind	def	def	two 2	ind 1	one 3
16	ind	ind	two	ind	two	def	def	two 3	two 2	REL 1
17	ind	ind	ind	ind	ind	def	def	EPI 1	EPI 2	EPI 3
18	ind	ind	ind	ind	ind	def	def	REL 2	two 3	two 1
19	ind	ind	ind	ind	ind	def	def	EPI 3	two 1	two 2
20	ind	ind	ind	ind	ind	def	def	two 1	two 3	two 2

Table G.3 Referring expressions and discriminative scores for the 9-11 year old group.

9-11yrs	FIRST MENTION					SECOND MENTION				
	DISTRACTOR		EXPERIMENTAL			DISTRACTOR		EXPERIMENTAL		(order)
PAIR	Boy	Girl	Clowns	Boys	Men	Boy	Girl	Clowns	Boys	Men
PHYSICAL CONDITION										
1	ind	ind	ind	ind	ind	def	def	DIS 1	DIS 2	DIS 3
2	ind	ind	ind	ind	ind	def	def	DIS 2	DIS 3	DIS 1
3	ind	ind	two	two	two	def	def	DIS 3	ind 1	DIS 2
4	ind	ind	two	ind	ind	def	def	DIS 1	DIS 3	ind 2
5	def	def	ind	two	ind	def	def	DIS 2	DIS 1	DIS 3
6	ind	ind	ind	ind	ind	def	def	two 3	two 2	DIS 1
7	ind	ind	ind	ind	ind	def	def	dis 1	dis 2	dis 3
EPISODIC CONDITION										
8	ind	ind	ind	ind	ind	def	def	EPI 1	EPI 2	EPI 3
9	ind	ind	ind	ind	ind	def	def	EPI 2	two 3	two 1
10	def	def	ind	two	ind	def	def	SPA 3	SPA 1	SPA 2
11	ind	ind	ind	ind	two	def	def	EPI 1	EPI 3	EPI 2
12	ind	ind	ind	ind	ind	def	def	SPA 2	SPA 1	SPA 3
13	ind	ind	ind	ind	two	def	def	one 3	two 2	REL 1

Table G.4 Referring expressions and discriminative scores for the parents group.

Parents	FIRST MENTION					SECOND MENTION				
	DISTRACTOR		EXPERIMENTAL			DISTRACTOR		EXPERIMENTAL		(order)
PAIR	Boy	Girl	Clowns	Boys	Men	Boy	Girl	Clowns	Boys	Men
PHYSICAL CONDITION										
1	ind	ind	ind	ind	ind	def	def	DIS 1	DIS 2	DIS 3
2	ind	ind	ind	ind	ind	def	def	DIS 2	DIS 3	DIS 1
3	ind	ind	ind	ind	ind	def	def	DIS 3	ind 1	DIS 2
4	ind	ind	ind	ind	ind	def	def	DIS 1	DIS 3	DIS 2
EPISODIC CONDITION										
5	ind	ind	ind	ind	ind	def	def	ind 1	ind 2	EPI 3
6	ind	ind	ind	ind	ind	def	def	SPA 2	SPA 3	ind 1
7	ind	ind	ind	ind	ind	def	def	ind 3	SPA 1	SPA 2
8	ind	ind	ind	ind	ind	def	def	REL 1	ind 3	ind 2

Table G.5 Expressions used in each condition

	FIRST MENTION							SECOND MENTION						
	DISTRACTOR		EXPERIMENTAL					DISTRACTOR		EXPERIMENTAL				
AGE	Ind	Def	Ind	Def	Mix	ONE	TWO	Ind	Def	Ind	Def	ONE	TWO	DISC
PHYSICAL CONDITION														
3-5	14	6	20	9	1	3	6	0	20	6	24	9	6	9
6-8	18	2	24	4	2	0	4	0	20	5	25	0	0	25
9-11	12	2	16	5	0	0	5	0	14	2	19	0	2	17
PAR.	8	0	12	0	0	-	-	0	8	1	11	0	0	11
TOTAL	44	10	72	18	3	3	15	0	62	14	79	9	8	62
EPISODIC CONDITION														
3-5	12	8	16	11	3	2	9	0	20	4	26	7	17	2
6-8	19	1	24	6	0	2	4	0	20	3	27	1	12	14
9-11	10	2	15	3	0	0	3	0	12	0	18	1	3	14
PAR.	8	0	12	0	0	-	-	0	8	6	6	0	0	6
TOTAL	49	11	67	20	3	2	16	0	50	14	77	9	32	36

Table G.6 Types of discriminative expressions in the 'episodic' condtion.

AGE	SPATIO-TEMPORAL	EPISODIC	EPISODIC + RELATIVE
3-5	0	2	0
6-8	0	14	2
9-11	6	7	1
PAR.	5	2	2

Table G.7 Picture choices, judgements, blame and listener intervention for the 3-5 year old group.

	DISTRACTOR		EXPERIMENTAL			JUDGEMENTS			FAULT		
PAIR	Boy	Girl	Clowns	Boys	Men	Clowns	Boys	Men	Clowns	Boys	Men
PHYSICAL CONDITION											
1	dx	cor	sin	cor	opp	D	A	D	l	-	S
2	cor	cor	cor	cor	cor	A	A	A	-	-	-
3	dx	cor	cor	cor	cor	A	A	A	-	-	-
4	dx	cor	sin	opp	cor	D	D	A	l	l	-
5	do	cor	opp	cor	cor	D	A	A	S	-	-
6	cor	cor	sin	cor	cor	D	A	A	S	-	-
7	dx	cor	opp	cor	cor	D	A	A	L	-	-
8	cor	cor	cor	cor	opp	A	A	D	-	-	L
9	cor	cor	opp	opp	cor	D	D	A	S	L	-
10	dx	dx	cor	cor	cor	A	A	A	-	-	-
EPISODIC CONDITION											
11	dx	cor	opp	opp	cor	A	D	A	S	L	-
12	cor	dx	opp	cor	opp	A	A	A	S	-	L
13	cor	cor	cor	sin	opp	A	D	A	-	S	S
14	dx	cor	cor	opp	cor	A	D	A	-	S	-
15	cor	cor	cor	sin	opp	A	D	A	-	s	l
16	cor	dx	cor	cor	sin	A	A	D	-	-	s
17	cor	dx	cor	opp	cor	A	A	A	-	l	-
18	dx	cor	opp	opp	opp	A	D	A	S	L	L
19	dx	cor	opp	opp	opp	A	D	A	N	L	L
20	cor	cor	opp	opp	opp	D	D	A	L	L	L

Table G.8 Referring expressions and discriminative scores for the 6-8 year old group.

	DISTRACTOR		EXPERIMENTAL			JUDGEMENTS			FAULT		
PAIR	Boy	Girl	Clowns	Boys	Men	Clowns	Boys	Men	Clowns	Boys	Men
PHYSICAL CONDITION											
1	cor	cor	NScor	NScor	cor	A	A	A	-	-	-
2	cor	cor	cor	cor	cor	A	A	A	-	-	-
3	cor	cor	cor	cor	cor	A	A	A	-	-	-
4	cor	cor	NScor	cor	cor	A	A	A	-	-	-
5	cor	cor	cor	cor	opp	A	A	D	-	-	s
6	cor	cor	cor	cor	opp	A	A	D	-	-	s
7	cor	do	cor	opp	cor	A	D	A	-	l	-
8	cor	cor	cor	cor	cor	A	A	A	-	-	-
9	cor	cor	cor	NScor	cor	A	A	A	-	-	-
10	cor	cor	cor	cor	cor	A	A	A	-	-	-
EPISODIC CONDITION											
11	cor	cor	cor	cor	cor	A	A	A	-	-	-
12	cor	cor	cor	cor	opp	A	A	D	-	-	L
13	cor	cor	cor	opp	cor	A	D	A	-	l	-
14	cor	cor	cor	cor	cor	A	A	A	-	-	-
15	do	cor	NSopp	opp	NSopp	A	D	D	L	L	N
16	cor	cor	opp	cor	cor	D	A	A	S	-	-
17	cor	cor	NScor	opp	NSsin	A	D	D	-	l	l
18	cor	do	cor	opp	opp	A	D	D	-	L	L
19	cor	do	opp	cor	cor	D	A	A	s	-	-
20	cor	cor	cor	cor	cor	A	A	A	-	-	-

Table G.9 Referring expressions and discriminative scores for the 9-11 year old group.

	DISTRACTOR		EXPERIMENTAL			JUDGEMENTS			FAULT		
PAIR	Boy	Girl	Clowns	Boys	Men	Clowns	Boys	Men	Clowns	Boys	Men
PHYSICAL CONDITION											
1	cor	cor	cor	cor	cor	A	A	A	-	-	-
2	cor	cor	cor	cor	cor	A	A	A	-	-	-
3	cor	cor	cor	cor	cor	A	A	A	-	-	-
4	Scor	cor	cor	Scor	cor	A	A	A	-	-	-
5	cor	cor	cor	cor	cor	A	A	A	-	-	-
6	cor	cor	cor	cor	cor	A	A	A	-	-	-
7	cor	cor	cor	cor	cor	A	A	A	-	-	-
EPISODIC CONDITION											
8	cor	cor	cor	cor	cor	A	A	A	-	-	-
9	cor	cor	cor	cor	cor	A	A	A	-	-	-
10	cor	cor	cor	cor	cor	A	A	A	-	-	-
11	cor	cor	cor	cor	opp	A	A	D	-	-	1
12	cor	cor	cor	cor	cor	A	A	A	-	-	-
13	cor	cor	cor	opp	cor	A	D	A	-	S	-

Table G.10 Referring expressions and discriminative scores for the parents group.

	DISTRACTOR		EXPERIMENTAL			JUDGEMENTS			FAULT		
PAIR	Boy	Girl	Clowns	Boys	Men	Clowns	Boys	Men	Clowns	Boys	Men
PHYSICAL CONDITION											
1	cor	cor	cor	cor	cor	A	A	A	-	-	-
2	cor	cor	cor	cor	cor	A	A	A	-	-	-
3	cor	cor	cor	cor	cor	A	A	A	-	-	-
4	cor	cor	cor	cor	cor	A	A	A	-	-	-
EPISODIC CONDITION											
5	cor	cor	cor	cor	cor	A	A	A	-	-	-
6	cor	cor	cor	cor	cor	A	A	A	-	-	-
7	cor	cor	cor	cor	cor	A	A	A	-	-	-
8	cor	cor	cor	cor	cor	A	A	A	-	-	-

Table G.11 Overall listener and judgement scores

AGE	DISTRACTOR cor	do	dx	EXPERIMENTAL cor	opp	sin	MISJUDGE A	D	SP-FAULT S	L	N	LI-FAULT s	l	n	INTERVENE NS	S
PHYSICAL CONDITION																
3-5	16	1	6	20	7	3	0	0	4	3	1	0	3	0	0	0
6-8	19	1	0	27	3	0	0	0	0	0	0	2	1	0	4	0
9-11	14	0	0	21	0	0	0	0	0	0	0	0	0	0	0	2
PAR.	8	0	0	12	0	0	0	0	-	-	-	-	-	-	0	0
EPISODIC CONDITION																
3-5	13	0	7	10	17	3	11	0	6	9	0	2	2	0	0	0
6-8	17	3	0	19	10	1	1	0	1	5	1	1	3	0	4	0
9-11	12	0	0	16	2	0	0	0	1	0	0	0	1	0	0	0
PAR.	8	0	0	12	0	0	0	0	-	-	-	-	-	-	0	0

Table G.12 Analysis-of-variance summary table looking at discriminative and non-discriminative scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	17.97	60			
age	1.83	3	0.61	2.43	n.s
Phys./Epis.	0.13	1	0.13	0.53	n.s
age X P/E	2.72	3	0.91	3.62	<.05
error	13.29	53	0.25		
Within Subjects	165.20	61			
ambig/non-amb.	25.54	1	25.54	19.15	<.001
age X amb/non	52.47	3	17.49	13.12	<.001
P/E X amb/non	13.56	1	13.56	10.17	<.005
age X P/E X amb/non-amb.	3.16	3	1.05	0.79	n.s
error	70.67	53	1.33		

Table G.13 Cochran test comparing discriminative scores over trials in the 'physical' condition.

Cochran Q Test					
Non-disc	Discrim	Condition			
12	19	TRIAL 1ST			
9	22	TRIAL 2ND			
10	21	TRIAL 3RD			
Cases	Cochran Q		df	p	
31		1.17	2		n.s

Table G.14 Cochran test comparing discriminative scores over trials in the 'episodic' condition.

Cochran Q Test					
Non-disc	Discrim	Condition			
18	12	TRIAL 1ST			
17	13	TRIAL 2ND			
19	11	TRIAL 3RD			
Cases	Cochran Q		df	p	
30		0.50	2		n.s

Table G.15 Analysis-of-variance summary table looking at indefinite and definite scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	1.84	60			
age	0.09	3	0.03	0.99	n.s
error	1.75	57	0.03		
Within Subjects	943.29	183			
first/second	0.08	1	0.08	2.43	n.s
age X 1st/2nd	0.09	3	0.03	0.99	n.s
error	1.75	57	0.03		
indef/def	7.40	1	7.40	5.97	<.05
age X ind/def	34.17	3	11.39	9.20	<.001
error	70.58	57	1.24		
1st/2nd X ind/def	710.67	1	710.67	372.32	<.001
age X 1st/2nd X indef/def	16.75	3	5.59	2.93	<.05
error	108.80	57	1.91		

Table G.16 Analysis-of-variance summary table looking at correct verses incorrect choices by the listener in the 'physical' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	99.73	31			
correct/incorrect	74.52	1	74.52	124.20	<.001
age X corr/incorr.	9.01	3	3.00	5.00	<.01
error	16.20	27	0.60		

Table G.17 Analysis-of-variance summary table looking at correct verses incorrect choices by the listener in the 'episodic' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	84.64	30			
correct/incorrect	21.37	1	21.37	17.11	<.001
age X corr/incorr.	30.80	3	10.27	8.22	<.001
error	32.47	26	1.25		

Table G.18 Analysis-of-variance summary table looking at the effects of condition on correct and incorrect listener choices.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	183.76	61			
correct/incorrect	87.32	1	87.32	95.09	<.001
age X corr/incorr.	36.18	3	12.06	13.13	<.001
P/E X corr/incorr.	7.53	1	7.53	8.20	<.01
age X P/E X corr/ incorr.	4.06	3	1.35	1.47	n.s
error	48.67	53	0.92		

Table G.19 Spearman correlation between discriminative scores and correct listener scores in the 'physical' condition for the 3-5 year olds.

Spearman correlation coefficient	N = no. of subjects
Correct listener -0.64	
N= 10	
p<.05	
Discriminative scores	

Table G.20 Spearman correlation between discriminative scores and correct listener scores in the 'physical' condition for the 6-8 year olds.

Spearman correlation coefficient	N = no. of subjects
Correct listener 0.42	
N= 10	
n.s	
Discriminative scores	

Table G.21 Spearman correlation between discriminative scores and correct listener scores in the 'episodic' condition for the 3-5 year olds.

Spearman correlation coefficient	N = no. of subjects
Correct listener 0.0	
N= 10 n.s	
Discriminative scores	

Table G.22 Spearman correlation between discriminative scores and correct listener scores in the 'episodic' condition for the 6-8 year olds.

Spearman correlation coefficient	N = no. of subjects
Correct listener 0.08	
N= 10 n.s	
Discriminative scores	

Table G.23 Spearman correlation between discriminative scores and correct listener scores in the 'episodic' condition for the 9-11 year olds.

Spearman correlation coefficient	N = no. of subjects
Correct listener 0.25	
N= 6 n.s	
Discriminative scores	

Table G.24 Wilcoxen test comparing correct and incorrect choices by the listener for distractor stories in the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
4.5	7	- ranks (incorrect < correct)
4.5	1	+ ranks (incorrect > correct)
	12	ties (incorrect = correct)
	total=20	

Z = -1.89 2-tailed p n.s

Table G.25 Wilcoxen test comparing correct and incorrect choices by the listener for distractor stories in the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
8.5	16	- ranks (incorrect < correct)
0.0	0	+ ranks (incorrect > correct)
	4	ties (incorrect = correct)
	total=20	

Z = -3.52 2-tailed p <.0005

Table G.26 Wilcoxen test comparing correct and incorrect choices by the listener for distractor stories in the 9-11 year old group.

Wilcoxen test		
Rank means	cases	
7.0	13	- ranks (incorrect < correct)
0.0	0	+ ranks (incorrect > correct)
	0	ties (incorrect = correct)
total=13		

Z = -3.18 2-tailed p <.005

Table G.27 Wilcoxen test comparing correct and incorrect choices by the listener for distractor stories in the parents group.

Wilcoxen test		
Rank means	cases	
4.5	8	- ranks (incorrect < correct)
0.0	0	+ ranks (incorrect > correct)
	0	ties (incorrect = correct)
total= 8		

Z = -2.52 2-tailed p <.05

APPENDIX H

EXPERIMENT 8: Using relative clauses for anaphoric reference.

DATA

Table H.1	Mini-stories and questions used as materials.
Tables H.2-H.3	Reference used in answering questions in 'same' and 'different' conditions.
Table H.4	Reference scores in 'same' and 'different' conditions in the two age groups.

Key:

SAME	DIFFERENT	
who	WHO	- 'who' relative
what	WHAT	- 'what' relative
mod	MOD	- modifier
sim	SIM	- simple definite noun phrase
oth	OTH	- 'other' modifier
demo	DEMO	- demonstrative
n	N	- no reference to context

ANALYSES

Table H.5	Analysis-of-variance summary table comparing age group and ambiguous/unambiguous reference in the same condtion.
Table H.6	Analysis-of-variance summary table comparing age group and ambiguous/unambiguous reference in the different condtion.
Table H.7-H.13	Analysis-of-variance summary tables comparing same and different conditions in the type of reference used ('who', 'what', modifier, 'other' modifier, simple noun phrase, demonstrative and no context reference).

Table H.1 Mini-stories and questions used as materials.

Same/same-gender referents.

There were two boys carrying a desk.
One of the boys held on with both hands.
The other boy tripped up a step.
Who dropped the desk do you think?

There were two dogs in a field.
One of the dogs was frightened.
The other dog was friendly.
Who ran away do you think?

There were two men in a car.
One of the men was reading a book.
The other man was driving.
Who put the brakes on do you think?

There were two boys at a party.
One of the boys sat on his own.
The other boy started to dance.
Who went home first do you think?

There were two ladies in a shop.
One of the ladies was buying a coat.
The other lady was buying a cake.
Who was hungry do you think?

There were two girls at school.
One of the girls was working very hard.
The other girl went to sleep.
Who finished the sums first do you think?

Two boys were playing tennis.
One of the boys hit the ball over the net.
The other boy missed the ball.
Who had to pick the ball up do you think?

Two teachers were in the gym.
One of the teachers stretched his weak arms.
The other teacher showed off his muscles.
Who dropped the heavy weights do you think?

Two girls were buying ice-creams.
One of the girls asked for a small lolly-pop.
The other girl asked for a large cone.
Who was greedy do you think?

There were two girls eating their dinner.
One of the girls started to play with her plate.
The other girl cut her food with a knife and a fork.
Who threw the dinner on the floor do you think?

There were two dancers in a ballroom.
One of the dancers put on some ballet shoes.
The other dancer was wearing some tap shoes.
Who made the most noise do you think?

There were two boys swimming in the sea.
One of the boys did the breast stroke.
The other boy put on a rubber ring.
Who was a good swimmer do you think?

<u>Different/different-gender referents.</u>

There was a boy and a girl carrying a desk.
The girl held on with both hands.
The boy tripped up a step.
Who dropped the desk do you think?

There was a cat and a dog in a field.
The cat was frightened.
The dog was friendly.
Who ran away do you think?

There was a man and a lady in a car.
The man was reading a book.
The lady was driving.
Who put the brakes on do you think?

There was a boy and a girl at a party.
The boy sat on his own.
The girl started to dance.
Who went home first do you think?

There was a lady and a man in a shop.
The lady was buying a coat.
The man was buying a cake.
Who was hungry do you think?

There was a girl and a boy at school.
The girl was working very hard.
The boy went to sleep.
Who finished the sums first do you think?

A boy and a girl was playing tennis.
The boy hit the ball over the net.
The girl missed the ball.
Who had to pick the ball up do you think?

A teacher and a postman were in the gym.
The teacher stretched his weak arms.
The postman showed off his muscles.
Who dropped the heavy weights do you think?

A girl and a boy were buying ice-creams.
The girl asked for a small lolly-pop.
The boy asked for a large cone.
Who was greedy do you think?

There was a girl and a boy eating their dinner.
The girl started to play with her plate.
The boy cut his food with a knife and a fork.
Who threw the dinner on the floor do you think?

There was a lady and a man in a ballroom.
The lady put on some ballet shoes.
The man was wearing some tap shoes.
Who made the most noise do you think?

There was a boy and a girl swimming in the sea.
The boy did the breast stroke.
The girl put on a rubber ring.
Who was a good swimmer do you think?

Table H.2 References used in answering questions for the 3-5 year old group.

S	desk	field	car	party	shop	school	tennis	gym	icecr.	dinner	dance	sea
1	WHO	mod	WHO	SIM	who	mod	WHO	who	WHO	mod	who	WHO
2	WHO	WHO	mod	who	WHO	who	WHO	who	WHO	who	who	WHO
3	sim	sim	sim	sim	MOD	mod	DEM	MOD	DEM	SIM	DEM	mod
4	who	who	WHAT	WHO	who	WHAT	what	WHAT	WHO	what	WHAT	who
5	WHAT	what	what	mod	WHAT	MOD	what	mod	MOD	MOD	mod	MOD
6	WHO	who	WHO	who	who	MOD	WHO	WHO	who	WHO	who	who
7	SIM	sim	sim	SIM	oth	DEM	sim	DEM	oth	DEM	DEM	sim
8	MOD	MOD	mod	mod	MOD	mod	mod	mod	MOD	mod	MOD	MOD
9	who	who	WHO	who	WHO	WHO	who	WHO	WHO	who	WHO	who
10	WHO	who	who	WHO	WHO	who	WHO	who	who	WHO	WHO	who
11	what	MOD	what	mod	mod	MOD	MOD	MOD	mod	MOD	MOD	mod
12	who	who	WHO	who	WHO	who	who	WHO	WHO	who	WHO	WHO
13	who	WHO	mod	mod	WHO	who	MOD	MOD	WHO	mod	mod	WHO
14	WHAT	what	WHAT	WHAT	mod	MOD	mod	mod	mod	MOD	mod	MOD
15	n	n	N	n	N	n	N	N	n	N	OTH	n
16	who	WHO	who	WHO	WHO	who	who	WHO	WHO	who	who	WHO
17	WHO	MOD	mod	who	WHO	mod	WHO	who	MOD	who	WHO	who
18	who	MOD	who	who	WHO	mod	who	MOD	WHO	WHO	who	WHO
19	WHO	who	who	WHO	who	WHO	who	WHO	WHO	who	WHO	who
20	WHO	WHO	who	who	mod	MOD	who	mod	WHO	mod	MOD	WHAT

Table H.3 References used in answering questions for the 6-8 year old group.

S	desk	field	car	party	shop	school	tennis	gym	icecr.	dinner	dance	sea
1	WHO	who	WHO	who	WHO	who	WHO	who	WHO	who	WHO	who
2	mod	WHO	who	mod	WHO	MOD	WHO	who	MOD	who	who	WHO
3	who	WHO	WHO	who	who	WHO	who	WHO	WHO	WHO	who	who
4	who	WHO	who	MOD	mod	mod	WHO	MOD	MOD	who	MOD	mod
5	WHO	who	who	WHO	who	WHO	who	who	who	WHO	WHO	WHO
6	who	WHO	WHO	who	WHO	WHO	who	WHO	who	who	WHO	who
7	MOD	MOD	mod	SIM	mod	MOD	mod	MOD	mod	who	SIM	mod
8	WHO	WHO	who	who	WHO	who	WHO	WHO	who	WHO	who	who
9	who	who	WHO	WHO	WHO	who	WHO	who	who	WHO	who	WHO
10	who	mod	WHO	WHO	MOD	MOD	mod	who	MOD	mod	mod	WHO
11	MOD	what	what	WHO	mod	WHO	who	MOD	who	WHO	MOD	who
12	MOD	mod	who	MOD	who	WHO	MOD	mod	mod	MOD	mod	WHO
13	who	WHO	who	who	who	WHO	WHO	who	WHO	WHO	who	WHO
14	WHO	who	MOD	who	WHO	who	WHO	who	who	WHO	WHO	who
15	mod	who	WHO	who	who	MOD	MOD	who	MOD	mod	WHO	WHO
16	WHO	WHO	WHO	who	WHO	mod	who	mod	MOD	MOD	who	who
17	mod	mod	MOD	MOD	MOD	MOD	who	who	MOD	MOD	who	mod
18	who	WHO	WHO	who	WHO	WHO	WHO	who	who	who	WHO	who
19	WHO	who	who	WHO	who	WHO	who	WHO	WHO	who	WHO	who
20	mod	MOD	who	mod	who	MOD	who	WHO	who	MOD	WHO	WHO

Table H.4 Reference scores in each condition.

AGE	who/WHO	what/WHAT	mod/MOD	sim/SIM	oth/OTH	dem/DEM	n/N
SAME							
3-5	62	8	34	2	8	0	6
6-8	89	2	29	0	0	0	0
TOTALS:	151	10	63	2	8	0	6
DIFFERENT							
3-5	59	10	32	1	6	7	5
6-8	84	0	34	0	2	0	0
TOTALS:	143	10	66	1	8	7	5

Table H.5 Analysis-of-variance summary table looking at ambiguous and unambiguous reference in the 'same' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	17.55	39			
age	0.45	1	0.45	1.0	n.s
error	17.10	38	0.45		
Within Subjects	686.00	40			
ambig/unambig.	572.45	1	572.45	206.98	<.001
age X amb/unamb.	8.45	1	8.45	3.06	n.s
error	105.10	38	2.77		

Table H.6 Analysis-of-variance summary table looking at ambiguous and unambiguous reference in the 'different' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	12.19	39			
age	0.31	1	0.31	1.0	n.s
error	11.88	38	0.31		
Within Subjects	668.50	40			
ambig/unambig.	610.51	1	610.51	433.84	<.001
age X amb/unamb.	4.51	1	4.51	3.21	n.s
error	53.48	38	1.41		

Table H.7 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of 'who' reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	22.50	40			
same/different	0.01	1	0.01	1.76	n.s
error	22.49	39	0.58		

Table H.8 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of 'what' reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	9.00	40			
same/different	0.0	1	0.0	0.0	n.s
error	9.00	39	0.23		

Table H.9 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of modifiers for reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	23.00	40			
same/different	0.20	1	0.20	0.34	n.s
error	22.80	39	0.59		

Table H.10 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of 'other' modifiers for reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	2.49	40			
same/different	0.01	1	0.01	0.20	n.s
error	2.48	39	0.06		

Table H.11 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of simple definite noun phrases for reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	11.00	40			
same/different	0.0	1	0.0	0.0	n.s
error	11.00	39	0.28		

Table H.12 Analysis-of-variance summary table comparing 'same' and 'different' conditions in the use of demonstratives for reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	12.40	40			
same/different	0.61	1	0.61	2.01	n.s
error	11.89	39	0.31		

Table H.13 Analysis-of-variance summary table comparing 'same' and'different' conditions in the failure to use context for reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	0.50	40			
same/different	0.01	1	0.01	1.00	n.s
error	0.49	39	0.01		

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DATA

Tables I.1-I.4 — Discriminative scores in same-gender and different-gender conditions and in similar and identical conditions.

Key:

G	Gender	X	Character (-)
C	Colour	S	Spatial
Z	Character (+)	D	'That one'/'there' (deictic)

Tables I.5-I.8 — Response times and listener scores in same-gender and different-gender conditions and in similar and identical conditions.

Key:

TIME: 0 = <10 SECS 1 = 10-20 SECS 2 = >20SECS m=mean

LISTENER: 1 = CORRECT CHOICE 0 = WRONG CHOICE T=TOTAL

Table I.9 — Discriminative scores in all four age groups in same-gender and different-gender conditions and in similar and identical conditions.

Table I.10 — Response times in all four age groups in same-gender and different-gender conditions and in similar and identical conditions.

Table I.11 — Listener scores in all four age groups in same-gender and different-gender conditions and in similar and identical conditions.

Table I.12 — Contrastive scores in all four age groups in similar and identical conditions for the different-gender condition.

Table I.13 — Discriminative scores in all four age groups in the similar and identical condition.

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Table I.14 — Analysis-of-variance summary table looking at discriminative scores comparing age group, same-gender /different-gender and similar/ identical conditions.

Table I.15 — Analysis-of-variance summary table comparing age group, same-gender

Table I.1 Discriminative scores for the 3-5 year old group.

3-5 yrs	SAME GENDER						DIFFERENT GENDER					
S.	1	2	3	4	5	6	1	2	3	4	5	6
SIMILARS												
1	C	C	C	CX	C	C	C	GC	C	C	C	C
2	C	G	C	C	C	C	C	C	C	C	C	GC
3	C	C	C	G	C	C	G	GC	G	G	G	C
4	G	G	GX	G	G	G	G	G	G	G	G	G
5	C	GC	GC	GC	C	GC	C	C	C	C	C	C
6	GC	GC	GC	C	C	C	GCZ	GC	GC	GC	GC	GC
7	C	C	C	C	C	C	G	GC	C	C	C	C
8	C	GC	C	GC	GC	C	C	GCX	C	GC	GC	C
IDENTICALS												
9	D	D	D	D	D	D	GC	G	GC	G	GZ	G
10	D	C	C	X	D	D	X	C	Z	Z	X	X
11	GC	GCZ	CZS	GC	GC	GC	GC	GC	GC	GC	GC	GC
12	G	C	GC	GC	GS	C	GCS	GCS	GCS	GCS	GCS	GCS
13	GC	GC	GC	GC	G	Z	GC	GZ	GC	GC	GC	GC
14	GC	GC	GC	C	GC	G	GC	GC	GC	GC	G	G
15	D	D	D	S	G	D	G	GC	GC	G	G	GC
16	GC	G	GC	GC	GC	GC	D	D	D	D	D	D

Table I.2 Discriminative scores for the 6-8 year old group.

6-8 yrs	SAME GENDER						DIFFERENT GENDER					
S.	1	2	3	4	5	6	1	2	3	4	5	6
SIMILARS												
1	GC	GC	GC	GC	GC	GC	G	GCX	GC	GCZ	GC	GC
2	GC	GC	C	C	C	C	GC	GC	GC	GC	GC	GC
3	C	C	C	C	C	C	C	C	C	C	C	C
4	GC	GZ	GC	GC	GC	GC	GC	GC	GC	GC	GC	GCX
5	C	C	C	C	C	C	C	C	C	C	C	GC
6	GC	GC	GC	GC	GCZ	GC	GC	GC	GC	GC	GC	GC
7	GC	GC	G	C	GC	GC	GC	GC	GC	GC	GC	GC
8	GC	C	C	C	C	GC	GC	GC	GC	GC	GC	GC
IDENTICALS												
9	GC	C	GC	GC	X	Z	X	X	Z	Z	X	Z
10	C	CS	CS	CS	C	C	G	C	CX	CX	C	C
11	G	G	GC	GZ	GC	GC	GS	GS	GS	GS	GS	GS
12	Z	GX	X	GS	GS	GS	D	D	Z	Z	D	D
13	GC	CZ	CX	GCZ	CZ	X	GC	G	GC	GC	GC	GC
14	GCX	GCS	GCX	GCZ	GCX	GCS	GCX	GC	GCZ	GCZ	GCZ	GC
15	GCS	GC	GCS	GCS	GC	GC	GCX	GCZ	GCZ	GCZ	GCX	GCX
16	GC	GC	GC	GC	GC	GC	CS	CS	CS	CS	CS	C

Table I.3 Discriminative scores for the 9-11 year old group.

9-11 yrs	SAME GENDER						DIFFERENT GENDER					
S.	1	2	3	4	5	6	1	2	3	4	5	6
SIMILARS												
1	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
2	C	C	C	GC	C	C	GC	GC	GC	GC	GC	GC
3	C	C	C	CZ	C	C	GC	GC	CX	CX	GC	C
4	C	C	C	C	GC	C	C	C	C	C	C	C
5	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
6	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
7	C	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
8	C	C	C	C	C	C	C	C	C	C	C	C
IDENTICALS												
9	GX	GCX	GC	GX	CZ	GZ	Z	X	X	Z	X	X
10	X	X	Z	Z	Z	X	GC	Z	G	Z	G	G
11	S	S	S	S	S	S	GS	GS	GS	G	S	GS
12	GCX	GCZ	GCX	GCX	GCX	GCZ	GC	GCX	GCZ	GCX	GCX	GC
13	GC	GC	GZ	GX	GZ	GC	GC	GC	GC	X	CZ	G
14	GCZ	GC	GZ	GX	GCZ	CZ	ZCX	GC	GZ	GX	G	CX
15	X	Z	Z	X	Z	Z	Z	Z	Z	X	Z	X
16	S	S	S	S	S	C	G	G	S	S	S	G

Table I.4 Discriminative scores for the parents group.

Parents	SAME GENDER						DIFFERENT GENDER					
S.	1	2	3	4	5	6	1	2	3	4	5	6
SIMILARS												
1	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
2	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
3	C	C	C	C	C	C	G	G	G	G	G	G
4	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
5	GC	GC	GC	GC	GC	GC	G	G	G	G	G	G
6	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
7	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC	GC
8	GC	GC	GC	GC	GC	GC	G	G	G	G	G	G
IDENTICALS												
9	GX	GX	GZ	GX	GZ	GX	GCZ	GCX	GX	GC	GX	GC
10	X	Z	Z	GZ	CX	Z	G	GX	G	G	G	G
11	Z	X	X	Z	Z	Z	Z	X	X	Z	Z	Z
12	X	Z	X	Z	Z	X	G	G	G	G	G	G
13	GC	GC	GCZ	GCZ	GC	GC	GCZ	GZ	GCX	GX	GCX	GCZ
14	GX	GCZ	GZ	GX	GC	GC	G	G	G	G	G	G
15	GS	GS	GX	GS	GS	GS	GX	GZ	GZ	GX	GZ	GS
16	GCX	GCX	GZ	GX	GZ	GX	G	G	G	G	G	G

Table I.5 Response times and listener scores for the 3-5 year old group.

3-5 yrs	RESPONSE TIMES				LISTENER SCORES												
	SAME GENDER		DIFF. GENDER		SAME GENDER							DIFF. GENDER					
S	123456	m	123456	m	1	2	3	4	5	6	T	1	2	3	4	5	6	T
SIMILARS																		
1	111111	1	010000	0	1	1	1	1	0	1	5	1	1	1	1	1	1	6
2	111011	1	111100	1	1	0	1	1	1	1	5	1	1	1	0	0	1	4
3	111011	1	110000	0	1	1	1	0	1	1	5	1	1	1	1	1	1	6
4	101101	1	000110	0	0	0	1	0	0	0	1	1	1	1	1	1	1	6
5	111011	1	001000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
6	111021	1	211011	1	1	1	1	1	1	1	6	1	1	1	1	1	1	6
7	111110	0	111111	1	1	0	1	1	1	1	5	1	1	1	1	1	1	6
8	000100	0	110011	1	1	1	1	1	1	1	6	0	1	1	1	1	1	5
IDENTICALS																		
9	222112	2	221111	1	1	1	1	1	1	1	6	1	1	1	1	1	1	6
10	001100	0	111101	1	1	1	1	1	1	1	6	0	0	1	1	0	0	2
11	111010	1	111101	1	0	1	1	1	0	0	3	1	1	1	1	1	1	6
12	000000	0	000010	0	0	1	1	1	1	1	5	1	1	1	1	1	1	6
13	221122	2	211121	1	0	0	0	1	1	1	3	1	1	1	1	0	1	5
14	222112	2	100010	0	0	0	0	0	1	1	2	1	1	1	0	1	1	5
15	111111	1	111111	1	0	1	0	1	1	1	4	1	1	1	0	1	1	5
16	101000	0	111011	1	0	1	0	1	0	1	3	1	1	1	1	0	1	5

Table I.6 Response times and listener scores for the 6-8 year old group.

6-8 yrs	RESPONSE TIMES				LISTENER SCORES											
	SAME GENDER		DIFF. GENDER		SAME GENDER							DIFF. GENDER						
S	123456	m	123456	m	1	2	3	4	5	6	T	1	2	3	4	5	6	T
SIMILARS																		
1	000000	0	000000	0	1	1	1	0	1	1	5	1	1	1	1	1	1	6
2	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
3	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
4	000000	0	000000	0	1	0	1	1	1	1	5	1	1	1	1	1	1	6
5	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
6	000010	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
7	000000	0	110000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
8	010000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
IDENTICALS																		
9	000000	0	000000	0	0	1	1	0	1	1	4	1	1	1	1	0	0	4
10	000000	0	000000	0	1	1	1	1	0	1	5	1	0	1	1	0	0	3
11	000000	0	000000	0	1	0	1	1	1	1	5	1	1	1	1	1	1	6
12	222122	2	222222	2	1	1	1	0	1	0	4	0	0	1	1	1	1	4
13	000000	0	001000	0	0	1	1	1	1	1	5	1	1	1	1	1	1	6
14	000000	0	000000	0	1	1	1	1	1	0	5	1	1	1	1	1	1	6
15	100000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
16	110011	1	110000	0	1	0	0	1	1	1	4	1	1	1	0	1	0	4

Table I.7 Response times and listener scores for the 9-11 year old group.

9-11 yrs RESPONSE TIMES				LISTENER SCORES													
SAME GENDER		DIFF. GENDER		SAME GENDER							DIFF. GENDER						
S	123456	m	123456	m	1	2	3	4	5	6	T	1	2	3	4	5	6	T
SIMILARS																		
1	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
2	000000	0	011000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
3	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
4	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
5	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
6	000000	0	000000	0	1	1	1	1	1	1	6	0	0	0	0	0	0	0
7	000000	0	000000	0	0	1	1	1	1	1	5	1	1	1	1	1	1	6
8	000100	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
IDENTICALS																		
9	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
10	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
11	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
12	001111	1	000000	0	0	0	1	1	1	0	3	1	1	1	1	1	1	6
13	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
14	000000	0	000000	0	1	0	1	1	1	1	5	1	1	1	1	1	1	6
15	000010	0	000000	0	1	0	1	1	1	1	5	1	0	1	1	1	0	4
16	000000	0	000000	0	1	1	1	1	1	0	5	1	1	1	1	1	1	6

Table I.8 Response times and listener scores for the parents group.

Parents	RESPONSE TIMES				LISTENER SCORES													
	SAME GENDER		DIFF. GENDER		SAME GENDER							DIFF. GENDER						
S	123456	m	123456	m	1	2	3	4	5	6	T	1	2	3	4	5	6	T
SIMILARS																		
1	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
2	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
3	010010	0	001000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
4	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
5	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
6	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
7	000000	0	000100	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
8	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
IDENTICALS																		
9	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
10	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
11	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
12	010000	0	100000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
13	000000	0	001000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
14	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
15	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6
16	000000	0	000000	0	1	1	1	1	1	1	6	1	1	1	1	1	1	6

Table I.9 Total discriminative scores.

	SAME GENDER				DIFFERENT GENDER			
AGE	G	C	X+Z	S	G	C	X+Z	S
SIMILARS								
3-5	18	40	2	0	24	37	2	0
6-8	27	46	2	0	37	47	3	0
9-11	25	48	1	0	33	48	2	0
PAR.	42	48	0	0	48	30	0	0
IDENTICALS								
3-5	26	26	4	3	36	27	7	6
6-8	33	36	15	11	25	28	20	11
9-11	22	17	31	11	26	13	24	8
PAR.	31	12	37	5	42	8	22	1

Table I.10 Total response times.

	SAME GENDER			TOTAL	DIFFERENT GENDER			TOTAL
AGE	0	1	2		0	1	2	
SIMILARS								
3-5	12	35	1	48	23	24	1	48
6-8	46	2	0	48	46	2	0	48
9-11	47	1	0	48	46	2	0	48
PAR.	46	2	0	48	46	2	0	48
IDENTICALS								
3-5	16	20	12	48	17	27	4	48
6-8	37	6	5	48	39	3	6	48
9-11	43	5	0	48	48	0	0	48
PAR.	47	1	0	48	46	2	0	48

Table I.11 Total listener scores (out of 48).

	SIMILARS		IDENTICALS	
AGE	SAME GENDER	DIFF GENDER	SAME GENDER	DIFF GENDER
3-5	39	45	32	40
6-8	46	48	38	39
9-11	47	42	42	46
PAR.	48	48	48	48

Table I.12 Total contrastive scores (different-gender).

	SIMILARS		IDENTICALS	
	GENDER ONLY	COLOUR ONLY	GENDER ONLY	CHARACTER/SPATIAL ONLY
3-5	11	24	28	5
6-8	1	11	9	15
9-11	0	15	16	22
PAR.	18	0	25	6

Table I.13 Total discriminative scores in similar and identical conditions.

	SIMILARS	IDENTICALS
3-5	48	41
6-8	48	40
9-11	48	48
PAR.	48	48

Table I.14 Analysis-of-variance summary table looking at the effects of condition on discriminative scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	209.81	63			
age	54.59	3	18.20	13.29	<.001
similar/identical	51.26	1	51.26	37.43	<.001
age X sim./id.	27.27	3	9.09	6.64	<.001
error	76.69	56	1.37		
Within Subjects	173.31	64			
same/diff. gender	37.20	1	37.20	26.06	<.001
age X same/diff.	27.21	3	9.07	6.35	<.001
sim/id X same/diff	18.76	1	18.76	13.14	<.001
age X sim/id X same/diff gender	8.40	3	2.80	1.96	n.s
error	79.74	56	1.43		

Table I.15 Analysis-of-variance summary table looking at positive verses negative discriminative relatives.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	120.01	31			
age	45.38	3	15.13	5.68	<.005
error	74.63	28	2.67		
Within Subjects	94.01	96			
same/diff. gender	1.53	1	1.53	0.72	n.s
age X same/diff.	8.09	3	2.70	1.27	n.s
error	59.38	28	2.12		
+/-	0.28	1	0.28	0.54	n.s
age X +/-	0.09	3	0.03	0.06	n.s
error	14.63	28	0.52		
same/diff X +/-	0.50	1	0.50	1.67	n.s
age X same/diff X +/-	1.13	3	0.38	1.25	n.s
error	8.38	28	0.30		

Table I.16 Analysis-of-variance summary table looking at scores for discriminative and irrelevant information colour and character information.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	588.06	63			
age	53.65	3	17.88	1.93	n.s
similar/identical	6.57	1	6.57	0.71	n.s
age X sim./id.	8.65	3	2.88	0.31	n.s
error	519.19	56	9.27		
Within Subjects	2500.50	64			
discrim/irrelevant	825.20	1	825.20	99.23	<.001
age X disc/irrel.	176.52	3	58.84	7.08	<.001
sim/id X disc/irrel	897.82	1	897.82	107.97	<.001
age X sim/id X disc/irrel.	135.27	3	45.09	5.42	<.005
error	465.69	56	8.32		

Table I.17 Analysis-of-variance summary table looking at the effects of condition in the use of discriminative colour and character information.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	610.41	63			
age	68.56	3	22.85	5.18	<.005
similar/identical	264.50	1	264.50	60.00	<.001
age X sim./id.	40.56	3	13.52	3.07	<.05
error	246.88	56	4.41		
Within Subjects	199.01	64			
same/diff. gender	9.03	1	9.03	3.18	n.s
age X same/diff.	27.66	3	9.22	3.25	<.05
sim/id X same/diff	0.28	1	0.28	0.10	n.s
age X sim/id X same/diff gender	3.16	3	1.05	0.37	n.s
error	158.88	56	2.84		

Table I.18A Analysis-of-variance summary table looking at the effects of age group on correct choice scores by the listener.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	175.00	63			
age	41.63	3	13.88	6.24	<.001
error	133.38	60	2.22		

Table I.18B Studentised Newman-keuls test of multiple comparisons looking at the effects of age group on correct choices by the listener.

mean	age group	3-5	6-8	9-11	adult
9.75	3-5				
10.69	6-8				
11.06	9-11	*			
12.00	parent	*	*		

Table I.19 Pearson correlations between discriminative and correct choice scores.

Pearson Correlation coefficient			N= no. of subjects r = coefficient
	CHOICE	DISCRIM.	
	1.00	0.61	
CHOICE	(N=64)	(N=64)	
		p<.000	
DISCRIM.	r =0.61	1.00	
	(N=64)	(N=64)	
	p<.000 1-Tailed		

Table I.20 Pearson correlations between discriminative and correct choice scores for the 3-5 year old group.

Pearson Correlation coefficient			N= no. of subjects r = coefficient
	CHOICE	DISCRIM.	
	1.00	0.63	
CHOICE	(N=16)	(N=16)	
		p<.005	
DISCRIM.	r =0.63	1.00	
	(N=16)	(N=16)	
	p<.005 1-Tailed		

Table I.21 Pearson correlations between discriminative and correct choice scores for the 6-8 year old group.

Pearson Correlation coefficient			N= no. of subjects r = coefficient
	CHOICE	DISCRIM.	
	1.00	0.74	
CHOICE	(N=16)	(N=16)	
		p<.001	
DISCRIM.	r =0.74	1.00	
	(N=16)	(N=16)	
	p<.001 1-Tailed		

Table I.22 Pearson correlations between discriminative and correct choice scores for the 9-11 year old group.

Pearson Correlation coefficient			N= no. of subjects r = coefficient
	CHOICE	DISCRIM.	
CHOICE	1.00 (N=16)	-0.18 (N=16) n.s	
DISCRIM.	r =-0.18 (N=16) n.s	1.00 (N=16)	
		1-Tailed	

APPENDIX J

EXPERIMENT 10: Model Village: Identification and anaphoric reference.

DATA

Tables J.1-J.4 — Discriminative and redundant experimental scores for 'physical', 'quantity' and 'spatial' discriminations.

Key:
Tp - situations where 'physical' discrimination required
Tq - situations where 'quantity' discrimination required
Ts - situations where 'spatio-temporal' discrimination required

PHY - 'Physical' discriminations score
QUA - 'Quantity' discriminations score
SPA - 'Spatial' or 'temporal' discriminations score

RP - 'Physical' redundancy score
RQ - 'Quantity' redundancy score
RS - 'Spatial' or 'temporal' redundancy score

Tables J.5-J.8 — Correct and incorrect pronoun scores including pronouns to referents in high focus.

Key: P - Pronoun
N - Full noun phrase
\- - No reference

Tables J.9-J.12 — Indefinite scores as a function of the referential array.

Key:
IND - Indefinite (a/one of the...)
DEF - Definite (the / he,she,it)

Tables J.13-J.16 — Display errors and listener intervention in total and as a function of ambiguity.

Key:
C - General Comments
Q - General Questions
P - Process Questions
S - Perceptual remarks

Table J.17 — Discriminative scores for 'physical', 'quantity' and 'spatial' discriminations in all four age groups.

Table J.18 — Redundant scores in all four age groups.

ANALYSES

Table J.1 Discriminative and redundant scores for the 3-5 year old group.

3-5 yrs	DISCRIMINATIONS						REDUNDANCY		
S.	Tp	PHY	Tq	QUA	Ts	SPA	RP	RQ	RS
1	5	3	6	1	4	1	0	0	0
2	4	3	7	3	5	0	0	0	0
3	5	1	6	1	7	0	0	0	0
4	4	1	4	1	3	1	0	0	0
5	5	5	5	3	5	4	0	0	1
6	5	2	5	2	4	1	0	0	0
7	5	4	6	1	7	5	0	0	1
8	3	2	4	1	4	1	0	0	0
9	5	3	6	0	4	2	0	0	0
10	5	3	5	3	8	0	0	0	0
11	5	2	7	2	7	0	1	0	0
12	3	2	4	1	4	2	0	0	0
13	6	4	5	2	4	2	0	0	0
14	5	3	6	2	3	1	1	0	0
15	7	4	5	2	4	2	0	0	0
16	4	2	5	1	4	2	1	0	0

Table J.2 Discriminative and redundant scores for the 6-8 year old group.

6-8 yrs	DISCRIMINATIONS						REDUNDANCY		
S.	Tp	PHY	Tq	QUA	Ts	SPA	RP	RQ	RS
1	5	3	6	2	7	6	0	0	1
2	5	4	7	6	9	3	0	1	2
3	5	5	5	2	6	3	1	0	1
4	7	7	7	3	4	2	0	0	2
5	4	4	6	4	8	7	0	0	3
6	5	5	8	5	7	0	0	0	0
7	5	5	7	4	6	4	0	0	0
8	5	2	7	4	5	1	1	0	0
9	5	5	7	6	7	4	0	0	1
10	7	7	5	3	8	7	0	0	4
11	1	1	8	7	12	8	0	0	3
12	6	5	5	4	10	10	2	0	5
13	6	4	6	6	8	5	0	0	0
14	5	3	7	5	8	7	0	0	12
15	5	0	4	1	10	8	0	0	3
16	4	3	6	4	8	5	0	0	0

Table J.3 Discriminative and redundant scores for the 9-11 year old group.

9-11 yrs	DISCRIMINATIONS						REDUNDANCY		
S.	Tp	PHY	Tq	QUA	Ts	SPA	RP	RQ	RS
1	5	5	5	3	7	6	0	0	2
2	7	6	7	4	8	7	0	0	2
3	9	4	6	3	7	5	1	0	3
4	7	2	6	6	12	10	1	0	4
5	7	6	6	5	7	7	0	0	2
6	6	6	6	4	3	3	0	0	11
7	8	8	5	4	10	10	0	0	3
8	6	6	6	6	12	12	0	0	5
9	5	5	6	3	7	7	0	0	4
10	9	7	5	3	10	9	5	0	2
11	7	7	4	1	10	10	0	0	5
12	7	5	6	2	8	6	0	0	7
13	9	7	5	3	11	11	0	0	1
14	5	5	7	5	4	3	0	0	5
15	9	4	6	3	7	5	1	0	5
16	5	5	5	4	9	8	0	0	2

Table J.4 Discriminative and redundant scores for the adults group.

Adults	DISCRIMINATIONS						REDUNDANCY		
S.	Tp	PHY	Tq	QUA	Ts	SPA	RP	RQ	RS
1	8	8	14	14	0	0	0	0	7
2	6	4	8	8	7	6	0	0	4
3	6	5	9	8	7	6	0	0	5
4	5	5	9	8	5	5	0	0	6
5	6	6	8	6	5	5	0	0	9
6	7	7	7	5	8	8	0	0	3
7	6	5	11	11	4	4	2	0	9
8	6	6	6	6	6	6	0	0	2
9	7	7	8	6	6	6	0	0	6
10	6	6	8	6	6	6	0	0	6
11	8	8	11	11	6	6	0	0	5
12	6	5	9	8	7	7	1	0	2
13	6	6	9	8	5	5	0	0	6
14	6	5	9	8	9	8	0	0	6
15	6	6	9	9	6	6	0	0	7
16	7	7	9	8	7	7	0	0	5

Table J.5 Pronominal scores in the 3-5 year old group.

3-5 yrs	PRONOUNS		PRO TO REFERENT IN HIGH FOCUS				
S.	CORRECT	INCORRECT	9	10	26	36	40
1	0	0	N	N	N	N	N
2	3	0	N	N	P	N	N
3	6	0	P	P	-	N	N
4	0	1	N	N	-	N	N
5	3	0	N	N	N	N	P
6	0	0	N	N	N	N	N
7	0	0	N	N	N	N	N
8	2	0	N	N	P	N	N
9	0	0	N	N	N	N	N
10	4	0	N	N	P	N	P
11	0	0	N	N	N	N	N
12	1	0	N	N	-	N	N
13	3	0	N	N	N	N	P
14	3	0	P	P	N	N	N
15	1	0	N	N	-	N	N
16	2	0	N	N	N	N	N

Table J.6 Pronominal scores in the 6-8 year old group.

6-8 yrs S.	PRONOUNS CORRECT	INCORRECT	PRO TO REFERENT IN HIGH FOCUS 9	10	26	36	40
1	5	0	N	N	N	N	N
2	2	0	N	N	N	N	N
3	0	0	N	N	N	N	N
4	9	0	N	P	P	P	P
5	0	0	N	N	N	N	N
6	8	0	N	P	N	N	N
7	0	0	N	N	N	N	N
8	0	0	N	N	N	N	N
9	8	0	N	N	P	N	N
10	4	0	N	N	P	N	N
11	4	0	N	N	-	N	N
12	0	0	N	N	N	N	N
13	0	0	N	N	N	N	N
14	0	0	N	N	N	N	N
15	0	0	N	N	-	N	N
16	0	0	N	N	N	N	N

Table J.7 Pronominal scores in the 9-11 year old group.

9-11 yrs	PRONOUNS		PRO TO REFERENT IN HIGH FOCUS				
S.	CORRECT	INCORRECT	9	10	26	36	40
1	5	0	N	N	N	P	N
2	3	0	N	N	N	N	N
3	5	0	N	P	N	P	P
4	2	0	N	N	N	N	N
5	3	0	N	N	N	N	N
6	5	0	N	N	N	P	N
7	4	0	N	N	P	P	N
8	1	0	N	N	N	N	N
9	5	0	N	P	P	P	P
10	0	0	N	N	N	N	N
11	0	0	N	N	N	N	N
12	0	0	N	N	N	N	N
13	3	0	N	N	N	N	P
14	2	0	N	N	P	N	N
15	7	0	N	P	N	P	P
16	1	0	N	N	N	P	N

Table J.8 Pronominal scores in the adults group.

Adults	PRONOUNS		PRO TO REFERENT IN HIGH FOCUS				
S.	CORRECT	INCORRECT	9	10	26	36	40
1	5	0	P	P	N	P	P
2	5	0	N	N	N	N	P
3	17	0	P	N	N	P	P
4	10	0	P	P	N	P	P
5	0	0	N	N	-	N	N
6	1	0	N	N	N	N	N
7	10	0	N	N	N	N	N
8	10	0	N	P	P	P	P
9	9	0	P	P	N	P	P
10	10	0	N	N	N	N	N
11	9	0	P	N	N	P	P
12	8	0	N	P	N	N	N
13	2	0	N	N	P	N	P
14	5	0	N	N	N	N	P
15	5	0	N	N	N	P	N
16	7	0	P	P	N	P	P

Table J.9 Indefinite scores for the 3-5 year old group

3-5 years	1ST PLACED NON-SPECIFIC ITEM				INDEFINITE SCORES FOR OTHER ITEMS	
S.	tree	woman	sheep	car	2ND IDENTICAL	SINGLETON/SIMILAR
1	DEF	IND	DEF	IND	6	9
2	DEF	DEF	DEF	DEF	0	0
3	DEF	IND	IND	IND	1	2
4	DEF	DEF	DEF	DEF	0	0
5	DEF	DEF	DEF	DEF	1	0
6	DEF	DEF	DEF	DEF	0	0
7	DEF	DEF	DEF	DEF	0	0
8	DEF	DEF	DEF	DEF	1	0
9	DEF	DEF	DEF	IND	0	1
10	DEF	IND	DEF	IND	0	1
11	DEF	DEF	DEF	DEF	0	0
12	DEF	DEF	DEF	DEF	0	0
13	DEF	DEF	DEF	DEF	0	0
14	DEF	DEF	DEF	DEF	0	0
15	DEF	DEF	IND	DEF	0	0
16	DEF	DEF	DEF	IND	0	0

Table J.10 Indefinite scores for the 6-8 year old group

6-8 years	1ST PLACED NON-SPECIFIC ITEM				INDEFINITE SCORES FOR OTHER ITEMS	
S.	tree	woman	sheep	car	2ND IDENTICAL	SINGLETON/SIMILAR
1	DEF	DEF	DEF	DEF	0	0
2	DEF	DEF	DEF	DEF	0	0
3	DEF	DEF	DEF	DEF	0	0
4	DEF	IND	IND	DEF	1	2
5	DEF	DEF	DEF	DEF	1	0
6	DEF	DEF	IND	DEF	2	0
7	DEF	DEF	DEF	DEF	0	0
8	DEF	DEF	DEF	IND	0	0
9	DEF	DEF	DEF	IND	1	0
10	DEF	IND	DEF	DEF	0	0
11	IND	IND	DEF	DEF	1	0
12	DEF	DEF	DEF	DEF	1	0
13	IND	IND	IND	IND	1	0
14	DEF	DEF	DEF	IND	2	0
15	DEF	IND	IND	IND	5	2
16	DEF	DEF	IND	IND	0	0

Table J.11 Indefinite scores for the 9-11 year old group

9-11 years 1ST PLACED NON-SPECIFIC ITEM					INDEFINITE SCORES FOR OTHER ITEMS	
S.	tree	woman	sheep	car	2ND IDENTICAL	SINGLETON/SIMILAR
1	DEF	IND	DEF	IND	1	0
2	IND	IND	DEF	DEF	1	0
3	DEF	IND	IND	DEF	1	0
4	IND	IND	IND	IND	0	0
5	DEF	IND	IND	IND	1	0
6	DEF	DEF	IND	IND	1	0
7	IND	IND	IND	IND	1	0
8	IND	DEF	IND	IND	0	0
9	IND	IND	IND	IND	2	0
10	DEF	DEF	DEF	DEF	0	0
11	DEF	DEF	DEF	DEF	1	0
12	IND	IND	IND	IND	5	1
13	IND	IND	IND	IND	4	0
14	DEF	IND	IND	IND	1	0
15	DEF	IND	IND	DEF	1	0
16	IND	IND	DEF	IND	1	0

Table J.12 Indefinite scores for the adults group

Adults					INDEFINITE SCORES	
1ST PLACED NON-SPECIFIC ITEM					FOR OTHER ITEMS	
S.	tree	woman	sheep	car	2ND IDENTICAL	SINGLETON/SIMILAR
1	DEF	IND	IND	IND	0	0
2	IND	IND	IND	IND	0	0
3	DEF	IND	DEF	DEF	0	0
4	DEF	IND	IND	IND	2	0
5	DEF	DEF	DEF	DEF	0	0
6	IND	IND	IND	IND	4	0
7	IND	IND	IND	IND	0	0
8	IND	IND	IND	IND	0	0
9	IND	IND	IND	IND	0	0
10	IND	IND	IND	IND	0	0
11	IND	IND	DEF	IND	0	0
12	IND	IND	IND	IND	1	0
13	IND	IND	IND	IND	2	0
14	IND	IND	IND	IND	0	0
15	IND	IND	IND	IND	0	0
16	DEF	IND	IND	IND	0	0

Table J.13 Display errors and listener intervention in the 3-5 year old group.

	DISPLAY ERRORS		LISTENER INTERVENTION							
	Total	when ambiguous	Total				when ambiguous			
			C	Q	P	S	C	Q	P	S
1	4	1	1	2	2	0	0	0	2	0
2	4	3	1	0	0	0	0	0	0	0
3	4	3	0	0	0	0	0	0	0	0
4	4	2	0	2	2	0	0	0	2	0
5	2	2	0	0	0	0	0	0	0	0
6	3	2	2	0	1	0	1	0	1	0
7	5	3	0	0	1	0	0	0	1	0
8	4	2	2	0	1	0	0	0	1	0
9	5	3	0	2	1	0	0	0	1	0
10	4	3	1	0	0	1	0	0	0	0
11	2	2	0	2	2	0	0	1	1	0
12	3	3	2	0	1	0	2	0	1	0
13	3	2	0	2	0	1	0	0	0	0
14	4	3	1	1	1	0	0	0	1	0
15	5	4	1	0	0	0	1	0	0	0
16	4	3	0	2	1	0	0	0	0	0

Table J.14 Display errors and listener intervention in the 6-8 year old group.

	DISPLAY ERRORS		LISTENER INTERVENTION							
	Total	when ambiguous	Total				when ambiguous			
			C	Q	P	S	C	Q	P	S
1	3	1	1	1	0	0	1	0	0	0
2	1	0	0	0	0	0	0	0	0	0
3	2	0	0	1	0	0	0	1	0	0
4	1	0	0	0	0	0	0	0	0	0
5	3	0	0	0	0	0	0	0	0	0
6	2	1	1	0	0	0	1	0	0	0
7	0	0	0	0	2	0	0	0	1	0
8	1	1	0	1	2	2	0	0	2	1
9	0	0	4	2	1	0	3	1	0	0
10	3	1	0	0	0	0	0	0	0	0
11	1	1	0	1	2	0	0	0	2	0
12	1	0	0	0	1	0	0	0	1	0
13	0	0	0	0	2	0	0	0	2	0
14	1	0	2	0	2	1	0	0	2	0
15	1	1	0	0	0	0	0	0	0	0
16	1	1	1	1	1	0	0	0	1	0

Table J.15 Display errors and listener intervention in the 9-11 year old group.

DISPLAY ERRORS		LISTENER INTERVENTION							
Total	when ambiguous	Total				when ambiguous			
		C	Q	P	S	C	Q	P	S
1	2	2	1	0	1	0	0	0	1	0
2	0	0	2	0	1	0	0	0	1	0
3	0	0	1	0	2	0	1	0	2	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	2	0	0	0	0	0	0
6	0	0	0	1	1	0	0	0	0	0
7	0	0	1	0	0	0	0	0	0	0
8	0	0	0	0	0	1	0	0	0	0
9	0	0	0	1	0	0	0	0	0	0
10	1	1	0	1	0	0	0	0	0	0
11	1	0	3	2	1	0	0	0	1	0
12	0	0	0	0	2	0	0	0	2	0
13	1	0	0	0	1	0	0	0	1	0
14	1	0	0	0	0	1	0	0	0	0
15	0	0	0	0	3	0	0	0	3	0
16	0	0	0	0	0	0	0	0	0	0

Table J.16 Display errors and listener intervention in the adults group.

	DISPLAY ERRORS		LISTENER INTERVENTION							
	Total	when ambiguous	Total				when ambiguous			
			C	Q	P	S	C	Q	P	S
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	1	1	0	0	1	0	0	0	1	0
4	0	0	0	0	2	0	0	0	1	0
5	1	1	2	0	1	0	0	0	1	0
6	0	0	0	1	2	0	0	0	2	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
9	1	0	0	2	0	0	0	0	0	0
10	0	0	0	0	1	0	0	0	1	0
11	0	0	1	0	0	0	0	0	0	0
12	0	0	1	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	1	0	0	0	1	1	0	0	1	0
15	0	0	0	0	0	0	0	0	0	0
16	0	0	1	0	1	0	0	0	1	0

Table J.17 Total discriminative scores

AGE	Tp	PHY	Tq	QUA	Ts	SPA	Tp+Tq+Ts	PHY+QUA+SPA
3-5	76	44	86	26	77	24	239	94
6-8	80	63	101	66	123	80	304	209
9-11	111	87	91	59	132	119	334	265
ADULT	102	96	144	130	94	91	340	317
TOTAL	369	290	422	281	426	314		

Table J.18 Total redundancy scores

AGE	RP	RQ	RS	TOTAL
3-5	3	0	2	5
6-8	4	1	37	42
9-11	8	0	63	71
ADULT	3	0	88	91
TOTAL	8	1	190	

Table J.19 Total pronominal scores

AGE	CORRECT PRONOUNS	INCORRECT PRONOUNS	HIGH FOCUS PRONOUNS
3-5	28	1	10
6-8	40	0	6
9-11	46	0	18
ADULT	113	0	32
TOTAL	227	1	66

Table J.20 Total indefinite scores

AGE	1ST IDENTICAL	2ND IDENTICAL	SINGLETON + SIMILARS
3-5	10	9	13
6-8	18	15	4
9-11	42	21	1
ADULT	54	9	0
TOTAL	124	54	18

Table J.21 Total display errors

AGE	TOTAL ERRORS	ERRORS WHEN AMBIGUOUS
3-5	60	41
6-8	21	7
9-11	6	3
ADULT	4	2
TOTAL	91	53

Table J.22 Total listener intervention scores

	TOTAL INTERVENTION				TOTAL	WHEN AMBIGUOUS				TOTAL
AGE	C	Q	P	S		C	Q	P	S	
3-5	11	13	13	2	39	4	1	11	0	16
6-8	9	7	13	3	32	5	2	11	1	19
9-11	8	7	12	2	29	1	0	11	0	12
ADULT	5	3	9	1	18	0	0	8	0	8
TOTAL	33	30	47	8		10	3	41	1	

Table J.23A Analysis-of-variance summary table showing the effects of age group on discriminative scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	35375.23	63			
age	25398.17	3	8466.06	50.91	<.0000
error	9977.06	60	166.28		

Table J.23B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on discriminative scores.

mean	age group	3-5	6-8	9-11	adult
39.31	3-5				
68.94	6-8	*			
79.94	9-11	*	*		
93.38	adult	*	*	*	

Table J.24 Analysis-of-variance summary table looking at the effects of type of discrimination (physical, quantity and spatio-temporal) on discriminative scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	102269.69	63			
age	71134.44	3	23711.38	45.69	<.001
error	31135.25	60	518.92		
Within Subjects	54930.00	128			
phys/quan/spat.	8475.75	2	4237.88	12.88	<.001
age X phy/qua/spa	6980.25	6	1163.38	3.54	<.005
error	39474.00	120	328.95		

Table J.25A Analysis-of-variance summary table showing the effects of age group on redundant scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	21895.18	63			
age	6255.03	3	2085.01	8.00	<.0001
error	15640.16	60	260.67		

Table J.25B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on redundant scores.

mean	age group	3-5	6-8	9-11	adult
5.00	3-5				
18.89	6-8	*			
28.99	9-11	*			
29.22	adult	*			

Table J.26 Analysis-of-variance summary table looking at the effects of discrimination type (physical, quantity and spatio-temporal) on redundant scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	194.828	63			
age	87.307	3	29.10	16.24	<.001
error	107.521	60	1.79		
Within Subjects	734.68	128			
phys/quan/spat.	341.64	2	170.82	90.93	<.001
age X phy/qua/spa	167.62	6	27.94	14.87	<.001
error	225.42	120	1.88		

Table J.27 Wilcoxen test comparing discriminative and redundant 'spatio-temporal' scores for the 3-5 year old group.

Wilcoxen test		
Rank means	cases	
6.50	12	-Ranks (redundant < discriminative)
0.00	0	+Ranks (redundant > discriminative)
	4	Ties (redundant = discriminative)
	total=16	

Z = -3.06 2-tailed p = .005

Table J.28 Wilcoxen test comparing discriminative and redundant 'spatio-temporal' scores for the 6-8 year old group.

Wilcoxen test		
Rank means	cases	
7.23	13	-Ranks (redundant < discriminative)
11.00	1	+Ranks (redundant > discriminative)
	2	Ties (redundant = discriminative)
	total=16	

Z = -2.61 2-tailed p = .01

Table J.29 Wilcoxen test comparing discriminative and redundant 'spatio-temporal' scores for the 9-11 year old group.

Wilcoxen test		
Rank means	cases	
8.54	12	-Ranks (redundant < discriminative)
5.83	3	+Ranks (redundant > discriminative)
	1	Ties (redundant = discriminative)
	total=16	

Z = -2.41 2-tailed p = .05

Table J.30 Wilcoxen test comparing discriminative and redundant 'spatio-temporal' scores for the adults group.

Wilcoxen test		
Rank means	cases	
7.56	8	-Ranks (redundant < discriminative)
7.42	6	+Ranks (redundant > discriminative)
	2	Ties (redundant = discriminative)
	total=16	

Z = -0.50 2-tailed p = n.s

Table J.31A Analysis-of-variance summary table showing the effects of age group on appropriate pronoun scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	833.86	63			
age	274.17	3	91.39	9.80	<.0000
error	559.69	60	9.33		

Table J.31B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on appropriate pronoun scores.

mean	age group	3-5	6-8	9-11	adult
1.75	3-5				
2.50	6-8				
2.88	9-11				
7.06	adult	*	*	*	

Table J.32 Analysis-of-variance summary table showing the effects of age group on type of definite reference for referents in high focus.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	3.11	63			
age	0.27	3	0.09	1.92	n.s
error	2.84	60	0.05		
Within Subjects	472.50	64			
article/pronoun	250.32	1	250.32	83.92	<.001
age X art/pronoun	43.21	3	14.40	4.83	<.005
error	178.97	60	2.98		

Table J.33 Analysis-of-variance summary table showing the effects of age group on predicted verses unpredicted indefinite scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	53244.63	63			
age	22812.00	3	7604.00	14.99	<.001
error	30432.63	60	507.21		
Within Subjects	212.50	64			
predicted/unpred.	65865.06	1	65865.06	171.71	<.001
age X pred/unpred	24679.56	3	8226.52	21.45	<.001
error	23014.63	60	383.58		

Table J.34 Kruskal-Wallis test looking at the effects of age group on display errors.

Kruskal-Wallis 1-way analysis-of-variance

mean rank	cases	conditions
29.66	16	3-5 yrs
13.81	13	6-8 yrs
10.60	5	9-11 yrs
8.50	4	adults
	total=38	

			Corrected for ties	
cases	chi-square	p	chi-square	p
38	23.90	<.0000	26.27	<.0000

Table J.35 Kruskal-Wallis test looking at the effects of age group on display errors that are due to ambiguity.

Kruskal-Wallis 1-way analysis-of-variance

mean rank	cases	conditions
29.94	16	3-5 yrs
11.92	13	6-8 yrs
12.20	5	9-11 yrs
11.50	4	adults
	total=38	

			Corrected for ties	
cases	chi-square	p	chi-square	p
38	24.39	<.0000	26.04	<.0000

Table J.36 Spearman correlation test between discriminative scores and display errors that are due to ambiguity.

Spearman correlation coefficient

N=no. of subjects
r=coefficient

r = -0.72
N(38)
p<.000

Table J.37 Analysis-of-variance summary table showing the effects of age group on listener intervention.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	164.44	63			
age	14.31	3	4.77	1.91	n.s
error	150.13	60	2.50		

Table J.38A Analysis-of-variance summary table showing the effects of age group on listener intervention that is due to ambiguity.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	41543.63	58			
age	6171.24	3	2057.08	3.20	<.05
error	35372.40	55	643.13		

Table J.38B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on listener intervention that is due to ambiguity.

mean	age group	3-5	6-8	9-11	adult
12.02	3-5				
13.11	6-8				
23.60	9-11				
38.89	adult	*	*		

Table J.39A Analysis-of-variance summary table showing the effects of age group on process questions that are a function of ambiguity.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	35613.10	58			
age	7471.56	3	2490.52	4.87	<.005
error	28141.55	55	551.67		

Table J.39B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on process questions that are a function of ambiguity.

mean	age group	3-5	6-8	9-11	adult
8.05	3-5				
12.44	6-8				
14.17	9-11				
38.89	adult	*	*	*	

APPENDIX K

EXPERIMENT 11: Pronominal reference as a function of lexical and pragmatic factors.

DATA

Table K.1 — Referring expressions on the pilot test (adults) in same-gender and different-gender conditions and in plausible and neutral conditions.

Table K.2-K.3 — Referring expressions by children in same-gender and different-gender conditions and in plausible and neutral conditions.

Table K.4 — Referring expressions in the two age groups in same-gender and different-gender conditions and in plausible and neutral conditions.

Key:
N - Name
P - Pronoun
D - Simple definite noun phrase ('the boy')

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Table K.5 (adults) — Analysis-of variance summary table looking at pronoun scores on the pilot test comparing same-gender/different gender and plausible/neutral conditions.

Table K.6 (children) — Analysis-of-variance summary table comparing age group and pronoun verses name references.

Table K.7 — Analysis-of-variance summary table looking at (children) pronoun scores comparing age group and the four experimental conditions (varying as a function of gender matching and plausibility).

Table K.8 — Analysis-of-variance summary table looking at (children) pronoun scores comparing age group, same-gender/different-gender and plausible/neutral conditions.

Table K.9 — Analysis-of-variance summary table looking at (children) pronoun scores comparing age group and same/different-gender conditions in the 'neutral' condition.

Table K.10 — Analysis-of-variance summary table looking at (children) pronoun scores

comparing age group and same/different-gender conditions in the 'plausible' condition.

Table K.1 Referring expressions on the pilot test - adults.

SUBJECT	SAME-GENDER						DIFFERENT-GENDER					
	PLAUSIBLE			IMPLAUSIBLE			PLAUSIBLE			IMPLAUSIBLE		
	1	2	3	1	2	3	1	2	3	1	2	3
1	N	N	N	N	N	N	P	P	N	N	N	P
2	N	P	N	N	N	N	N	P	N	N	N	N
3	P	P	P	N	N	N	P	P	N	N	P	P
4	P	P	N	N	N	N	P	N	N	N	N	N
5	P	N	P	N	N	N	P	N	P	N	P	N
6	N	N	P	N	N	N	N	P	P	N	P	P
7	N	P	P	N	N	N	P	N	N	N	N	P
8	N	P	N	N	N	N	N	N	P	N	N	N
9	N	N	N	N	N	N	N	N	N	N	N	N
10	P	P	N	N	N	N	N	P	N	P	P	N

Table K.2 Referring expressions by 3-5 year olds

3-5 years	SAME-GENDER						DIFFERENT-GENDER					
SUBJECT	PLAUSIBLE			IMPLAUSIBLE			PLAUSIBLE			IMPLAUSIBLE		
	1	2	3	1	2	3	1	2	3	1	2	3
1	N	P	P	N	P	P	N	N	N	N	N	N
2	N	N	N	N	N	N	N	P	N	N	N	N
3	N	N	N	P	P	P	D	P	P	N	N	N
4	N	N	N	P	P	P	P	N	P	N	P	P
5	N	N	N	N	N	N	N	N	N	N	N	N
6	N	N	N	P	P	P	P	N	N	N	P	P
7	P	P	N	P	P	P	P	P	P	P	P	P
8	N	P	P	P	P	P	N	N	P	N	N	N
9	P	P	P	P	P	P	P	P	P	P	P	P
10	N	N	N	N	N	N	D	P	N	P	P	N
11	N	N	N	N	N	P	N	N	P	N	N	N
12	P	N	P	N	P	P	N	N	N	P	N	P

Table K.3 Referring expressions by 6-8 year olds

6-8 years	SAME-GENDER						DIFFERENT-GENDER					
SUBJECT	PLAUSIBLE			IMPLAUSIBLE			PLAUSIBLE			IMPLAUSIBLE		
	1	2	3	1	2	3	1	2	3	1	2	3
1	N	N	N	N	N	N	N	P	P	N	N	N
2	N	N	N	N	N	N	N	N	N	N	P	N
3	N	N	N	N	N	N	N	P	N	N	N	N
4	N	N	N	N	P	P	N	N	N	P	N	N
5	N	N	N	P	N	N	N	N	N	P	N	N
6	P	P	P	P	P	P	P	P	N	N	N	N
7	N	N	N	N	N	N	N	N	N	N	N	N
8	N	P	P	N	N	N	N	P	N	N	N	N
9	N	P	N	N	P	P	N	N	P	N	N	D
10	P	P	P	N	N	N	N	P	P	N	N	N
11	N	N	N	P	N	P	N	N	N	N	N	N
12	N	N	P	N	P	N	N	N	N	P	P	N

Table K.4 Overall referring expressions

AGE	SAME-GENDER						DIFFERENT-GENDER					
	PLAUSIBLE			IMPLAUSIBLE			PLAUSIBLE			IMPLAUSIBLE		
	P	N	D	P	N	D	P	N	D	P	N	D
3-5:	11	25	0	23	13	0	15	19	2	14	22	0
6-8:	10	26	0	11	25	0	9	27	0	5	30	1
SUM:	21	51	0	34	38	0	24	46	2	19	52	1
ADULT:	14	16	0	0	30	0	13	17	0	9	21	0

Table K.5 Analysis-of-variance summary table looking at pronoun scores on the pilot test.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	22.50	30			
plausible/neutral	8.10	1	8.10	30.38	<.001
error	2.40	9	0.27		
same/diff. gender	1.60	1	1.60	3.69	n.s
error	3.90	9	0.43		
pl/neut X same/diff	2.50	1	2.50	5.63	<.05
error	4.00	9	0.44		

Table K.6 Analysis-of-variance summary table looking at the effects of age on type of reference.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	287.98	96			
name/pronoun	44.08	1	44.08	9.84	<.005
age X name/pro.	16.33	1	16.33	3.65	n.s
error	98.58	22	4.48		
same/diff. gender X name/pro.	3.00	1	3.00	1.74	n.s
age X same/diff X name/pro.	0.08	1	0.08	0.05	n.s
error	37.92	22	1.72		
plaus/neutral X name/pro	1.33	1	1.33	0.67	n.s
age X pl/neut X name/pro	4.08	1	4.08	2.06	n.s
error	43.58	22	1.98		
same/diff X pl/neut X name/pronoun	6.75	1	6.75	4.80	<.05
age X same/diff X pl/neut X name/pro	1.33	1	1.33	0.95	n.s
error	30.92	22	1.41		

Table K.7 Analysis-of-variance summary table comparing pronoun scores across each condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	57.46	23			
age	8.17	1	8.17	3.65	n.s
error	49.29	22	2.24		
Within Subjects	64.50	72			
condition (1-4)	5.54	3	1.85	2.17	n.s
age X condition	2.75	3	0.92	1.08	n.s
error	56.21	66	0.85		

Table K.8 Analysis-of-variance summary table comparing pronoun scores across the main variables of the experiment (age group, gender matching, plausibility).

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	57.46	23			
age	8.17	1	8.17	3.65	n.s
error	49.29	22	2.24		
Within Subjects	64.51	72			
same/diff gender	1.50	1	1.50	1.74	n.s
age X same/diff.	0.04	1	0.04	0.05	n.s
error	18.96	22	0.86		
plaus/neutral	0.67	1	0.67	0.67	n.s
age X pl/neut.	2.04	1	2.04	2.06	n.s
error	21.79	22	0.99		
same/diff X pl/neut	3.38	1	3.38	4.80	<.05
age X same/diff. X plaus/neutral	0.67	1	0.67	0.95	n.s
error	15.46	22	0.70		

Table K.9 Analysis-of-variance summary table looking at pronoun scores in the 'neutral' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	55.98	23			
age	9.19	1	9.19	5.81	<.05
error	46.79	22	1.58		
Within Subjects	24.50	24			
same/diff. gender	4.69	1	4.69	5.26	<.05
age X same/diff.	0.19	1	1.19	0.21	n.s
error	19.62	22	0.89		

Table K.10 Analysis-of-variance summary table looking at pronoun scores in the 'plausible' condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	37.31	23			
age	1.02	1	1.02	0.62	n.s
error	36.29	22	1.65		
Within Subjects	15.50	24			
same/diff. gender	0.19	1	0.19	0.28	n.s
age X same/diff.	0.52	1	0.52	0.78	n.s
error	14.79	22	0.67		

APPENDIX L

EXPERIMENT 12: Comprehension of definite reference as a function of specificity and pragmatic context.

DATA

Tables L.1-L.4	Reference choices across all five conditions (varying as a function of referential specificity and plausibility).
Tables L.5-L.8	Justifications across all five conditions.
Table L.9	Correct choices across all five conditions in all four age groups.
Tables L.10-L.14	Types of justifications in all four age groups.

Key:

SP - choose specifically mentioned and plausible referent
S - choose specifically mentioned referent
P - choose plausible referent
N - choose neither specifically mentioned nor plausible referent
L - no choice : ask for more information

R - Justify by what said by experimenter
P - Justify by pragmatic inference
NP - Justify by new pragmatic inference
PH - Physical justification
M - Justify by Message ambiguity
NO - No jusfification/ indeterminate

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Table L.15	Analysis-of-variance summary table looking at correct choices comparing age group, +/- referential conditions and +/- pragmatic conditions.
Table L.16A	Analysis-of-variance summary table showing the effects of age group on correct +R-P scores.
Table L.16B	Studentised Newman-Keuls multiple range test showing the effects of age group on correct +R-P scores.
Table L.17	Analysis-of-variance summary table showing the effect of age group on correct -R+P scores.
Table L.18	Analysis-of-variance summary table comparing age group and 'silly' verses performative bias scores in the -R-P condition.
Table L.19	Analysis-of-variance summary table

Table L.1 Reference choices in the 3-5 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	SP	SP	SP	SP	N	N	N	N	P	P	N	P	L	L	L	L	P	P	P	P
2	SP	SP	SP	SP	S	S	S	S	P	N	P	P	N	N	N	N	S	S	S	S
3	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	N	S	S	S	S
4	SP	SP	SP	SP	S	S	S	N	P	P	P	N	L	L	L	L	S	P	P	P
5	SP	SP	SP	SP	S	N	N	S	L	L	N	N	N	N	L	L	S	S	S	P
6	SP	SP	SP	SP	S	S	S	S	P	P	N	N	N	N	N	N	S	S	S	S
7	SP	SP	SP	SP	S	S	S	S	N	N	P	P	N	N	N	N	S	S	S	S
8	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
9	SP	SP	SP	SP	S	S	S	S	L	P	P	L	N	N	N	N	S	S	S	S
10	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	N	S	S	S	S
11	SP	SP	SP	SP	N	S	S	N	N	N	L	L	N	N	N	N	P	S	S	P
12	SP	SP	SP	SP	S	N	S	S	P	P	P	P	N	N	N	N	S	S	S	S
13	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
14	SP	SP	SP	SP	N	N	N	N	P	P	P	N	N	N	N	N	P	P	P	P
15	SP	SP	SP	SP	N	S	S	S	N	N	P	P	N	N	L	L	S	S	S	S
16	SP	SP	SP	SP	S	S	N	N	P	P	P	P	N	N	N	N	S	S	S	P

Table L.2 Reference choices in the 6-8 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	N	S	S	S	S
2	SP	SP	SP	SP	N	S	N	N	P	P	P	P	N	N	N	N	P	S	S	S
3	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	N	P	S	S	S
4	SP	SP	SP	SP	S	S	S	S	L	L	P	L	L	L	L	L	S	S	S	S
5	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	N	S	S	S	S
6	SP	SP	SP	SP	S	S	S	S	P	P	L	P	N	L	L	N	S	S	S	S
7	SP	SP	SP	SP	S	S	S	S	L	L	L	L	L	L	L	L	S	S	S	S
8	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	L	S	S	S	S
9	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	N	N	S	S	S	S
10	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	L	S	S	S	S
11	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
12	SP	SP	SP	SP	S	S	S	S	N	P	P	P	N	N	N	N	S	S	S	S
13	SP	SP	SP	SP	S	S	S	S	P	N	P	P	N	N	N	L	S	S	S	S
14	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	L	N	S	S	S	S
15	SP	SP	SP	SP	S	S	S	S	L	P	P	L	N	L	L	L	P	S	S	S
16	SP	SP	SP	SP	S	S	S	S	P	N	P	P	L	N	N	N	S	S	S	S

Table L.3 Reference choices in the 9-11 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	SP	SP	SP	SP	S	S	S	S	P	P	P	N	N	L	L	N	S	S	S	S
2	SP	SP	SP	SP	S	S	S	S	N	P	P	P	L	L	N	N	S	S	S	S
3	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	L	S	S	S	S
4	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	N	N	S	S	S	S
5	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
6	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
7	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
8	SP	SP	SP	SP	S	S	S	S	L	P	P	N	N	N	L	N	S	S	S	S
9	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
10	SP	SP	SP	SP	S	S	S	S	N	P	P	P	N	N	N	L	S	S	S	S
11	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	L	L	S	S	S	S
12	SP	SP	SP	SP	S	S	S	S	N	P	P	P	L	L	L	L	S	S	S	S
13	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	N	P	S	S	S
14	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	L	L	S	S	S	S
15	SP	SP	SP	SP	S	S	S	S	L	L	L	L	L	L	L	L	S	S	S	S
16	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	N	N	S	S	S	S

Table L.4 Reference choices in the parents group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	SP	SP	SP	SP	S	S	S	S	L	L	P	P	L	L	L	L	S	S	S	S
2	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	L	S	S	S	S
3	SP	SP	SP	SP	S	S	S	S	L	P	P	L	L	L	L	N	S	S	S	S
4	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
5	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	L	L	S	S	S	S
6	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	L	S	S	S	S
7	SP	SP	SP	SP	S	S	S	S	L	L	L	L	L	L	L	L	S	S	S	S
8	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	L	P	P	P	P
9	SP	SP	SP	SP	S	S	S	S	P	P	L	L	L	L	L	L	S	S	S	S
10	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	N	L	S	S	S	S
11	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	L	L	L	S	S	S	S
12	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
13	SP	SP	SP	SP	S	S	S	S	P	P	P	P	L	L	L	L	S	S	S	S
14	SP	SP	SP	SP	S	S	S	S	L	L	P	P	L	L	L	L	S	S	S	S
15	SP	SP	SP	SP	S	S	S	S	P	P	P	P	N	N	L	L	S	S	S	S
16	SP	SP	SP	SP	N	S	S	S	L	P	P	P	L	L	L	L	S	S	S	S

Table L.5 Justifications in the 3-5 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	P	P	P	P	NP	NP	NP	NP	P	PH	P	P	NP	NP	NP	NP	P	P	P	P
2	P	P	P	P	NP	NP	PH	PH	P	P	P	P	NP	NO	NP	NP	PH	PH	P	P
3	P	P	P	P	PH	PH	PH	PH	P	P	P	P	NO	NP	NP	NP	P	PH	PH	P
4	P	P	P	P	R	NO	PH	NP	P	P	P	NO	NP	NP	NP	NP	R	P	P	P
5	NO	R	R	R	R	NP	NP	R	P	P	P	P	NP	NP	NP	NP	R	R	R	P
6	R	R	R	R	R	R	R	R	NO	NO	NO	NO	NO	NO	NO	NO	R	R	R	R
7	R	P	P	P	R	R	R	R	NO	NO	P	P	NO	NO	NO	NO	R	R	P	P
8	R	R	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
9	P	P	P	P	NO	PH	PH	NO	P	P	P	P	NO	NO	NP	NP	P	P	PH	PH
10	P	P	P	P	NP	NP	R	R	P	P	P	P	NO	NO	NO	NO	P	R	PH	PH
11	P	P	R	P	PH	PH	PH	PH	P	P	P	P	NP	PH	NO	NO	P	P	PH	P
12	P	P	R	NO	PH	NP	R	R	P	P	PH	NO	NP	NP	NP	NO	PH	PH	PH	PH
13	P	P	R	R	NP	R	R	PH	P	P	P	P	NO	NO	NO	NO	R	R	R	R
14	P	P	P	P	NP	NP	NP	NO	P	P	P	PH	NO	NO	NP	NP	PH	P	P	P
15	P	P	P	P	NP	R	PH	PH	P	P	P	NO	NO	PH	NP	NO	R	P	R	P
16	P	P	P	P	R	PH	PH	PH	P	P	P	P	NP	NP	NO	NP	P	NO	PH	P

Table L.6 Justifications in the 6-8 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	P	P	P	P	R	R	R	R	P	P	P	P	NO	NO	NO	NO	R	R	R	P
2	P	P	P	P	PH	PH	PH	NP	P	P	P	P	PH	PH	PH	PH	P	PH	PH	PH
3	P	P	P	P	NP	R	NP	NP	P	P	P	P	NP	NP	NP	NP	P	R	P	P
4	P	P	P	P	PH	R	R	R	R	P	PH	P	M	M	M	M	R	R	R	P
5	P	P	P	P	R	R	R	R	P	P	P	P	PH	NO	M	PH	R	R	R	R
6	P	P	P	P	R	R	R	R	P	P	R	P	PH	NP	NP	PH	R	R	PH	R
7	P	P	P	P	NP	R	R	R	R	R	R	R	M	M	M	M	R	R	R	R
8	P	P	P	P	R	R	R	R	P	P	P	P	NP	NP	NP	M	R	R	R	R
9	P	P	P	P	R	R	R	R	PH	P	P	P	NP	NP	PH	PH	R	R	R	R
10	P	P	P	P	R	R	R	R	P	P	P	P	PH	PH	NP	NP	R	R	R	R
11	P	P	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
12	PH	P	P	P	R	R	R	R	PH	PH	P	NO	NO	PH	NO	NO	R	R	R	R
13	P	P	P	P	R	R	R	R	P	P	P	P	NP	NP	NP	NP	P	R	R	P
14	P	P	R	P	NP	R	R	R	P	P	P	P	PH	NP	NO	PH	P	R	R	R
15	P	P	R	R	R	PH	R	R	R	P	P	R	PH	NP	NP	NP	P	R	PH	NO
16	R	R	R	P	R	R	R	R	P	NO	P	P	NO	NO	NO	NO	R	R	R	R

Table L.7 Justifications in the 9-11 year old group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	R	R	R	R	R	R	R	R	P	P	P	N	NP	NP	NP	NP	R	R	R	R
2	P	P	P	P	R	R	R	R	N	P	P	P	M	NP	PH	PH	R	R	R	R
3	R	P	P	P	R	R	R	R	P	P	P	P	PH	NP	NO	NO	NO	R	R	NO
4	P	P	P	P	R	R	R	NP	P	P	P	P	NP	NP	NO	NO	P	P	R	R
5	P	P	P	P	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
6	R	R	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
7	P	R	R	R	R	R	R	R	P	P	P	P	M	M	M	M	R	R	R	R
8	P	R	P	P	R	R	R	R	L	P	P	N	NP	NP	M	NP	R	R	R	R
9	P	P	R	P	R	R	R	R	P	P	P	P	NP	M	NP	NP	R	R	R	R
10	P	R	R	R	R	R	R	R	N	P	P	P	PH	PH	PH	M	R	R	R	R
11	P	R	P	P	R	R	R	R	P	P	P	P	PH	PH	NO	NP	PH	R	R	PH
12	R	P	P	P	R	R	R	R	N	P	P	P	NP	M	M	M	R	R	R	R
13	P	P	P	P	R	R	R	R	P	P	P	P	NP	NP	NP	NP	P	P	R	R
14	P	P	P	P	R	R	R	R	P	P	P	P	NP	PH	NP	NP	R	R	R	R
15	R	R	P	P	R	R	R	R	L	L	L	L	M	M	M	M	PH	R	R	PH
16	P	P	P	P	R	R	R	R	P	P	P	P	M	M	NO	NO	R	R	R	R

Table L.8 Justifications in the parents group

	+R+P				+R-P				-R+P				-R-P				R OR P			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	R	R	R	R	R	R	R	R	R	R	P	P	NO	NP	NP	NP	R	R	R	R
2	R	R	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
3	R	R	R	R	R	R	R	R	P	P	P	P	NP	M	M	NP	R	R	R	R
4	R	R	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
5	P	P	P	P	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
6	R	R	P	P	NP	R	R	NP	P	P	P	P	NP	M	M	M	R	R	R	R
7	R	R	R	R	R	R	R	R	PH	PH	R	R	M	M	PH	NO	R	R	R	R
8	R	P	P	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	P	P	P	P
9	P	P	P	P	R	R	R	R	P	P	R	R	NO	NP	NO	NO	R	R	R	R
10	R	R	R	R	R	R	R	R	P	P	P	P	NP	NP	NP	NP	R	R	R	R
11	R	R	R	R	R	R	R	R	P	P	P	P	NO	M	M	NP	R	R	R	R
12	P	R	R	R	R	R	R	R	P	P	P	P	M	M	M	M	R	R	R	R
13	P	R	R	P	R	R	R	R	P	P	P	P	NP	NP	NP	NP	P	R	R	P
14	P	R	R	R	R	R	R	R	P	P	P	P	NP	M	M	NP	P	R	R	R
15	R	R	R	R	R	R	R	R	P	P	P	P	NO	NO	M	M	R	R	R	R
16	R	P	P	P	R	R	R	R	P	P	P	P	NP	NP	M	M	R	R	R	R

Table L.9 Total correct choices

AGE	+R+P (SP)	+R-P (S)	-R+P (P L)		-R-P(MORE CHOICE)	R OR P (S P)	
3-5	64	46	44	6	20	44	49 15
6-8	64	61	51	10	26	38	61 3
9-11	64	64	54	5	39	25	63 1
PAR.	64	63	51	10	54	10	60 4
TOTALS:	256	234	200	31	139	117	233 23

Table L.10. Justification scores in the +R+P condition
(in brackets are scores when fail to choose as expected)

+R+P	AGE	R	P	PH	NO
	3-5	16	45	0	3
	6-8	8	55	0	1
	9-11	21	43	0	0
	PAR.	41	23	0	0

Table L.11. Justification scores in the +R-P condition

+R-P	AGE	R	NP	PH	NO
	3-5	23	4(13)	16(5)	3
	6-8	51	5(1)	5(2)	0
	9-11	63	1	0	0
	PAR.	90	3(1)	0	0

Table L.12. Justification scores in the -R+P condition

-R+P	AGE	R	P	PH	NO
	3-5	0	37(10)	1	6
	6-8	3?	44(8)	6(2)	1
	9-11		53(1)	1	0(4)
	PAR.	3?	51(9)	0	0(1)

Table L.13. Justification scores in the -R-P condition

-R-P	AGE	M	NP	PH	NO
	3-5	0	12(18)	0(4)	8(22)
	6-8	8	13(10)	0(19)	5(9)
	9-11	17	18(11)	0(10)	4(4)
	PAR.	19	31(8)	0	4(2)

Table L.14. Justification scores in the R OR P condition

R OR P	AGE	R	P	PH	NO
	3-5	22	13(14)	13	1(1)
	6-8	46	7(3)	7	1
	9-11	54	4(1)	4	1
	PAR.	57	3(4)	0	0

Table L.15 Analysis-of-variance summary table comparing age group, +/- referential and +/- pragmatic conditions for correct choice scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	80.98	63			
age	29.20	3	9.73	11.28	<.001
error	51.78	60	0.86		
Within Subjects	342.01	192			
+/- referential	90.25	1	90.25	111.01	<.001
age X +/- ref	6.97	3	2.32	2.86	<.05
error	48.78	60	0.81		
+/- pragmatic	26.27	1	26.27	22.87	<.001
age X +/- prag	15.83	3	5.28	4.59	<.01
error	68.91	60	1.15		
+/- ref X +/- prag	6.25	1	6.25	5.14	<.05
age X ref X prag	5.84	3	1.95	1.60	n.s
error	72.91	60	1.22		

Table L.16A Analysis-of-variance summary table showing the effects of age group on correct +R-P scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	50.11	63			
age	11.80	3	3.93	6.16	<.001
error	38.31	60	0.64		

Table L.16B Studentised Newman-Keuls test of multiple comparisons showing the effects of age group on correct +R-P scores.

mean	condition	3-5	6-8	9-11	adult
	3-5				
	6-8	*			
	9-11	*			
	adult	*			

Table L.17 Analysis-of-variance summary table showing the effects of age group on correct -R+P scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	93.00	63			
age	3.38	3	1.13	0.75	n.s
error	89.63	60	1.49		

Table L.18 Analysis-of-variance summary table showing the effects of age group on 'silly' verses performative bias scores in the -R-P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	318.00	64			
'silly'/perf.bias	3.78	1	3.78	0.99	n.s
age X silly/perf.	85.34	3	28.45	7.46	<.001
error	228.88	60	3.82		

Table L.19 Analysis-of-variance summary table comparing referential and pragmatic choices in the R OR P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	462.00	64			
ref./prag.	344.53	1	344.53	201.43	<.001
age X ref./prag.	14.84	3	4.95	2.89	<.05
error	102.63	60	1.71		

Table L.20 Analysis-of-variance summary table comparing referential choices between R OR P and +R-P conditions.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	92.87	63			
age	18.81	3	6.27	5.08	<.005
error	74.06	60	1.23		
Within Subjects	16.00	64			
R OR P/+R-P (cond.)	0.03	1	0.03	0.12	n.s
age X cond.	0.41	3	0.14	0.52	n.s
error	15.56	60	0.26		

Table L.21 Analysis-of-variance summary table comparing referential and pragmatic justifications in the +R+P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	0.12	63			
age	0.01	3	0.00	2.22	n.s
error	0.11	60	0.00		
Within Subjects	22.03	64			
ref/prag (justif.)	3.13	1	3.13	12.85	<.001
age X ref/prag.	4.41	3	1.47	6.05	<.001
error	14.59	60	0.24		

Table L.22 Analysis-of-variance summary table comparing referential and other justifications in the +R-P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	24.44	62			
ref/other(justif.)	12.14	1	12.14	93.69	<.001
age X ref/other	4.78	3	1.59	12.29	<.001
error	7.52	58	0.13		

Table L.23 Analysis-of-variance summary table showing the effects of age group on pragmatic justifications in the -R+P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	2.85	58			
age	0.30	3	0.10	2.14	n.s
error	2.55	55	0.05		

Table L.24 Analysis-of-variance summary table comparing justifications in the -R-P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	0.02	48			
age	0.00	3	0.00	0.50	n.s
error	0.02	45	0.00		
Within Subjects	26.37	98			
mess/prag/none(just.)	2.63	2	1.31	5.47	<.01
age X just.	2.10	6	0.35	1.45	n.s
error	21.64	90	0.24		

Table L.25 Analysis-of-variance summary table comparing referential and pragmatic justifications in the R OR P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	2.02	60			
age	0.35	3	0.12	4.01	<.05
error	1.67	57	0.03		
Within Subjects	20.22	61			
ref/prag(just.)	12.35	1	12.35	125.30	<.001
age X just.	2.25	3	0.75	7.61	<.001
error	5.62	57	0.10		

APPENDIX M

EXPERIMENT 13: Comprehension of pronominal reference as a function of lexical and pragmatic ambiguity.

DATA

Tables M.1-M.4 — Choice of doll in all five conditions (varying as a function of lexical marking and plausibility).

Key:
PL - choose plausible and lexically marked referent
P - choose plausible referent
L - choose lexically marked referent
O - choose neither plausible nor lexically marked
S - choose 'somebody box'

Tables M.5-M.8 — Choice of doll for each trial in all five conditions.

Key:
1 - 1st mentioned doll
2 - 2nd mentioned doll
3 - unmentioned doll
N - neither

Tables M.9-M.12 — Choice totals for each subject

Key:
1 - 1st mentioned doll
2 - 2nd mentioned doll
0 - neither doll
S - someone box

Table M.13 — Choice scores in all five conditions and in all four age groups.

Table M.14 — Yes and no scores in all five conditions and in all four age groups.

ANALYSES

Table M.15 — Analysis-of-variance summary table comparing age group, the five experimental conditions (lexical marking and plausibility) and choice of first verses second named doll.

Table M.16 — Analysis-of-variance summary table comparing age group, +/- lexical and +/- pragmatic conditions in correct choices of a doll.

Table M.17 — Analysis-of-variance summary table comparing age group and pragmatic/ lexical/someone choices in the L or P condition.

Table M.1 Choices in the 3-5 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	L
2	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	O	O	P	P	P	P
3	PL	PL	PL	PL	P	P	P	P	L	O	L	L	O	O	O	O	P	P	P	P
4	O	O	PL	O	P	O	O	O	O	O	L	L	O	O	O	O	O	L	L	O
5	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
6	PL	PL	PL	PL	P	P	P	P	L	L	O	O	O	O	O	O	P	P	P	P
7	PL	PL	PL	PL	P	P	P	P	S	L	S	S	S	S	S	O	P	P	P	P
8	PL	PL	PL	PL	P	P	P	P	L	O	L	O	S	O	O	O	P	P	P	P
9	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
10	PL	PL	PL	PL	P	P	P	P	O	L	L	L	O	O	O	O	P	P	P	P
11	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	S	P	P	P	P
12	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
13	PL	PL	PL	PL	P	P	P	P	O	O	L	L	O	O	S	S	P	P	P	P
14	PL	PL	PL	PL	P	P	P	P	O	L	L	L	O	O	O	O	P	P	P	P
15	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
16	PL	PL	PL	PL	P	P	P	P	L	O	L	O	O	O	S	O	P	P	P	P

Table M.2 Choices in the 6-8 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	S	P	S	P
2	PL	PL	PL	PL	P	P	P	P	O	L	O	L	O	O	S	O	P	P	P	P
3	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	O	O	S	P	P	S
4	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	L
5	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	O	O	O	L	L	P	P
6	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	L	L	P	P
7	PL	PL	PL	PL	P	P	P	O	L	L	L	L	O	O	O	O	L	P	P	L
8	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
9	PL	PL	PL	PL	P	P	P	P	O	L	L	L	O	O	O	O	P	P	P	P
10	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	S	P	P	P	P
11	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	P	P	P
12	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	L	L	L	L
13	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	S	S	P	P	L	L
14	PL	PL	PL	PL	P	P	P	P	O	L	L	L	O	O	O	O	P	P	P	P
15	PL	PL	PL	PL	P	P	P	P	L	O	O	L	O	O	O	O	P	P	P	P
16	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	S	S	S	S	S	S

Table M.3 Choices in the 9-11 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	L	L	L	L
2	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	S	S	S	S
3	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	S	S	S	S
4	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	S	S	S	S	L	L
5	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
6	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	P	S	S
7	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
8	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
9	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
10	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	P	S	S	S
11	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	P	P	P	P
12	PL	PL	PL	PL	P	O	P	O	L	L	L	L	O	O	O	O	S	S	S	L
13	PL	PL	PL	PL	P	P	P	P	L	L	L	O	O	O	O	S	L	L	L	L
14	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	L
15	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	S	S	S	S	S	S
16	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	O	O	L	L	L	P

Table M.4 Choices in the parent group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	O	S	S	S	S
2	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
3	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
4	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	L	L	L	L
5	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	O	S	S	L	L	L	L
6	PL	PL	PL	PL	P	P	P	P	L	L	L	O	O	O	O	O	L	L	P	L
7	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
8	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	L	L	L	L
9	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	O	O	O	L	L	L	L
10	PL	PL	PL	PL	P	O	P	P	L	L	L	O	S	S	O	O	L	L	L	L
11	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
12	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	S	S	S	S
13	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	L	L	L	L
14	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	S	P	P	P	P
15	PL	PL	PL	PL	P	P	P	P	L	L	L	L	S	S	S	O	P	L	L	S
16	PL	PL	PL	PL	P	P	P	P	L	L	L	L	O	S	S	S	S	S	S	S

Table M.5 Choice of doll for the 3-5 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	2	1	2	1	1	2	1	2	2	1	2	1	1	2	1	2	1	2	1	1
2	1	2	1	2	2	1	2	1	1	2	1	2	2	N	2	2	2	1	2	1
3	2	1	2	1	1	2	1	2	2	2	2	1	2	2	2	2	1	2	1	2
4	3	3	1	1	2	3	1	3	2	3	1	2	3	1	3	3	3	2	1	3
5	2	1	2	1	1	2	1	2	2	1	2	1	2	2	2	2	1	2	1	2
6	1	2	1	2	2	1	2	1	1	2	2	1	2	1	1	1	2	1	2	1
7	2	1	2	1	1	2	2	2	N	2	N	N	N	N	N	2	1	2	1	2
8	1	2	1	2	2	1	2	1	1	1	1	1	N	2	2	2	2	1	2	1
9	2	1	2	1	1	2	2	2	2	1	2	1	2	2	2	2	1	2	1	2
10	1	2	1	2	2	1	2	1	2	2	1	2	2	1	2	2	2	1	2	1
11	2	1	2	1	1	2	2	2	2	1	2	1	2	2	2	N	1	2	1	2
12	1	2	1	2	2	1	2	1	1	2	1	2	2	2	2	2	2	1	2	1
13	2	1	2	1	1	2	2	2	1	2	2	1	1	2	N	N	1	2	1	2
14	1	2	1	2	2	1	2	1	2	2	1	2	2	1	2	2	2	1	2	1
15	2	1	2	1	1	2	2	2	2	1	2	1	2	2	2	2	1	2	1	2
16	1	2	1	2	2	1	2	1	1	1	1	1	2	2	N	2	2	1	2	1

Table M.6 Choice of doll for the 6-8 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	1	2	1	2	2	1	2	1	1	2	1	2	2	1	1	2	N	1	N	1
2	2	1	2	1	1	2	1	2	1	1	1	1	2	2	N	1	1	2	1	2
3	1	2	1	2	2	1	2	1	1	2	1	2	2	N	1	2	N	1	2	N
4	2	1	2	1	1	2	1	2	2	1	2	1	2	2	1	1	1	2	1	1
5	1	2	1	2	2	1	2	1	1	2	1	2	N	2	2	2	1	2	2	1
6	2	1	2	1	1	2	1	2	2	1	2	1	2	2	2	2	2	1	1	2
7	1	2	1	2	2	1	2	2	1	2	1	2	2	1	2	2	1	1	2	2
8	2	1	2	1	1	2	1	2	2	1	2	1	2	2	2	2	1	2	1	2
9	1	2	1	2	2	1	2	1	2	2	2	1	2	2	1	1	2	1	2	1
10	2	1	2	1	1	2	1	2	2	1	2	1	1	2	1	N	1	2	1	2
11	1	2	1	2	2	1	2	1	1	2	1	2	2	1	2	1	2	1	2	1
12	2	1	2	1	1	2	1	2	2	1	2	1	2	2	1	1	2	1	2	1
13	1	2	1	2	2	1	2	1	1	2	1	2	2	2	N	N	2	1	1	2
14	2	1	2	1	1	2	1	2	1	1	2	1	1	1	2	2	1	2	1	2
15	1	2	1	2	2	1	2	1	1	1	2	2	2	1	2	1	2	1	2	1
16	2	1	2	1	1	2	1	2	2	1	2	1	2	N	N	N	N	N	N	N

Table M.7 Choice of doll for the 9-11 year old group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	2	1	2	1	1	2	1	2	2	1	2	1	2	1	2	2	1	2	1	2
2	1	2	1	2	2	1	2	1	1	2	1	2	2	2	2	2	N	N	N	N
3	2	1	2	1	1	2	1	2	2	1	2	1	2	2	2	2	N	N	N	N
4	1	2	1	2	2	1	2	1	1	2	1	2	1	N	N	N	N	N	2	1
5	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	N	N	N	N
6	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	1	N	N
7	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	N	N	N	N
8	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	N	N	N
9	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	N	N	N	N
10	1	2	1	2	2	1	2	1	1	2	1	2	2	2	2	2	1	N	N	N
11	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	2	1	2	1
12	1	2	1	2	2	2	2	2	1	2	1	2	2	2	2	2	N	N	N	1
13	2	1	2	1	1	2	1	2	2	1	2	2	2	2	1	N	1	2	1	2
14	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	N	N	1
15	2	1	2	1	1	2	1	2	2	1	2	1	1	N	N	N	N	N	N	N
16	1	2	1	2	2	1	2	1	1	2	1	2	2	N	2	1	2	1	2	2

Table M.8 Choice of doll for the parent group

	+P+L				+P-L				-P+L				-P-L				P V L			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	2	N	N	N	N
2	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	N	N	N	N
3	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	N	N	N
4	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	1	2	1	2
5	1	2	1	2	2	1	2	1	1	2	1	2	N	2	N	N	2	1	2	1
6	2	1	2	1	1	2	1	2	2	1	2	2	2	2	2	2	1	2	2	2
7	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	N	N	N
8	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	1	2	1	2
9	1	2	1	2	2	1	2	1	1	2	1	2	2	2	2	2	2	1	2	1
10	2	1	2	1	1	1	1	2	2	1	2	2	N	N	1	2	1	2	1	2
11	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	N	N	N	N
12	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	N	N	N	N
13	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	N	2	1	2	1
14	2	1	2	1	1	2	1	2	2	1	2	1	N	N	N	N	2	1	2	1
15	1	2	1	2	2	1	2	1	1	2	1	2	N	N	N	2	1	1	2	N
16	2	1	2	1	1	2	1	2	2	1	2	1	2	N	N	N	N	N	N	N

Table M.9 Choice of doll totals for each subject in the 3-5 year old group

3-5 YEARS	BOTH				+P				+L				NONE				CONFLICT			
	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S
1	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	3	1	0	0
2	2	2	0	0	2	2	0	0	2	2	0	0	0	3	0	1	2	2	0	0
3	2	2	0	0	2	2	0	0	1	3	0	0	0	4	0	0	2	2	0	0
4	2	0	2	0	1	1	2	0	1	2	1	0	1	0	3	0	1	1	2	0
5	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
6	2	2	0	0	2	2	0	0	2	2	0	0	3	1	0	0	2	2	0	0
7	2	2	0	0	2	2	0	0	0	1	0	3	0	1	0	3	2	2	0	0
8	2	2	0	0	2	2	0	0	4	0	0	0	0	3	0	1	2	2	0	0
9	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
10	2	2	0	0	2	2	0	0	1	3	0	0	1	3	0	0	2	2	0	0
11	2	2	0	0	2	2	0	0	2	2	0	0	0	3	0	1	2	2	0	0
12	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
13	2	2	0	0	2	2	0	0	2	2	0	0	1	1	0	2	2	2	0	0
14	2	2	0	0	2	2	0	0	1	3	0	0	1	3	0	0	2	2	0	0
15	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
16	2	2	0	0	2	2	0	0	4	0	0	0	0	3	0	1	2	2	0	0

Table M.10 Choice of doll totals for each subject in the 6-8 year old group

6-8 YEARS	BOTH				+P				+L				NONE				CONFLICT			
	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S
1	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	0	0	2
2	2	2	0	0	2	2	0	0	4	0	0	0	1	2	0	1	2	2	0	0
3	2	2	0	0	2	2	0	0	2	2	0	0	1	2	0	1	1	1	0	2
4	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	3	1	0	0
5	2	2	0	0	2	2	0	0	2	2	0	0	0	3	0	1	2	2	0	0
6	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
7	2	2	0	0	1	3	0	0	2	2	0	0	1	3	0	0	2	2	0	0
8	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
9	2	2	0	0	2	2	0	0	1	3	0	0	2	2	0	0	2	2	0	0
10	2	2	0	0	2	2	0	0	2	2	0	0	2	1	0	1	2	2	0	0
11	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
12	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
13	2	2	0	0	2	2	0	0	2	2	0	0	0	2	0	2	2	2	0	0
14	2	2	0	0	2	2	0	0	3	1	0	0	2	2	0	0	2	2	0	0
15	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0	2	2	0	0
16	2	2	0	0	2	2	0	0	2	2	0	0	0	1	0	3	0	0	0	4

Table M.11 Choice of doll totals for each subject in the 9-11 year old group

9-11 YEARS	BOTH				+P				+L				NONE				CONFLICT			
	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S
1	2	2	0	0	2	2	0	0	2	2	0	0	1	3	0	0	2	2	0	0
2	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	0	0	0	4
3	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	0	0	0	4
4	2	2	0	0	2	2	0	0	2	2	0	0	1	0	0	3	1	1	0	2
5	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
6	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	1	0	0	3
7	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
8	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
9	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
10	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	1	0	0	3
11	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	2	2	0	0
12	2	2	0	0	0	4	0	0	2	2	0	0	0	4	0	0	1	0	0	3
13	2	2	0	0	2	2	0	0	1	3	0	0	1	2	0	1	2	2	0	0
14	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	1	0	0	3
15	2	2	0	0	2	2	0	0	2	2	0	0	1	0	0	3	0	0	0	4
16	2	2	0	0	2	2	0	0	2	2	0	0	1	2	0	1	1	3	0	0

Table M.12 Choice of doll totals for each subject in the parent group

Parent	BOTH				+P				+L				NONE				CONFLICT			
	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S	1	2	O	S
1	2	2	0	0	2	2	0	0	2	2	0	0	0	1	0	3	0	0	0	4
2	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
3	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
4	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	2	2	0	0
5	2	2	0	0	2	2	0	0	2	2	0	0	0	1	0	3	2	2	0	0
6	2	2	0	0	2	2	0	0	1	3	0	0	0	4	0	0	1	3	0	0
7	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
8	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	2	2	0	0
9	2	2	0	0	2	2	0	0	2	2	0	0	0	4	0	0	2	2	0	0
10	2	2	0	0	3	1	0	0	1	3	0	0	1	1	0	2	2	2	0	0
11	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
12	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	0	0	0	4
13	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	2	2	0	0
14	2	2	0	0	2	2	0	0	2	2	0	0	0	0	0	4	2	2	0	0
15	2	2	0	0	2	2	0	0	2	2	0	0	0	1	0	3	2	1	0	1
16	2	2	0	0	2	2	0	0	2	2	0	0	0	1	0	3	0	0	0	4

Table M.13 Total correct choices

AGE	+P+L PL	+P-L P	-P-L L	-P-L SOMEBODY BOX	RVP P	RVP L
3-5	61	61	48	9	59	3
6-8	64	63	58	9	43	13
9-11	64	62	63	36	7	15
PAR.	64	63	62	50	6	29
TOTALS:	253	249	231	104	115	60

Table M.14 Yes and no totals

AGE	+P+L Y	+P+L N	+P-L Y	+P-L N	-P-L Y	-P-L N	-P-L Y	-P-L N	RVP Y	RVP N
3-5	32	30	26	36	30	30	9	43	32	30
6-8	32	32	31	33	34	30	19	36	30	26
9-11	32	32	30	34	31	33	5	23	12	10
PAR.	32	32	33	31	30	34	1	13	16	18
TOT:	128	126	120	134	125	127	34	115	90	84

Table M.15 Analysis-of-variance summary table looking at the effect of conditions on choice of first verses second named doll.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	68.39	63			
age	18.49	3	6.16	7.41	<.001
error	49.88	60	0.83		
Within Subjects	448.41	576			
condition	71.85	4	17.96	33.77	<.001
age X condition	47.87	12	3.99	7.50	<.001
error	127.68	240	0.53		
first/second	8.56	1	8.56	16.65	<.001
age X 1st/2nd	1.41	3	0.47	0.91	n.s
error	30.84	60	0.51		
cond. X 1st/2nd	43.15	4	10.79	23.89	<.001
age X cond X 1/2	8.70	12	0.73	1.61	n.s
error	108.35	240	0.45		

Table M.16 Analysis-of-variance summary table looking at the effect of conditions on correct choices.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	85.16	63			
age	35.64	3	11.88	14.39	<.001
error	49.52	60	0.83		
Within Subjects	389.25	192			
+/- pragmatic	108.94	1	108.94	194.67	<.001
age X +/- prag.	28.23	3	9.41	16.82	<.001
error	33.58	60	0.56		
+/- lexical	67.04	1	67.04	108.29	<.001
age X +/- lex.	11.57	3	3.86	6.23	<.001
error	37.14	60	0.62		
pragmat. X lexic.	59.10	1	59.10	113.19	<.001
age X pragmat. X lexic.	12.32	3	4.11	7.67	<.001
error	31.33	60	0.52		

Table M.17 Analysis-of-variance summary table comparing age group and type of choices (pragmatic/lexical/'someone') in the L OR P condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	1.88	63			
age	0.63	3	0.02	1.00	n.s
error	1.25	60	0.02		
Within Subjects	560.67	128			
prag/lex/one(choice)	24.39	2	12.19	4.66	<.05
age X choice	222.53	6	37.09	14.19	<.001
error	313.75	120	2.62		

APPENDIX N

EXPERIMENT 14: Understanding definite reference as a function of principle C of binding theory and pragmatic context.

DATA

Table N.1 — Sentences used as experimental stimuli for older subjects.

Table N.2 — Sentences used as experimental stimuli for 3 to 8 year old subjects.

Table N.3 — Post-experimental questionnaire given to adult subjects.

Tables N.4-N.8 — Non-identity inward and outward responses for neutral, plausible and implausible conditions as well as anaphoric and cataphoric conditions in both tangible and intangible groups.

Tables N.9-N.12 — Non-identity yes and no responses for neutral, plausible and implausible conditions as well as anaphoric and cataphoric conditions in both tangible and intangible groups.

Tables N.13-N.17 — Unrestricted backward anaphora inward and outward responses and yes and no responses for neutral, plausible and implausible conditions as well as anaphoric and cataphoric conditions in both tangible and intangible groups.

Tables N.18-N.22 — Unrestricted forward anaphora inward and outward responses and yes and no responses for neutral, plausible and implausible conditions as well as anaphoric and cataphoric conditions in both tangible and intangible groups.

Key:
O - Outside referent I - Inside referent

Y - Yes N - No U - Unsure

Table N.23 — Memory errors from adult subjects in neutral, plausible and implausible conditions for experimental and filler stories.

E = Error on memory and/or control question.

Table N.24 — Post-experimental questionnaire answers from adult subjects

Key: A = answer a. B = answer b. C = answer c.

Tables N.67A-N.70B Chi-square tests comparing multiple choice responses on the post-experimental questionnaire.

Table N.1 Sentence-pairs and questions used for older subjects. (In the tangible condition all referent pairs were Jane and Susan).

X = Name of one of the individuals mentioned in the sentence-pair.

A. NEUTRAL PRAGMATICS.
ANAPHORIC CONTEXT.

Non-identity
1. Susan was watching T.V. She didn't know why Jane felt so sad.
Was it X that didn't know?
Was X watching TV?
Was X feeling sad?

2. John was reading a book. He was happy that Peter had passed the exam.
Was it X that was happy?
Was X reading a book?
Was it X who passed the exam?

3.James was washing his face. He felt worried when Mike dried his hands.
Was it X who was feeling worried?
Was it X who was washing his face?
Was X drying his hands?

4.Carol was clapping her hands. She wanted to smile as Mandy watched the clown.
Was it X that wanted to smile?
Was X clapping her hands?
Was X watching the clown?

Unrestricted Backward Anaphora
5. Sally was at home. Before she lit the candle Lisa locked the door.
Did X light the candle?
Was X at home?
Did X lock the door?

6.Geoff was getting into a car. As he sat down Norman looked at the picture.
Was X sitting down?
Was X getting into a car?
Did X look at the picture?

OR
5.Janet held up a bat. After she picked up the ball, Laura stood by the net.
Did X pick up the ball?
Did X hold up a bat?
Did X stand by the net?

6.Gordon was opening the cupboard. While he counted the tins, Ken scratched his head.
Did X count the tins?
Did X open the cupboard?
Did X scratch his head?

Unrestricted Forward Anaphora
7.Janet held up a bat. After Laura picked up the ball, she stood by the net.
Did X stand by the net?
Did X hold up a bat?
Did X pick up a ball?

8. Gordon was opening the cupboard. While Ken counted the tins, he scratched his head.
Did X scratch his head?
Did X open the cupboard?
Did X count the tins?

OR
7. Sally was at home. Before Lisa lit the candle, she locked the door.
Did X lock the door?
Was X riding a bike?
Did X light the candle?

8.Geoff was getting into a car. As Norman looked at the picture he sat down.
Did X sit down?
Was X getting into a car?
Did X look at the picture?

CATAPHORIC CONTEXT.

Non-identity
9. She found a chair when Jane had finished her tea. Mary was 10 years old.
Did X find a chair?
Did X finish her tea?
Was X 10 years old?

10. He felt tired as Simon fed the cat. David was drawing a picture.
Did X feel tired?
Did X feed the cat?
Was X drawing a picture?

11. He tidied the room after Timmy drank some coffee. Fred had a younger sister.
Did X tidy the room?
Did X drink some coffee?
Did X have a younger sister?

12.She swam slowly before Cindy went to the shops. Polly was going out at 6 o'clock.
Was X swimming slowly?
Did X go to the shops?
Was X going out at 6 o'clock?

Unrestricted Backward Anaphora

13. When she got home Susan watched the film. Linda made a cake.
Did X get home?
Did X watch the film?.
Did X make a cake?

14.As he cut the paper,Don looked at the door. Sammy could hear the music.
Did X cut the paper?
Did X look at the door?
Did X hear the music?

OR

13.After she got up, Jessica opened the drawer. Sharon looked at the clock.
Did X get up?
Was X opening the drawer?
Did X look at the clock?

14.Before he stood up, Billy tapped the table. Andy mended a clock.
Did X stand up?
Was X tapping the table?
Was X mending a clock?

Unrestricted Forward Anaphora

15.After Jessica got up, she opened the drawer. Sharon looked at the clock.
Did X open the drawer?
Was X getting up?
Did X look at the clock?

16.Before Billy stood up, he tapped the table. Andy mended a clock.
Did X tap the table?
Was X standing up?
Was X mending a clock?

OR

15. When Susan watched the film, she got home. Linda made a cake.
Did X get home?
Did X watch the film?.
Did X make a cake?

16.As Don cut the paper, he looked at the door. Sammy could hear the music.
Did X look at the door?
Did X cut the paper?
Did X hear the music?

B. NON-IDENTITY PLAUSIBLE.
ANAPHORIC CONTEXT.

Non-identity

17. Peter was on the beach. He built a sandcastle while Paul was paddling.
Did X build a sandcastle?
Was it X that was on the beach?
Was X paddling?

18. Pam had looked everywhere. She saw where Janet was hiding.
Was it X that saw the hiding?
Did X look everywhere?
Was X hiding?

19.Julie was holding the map. She looked at the castle as Emma danced at the disco.
Was X looking at the castle?
Was X holding the map?
Was X dancing at the disco?

20.Barry lit the fire. He picked up the coal when Ricky sat in a restaurant.
Did X pick up the coal?
Did X light the fire?
Did X sit in a restaurant?

Unrestricted Backward Anaphora

21. Jack was singing loudly. As he had a headache Philip took an aspirin.
Did X have a headache?
Was X singing loudly?
Did X take an aspirin?

22.Dawn was whispering. As she made a noise, Judy stamped her foot.
Was X making a noise?
Was X whispering?
Was X stamping her foot?

OR

21.Lee was climbing a ladder. As he sat down, Bobby folded his arms.
Was X sitting down?
Was X climbing a ladder?
Was X folding his arms?

22.Tracy was hiding. When she opened the present, Donna jumped for joy.
Was X opening the present?
Was X hiding?
Was X jumping for joy?

Unrestricted Forward Anaphora

23.Lee was climbing a ladder. As Bobby sat down, he folded his arms.
Was X folding his arms?
Was X climbing a ladder?
Was X sitting down?

24.Tracy was hiding. When Donna opened the present, she jumped for joy.
Was X jumping for joy?
Was X hiding?
Was X opening the present?

OR

23. Jack was singing loudly. As Philip had a headache,he took an aspirin.
Did X take an aspirin?
Was X singing loudly?
Did X take an aspirin?

24.Dawn was whispering. As Judy made a noise, she stamped her foot.
Was X stamping her foot?
Was X whispering?
Was X making a noise?

CATAPHORIC CONTEXT.

Non-identity

25. He came in when Tom was going out. Carl took off his coat.
Was X coming in?
Was X going out?
Did X take off his coat?

26. She was fast asleep while Sara was dancing. Mel was wearing pyjamas.
Was X fast asleep?
Was X dancing?
Was X wearing pyjamas?

27.She danced gracefully as Louisse climbed the hill.Suzie stretched her arms.
Was X dancing gracefully?
Was X climbing the hill?
Was X stretching her arms?

28. He counted the money when Don was skating. Harry was holding a piggy-bank.
Was X counting the money?
Was X skating?
Was X holding a piggy-bank?

Unrestricted Backward Anaphora

29. When he threw the ball David broke a window. Joseph was reading a book.
Did X throw the ball?
Did X brake a window?
Was X reading a book?

30.As she put the toys away, Anna tidied the bedroom. Lizzie was making a mess.
Was X putting the toys away?
Was X tidying the bedroom?
Was X making a mess?

OR

29.While he ate the chocolate, Jim dirtied his mouth. Terry steered the boat.
Did X eat the chocolate?
Did X dirty his mouth?
Did X steer the boat?

30.Before she went to bed, Nicola read a story. Katy woke up.
Did X go to bed?
Did X read a story?
Did X wake up?

Unrestricted Forward Anaphora

31.While Jim ate the chocolate, he dirtied his mouth. Terry steered the boat.
Did X dirty his mouth?
Did X eat the chocolate?
Did X steer the boat?

32.Before Nicola went to bed, she read a story. Katy woke up.
Did X read a story?
Did X go to bed?
Did X wake up?

OR

31. When David threw the ball he broke a window. Joseph was reading a book.
Did X brake a window?
Did X throw a ball?
Was X reading a book?

32.As Anna put the toys away, she tidied the bedroom. Lizzie was making a mess.
Was X tidying the bedroom?
Was X putting the toys away?
Was X making a mess?

C. NON-IDENTITY IMPLAUSIBLE.
ANAPHORIC CONTENT.

Non-identity
33. Susan was tucked up in bed. She was very cold when Lisa was standing in the snow.
Was X very cold?
Was X tucked up in bed?
Was X standing in the snow?

34.Simon was sitting indoors. He hurt his arm when Derek fell off the bike.
Did X hurt his arm?
Was X sitting indoors?
Did X fall off the bike?

35.Garry was carrying a heavy box. He was waving his arms when Russell saw the football match.
Was X waving his arms?
Was X carrying a heavy box?
Did X see the football match?

36.Teresa had no money. She bought a ticket before Wendy got in the train.
Was X buying a ticket?
Was it X who had no money?
Was X getting in the train?

Unrestricted Backward Anaphora
37. Marion put her slippers on. When she went upstairs Jill was cutting the grass.
Did X go upstairs?
Did X put her slippers on?
Was X cutting the grass?

38.Robert had an early night. When he shut the curtains, Gavin went to a party.
Did X shut the curtains?
Did X have an early night?
Did X go to a party?

OR
37.Heather was walking the dog. As she turned the corner, Joan was sunbathing.
Was X turning the corner?
Was X walking the dog?
Was X sunbathing?

38.Matthew bought a shirt. When he took out some money, Charlie swam quickly.
Did X take out some money?
Did X buy a shirt?
Did X swim quickly?

Unrestricted Forward Anaphora

39.Heather was walking the dog. As Joan was sunbathing, she turned the corner.
Was X turning the corner?
Was X walking the dog?
Was X sunbathing?

40.Matthew bought a shirt. When Charlie swam quickly, he took out some money.
Did X take out some money?
Did X buy a shirt?
Did X swim quickly?

OR

39. Marion put her slippers on. When Jill was cutting the grass, she went upstairs.
Did X go upstairs?
Did X put her slippers on?
Was X cutting the grass?

40.Robert had an early night. When Gavin went to a party, he shut the curtains.
Did X shut the curtains?
Did X have an early night?
Did X go to a party?

CATAPHORIC CONTEXT.

Non-identity

41. She was very hungry when Karen missed breakfast. Paula had eaten 6 slices of toast.
Was X very hungry?
Had X missed breakfast?
Had X eaten 6 slices of toast?

42. He was very hot when Ian sat in the sun. Mark was slipping on the ice.
Was X very hot?
Did X sit in the sun?
Did X slip on the ice?

43.She drove a car as Andrea travelled 69 miles. Gillian was going for a walk.
Was X driving a car?
Was X travelling 69 miles?
Was X going for a walk?

44. He was very tired after Lenny lifted the weights. Dominic had done nothing all day.
Was X very tired?
Did X lift the weights?
Had X done nothing all day?

Unrestricted Backward Anaphora

45. As she made tea Betty stood on her head. Jill put the kettle on.
Was X making tea?
Did X stand on her head?
Did X put the kettle on?

46.When he passed the exam, Ben felt a failure. Edward went out to celebrate.
Did X pass the exam?
Did X feel a failure?
Did X go out to celebrate?

OR

45.As she caught a bus, Jackie stayed at home. Pippa payed for a ticket.
Did X catch a bus?
Did X stay at home?
Was X paying for a ticket?

46.While he drank some wine, Jeremy dived into the sea. Steven held a cup with both hands.
Was X drinking some wine?
Was X diving into the sea?
Was X holding a cup with both hands?

Unrestricted Forward Anaphora

47.As Jackie stayed at home, she caught a bus. Pippa paid for a ticket.
Did X catch a bus?
Did X stay at home?
Was X paying for a ticket?

48.While Jeremy dived into the sea, he drank some wine. Steven held a cup with both hands.
Was X drinking some wine?
Was X diving into the sea?
Was X holding a cup with both hands?

OR

47. As Betty stood on her head, she made tea. Jill put the kettle on.
Was X making tea
Did X stand on her head?
Did X put the kettle on?

48.When Ben passed the exam, he felt a failure. Edward took a test again.
Did X feel a failure?
Did X pass the exam?
Did X take a test again?

Table N.2 Sentence-pairs and questions used for younger subjects. (In the tangible condition all referent pairs were Jane and Susan).

X = Name of one of the individuals mentioned in the sentence-pair.
Only the referential questions are shown.

A. NEUTRAL PRAGMATICS.
ANAPHORIC CONTEXT.

Non-identity
1. Susan was watching T.V. She was singing as Jane was dancing
Was X singing?

2. John was reading. He was smiling as Peter was singing
Was X smiling?

3.James was clapping. He was jumping when Mike was happy
Was X jumping?

4.Carol was cooking. She shut the door when Mandy put the kettle on
Did X shut the door?

Unrestricted Backward Anaphora
5. Sally was at home. When she cried Lisa opened the box
Was X crying?

6.Geoff was walking. As he smiled, Norman held a box.
Was X smiling?

OR
5.Janet held a ball. When she looked up Laura played a game
Did X look up?

6.Gordon sat down. When he saw a dog Ken clapped.
Did X see a dog?

Unrestricted Forward Anaphora
7.Janet held a ball. When Laura played a game she looked up
Did X look up?

8. Gordon sat down. When Ken clapped he saw a dog
Did X see a dog?

OR
7. Sally was at home. When Lisa opened the box she cried
Did X cry?

8.Geoff was walking. As Norman smiled, he held a box.
Did X hold a box?

CATAPHORIC CONTEXT.

Non-identity

9. She ate sweets when Jane watched the telly. Mary went outside.
Did X eat sweets?

10. He smiled as Simon fed the cat. David fed the dog.
Did X smile?

11. He sang as Timmy played. Fred was happy.
Did X sing?

12.She drank the milk when Cindy came home. Polly was sitting.
Did X drink the milk?

Unrestricted Backward Anaphora

13. When she sat in bed Susan read a book. Linda had a drink.
Did X sit in bed?

14.As he went upstairs Don whistled. Sammy carried a book
Did X go upstairs?

OR

13.When she got up Jessica washed. Sharon brushed her teeth
Did X get up?

14.As he talked Billy ate dinner. Andy was playing.
Did X talk?

Unrestricted Forward Anaphora

15.When Jessica got up she washed. Sharon brushed her teeth
Did X wash?

16. As Billy ate dinner he talked. Andy was playing.
Did X talk?

OR

15. When Susan read a book she sat up in bed. Linda had a drink.
Did X sit up in bed?

16.As Don went upstairs he whistled. Sammy carried a book.
Did X whistle?

B. NON-IDENTITY PLAUSIBLE.
ANAPHORIC CONTEXT.

Non-identity
Peter cried. He was sad when Paul was happy.
Was X sad?

18. Pam was sleeping. She was snoring as Janet was jumping.
Was X snoring?

19.Julie was skipping. She was in the garden when Emma was in bed.
Was X in the garden?

20.Barry was in the sun. He was hot when Ricky was in the snow.
Was X hot?

Unrestricted Backward Anaphora
21. Jack was noisy. As he was quiet Philip whispered.
Was X quiet?

22.Dawn was tall. As she was tiny Judy had to look up.
Was X tiny?

OR
21.Lee was playing tennis. As he was in bed Bobby was ill.
Was X in bed?

22.Tracy was reading. As she wore a swimsuit Donna was swimming.
Was X wearing a swimsuit?

Unrestricted Forward Anaphora
23.Lee was playing tennis. As Bobby was ill he sat down.
Did X sit down?

24.Tracy was reading. As Donna was swimming she wore a swimsuit.
Did X wear a swimsuit?

OR
23. Jack was noisy. As Philip whispered he was quiet.
Was X quiet?

24.Dawn was tall. As Judy was tiny she had to look up.
Did X have to look up?

CATAPHORIC CONTEXT.

Non-identity

25. He went upstairs when Tom came downstairs. Carl was going to bed.
Did X go upstairs?

26. She snored when Sara was skating. Mel was wearing pyjamas.
Was X snoring?

27.She wrote as Louisse had a bath. Suzie held a pencil.
Was X writing?

28. He screamed as Don was sleeping. Harry made a lot of noise.
Did X scream?

Unrestricted Backward Anaphora

29. When he was sick David cried. Joseph was clapping his hands.
Was X sick?

30.As she was tidy Anna put the toys away. Lizzie made a mess.
Was X tidy?

OR

29.When he was happy Jim smiled. Terry hurt his foot.
Was X happy?

30.As she had a bike Nicola cycled to school. Katy had a car.
Did X have a bike?

Unrestricted Forward Anaphora

31.When Jim smiled he was happy. Terry hurt his foot.
Was X happy?

32.As Nicola had a bike she cycled to school. Katy had a car.
Did X cycle to school?

OR

31. When David was sick he cried. Joseph was clapping his hands.
Did X cry?

32.As Anna was tidy she put the toys away. Lizzie made a mess.
Did X put the toys away?

C. NON-IDENTITY IMPLAUSIBLE.
ANAPHORIC CONTEXT.

Non-identity

33. Susan was hot. She put on some gloves when Lisa was in the snow.
Did X put on some gloves?

34.Simon was asleep. He laughed when Derek watched the clown.
Did X laugh?

35.Garry was happy. He cried when Russell got told off.
Did X cry?

36.Teresa was dancing. She swam in the sea when Wendy was at the seaside.
Did X swim in the sea?

Unrestricted Backward Anaphora

37. Marion was wearing boots. When she made a snowman Jill put her slippers on.
Did X make a snowman?

38.Robert had a cold. Whan he sneezed Gavin went to a party
Did X sneeze?

OR

37.Heather was sunbathing. As she got a suntan Joan put on her coat.
Did X get a suntan?

38.Matthew was shopping. When he bought a new jumper Charlie had a bath.
Did X buy a new jumper?

Unrestricted Forward Anaphora

39.Heather was sunbathing. As Joan put on her coat she got a suntan.
Did X get a suntan?

40.Matthew was shopping. When Charlie had a bath he bought a new jumper.
Did X buy a new jumper?

OR

39. Marion was wearing boots. When Jill put her slippers on she made a snowman.
Did X make a snowman?

40.Robert had a cold. When Gavin went to a party he sneezed
Did X sneeze?

CATAPHORIC CONTENT.

Non-identity
41. She was very hungry when Karen had no dinner. Paula had two dinners.
Was X very hungry?

42. He was very hot when Ian sat in the sun. Mark was shivering.
Was X very hot?

43.She ate when Andrea had her breakfast. Gillian went swimming.
Did X eat?

44. He was very happy when Lenny was on holiday. Danny was working.
Was X very happy?

Unrestricted Backward Anaphora
45. As she jumped Betty slept. Jill was playing.
Did X jump?

46.When he painted Ben swam. Edward made a mess.
Was X painting?

OR
45.As she ran Jackie watched the telly. Pippa was out of breath.
Did X run?

46.While he had a bath Jeremy drove a car. Steven picked up some soap.
Did X have a bath?

Unrestricted Forward Anaphora
47.As Jackie watched the telly she ran. Pippa was out of breath.
Did X run?

48.While Jeremy drove a car he had a bath. Steven picked up some soap.
Did X have a bath?

OR
47. As Betty slept she jumped. Jill was playing.
Did X jump?

48.When Ben swam he painted. Edward made a mess.
Was X painting?

Table N.3 Post-experimental questionnaire that was given to the adult subjects.

Tick the box that you think is appropriate.

1. Did you find that the sentences were

A complicated
B okay
C easy

2. Do you think that most of the sentences were

A very common
B atypical
C ambiguous

3. Did you find the questions

A okay
B easy
C difficult to answer

4. Did you find that

A you were bored and tired and couldn't think straight
B you were able to concentrate all the way through.
C you became tired and/or bored as the experiment progressed.

Table N.4 Non-identity inward (I) and outward (O) scores for the 3-5 year old group.

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TANGIBLE																								
1	O	O	O	O	O	I	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I	I
2	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	O	O	O
3	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	O	I	I	I	I
4	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	O	O	I	O	I	I
5	O	O	I	I	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I
6	O	I	O	I	O	O	O	O	O	O	O	O	O	O	O	O	I	O	I	O	I	I	I	I
7	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I
8	I	O	O	O	I	O	O	O	O	O	O	1	O	O	O	O	I	O	O	I	I	O	I	I
INTANGIBLE																								
9	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	I	I	O	O	I	O	I	I
10	O	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I
11	O	O	O	O	I	I	I	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I
12	O	O	O	O	I	O	O	O	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I	O
13	O	O	O	O	O	O	I	I	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I
14	O	I	I	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I
15	I	I	I	I	I	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I	O	O
16	I	I	O	O	O	O	I	O	O	O	O	O	O	O	O	O	I	O	O	I	I	O	O	I

Table N.5 Non-identity inward (I) and outward (O) scores for the 6-8 year old group.

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TANGIBLE																								
1	O	O	O	O	O	O	I	I	O	I	I	O	O	O	I	O	I	O	I	I	I	I	I	I
2	O	O	O	I	O	I	I	O	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I	I
3	O	O	O	O	O	O	O	I	O	O	O	O	O	O	O	O	I	I	O	O	I	I	I	I
4	O	O	O	O	O	I	O	O	O	O	O	O	O	O	O	O	I	O	O	I	I	I	I	I
5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I	O
6	O	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	I	O	I	I	I	I	I
7	O	O	O	O	I	I	I	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I	I	I
8	O	I	O	O	I	O	O	I	O	O	O	O	O	O	I	O	I	I	O	O	I	I	I	I
INTANGIBLE																								
9	O	O	O	O	I	O	I	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I	I	I
10	O	O	O	O	I	O	O	I	O	O	O	O	O	I	O	O	I	O	I	O	I	O	I	I
11	O	O	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	I	I	O	I	I	O	I
12	O	O	O	O	I	O	O	I	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I
13	O	O	O	O	O	O	I	O	O	O	O	O	O	O	I	O	I	I	O	O	O	I	I	I
14	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	O	I	I	O	I	I	I	I	I
15	O	O	O	O	O	I	I	O	O	O	O	O	I	O	O	O	O	I	I	O	I	I	I	I
16	O	O	O	O	O	O	O	I	O	O	O	O	O	O	O	O	O	I	I	I	O	I	I	I

Table N.6 Non-identity inward (I) and outward (O) scores for the 9-11 year old group.

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TANGIBLE																								
1	O	O	O	I	O	O	O	I	O	O	O	O	O	O	O	O	I	O	I	O	O	O	O	O
2	O	O	O	O	I	O	O	O	O	I	O	O	O	O	O	O	O	O	O	I	I	I	I	I
3	O	I	O	O	I	I	I	I	O	O	I	O	O	O	O	I	O	O	O	O	I	I	O	I
4	O	I	O	O	O	O	I	O	O	I	I	O	O	O	I	O	O	I	O	I	O	I	I	I
5	I	O	O	O	O	O	I	O	O	I	O	O	O	O	O	O	O	O	O	O	O	I	I	I
6	O	O	O	I	I	I	O	O	I	O	O	O	O	I	I	I	O	O	O	I	I	I	I	I
7	O	O	I	O	O	O	I	O	I	O	O	O	O	O	O	O	I	O	I	O	I	I	O	I
8	I	O	O	O	O	O	O	O	O	I	I	O	O	I	I	O	O	I	I	I	I	O	O	I
INTANGIBLE																								
9	O	O	O	O	I	O	O	I	O	O	1	O	O	1	O	O	O	I	O	I	I	O	I	I
10	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I
11	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	1	I	I	O	O	O	I	I	I
12	O	O	O	O	I	O	I	O	O	O	O	O	O	O	O	O	I	O	I	O	I	O	I	I
13	I	O	O	I	I	O	I	O	1	O	O	O	1	1	1	1	O	I	O	I	I	I	I	I
14	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	I	I	I	O	I	I	I	I
15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	I	I	I	I	I	I
16	O	O	O	O	O	I	O	O	O	O	O	O	O	1	O	O	I	I	O	I	I	I	I	I

Table N.7 Non-identity inward (I) and outward (O) scores for the parent group.

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INTANGIBLE																								
1	O	O	O	I	O	I	I	O	O	I	I	O	O	I	I	I	O	I	O	I	I	O	I	I
2	O	O	O	O	I	I	I	I	O	O	O	I	I	I	O	I	I	O	I	O	I	I	I	I
3	I	O	I	I	I	I	O	I	O	I	O	O	I	I	I	O	O	O	O	O	I	I	O	I
4	O	O	O	O	I	O	O	I	I	O	O	O	O	O	O	O	O	O	O	O	I	I	O	I
5	O	O	O	O	O	I	I	O	O	O	O	O	O	O	O	O	O	I	I	I	O	I	I	I
6	I	O	O	I	I	O	O	O	O	O	I	I	O	O	O	O	I	I	O	I	I	I	I	O
7	I	O	I	I	O	I	I	I	O	O	I	O	O	O	O	I	O	I	O	I	I	I	I	I
8	O	O	O	I	O	O	I	I	O	O	O	O	O	I	I	O	O	O	O	O	O	I	I	I
9	O	O	O	O	O	I	I	O	O	O	O	O	O	I	O	O	O	I	O	I	I	O	I	O
10	1	O	O	I	O	O	I	I	I	O	I	O	O	O	1	O	I	I	I	I	I	I	I	I
11	1	O	O	O	O	I	I	I	O	O	O	I	I	O	O	I	I	O	O	O	I	I	I	O
12	1	O	O	O	I	I	O	O	O	O	I	O	I	I	O	O	I	O	I	O	O	I	O	O
13	O	O	O	O	I	O	O	I	O	O	O	O	I	I	I	I	O	O	I	O	I	O	I	O
14	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
15	O	O	I	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	O	I	I	I
16	O	O	O	O	I	I	I	O	O	I	O	O	I	I	I	O	I	O	I	O	I	I	I	O

Table N.8 Non-identity inward (I) and outward (O) scores for the student group.

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INTANGIBLE																								
1	O	O	O	I	O	O	I	I	O	O	O	O	O	I	O	O	O	I	O	O	I	I	I	O
2	O	I	I	O	O	O	O	I	O	O	I	O	I	O	I	O	O	O	I	I	O	O	I	O
3	I	I	O	O	O	O	O	O	O	I	O	O	O	O	O	O	O	O	O	O	I	O	I	O
4	I	O	O	O	O	O	I	I	O	O	I	I	I	I	I	O	O	I	O	I	O	I	O	I
5	O	O	O	O	I	I	O	O	O	O	O	O	O	I	O	I	I	O	O	O	I	O	I	I
6	O	O	O	O	O	I	O	O	O	O	I	O	O	I	O	O	I	I	I	I	O	I	O	I
7	O	O	O	O	I	I	O	O	O	I	O	O	O	O	O	I	I	O	I	O	I	O	O	O
8	O	O	O	O	I	O	O	I	O	O	O	O	O	I	I	O	O	O	O	O	O	I	O	O
9	O	O	O	O	O	O	I	O	O	O	O	O	I	O	O	O	O	I	O	O	I	I	O	I
10	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	I	I	I	I	I	I	I
11	O	I	O	O	I	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	O	O	O
12	O	O	O	O	O	O	O	I	I	O	O	O	O	O	O	I	O	O	I	O	O	I	O	I
13	O	O	O	O	O	I	I	O	O	O	O	O	I	O	O	I	I	O	I	O	I	O	I	O
14	O	O	O	O	O	O	O	O	O	I	O	O	I	O	O	O	O	O	O	O	O	I	O	I
15	O	O	O	O	O	I	O	O	O	O	O	O	O	I	O	O	O	O	O	O	O	O	O	I
16	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	I	O	O	O	I	O	I

Table N.9 Non-identity yes and no scores for the 6-8 year old group

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TANGIBLE																								
1	N	Y	N	Y	Y	N	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	N	Y	N	Y	N
2	Y	N	Y	Y	N	Y	Y	N	N	Y	N	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	N	Y
3	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	N	N	Y	N	Y	N	Y	Y	N	Y	N	Y	N
4	Y	N	Y	N	N	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y	Y	N	N	N	Y	N	Y
5	N	Y	N	Y	Y	N	Y	N	Y	N	Y	N	N	Y	N	Y	N	Y	Y	Y	N	Y	N	N
6	Y	N	Y	N	N	Y	Y	N	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	N
7	N	Y	N	Y	Y	N	Y	Y	Y	N	Y	N	N	Y	N	N	N	N	N	Y	N	Y	N	Y
8	Y	Y	Y	N	N	N	Y	Y	N	Y	N	Y	N	Y	Y	Y	Y	N	N	Y	Y	N	Y	N
INTANGIBLE																								
9	Y	N	Y	N	N	N	N	N	Y	N	Y	N	Y	N	N	Y	Y	N	Y	N	N	Y	N	Y
10	N	Y	N	Y	Y	Y	N	N	Y	N	Y	N	Y	Y	Y	N	Y	Y	Y	Y	N	N	N	Y
11	N	Y	N	Y	N	Y	Y	N	N	Y	N	Y	N	Y	N	Y	N	N	Y	Y	N	Y	Y	Y
12	N	Y	N	Y	N	N	Y	Y	N	Y	N	Y	Y	N	Y	N	N	Y	N	Y	Y	N	Y	N
13	Y	N	Y	N	N	Y	Y	Y	N	Y	N	Y	Y	N	N	N	N	Y	Y	N	Y	Y	Y	N
14	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	Y	N	Y	Y	N	N	N	N	Y	N	Y
15	Y	N	Y	N	Y	Y	N	N	N	Y	N	Y	Y	Y	N	Y	Y	Y	N	N	N	Y	N	Y
16	Y	N	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	N	Y	N	N	Y	N

Table N.10 Non-identity yes and no scores for the 9-11 year old group

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TANGIBLE																								
1	Y	N	Y	Y	N	Y	N	N	Y	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y
2	Y	N	Y	N	N	N	Y	N	Y	Y	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	N	Y
3	Y	Y	Y	N	Y	N	Y	N	N	Y	Y	Y	N	Y	N	N	N	Y	N	Y	N	Y	Y	Y
4	Y	Y	Y	N	Y	N	N	N	N	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	N	Y
5	N	N	Y	N	N	Y	Y	Y	N	N	N	Y	Y	N	Y	N	N	Y	N	Y	Y	Y	N	Y
6	Y	N	Y	Y	N	Y	Y	N	Y	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	N	Y	N	Y
7	Y	Y	Y	N	Y	N	N	N	N	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y
8	Y	Y	N	Y	N	Y	N	Y	Y	Y	N	N	Y	Y	N	N	Y	Y	N	Y	Y	N	N	Y
INTANGIBLE																								
9	Y	N	Y	N	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N
10	N	Y	N	Y	Y	N	Y	N	N	Y	N	Y	Y	N	Y	N	Y	N	Y	N	N	Y	N	Y
11	N	Y	N	Y	Y	N	N	Y	Y	N	Y	N	N	Y	N	N	Y	N	N	Y	Y	N	Y	Y
12	Y	N	Y	N	N	N	N	N	Y	N	Y	N	N	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	N
13	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	Y
14	Y	N	Y	N	N	Y	Y	N	N	Y	N	Y	Y	N	Y	N	Y	N	Y	Y	Y	N	Y	N
15	Y	N	Y	N	N	Y	N	Y	N	Y	N	Y	Y	N	Y	N	Y	Y	Y	N	Y	N	Y	N
16	N	Y	N	Y	N	N	N	Y	Y	N	Y	N	N	N	N	Y	N	Y	Y	Y	N	Y	N	Y

Table N.11 Non-identity yes and no scores for the parent group

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INTANGIBLE																								
1	N	Y	N	N	Y	Y	N	N	N	N	Y	Y	N	N	Y	N	N	N	N	N	N	N	N	Y
2	Y	N	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	Y	Y	N	N	N	N	N	Y	N	Y
3	Y	Y	Y	N	N	Y	Y	Y	Y	Y	Y	N	N	Y	N	N	N	Y	N	Y	Y	N	N	N
4	N	Y	N	Y	N	N	Y	Y	Y	Y	N	Y	Y	N	Y	N	Y	N	Y	N	N	Y	Y	Y
5	N	Y	N	Y	Y	Y	N	N	N	Y	N	Y	Y	N	Y	N	N	N	Y	N	N	N	Y	N
6	Y	Y	N	N	N	N	Y	N	N	Y	Y	N	Y	N	Y	N	Y	N	N	N	N	Y	N	N
7	Y	Y	Y	N	Y	Y	N	Y	N	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	Y	N	Y
8	N	Y	N	N	Y	N	N	Y	N	Y	N	Y	N	N	Y	Y	Y	N	Y	N	N	N	Y	N
9	Y	N	Y	N	Y	Y	N	N	Y	N	Y	N	N	N	N	Y	N	N	N	N	N	N	N	N
10	Y	Y	N	N	Y	N	N	Y	Y	Y	N	N	Y	N	N	N	Y	N	Y	N	N	Y	N	Y
11	N	N	Y	N	N	N	Y	N	Y	N	Y	Y	N	N	Y	Y	N	N	Y	N	N	Y	N	N
12	Y	Y	N	Y	Y	N	N	Y	Y	N	N	N	Y	N	N	Y	N	N	N	N	N	N	N	Y
13	Y	N	Y	N	N	N	Y	Y	N	Y	N	Y	N	Y	N	Y	Y	N	N	N	N	N	N	N
14	Y	N	Y	N	Y	N	Y	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	Y	N	Y	N
15	Y	N	N	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	N	Y	N
16	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	N	N	Y	N	N	N	N	N	N	N	Y	N	N

Table N.12 Non-identity yes and no scores for the student group

	NEUTRAL								PLAUSIBLE OUTWARD								IMPLAUSIBLE OUTWARD							
	anaphor.				cataphor.				anaphor.				cataphor.				anaphor.				cataphor.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
INTANGIBLE																								
1	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	N	N	N	N	Y	N	N	N	Y	N	Y	N	N
2	Y	Y	N	N	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	N	N	N
3	Y	N	N	Y	N	Y	N	Y	Y	Y	Y	N	N	Y	N	Y	Y	N	Y	N	N	N	N	N
4	N	N	Y	N	Y	N	N	Y	Y	N	N	Y	N	Y	N	N	N	N	N	N	N	N	N	N
5	Y	N	Y	N	Y	N	N	Y	Y	N	Y	N	N	N	N	N	N	N	Y	N	N	N	N	Y
6	N	Y	N	Y	Y	Y	Y	N	Y	N	N	N	Y	Y	Y	N	Y	N	Y	N	N	N	N	N
7	Y	N	Y	N	N	Y	Y	N	N	N	N	Y	Y	N	Y	Y	N	N	N	N	N	N	Y	N
8	Y	N	Y	N	Y	Y	N	N	Y	N	Y	N	Y	Y	N	N	N	Y	N	Y	N	N	N	Y
9	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	N	Y	Y	N	Y	N	N	N	Y	Y	N	N	N
10	Y	N	Y	N	N	Y	N	Y	Y	N	Y	N	N	Y	N	Y	Y	N	Y	N	Y	N	Y	N
11	Y	Y	Y	N	N	N	Y	N	N	Y	N	Y	Y	N	Y	N	N	Y	N	N	Y	N	Y	N
12	Y	N	Y	N	Y	N	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	N	N	N	N	N	N	N
13	N	Y	N	Y	N	N	Y	Y	Y	N	Y	N	N	N	Y	Y	N	N	N	N	N	N	N	N
14	N	Y	N	Y	N	Y	N	Y	Y	Y	Y	N	N	N	Y	N	Y	N	Y	N	N	N	N	N
15	Y	N	Y	N	N	N	N	Y	N	Y	N	Y	N	N	N	Y	Y	N	Y	N	N	Y	N	N
16	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N	N	N	Y	N	N	N	N

Table N.13 Unrestricted Backward Anaphora inward and outward scores for the 3-5 year old group.

	NEUTRAL				PLAUSIBLE OUTWARD				IMPLAUSIBLE OUTWARD			
	anaphor.		cataphor.		anaphor.		cataphor.		anaphor.		cataphor.	
S.	1	2	1	2	1	2	1	2	1	2	1	2
TANGIBLE												
1	O	O	O	O	O	I	O	I	I	O	I	I
2	O	O	O	I	O	O	O	O	I	I	I	I
3	O	O	I	O	O	O	O	O	O	I	I	I
4	O	O	I	I	O	O	I	O	O	O	I	O
5	O	I	I	I	O	I	O	O	I	I	I	I
6	I	I	O	O	O	O	O	O	I	I	I	I
7	O	O	O	I	O	O	I	O	I	O	I	I
8	O	I	O	I	O	I	O	O	O	I	I	I
INTANGIBLE												
9	O	O	O	I	O	I	O	O	I	I	I	I
10	I	O	I	I	O	O	O	O	I	I	I	I
11	O	O	I	I	I	I	O	O	I	I	I	I
12	O	I	I	O	O	I	O	O	I	I	I	I
13	I	O	O	O	O	O	O	O	I	I	I	I
14	I	O	I	I	O	I	O	O	I	I	I	I
15	I	I	I	O	I	O	I	O	O	O	I	I
16	I	O	O	O	O	I	O	O	I	O	I	I

Table N.14 Unrestricted Backward Anaphora inward and outward scores as well as yes/no scores for the 6-8 year old group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
TANGIBLE																		
1	O	O	NY	I	I	YN	O	O	YN	O	I	YY	I	I	NY	I	I	YN
2	O	O	YN	O	I	YY	O	O	NY	I	O	YY	I	I	YN	I	I	NY
3	I	O	YY	I	O	YY	O	I	YY	O	O	YN	O	I	YY	I	I	YN
4	O	I	YY	O	O	YN	O	O	NY	O	O	NY	I	I	YN	I	I	NY
5	O	O	NY	I	O	YY	O	O	YN	O	I	YY	I	I	NY	I	I	YN
6	O	O	YN	O	I	YY	O	O	NY	I	O	YY	I	I	YN	I	I	NY
7	O	O	NY	I	O	YY	I	O	NN	O	I	YY	I	I	NY	I	O	NN
8	O	I	YY	O	I	YY	O	O	NY	I	O	YY	I	I	YN	I	I	NY
INTANGIBLE																		
9	O	O	YN	I	O	YY	O	O	NY	O	O	NY	I	I	YN	I	I	YN
10	O	O	NY	I	I	NY	O	O	YN	O	O	YN	O	I	YY	I	I	NY
11	O	I	YY	I	O	YY	I	O	YY	I	O	YY	I	I	YN	I	O	YY
12	I	O	YY	O	I	YY	O	O	YN	O	O	YN	I	I	NY	I	I	NY
13	O	I	YY	O	O	NY	O	O	NY	I	O	YY	I	I	YN	I	I	YN
14	I	O	YY	O	I	YY	O	O	YN	I	O	NN	O	I	YY	I	I	NY
15	O	O	YN	O	I	NN	O	O	NY	I	O	YY	I	I	YN	I	I	YN
16	I	O	YY	I	O	YY	O	I	YY	O	O	YN	I	I	NY	I	I	NY

Table N.15 Unrestricted Backward Anaphora inward and outward scores as well as yes/no scores for the 9-11 year old group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
TANGIBLE																		
1	O	O	NY	I	I	YN	O	I	YY	O	I	NN	I	I	NY	I	I	YN
2	O	O	YN	I	I	NY	O	O	NY	O	O	YN	O	O	NY	O	I	YY
3	I	I	YN	I	O	YY	O	O	YN	I	O	YY	I	I	NY	I	I	YN
4	O	I	YY	O	O	YN	O	O	NY	I	I	NY	I	O	YY	O	I	YY
5	O	O	NY	I	O	YY	O	O	YN	I	O	YY	I	I	NY	I	I	YN
6	O	O	YN	O	I	YY	O	O	NY	I	O	NN	I	O	YY	I	I	NY
7	O	O	NY	I	O	YY	O	O	YN	O	O	NY	I	I	NY	I	I	YN
8	O	O	YN	O	I	YY	I	O	YY	O	O	YN	I	I	YN	O	I	YY
INTANGIBLE																		
9	O	O	YN	I	I	NY	O	O	NY	I	O	YY	I	I	YN	I	I	YN
10	O	O	NY	I	O	YY	O	O	YN	O	O	YN	O	O	YN	I	O	NN
11	O	O	YN	O	I	YY	O	O	NY	O	O	NY	I	O	YY	I	I	YN
12	O	O	NY	O	O	NY	O	O	YN	O	O	YN	I	O	NN	O	O	YN
13	O	I	YY	I	O	NN	I	O	YY	O	O	NY	O	I	NN	I	I	YN
14	O	O	NY	I	I	YN	O	O	YN	O	O	YN	I	I	NY	I	O	NN
15	O	O	YN	O	I	YY	O	O	NY	O	O	NY	I	I	YN	O	I	NN
16	I	O	YY	I	I	YN	O	O	YN	O	O	YN	I	I	NY	I	I	NY

Table N.16 Unrestricted Backward Anaphora inward and outward scores as well as yes/no scores for the parents group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
INTANGIBLE																		
1	O	O	NY	I	I	NY	I	O	NN	O	I	NN	O	I	NN	I	I	YN
2	I	I	NY	O	I	NN	O	O	NY	O	I	YY	O	I	YY	I	I	NY
3	I	I	YN	I	I	NY	I	O	NN	O	O	NY	I	I	YN	I	O	YY
4	O	O	YN	I	I	YN	O	O	NY	O	O	YN	I	I	NY	I	I	NY
5	O	I	NN	I	I	NY	O	O	YN	O	I	NN	U	I	UN	I	I	YN
6	O	I	YY	O	I	NN	O	O	NY	I	O	NN	I	O	NN	I	O	NN
7	O	I	NN	O	U	YU	I	O	NN	I	O	YY	O	I	NN	I	O	YY
8	O	I	YY	I	I	YN	O	O	NY	O	O	YN	O	I	YY	I	O	NN
9	O	O	NY	I	O	NN	O	O	YN	O	O	NY	O	I	NN	I	I	YN
10	O	O	YN	O	O	NY	O	O	YN	O	I	YY	O	O	YN	I	O	NN
11	O	O	NY	I	I	NY	I	O	NN	I	O	NN	O	I	NN	I	I	YN
12	O	O	YN	O	O	NY	O	O	NY	I	O	NN	O	O	YN	O	U	YU
13	I	I	YN	I	I	NY	O	O	YN	O	O	NY	I	I	YN	I	I	YN
14	I	O	NN	I	I	YN	I	O	YY	O	I	YY	I	I	NY	I	I	NY
15	I	I	YN	I	I	NY	I	O	NN	I	I	YN	I	I	YN	I	I	YN
16	I	I	NY	I	I	YN	O	O	NY	O	O	YN	I	I	NY	I	O	NN

Table N.17 Unrestricted Backward Anaphora inward and outward scores as well as yes/no scores for the students group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
INTANGIBLE																		
1	I	I	NY	I	I	YN	O	I	NN	I	I	YN	O	I	NN	I	O	YY
2	I	I	YN	I	I	NY	I	I	NY	O	I	YY	O	I	YY	I	I	NY
3	O	I	YY	I	I	YN	O	I	NN	O	I	NN	O	I	NN	I	I	YN
4	I	I	YN	I	I	NY	I	O	NN	I	O	NN	I	O	NN	I	I	NY
5	I	I	NY	I	I	YN	I	O	YY	I	I	YN	I	I	YN	I	I	YN
6	I	I	YN	I	I	NY	O	O	YN	O	O	YN	I	I	NY	O	I	YY
7	O	I	YY	I	I	YN	O	O	NY	I	O	YY	I	O	YY	I	I	YN
8	O	O	NY	I	I	NY	I	O	NN	I	O	NN	I	O	NN	I	I	NY
9	I	I	NY	I	I	YN	O	I	NN	O	I	NN	O	I	NN	I	I	YN
10	O	O	NY	I	I	NY	O	O	YN	O	O	YN	I	I	NY	I	I	NY
11	I	O	NN	I	I	YN	O	O	NY	I	I	YN	I	I	YN	I	I	YN
12	I	I	YN	I	I	NY	O	O	YN	O	O	YN	I	O	NN	I	I	NY
13	I	I	NY	I	O	YY	O	O	NY	I	O	YY	I	O	YY	I	I	YN
14	O	O	NY	I	I	NY	O	O	YN	O	I	YY	O	O	YN	I	I	NY
15	O	O	YN	I	I	YN	O	O	NY	I	I	YN	I	O	YY	I	I	YN
16	O	O	NY	I	I	NY	O	O	YN	O	O	YN	O	I	YY	I	I	NY

Table N.18 Unrestricted Forward Anaphora inward and outward scores for the 3-5 year old group.

	NEUTRAL				PLAUSIBLE OUTWARD				IMPLAUSIBLE OUTWARD			
	anaphor.		cataphor.		anaphor.		cataphor.		anaphor.		cataphor.	
S.	1	2	1	2	1	2	1	2	1	2	1	2
TANGIBLE												
1	I	I	O	I	I	O	O	O	I	I	I	I
2	I	I	I	I	I	O	O	I	I	I	I	I
3	O	I	I	O	O	I	O	O	I	I	I	I
4	I	I	I	I	O	I	I	I	I	I	I	I
5	I	I	I	O	O	I	O	O	I	I	I	I
6	I	I	I	I	O	O	O	O	I	I	I	O
7	I	I	I	I	I	O	O	O	I	I	I	I
8	I	I	I	I	O	I	O	O	I	O	I	I
INTANGIBLE												
9	I	I	I	I	O	I	I	O	I	I	I	I
10	I	I	I	I	O	O	I	I	I	I	I	I
11	I	I	I	I	I	O	O	I	I	I	I	I
12	O	I	I	I	O	O	O	O	I	I	I	I
13	I	I	I	I	O	I	O	O	I	I	I	I
14	I	I	I	O	O	I	O	O	I	I	I	I
15	I	O	I	I	I	O	O	O	I	I	I	I
16	I	I	I	I	O	I	O	O	I	I	I	I

Table N.19 Unrestricted Forward Anaphora inward and outward scores as well as yes/no scores for the 6-8 year old group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
TANGIBLE																		
1	I	I	YN	O	I	YY	I	O	YY	I	I	YN	I	I	YN	I	I	NY
2	O	I	YY	I	I	YN	I	I	YN	O	I	YY	I	I	NY	I	I	YN
3	O	I	YY	I	O	YY	I	I	NY	O	I	NN	I	I	YN	I	I	YN
4	I	I	NY	I	I	YN	O	I	NN	O	I	YY	I	I	NY	I	I	NY
5	I	I	NY	I	O	YY	O	O	NY	O	O	YN	O	I	YY	I	I	NY
6	I	O	YY	I	I	NY	O	I	YY	I	O	YY	I	O	YY	I	I	NY
7	I	I	YN	I	O	YY	I	O	YY	I	O	NN	I	I	YN	I	I	YN
8	I	O	YY	O	I	YY	O	I	YY	O	I	YY	I	I	YN	I	I	YN
INTANGIBLE																		
9	I	O	YY	O	I	YY	O	I	YY	I	O	YY	I	I	YN	I	I	YN
10	I	O	YY	I	O	YY	I	O	YY	O	I	YY	I	I	YN	I	I	NY
11	O	I	YY	O	I	YY	I	O	NN	O	I	NN	I	I	NY	O	I	NN
12	I	I	NY	I	I	YN	O	I	YY	I	I	YN	O	I	YY	I	I	YN
13	O	I	YY	O	I	YY	I	I	YN	O	I	NN	I	I	YN	I	I	YN
14	O	O	YN	I	O	YY	O	O	YN	O	O	NY	I	O	YY	I	I	NY
15	I	O	YY	I	O	YY	I	O	YY	O	I	YY	I	O	YY	I	I	YN
16	I	I	NY	I	I	NY	I	I	NY	I	I	NY	I	I	NY	I	I	NY

Table N.20 Unrestricted Forward Anaphora inward and outward scores as well as yes/no scores for the 9-11 year old group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
TANGIBLE																		
1	I	I	YN	O	O	NY	I	O	YY	I	I	NY	O	I	NN	I	I	YN
2	O	O	YN	I	I	YN	O	I	NN	I	I	YN	I	I	NY	O	I	NN
3	O	I	NN	I	O	YY	I	O	YY	I	O	YY	I	O	YY	I	O	YY
4	O	O	NY	I	I	YN	O	I	YY	O	I	YY	I	O	YY	I	I	NY
5	I	I	NY	I	I	YN	I	I	YN	I	I	YN	I	I	YN	I	O	YY
6	I	O	YY	I	O	NN	O	I	YY	I	O	YY	I	I	YN	I	I	NY
7	O	I	NN	I	O	YY	I	O	YY	O	O	YN	I	I	YN	I	I	YN
8	I	O	YY	I	I	YN	O	I	YY	O	O	NY	I	I	NY	I	I	NY
INTANGIBLE																		
9	I	O	YY	I	I	YN	O	I	YY	I	O	YY	I	O	YY	I	I	YN
10	I	I	NY	I	I	YN	I	O	YY	O	I	NN	I	I	YN	I	I	NY
11	I	I	YN	I	I	NY	I	I	YN	I	I	NY	I	I	NY	I	I	YN
12	I	I	NY	I	I	YN	O	I	YY	I	I	YN	I	I	YN	I	I	YN
13	O	I	YY	O	I	YY	I	O	YY	I	I	NY	O	I	YY	I	I	NY
14	I	I	YN	I	I	YN	O	I	YY	O	O	NY	I	I	YN	I	I	YN
15	I	I	YN	I	I	YN	I	O	YY	O	O	YN	I	I	YN	I	I	YN
16	I	O	YY	I	I	NY	O	O	YN	O	O	YN	I	I	NY	I	I	NY

Table N.21 Unrestricted Forward Anaphora inward and outward scores as well as yes/no scores for the parent group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
INTANGIBLE																		
1	I	I	YN	I	I	NY	I	O	YY	O	O	NY	I	I	YN	I	I	YN
2	I	O	NN	I	I	YN	O	I	NN	I	I	YN	I	I	NY	I	I	NY
3	I	O	YY	I	O	YY	I	I	YN	O	O	NY	I	O	YY	I	O	YY
4	O	O	YN	I	I	NY	O	O	NY	O	I	NN	I	O	NN	I	I	NY
5	O	O	YN	I	I	YN	I	O	YY	I	O	NN	I	I	YN	I	I	YN
6	O	I	YY	I	O	NN	O	O	YN	I	O	NN	I	I	YN	I	I	NY
7	O	O	NY	I	I	YN	I	O	YY	O	O	YN	I	O	NN	I	I	YN
8	I	O	NN	I	I	YN	O	I	NN	I	I	NY	O	I	YY	I	I	NY
9	O	O	YN	I	I	NY	O	I	NN	O	O	YN	I	O	YY	I	O	YN
10	O	O	NY	O	I	NN	O	O	NY	O	O	NY	O	I	NN	O	I	YY
11	O	I	NN	O	I	YY	I	O	YY	I	O	NN	I	I	NY	I	I	NN
12	I	I	NY	I	O	NN	O	I	YY	O	I	NN	I	I	YN	I	I	YN
13	O	O	YN	I	I	NY	I	O	NN	O	O	NY	O	I	NN	I	I	NY
14	I	O	YY	O	I	YY	O	I	YY	I	I	NY	O	I	NN	I	I	NY
15	I	I	YN	I	I	YN	I	O	YY	I	I	YN	I	I	YN	I	I	NY
16	I	I	YN	O	I	NN	O	O	NY	I	I	NY	I	O	YY	I	I	YN

Table N.22 Unrestricted Forward Anaphora inward and outward scores as well as yes/no scores for the student group.

	NEUTRAL						PLAUSIBLE OUTWARD						IMPLAUSIBLE OUTWARD					
	anaphor.			cataphor.			anaphor.			cataphor.			anaphor.			cataphor.		
S.	1	2		1	2		1	2		1	2		1	2		1	2	
INTANGIBLE																		
1	I	I	YN	I	I	NY	O	O	YN	I	I	NY	I	I	YN	I	I	YN
2	I	I	NY	I	O	NN	I	I	NY	I	I	YN	I	I	NY	I	I	NY
3	I	I	YN	I	I	YN	I	O	NN	O	O	NY	I	I	YN	I	I	YN
4	I	I	YN	O	I	NN	I	I	YN	I	O	YY	I	I	NY	I	I	YN
5	I	I	NY	I	I	NY	O	I	NN	I	O	NN	I	O	YY	I	I	NY
6	I	O	YY	I	I	YN	O	O	NY	O	O	YN	I	O	YY	I	I	NY
7	I	I	NY	I	I	NY	O	O	YN	O	O	YN	I	I	YN	I	I	YN
8	I	I	YN	O	O	YN	O	O	NY	I	I	NY	O	I	YY	I	I	NY
9	I	I	YN	I	I	NY	O	I	NN	O	O	NY	I	I	NY	I	I	YN
10	O	I	NN	I	I	YN	O	O	NY	O	O	YN	O	I	YY	I	I	NY
11	O	I	NN	I	I	YN	O	O	YN	I	I	NY	I	I	NY	I	I	NY
12	I	I	NY	O	O	NY	O	O	NY	I	I	YN	O	I	NN	I	I	YN
13	I	O	YY	O	I	YY	I	O	NN	I	I	NY	I	O	YY	I	O	NN
14	O	I	NN	I	I	YN	O	O	YN	I	I	NY	O	I	NN	I	1	NY
15	O	O	YN	I	I	YN	O	O	NY	O	I	YY	I	O	YY	I	I	NY
16	I	O	YY	I	I	NY	O	O	NY	O	O	NY	I	O	NN	I	I	YN

Table N.23 Memory errors: adult subjects only

	NEUTRAL		PLAUSIBLE OUTWARD		IMPLAUSIBLE OUTWARD	
	Experiment	Fillers	Experiment	Fillers	Experiment	Fillers
TRIAL	12345678	12345678	12345678	12345678	12345678	12345678
PARENTS						
1						
2					E	
3						
4	E		E	E		
5						
6						
7		E		E		
8						
9					E	
10		E				E E
11						
12						
13		E			E E	E
14						
15					E	
16						

Table N.23 cont..

STUDENTS																
1																
2																
3				E									E		E	
4																
5					E			E							E	E
6																
7																
8																
9																
10			E									E				E
11																
12				E												
13																
14														E		
15															E	
16									E		E					E

Table N.24 Post-experimental questionniare: adults only

	QUESTION 1	QUESTION 2	QUESTION 3	QUESTION 4
PARENTS				
1	B	B	A	A
2	A	B	C	A
3	A	B	C	A
4	A	B	C	B
5	A	B	A	A
6	B	B	C	B
7	A	B	A	C
8	B	B	B	B
9	A	B	C	A
10	B	B	C	B
11	A	B	C	A
12	A	B	C	C
13	B	B	C	A
14	A	B	C	A
15	A	B	C	A
16	B	B	A	B

Table N.24 cont...

STUDENTS				
1	A	B	B	C
2	A	B	C	B
3	B	A	C	A
4	A	B	C	B
5	A	B	A	A
6	B	B	C	B
7	A	B	A	C
8	A	B	C	B
9	B	A	C	A
10	A	B	A	A
11	A	B	C	B
12	A	B	C	C
13	B	B	C	B
14	A	B	A	A
15	A	B	A	B
16	B	B	C	A

Table N.25 Total non-identity outward scores

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
3-5	T	27	30	31	31	17	6
	N	24	20	32	32	13	6
6-8	T	30	19	30	29	12	1
	N	31	19	32	27	10	4
9-11	T	25	21	23	25	21	10
	N	30	21	30	25	11	3
PAR.	N	49	31	51	39	36	18
STUD.	N	57	46	56	46	42	33

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
3-5	T	12	8	13	13	6	1
	N	9	7	9	15	3	0
6-8	T	13	8	14	10	1	1
	N	11	8	14	12	2	1
9-11	T	13	5	14	10	4	3
	N	14	6	15	15	5	5
PAR.	N	17	8	26	21	11	7
STUD.	N	13	1	24	16	13	2

Table N.27 Total forward anaphora outward scores

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
3-5	T	1	3	9	13	1	1
	N	2	1	10	12	0	0
6-8	T	4	5	7	8	2	0
	N	7	6	7	7	3	1
9-11	T	8	5	7	7	3	3
	N	3	1	8	8	2	0
PAR.	N	18	7	19	17	9	3
STUD.	N	8	7	24	15	9	1

Table N.28 Total yes scores in the non-identity condition

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
6-8	T	18	17	16	17	20	15
	N	17	17	16	17	18	16
9-11	T	21	13	17	15	25	20
	N	16	15	18	15	25	19
PAR.	N	31	33	35	29	16	20
STUD.	N	33	34	36	30	20	11

Table N.29 Total yes scores in the backward anaphora condition

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
6-8	T	11	14	8	14	9	7
	N	13	12	10	10	10	9
9-11	T	9	13	10	8	10	11
	N	10	10	9	9	7	5
PAR.	N	15	13	12	15	12	14
STUD.	N	17	17	12	16	15	18

Table N.30 Total yes scores in the forward anaphora condition

AGE		NEUTRAL		PLAUSIBLE		IMPLAUSIBLE	
		anaphor	cataphor	anaphor	cataphor	anaphor	cataphor
6-8	T	12	13	11	10	10	8
	N	13	14	11	9	11	7
9-11	T	8	9	13	11	9	9
	N	11	9	14	8	10	8
PAR.	N	16	15	19	11	15	17
STUD.	N	16	15	12	17	19	15

Table N.31 Total memory errors.

AGE	NEUTRAL	PLAUSIBLE OUTWARD	IMPLAUSIBLE OUTWARD	TOTAL
PAR.	4	3	8	=15
STUD.	4	2	10	=16
TOT.	8	5	18	=31

Table N.32 Total questionnaire scores.

QUESTION	A	B	C	TOT.
1	21	11	0	32
2	0	30	2	32
3	9	2	21	32
4	15	12	5	32
TOT.	45	55	28	

Table N.33 Analysis-of-variance summary table showing the effects of neutral verses plausible verses implausible conditions on outward non-identity scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	974.03	160			
plaus/neut/implaus	613.61	2	306.80	134.50	<.001
error	360.42	158	2.28		

Table N.34 Analysis-of-variance summary table comparing subject group and plausible verses neutral conditions on outward non-identity scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	225.75	79			
subject group	58.47	4	14.62	6.55	<.001
error	167.28	75	2.23		
Within Subjects	101.51	80			
plaus./neutral	21.76	1	21.76	24.57	<.001
sub X plau/neut	13.34	4	3.33	3.77	<.01
error	66.41	75	0.89		

Table N.35 Analysis-of-variance summary table comparing plausible and neutral conditions on outward non-identity scores for the 3-5 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	34.50	16			
plaus./neutral	19.53	1	19.53	19.57	<.001
error	14.97	15	1.00		

Table N.36 Analysis-of-variance summary table comparing plausible and neutral conditions on outward non-identity scores for the 6-8 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	19.50	16			
plaus./neutral	11.28	1	11.28	20.59	<.001
error	8.22	15	0.55		

Table N.37 Analysis-of-variance summary table comparing plausible and neutral conditions on outward non-identity scores for the 9-11 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	18.01	16			
plaus./neutral	1.13	1	1.13	1.00	n.s
error	16.88	15	1.13		

Table N.38 Analysis-of-variance summary table comparing plausible and neutral conditions on outward non-identity scores for the parents group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	20.10	16			
plaus./neutral	3.13	1	3.13	2.78	n.s
error	16.88	15	1.13		

Table N.39 Analysis-of-variance summary table comparing plausible and neutral conditions on outward non-identity scores for the students group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	9.50	16			
plaus./neutral	0.03	1	0.03	0.05	n.s
error	9.47	15	0.63		

Table N.40 Analysis-of-variance summary table comparing subject group and implausible verses neutral conditions on outward non-identity scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	210.45	16			
subject group	49.48	4	12.37	5.76	<.001
error	160.97	75	2.15		
Within Subjects	559.51	80			
implaus./neutral	351.06	1	351.06	166.02	<.001
sub X impl/neut	49.85	4	12.46	5.89	<.001
error	158.59	75	2.12		

Table N.41 Analysis-of-variance summary table comparing implausible and neutral conditions on outward non-identity scores for the 3-5 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	139.50	16			
implaus./neutral	108.78	1	108.78	53.12	<.001
error	30.72	15	2.05		

Table N.42 Analysis-of-variance summary table comparing implausible and neutral conditions on outward non-identity scores for the 6-8 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	170.00	16			
implaus./neutral	162.00	1	162.00	303.75	<.001
error	8.00	15	0.53		

Table N.43 Analysis-of-variance summary table comparing implausible and neutral conditions on outward non-identity scores for the 9-11 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	132.00	16			
implaus./neutral	84.50	1	84.50	26.68	<.001
error	47.50	15	3.17		

Table N.44 Analysis-of-variance summary table comparing implausible and neutral conditions on outward non-identity scores for the parents group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	54.01	16			
implaus./neutral	21.13	1	21.13	9.64	<.01
error	32.88	15	2.19		

Table N.45 Analysis-of-variance summary table comparing implausible and neutral conditions on outward non-identity scores for the students group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	64.00	16			
implaus./neutral	24.50	1	24.50	9.30	<.01
error	39.50	15	2.63		

Table N.46 Analysis-of-variance summary table comparing subject group, neutral/plausible/implausible conditions and anaphoric/cataphoric conditions on outward non-identity scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	112.98	79			
subject group	20.51	4	5.13	4.16	<.005
error	92.47	75			
Within Subjects	737.01	400			
plaus/neut/implaus	306.80	2	153.40	182.94	<.001
sub X plau/neut/impl	54.43	8	6.80	8.11	<.001
error	125.78	150	0.84		
anaph/cataph	66.01	1	66.01	62.62	<.001
sub X an/cat	5.93	4	1.48	1.41	n.s
error	79.06	75	1.05		
p/n/i X an/cat	8.23	2	4.12	7.43	<.001
sub X p/n/i X an/cat	7.71	8	0.96	1.74	n.s
error	83.06	150	0.55		

Table N.47 Analysis-of-variance summary table showing the effects of anaphoric verses cataphoric conditions on outward non-identity scores in the neutral condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	97.01	80			
anaph./cataph.	27.23	1	27.23	30.83	<.001
error	69.78	79	0.88		

Table N.48 Analysis-of-variance summary table showing the effects of anaphoric verses cataphoric conditions on outward non-identity scores in the plausible condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	45.50	80			
anaph./cataph.	6.01	1	6.01	12.01	<.001
error	39.49	79	0.50		

Table N.49 Analysis-of-variance summary table showing the effects of anaphoric verses cataphoric conditions on outward non-identity scores in the implausible condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	107.50	80			
anaph./cataph.	41.01	1	41.01	48.72	<.001
error	66.49	79	0.84		

Table N.30 Analysis-of-variance summary table looking at the effects of tangibility on outward non-identity scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
tang/intang	1.13	1	1.13	1.28	n.s
age X tang/intang	1.52	2	0.76	0.97	n.s
error	36.83	42	0.88		
Within Subjects					
tang X plau/neut/imp	4.40	2	2.20	3.57	<.05
age X tang X p/n/i	10.27	4	2.57	4.16	<.005
error	51.80	84	0.62		
tang/intan X an/cat	0.50	1	0.50	0.57	n.s
age X tang X an/cat	0.44	2	0.22	0.25	n.s
error	37.17	42	0.89		
tang X plaus/neut/ implaus. X an/cat	4.02	2	2.01	3.66	<.05
age X tang X p/n/i X an/cat	0.98	4	0.25	0.45	n.s
error	46.21	84	0.55		

Table N.51A Analysis-of-variance summary table showing the effects of subject group on outward unrestricted backward anaphora (UBA) scores in the neutral condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	96.39	79			
subject group	29.95	4	7.49	8.45	<.0001
error	66.44	75	0.89		

Table N.51B Studentised Newman-Keuls test showing the effects of subject group on outward UBA scores in the neutral condition.

mean	age group	student	parent	9-11	6-8	3-5
0.88	student					
1.56	parent	*				
2.37	9-11	*	*			
2.50	6-8	*	*			
2.25	3-5	*	*			

Table N.52 Analysis-of-variance summary table showing the effects of subject group on outward UBA scores in the plausible condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	58.99	79			
subject group	6.80	4	1.70	2.44	n.s
error	52.19	75	0.70		

Table N.53 Analysis-of-variance summary table showing the effects of subject group on outward UBA scores in the implausible condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	58.19	79			
subject group	7.38	4	1.84	2.72	<.05
error	50.81	75	0.68		

Table N.54 Analysis-of-variance summary table comparing subject group and anaphoric/cataphoric conditions on outward UBA scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	136.74	79			
subject group	26.46	4	6.62	4.50	<.005
error	110.28	75	1.47		
Within Subjects	149.50	80			
anaph/cataph	54.06	1	54.06	46.85	<.001
age X an/cat	8.91	4	2.23	1.93	n.s
error	86.53	75	1.15		

Table N.55 Mann-Whitney test showing the effects of tangibility for 9-11 year olds in the plausible-cataphoric condition.

Mann-Whitney U test

mean rank	cases	condition
10.56	8	non-tangible
6.44	8	tangible
	total=16	

			Corrected for Ties	
U	W	2-tailed p	Z	2-tailed p
15.5	84.5	n.s	-2.03	<.05

Table N.56 Analysis-of-variance summary table comparing subject group and neutral/plausible/implausible conditions on unrestricted forward anaphora (UFA) scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	79.32	79			
subject group	5.57	4	1.39	1.42	n.s
error	73.75	75	0.98		
Within Subjects	208.67	160			
plaus/neut/implau	126.53	2	63.27	115.55	<.001
sub X p/n/i	20.01	8	2.50	4.57	<.001
error	82.13	150	0.55		

Table N.57 Analysis-of-variance summary table comparing subject group and anaphoric/cataphoric conditions on outward UFA scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	118.98	79			
subject group	8.35	4	2.09	1.42	n.s
error	110.63	75	1.48		
Within Subjects	208.67	160			
anaph/cataph	10.00	1	10.00	10.38	<.005
sub X an/cat	14.75	4	3.69	3.83	<.01
error	72.25	75	0.96		

Table N.58 Analysis-of-variance summary table comparing subject group, neutral/plausible/implausible conditions and non-identity verses UBA outward scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	43247.00	79			
subject group	4404.00	4	1101.00	2.13	n.s
error	38843.00	75	517.91		
Within Subjects	437235.00	400			
non-ident./UBA	38521.00	1	38521.00	80.26	<.001
sub X non-id/UBA	13032.00	4	3258.00	6.79	<.001
error	35995.00	75	479.93		
plaus/neut/impl	210188.00	2	105094.00	302.25	<.001
sub X p/n/i	28637.00	8	3579.63	10.30	<.001
error	52156.00	150	347.71		
non-id/UBA X p/n/i	6688.00	2	3344.00	10.65	<.001
sub X non-id/UBA X p/n/i	4923.00	8	615.38	1.96	n.s
error	47095.00	150	313.97		

Table N.59 Analysis-of-variance summary table comparing subject group, neutral/plausible/implausible conditions and non-identity verses UFA outward scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	37327.00	79			
subject group	2908.00	4	727.00	1.58	n.s
error	34419.00	75	458.92		
Within Subjects	483592.00	400			
non-ident./UFA	140939.00	1	140939.00	260.57	<.001
sub X non-id/UFA	6981.00	4	1745.25	3.23	<.05
error	40566.00	75	540.88		
plaus/neut/impl	163318.00	2	81659.00	240.42	<.001
sub X p/n/i	18078.00	8	2259.75	6.65	<.001
error	50947.00	150	339.65		
nonid/UFA X p/n/i	11641.00	2	5820.50	22.00	<.001
sub X non-id/UFA X p/n/i	11436.00	8	1429.50	5.40	<.001
error	39686.00	150	264.57		

Table N.60 Analysis-of-variance summary table comparing subject group, neutral/plausible/implausible conditions and UFA verses UBA outward scores.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	92.66	79			
subject group	6.61	4	1.65	1.44	n.s
error	86.05	75	1.15		
Within Subjects	673.83	400			
UBA/UFA	51.35	1	51.35	62.91	<.001
sub X UBA/UFA	16.60	4	4.15	5.08	<.001
error	61.22	75	0.82		
plaus/neut/implaus	314.07	2	157.03	252.81	<.001
sub X p/n/i	27.10	8	3.39	5.45	<.001
error	93.17	150	0.62		
UBA/UFA X p/n/i	6.07	2	3.03	5.36	<.01
sub X UBA/UFA X p/n/i	19.37	8	2.42	4.28	<.001
error	84.88	150	0.57		

Table N.61 Analysis-of-variance summary table comparing subject group, neutral/plausible/implausible conditions and anaphoric/cataphoric conditions on Yes scores in the non-identity condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	58.41	63			
subject group	24.68	3	8.23	14.63	<.001
error	33.73	60	0.56		
Within Subjects	209.83	320			
plaus/neut/implaus	7.58	2	3.79	7.52	<.001
sub X p/n/i	47.21	6	7.87	15.59	<.001
error	60.55	120	0.51		
anaph/cataph	5.27	1	5.27	13.42	<.001
sub X an/cat	3.65	3	1.22	3.10	<.05
error	23.57	60	0.39		
p/n/i X an/cat	1.00	2	0.50	1.06	n.s
sub X p/n/i X an/cat	4.29	6	0.72	1.51	n.s
error	56.71	120	0.47		

Table N.62 Analysis-of-variance summary table showing the effects of neutral verses plausible verses implausible conditions on Yes scores in the non-identity condition for the 6-8 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	21.34	32			
plaus/neut/implaus	0.38	2	0.19	0.27	n.s
error	20.96	30	0.70		

Table N.63 Analysis-of-variance summary table showing the effects of neutral verses plausible verses implausible conditions on Yes scores in the non-identity condition for the 9-11 year old group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	50.67	32			
plaus/neut/implaus	24.00	2	12.00	13.50	<.001
error	26.67	30	0.89		

Table N.64 Analysis-of-variance summary table showing the effects of neutral verses plausible verses implausible conditions on Yes scores in the non-identity condition for the parents group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	76.00	32			
plaus/neut/implaus	32.67	2	16.33	11.31	<.001
error	43.33	30	1.44		

Table N.65 Analysis-of-variance summary table showing the effects of neutral verses plausible verses implausible conditions on Yes scores in the non-identity condition for the students group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	82.67	32			
plaus/neut/implaus	52.54	2	26.27	26.16	<.001
error	30.13	30	1.00		

Table N.66 Analysis-of-variance summary table looking at the effects of tangibility on Yes scores in the non-identity condition.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects					
tang/intang	0.13	1	0.13	0.32	n.s
age X tang/intang	0.01	1	0.01	0.01	n.s
error	11.27	28	0.40		
Within Subjects					
tang X p/n/i	0.20	2	0.10	0.24	n.s
age X tang X p/n/i	0.07	2	0.04	0.09	n.s
error	23.55	56	0.42		
tang X an/cat	0.42	1	0.42	0.90	n.s
age X tang X an/cat	0.01	1	0.01	0.01	n.s
error	13.19	28	0.47		
tang X p/n/i X an/cat	0.66	2	0.33	0.64	n.s
age X tang X p/n/i X an/cat	0.82	2	0.41	0.81	n.s
error	28.62	56	0.51		

Table N.67A Chi-square test comparing multiple choice responses (answers A, B and C) to question 1 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
easy	0	10.67	-10.67
okay	11	10.67	0.33
complicated	21	10.67	10.33
	total=32		

Chi-square	df	p
20.69	2	<.0000

Table N.67B Chi-square test comparing multiple choice responses (answers A and B) to question 1 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
okay	11	16.00	-5.00
complicated	21	16.00	5.00
	total=32		

Chi-square	df	p
3.13	1	n.s

Table N.68A Chi-square test comparing multiple choice responses (answers A, B and C) to question 2 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
v common	0	10.67	-10.67
not typical	2	10.67	-8.67
ambiguous	30	10.67	19.33
	total=32		

Chi-square	df	p
52.75	2	<.0000

Table N.68B Chi-square test comparing multiple choice responses (answers B and C) to question 2 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
not typical	2	16.00	-14.00
ambiguous	30	16.00	14.00
	total=32		

Chi-square	df	p
24.50	1	<.0000

Table N.69A Chi-square test comparing multiple choice responses (answers A, B and C) to question 3 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
easy	2	10.67	-8.67
okay	9	10.67	-1.67
difficult	21	10.67	10.33
	total=32		

Chi-square	df	p
17.31	2	<.0000

Table N.69B Chi-square test comparing multiple choice responses (answers A and C) to question 3 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
okay	9	15.00	-6.00
difficult	21	15.00	6.00
	total=30		

Chi-square	df	p
4.80	1	<.05

Table N.70A Chi-square test comparing multiple choice responses (answers A, B and C) to question 4 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
sometimes	5	10.67	-5.67
concentrate	12	10.67	1.33
boredom	15	10.67	4.33
	total=32		

Chi-square	df	p
4.94	2	n.s

Table N.70B Chi-square test comparing multiple choice responses (answers A and B) to question 4 on the post-experimental questionnaire.

Chi-Square Test

	cases observed	expected	residual
concentrate	12	13.50	-1.50
boredom	15	13.50	1.50
	total=27		

Chi-square	df	p
0.33	1	n.s

APPENDIX O

EXPERIMENT 15: Story completions 1: As a function of contextual information about available and/or plausible referents.

DATA

Table O.1	Incomplete stories used as experimental stimuli.
Table O.2	Filler incomplete stories
Tables O.3-O.4	Types of completions for experimental stories as a function of semantic context (two or one available referent) and pragmatic context (plausible or neutral) for 'with' and 'that' stories.
Tables O.5-O.6	Reference to context information for filler stories as a function of semantic context and pragmatic context for 'because' and 'in' stories.
Table O.7	Completion scores in each condition for the child and adult subject groups
Table O.8	Reference to context scores in each condition of the fillers for the child and adult subject groups.

Key:

R - Relative R+ - Relative plus complement
Pr - Prepositional phrase C - Complement

Fillers

1 = Reference to contextual information
0 = No reference to contextual information

ANALYSES

Table O.9	Analysis-of-variance summary table comparing age group, semantic context (two,one), pragmatic context (P,N) and relative/non-relative completions.
Tables O.10-O.11	Analysis-of-variance summary tables comparing what/that, semantic context (two,one), pragmatic context (P,N) and relative/non-relative completions.
Table O.12	Analysis-of-variance summary table comparing age group, pragmatic context and relative/non-relative completions for 'with' stories.
Table O.13	Analysis-of-variance summary table comparing age group, pragmatic context and relative/non-relative completions

for 'that' stories.

Table O.14-O.15 Analysis-of-variance summary tables comparing order of sentences, semantic context, pragmatic context and relative/non-relative completions.

Table 0.1 Incomplete stories

ORDER OF SENTENCES S1-first S2-second
A. RELATIVE SUPPORTING CONTEXT (2 available referents)
PLAUSIBLE INFERENCE
THAT - REPETITION

1. A farmer had just planted some vegetables.
There was one pig that trod over his carrots and another pig that was asleep.
The farmer shouted to the pig that.....

2. A teacher wanted somebody in the class to be quiet.
In the class, there was a girl that was writing and another girl that was messing about.
The teacher warned the girl that.....

3. A policeman wanted all drivers to stop.
There was a car that was whizzing along and another car that was moving slowly.
The policeman shouted to the car that.....

4. Peter won a prize.
He saw a man that had an angry face and another man that had a smile on his face.
Peter told the man that.....

THAT - NO REPETITION

5. A lady had just made the tea.
One of her sons was at home and her other son was at school.
The lady told her son that.....

6. Susan knew that the party was at 7pm.
A girl asked her what the time was now and another girl asked her the time of the party.
Susan told the girl that.....

7. Betty found an empty tennis court.
She saw a boy from the tennis club and another boy from the swimming club.
Betty told the boy that.....

8. A nurse was telling patients that she wanted to make the beds.
One patient was in the bathroom and another patient was asleep.
The nurse told the patient that.....

WITH - REPETITION

9. A man was wearing heavy boots.
He saw a bird with a long tail and another bird with a short tail.
The man trod on the bird with.....

10. A barber was holding some scissors.
There was a man with short hair and another man with long hair.
The barber cut the hair of the man with.....

11. Katy took her towel out of the cupboard.
She had a son with a wet face and another son with a dry face
Katy dried her son with.....

12. Daniel was carrying some scissors.
He had a book with stories in it and another book with cut-outs.
Daniel cut pieces out of the book with.....

WITH - NO REPETITION

13. A man took out his lawn-mower.
One of his fields was covered in long grass and his other field was covered in mud.
He mowed the field with.....

14. A girl bought some cherries.
She had a cake covered in fruit and another cake that had nothing on top of it.
She covered the cake with.....

15. Tom was holding some shampoo.
He had a dog who had dirty hair and another dog who had clean hair.
Tom washed the dog with.....

16. Judy kept a spare blanket in the cupboard.
She had a child who was surrounded by teddy bears and another child that had the flu.
Judy covered over the child with.....

NO PLAUSIBLE INFERENCE
THAT - REPETITION

17. Linda was lonely.
She noticed one of her friends that was playing outside and another of her friends that was playing indoors.
Linda told her friend that.....

18. Paul scored a goal.
He had a brother that liked T.V and another brother that liked reading.
Paul told his brother that.....

19. Mr Smith was showing somebody the way to the theatre.
He saw a lady that wanted to see a pantomime and another lady that wanted to see a show.
Mr. Smith told the lady that.....

20. Jane had lost her mummy.
She saw a man that was selling sandwiches and another man that was selling balloons.
Jane told the man that.....

THAT - NO REPETITION

21. David kept the football in his room.
A friend was looking for it in the garage and another friend was looking for it in the shed.
David showed his friend that.....

22. Mary found a gold ring.
She saw a lady with a hat on and another lady with a scarf on.
Mary told the lady that.....

23. Peter was excited that he had passed the exam.
He saw a friend with his dog and he saw another friend playing with a ball.
Peter told the friend that.....

24. A headmaster was praising somebody for getting ten out of ten.
One of the pupils was sitting by the window and another pupil was sitting by the door.
The headmaster told the pupil that.....

WITH - REPETITION

25. A doctor was holding some plasters.
There was one lady with a cut leg and another lady with a cut arm.
The doctor covered over the cut for the lady with.....

26. Jack was holding a cloth.
There was a table with crumbs on it and another table with chocolate on it.
Jack cleaned the table with.....

27. The fireman was holding a hose.
There was one house with a garage and another house with two chimneys.
The fireman put out the fire coming from the house with...

28. A man picked up a spoon.
He saw a dish with ice-cream in it and another dish with fruit in it.
He ate from the dish with.....

WITH - NO REPETITION

29. A boy was just given his pocket money.
He saw a big-earred dog and also, a floppy-eared dog.
The boy bought the dog with.....

30. A lady bought a new pen.
She had a stripy pad and also, a spotty pad.
She wrote on the pad with.....

31. Lisa was holding some drum sticks.
She found a tin which had a black lid on it and she found another tin which had a red lid on it.
She banged hard on the tin with.....

32. The hairdresser was holding a hairdryer.
There was a lady who had curlers in her hair and another lady who had colour in her hair.
The hairdresser dryed the hair of the lady with.....

B. COMPLEMENT SUPPORTING CONTEXT (1 available referent).

PLAUSIBLE INFERENCE
THAT - REPETITION

C1 A farmer had just planted some vegetables.
There was a pig that trod over his carrots and a horse that was asleep.
The farmer shouted to the pig that.....

C2 A teacher wanted somebody in the class to be quiet.
In the class, there was a boy that was writing and a girl that was messing about.
The teacher warned the girl that.....

C3 A policeman wanted all drivers to stop.
There was a car that was whizzing along and a lorry that was moving slowly.
The policeman shouted to the car that.....

C4 Peter won a prize.
He saw a lady that had an angry face and a man that had a smile on his face.
Peter told the man that.....

THAT - NO REPETITION

C5 A lady had just made the tea.
Her son was at home and her daughter was at school.
The lady told her son that.....

C6 Susan knew that that the party was at 7 p.m.
A boy asked her what the time was now and a girl asked her the time of the party.
Susan told the girl that.....

C7 Betty found an empty tennis-court.
She saw a boy from the tennis club and a girl from the swimming club.
Betty told the boy that.....

C8 A nurse was telling patients that she wanted to make the beds.
A visitor was in the bathroom and one of the patients was asleep.
The nurse told the patient that.....

WITH - REPETITION

C9 A man was wearing heavy boots.
He saw a bird with a long tail and a dog with a short tail.
The man trod on the bird with.....

C10 A barber was holding some scissors.
There was a lady with short hair and a man with long hair.
The barber cut the hair of the man with.....

C11 Katy took her towel out of the cupboard.
She had a son with a wet face and a daughter with a dry face.
Katy dried her son with.....

C12 Daniel was carrying some scissors.
He had a magazine with stories in it and a book with cut-outs.
Daniel cut pieces out of the book with.....

WITH - NO REPETITION

C13 A man took out his lawn-mower.
His field was covered in long grass and his yard was covered in mud.
He mowed the field with.....

C14 A girl bought some cherries.
She had a trifle covered in fruit and a cake that had nothing on top of it.
She covered the cake with.....

C15 Tom was holding some shampoo.
He had a dog who had dirty hair and a cat who had clean hair.
Tom washed the dog with.....

C16 Judy kept a spare blanket in the cupboard.
She had a baby who was surrounded by teddy bears and a child that had the flu.
Judy covered over the child with.....

NO PLAUSIBLE INFERENCE
THAT - REPETITION

C17 Linda was lonely.
She noticed one of her friends that was playing outside and her baby sister that was playing indoors.
Linda told her friend that.....

C18 Paul scored a goal.
He had a sister that liked T.V and a brother that liked reading.
Paul told his brother that.....

C19 Mr Smith was showing somebody the way to the theatre.
He saw a lady that wanted to see a pantomime and a man that wanted to see a show.
Mr. Smith told the lady that.....

C20 Jane had lost her mummy.
She saw a lady that was selling sandwiches and a man that was selling balloons.
Jane told the man that.....

THAT - NO REPETITION

C21 David kept the football in his room.
A friend was looking for it in the garage and his mother was looking for it in the shed.
David showed his friend that.....

C22 Mary found a gold ring.
She saw a man with a hat on and a lady with a scarf on.
Mary told the lady that.....

C23 Peter was excited that he had passed the exam.
He saw a friend with his dog and he also saw his sister playing with a ball.
Peter told the friend that.....

C24 A headmaster was praising somebody for getting ten out of ten.
A teacher was sitting by the window and one of the pupils was sitting by the door.
The headmaster told the pupil that.....

WITH - REPETITION

C25 A doctor was holding some plasters.
There was a lady with a cut leg and a man with a cut arm.
The doctor covered over the cut for the lady with.....

C26 Jack was holding a cloth.
There was a chair with crumbs on it and a table with chocolate on it.
Jack cleaned the table with.....

C27 The fireman was holding a hose.
There was one house with a garage and a school with two chimneys.
The fireman put out the fire coming from the house with...

C28 A man picked up a spoon.
He saw a plate with ice-cream on it and a dish with fruit in it.
He ate from the dish with.....

WITH - NO REPETITION

C29 A boy was just given his pocket money.
He saw a big-earred dog and a floppy-eared rabbit.
The boy bought the dog with.....

C30 A lady bought a new pen.
She had a stripy ruler and also, a spotty pad.
She wrote on the pad with.....

C31 Lisa was holding some drum sticks.
She found a tin which had a black lid on it and she found a box which had a red lid on it.
She banged hard on the tin with.....

C32 The hairdresser was holding a hairdryer.
There was a little girl who had curlers in her hair and a lady who had colour in her hair.
The hairdresser dryed the hair of the lady with.....

Table N.2 Filler incomplete stories

ORDER OF SENTENCES S1-first S2-second

BECAUSE

F1. Linda had a bad cold
She had a tissue in her left hand and another tissue in her pocket.
Linda stayed at home because.....

F2. Mrs Mason was a maths teacher.
One of her pupils was clever and another of her pupils was bossy.
Mrs Mason was in the classroom because.....

F3. Bobby went to a sports club at weekends.
He played cricket on Saturday and went swimming on Sunday.
Bobby was busy at weekends because.....

F4. Alice was watching a film.
She had an ice-cream in one hand and some popcorn on her lap.
Alice was sitting in the cinema because.....

F5. A man was waiting for a bus
He saw a friend outside a shop and another friend over the road
The man was standing at the bus-stop because.....

F6. A girl was writing a letter
There was a ruler on the table and another ruler on the floor
The girl was holding a pen because.....

F7. Paul had just won a prize
He had a drink at the cafe and a sandwich at home
Paul was feeling happy because.....

F8. An old lady was knitting a jumper.
She had a cat on her shoulder and a bird in a cage
The old lady was holding some wool because.....

IN

F9. A postman was holding a sack of letters
He carried a letter from Spain and another letter from Durham
The postman found the letters in.....

F10.A cook was in a kitchen
He made a soup out of tomatoes and another soup out of onions
The cook made the soup in.....

F11. A lady went to look at a new shop.
She bought a hat made from cotton and a coat made from wool
The lady bought the clothes in.....

F12.A farmer walked past a field.

He saw a horse with a broken leg and a donkey with a bad foot
The farmer saw the animals in.....

F13. A girl went out to play in a park
She carried a red skate and also a yellow skate.
The girl put the skates on in.....

F14. A teacher put her hand into a box.
She took out a long piece of chalk and also a short piece of chalk
The teacher put the chalk back in.....

F15. A dog was running around a garden.
It had a ball in its mouth and a stick between its teeth
The dog played with his toys in.....

F16. A man opened a tin
He had some crackers made of cheese and some biscuits made of butter
He emptied the snacks in.....

Table O.3 Completions for the children

	WITH 2 REFS AVAIL.				WITH 1 REF AVAIL.				THAT 2 REFS AVAIL.				THAT 1 REF AVAIL.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PLAUSIBLE																
ONE ITEM FIRST																
1	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	C	R	C	C	C	C	C	C
2	R	R	R	R	R	R	Pr	R	R	R	R	C	C	R	C	C
3	R	R	Pr	R	R	R	R	Pr	R	R	R	R	C	C	R	C
4	R	R	R	Pr	R	R	R	R	R	R	R	C	C	C	C	R
TWO ITEMS FIRST																
5	R	R	Pr	Pr	Pr	R	Pr	Pr	C	C	C	C	C	C	C	C
6	Pr	R	R	R	Pr	R	Pr	Pr	C	C	C	C	C	C	C	C
7	R	R	Pr	R	R	Pr	Pr	Pr	C	C	C	C	C	C	C	C
8	Pr	R	R	R	R	R	Pr	R	R	R	R	C	C	C	C	C
NEUTRAL																
ONE ITEM FIRST																
9	R	R	Pr	Pr	R	R	Pr	R	C	C	R	C	C	C	C	C
10	R	R	Pr	R	R	Pr	R	Pr	C	C	C	C	C	C	C	C
11	R	R+	R+	R	R	R	R	Pr	C	C	C	C	C	C	C	C
12	R	Pr	R	R	R	R	R	Pr	C	C	C	C	C	C	C	C
TWO ITEMS FIRST																
13	Pr	Pr	Pr	Pr	Pr	R	Pr	Pr	C	C	C	C	C	C	C	C
14	R	R	R	Pr	R	Pr	Pr	R	C	C	C	C	C	C	C	C
15	R+	R	Pr	R	R	R	Pr	R	C	C	C	C	C	C	C	C
16	R	R	R	R	R	R	Pr	Pr	C	R	C	C	C	C	C	C

Table 0.4 Completions for the adults

	WITH								THAT							
	2 REFS AVAIL.				1 REF AVAIL.				2 REFS AVAIL.				1 REF AVAIL.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PLAUSIBLE																
ONE ITEM FIRST																
1	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	R	C	C
2	Pr	Pr	R+	Pr	Pr	Pr	Pr	Pr	R+	R+	R	R+	C	R+	C	C
3	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
4	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
TWO ITEMS FIRST																
5	R	R	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
6	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
7	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	R+	R	R	C	R+	C	C	C
8	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
NEUTRAL																
ONE ITEM FIRST																
9	R	R	R	R	R	R	R	Pr	R+	C	R+	C	C	C	C	C
10	R	R	R	R	R	R	R	R	C	C	C	C	C	C	C	C
11	R	R	Pr	R	Pr	Pr	Pr	Pr	C	C	C	R	C	C	C	C
12	R	R+	R	Pr	R	R	R	R	C	R+	R+	R+	C	C	C	R
TWO ITEMS FIRST																
13	R	R	R	R	Pr	Pr	Pr	R	C	R+	C	C	C	C	C	C
14	R	R	R	Pr	Pr	R	R	Pr	C	C	C	C	C	C	C	C
15	R	R	R	R	Pr	Pr	Pr	Pr	C	C	C	C	C	C	C	C
16	Pr	R	Pr	Pr	R	Pr	Pr	R	C	C	R+	C	C	C	C	C

Table 0.5 Reference to context on the fillers by the children.

	BECAUSE								IN							
	2 REFS AVAIL.				1 REF AVAIL.				2 REFS AVAIL.				1 REF AVAIL.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PLAUSIBLE																
ONE ITEM FIRST																
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TWO ITEMS FIRST																
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NEUTRAL																
ONE ITEM FIRST																
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TWO ITEMS FIRST																
13	1	1	0	1	1	1	1	1	1	1	1	0	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table 0.6 Reference to context on the fillers by the adults.

	BECAUSE								IN							
	2 REFS AVAIL.				1 REF AVAIL.				2 REFS AVAIL.				1 REF AVAIL.			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
PLAUSIBLE																
ONE ITEM FIRST																
1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	0	1	1	0	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TWO ITEMS FIRST																
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
NEUTRAL																
ONE ITEM FIRST																
9	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
11	1	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TWO ITEMS FIRST																
13	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	0	1	1	0	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Table O.7 Total relative completion scores for the child and the adults group.

	WITH		THAT	
	2 REFS.	1 REF.	2 REFS.	1 REF.
8-11				
PLAUSIBLE	22	16	14	3
NEUTRAL	22	19	2	0
ADULT				
PLAUSIBLE	5	0	7	3
NEUTRAL	26	16	7	1

Table O.8 Reference to context scores for fillers in the child and the adults group.

	2 REFS. AVAILABLE		1 REF. AVAILABLE	
	PLAUSIBLE	NEUTRAL	PLAUSIBLE	NEUTRAL
8-11	64	62	64	64
ADULT	63	61	63	62
TOT.	127	123	127	126

Table 0.9 Analysis-of-variance summary table comparing age group, semantic context (two,one), pragmatic context (P,N) and relative/non-relative completions.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
Completions(R/NR)	270.28	1	270.28	33.62	<.001
age X R/NR	34.03	1	34.03	4.23	<.05
pragmatic X R/NR	16.53	1	16.53	2.06	n.s
age X prag X R/NR	69.03	1	69.03	8.59	<.01
error	225.13	28	8.04		
semantic X R/NR	69.03	1	69.03	33.54	<.001
age X sem X R/NR	0.28	1	0.28	0.14	n.s
sem X prag X R/NR	0.78	1	0.78	0.38	n.s
age X sem X prag X R/NR	11.28	1	11.28	5.48	<.05
error	57.63	28	2.06		

Table O.10 Analysis-of-variance summary table comparing what/that, semantic context (two,one), pragmatic context (P,N) and relative/non-relative completions for the child subjects.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
Completions(R/NR)	28.13	1	28.13	5.76	<.05
pragmatic X R/NR	4.50	1	4.50	0.92	n.s
error	68.38	14	4.88		
with/that X R/NR	112.50	1	112.50	85.71	<.001
prag X with/that X R/NR	10.13	1	10.13	7.71	<.05
error	18.38	14	1.31		
semantic X R/NR	15.13	1	15.13	28.71	<.001
prag X sem X R/NR	4.50	1	4.50	8.54	<.05
error	7.38	14	0.53		
sem X with/that X R/NR	0.50	1	0.50	0.33	n.s
prag X sem X with/that X R/NR	1.13	1	1.13	0.74	n.s
error	21.38	14	1.53		

Table O.11 Analysis-of-variance summary table comparing what/that, semantic context (two,one), pragmatic context (P,N) and relative/non-relative completions for the adult subjects.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
Completions(R/NR)	124.03	1	124.03	39.30	<.001
pragmatic X R/NR	38.28	1	38.28	12.13	<.005
error	44.19	14	3.16		
with/that X R/NR	26.28	1	26.28	12.83	<.005
prag X with/that X R/NR	47.53	1	47.53	23.20	<.001
error	28.69	14	2.05		
semantic X R/NR	19.53	1	19.53	12.76	<.005
prag X sem X R/NR	1.53	1	1.53	1.00	n.s
error	21.44	14	1.53		
sem X with/that X R/NR	0.78	1	0.78	0.43	n.s
prag X sem X with/that X R/NR	0.28	1	0.28	0.16	n.s
error	25.44	14	1.82		

Table O.12 Analysis-of-variance summary table comparing age group, pragmatic context and relative/non-relative completions for 'with' stories.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	404.00	32			
Completions(R/NR)	0.25	1	0.25	0.04	n.s
age X R/NR	64.00	1	64.00	10.70	<.005
prag X R/NR	100.00	1	100.00	16.72	<.001
age X prag X R/NR	72.25	1	72.25	12.08	<.005
error	167.50	28	5.98		

Table O.13 Analysis-of-variance summary table comparing age group, pragmatic context and relative/non-relative completions for 'that' stories.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects	697.99	32			
Completions(R/NR)	517.56	1	517.56	95.50	<.001
age X R/NR	0.06	1	0.06	0.01	n.s
prag X R/NR	18.06	1	18.06	3.33	n.s
age X prag X R/NR	10.56	1	10.56	1.95	n.s
error	151.75	28	5.42		

Table O.14 Analysis-of-variance summary table comparing order of sentences, semantic context, pragmatic context and relative/non-relative completions for the child subjects.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
Completions(R/NR)	28.13	1	28.13	6.40	<.05
pragmatic X R/NR	4.50	1	4.50	1.02	n.s
sent. order X R/NR	12.50	1	12.50	2.84	n.s
prag X s.order X R/NR	3.13	1	3.13	0.71	n.s
error	52.75	12	4.40		
semantic X R/NR	15.13	1	15.13	25.03	<.001
prag X semant. X X R/NR	4.50	1	4.50	7.45	<.05
s.order X sem X R/NR	0.0	1	0.0	0.0	n.s
s.order X prag X semant. X R/NR	0.13	1	0.13	0.21	n.s
error	7.25	12	0.60		

Table 0.15 Analysis-of-variance summary table comparing order of sentences, semantic context, pragmatic context and relative/non-relative completions for the adult subjects.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
Completions(R/NR)	124.03	1	124.03	46.69	<.001
pragmatic X R/NR	38.28	1	38.28	14.41	<.005
sent. order X R/NR	7.03	1	7.03	2.65	n.s
prag X s.order X R/NR	5.28	1	5.28	1.99	n.s
error	31.88	12	2.66		
semantic X R/NR	19.53	1	19.53	10.97	<.01
prag X semant. X X R/NR	1.53	1	1.53	0.86	n.s
s.order X sem X R/NR	0.03	1	0.03	0.02	n.s
s.order X prag X semant. X R/NR	0.03	1	0.03	0.02	n.s
error	21.38	12	1.78		

APPENDIX P

EXPERIMENT 16: Story completions task 11.

DATA

Table P.1 — Incomplete stories used as experimental stimuli.

Tables P.2-P.3 — Types of completions for 'with' stories as a function of semantic context (two or one available referent), pragmatic context (plausible or neutral), type of relative in story (that, who, which, none) and type of presentation (questionnaire or verbal).

Tables P.4-P.5 — Types of completions for 'that' stories as a function of semantic context (two or one available referent), pragmatic context (plausible or neutral) and type of presentation (questionnaire or verbal).

Table P.6 — Types of completions for 'with' stories in each condition for the child and the adult group.

Table P.7 — Types of completions for 'that' stories in each condition for the child and the adult group.

Key:

R -	Relative	R+ -	Relative plus complement
Pr -	Prepositional phrase	C -	Complement

Relatives in context:

th -	that
who -	who
wh -	which
- -	none

ANALYSES

Tables P.8-P.9 — Analysis-of-variance summary tables comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'with' stories.

Tables P.10-P.11 — Analysis-of-variance summary tables comparing presentation form (questionnaire, verbal) and type of relative (that, who, which, none) for 'with' stories.

Tables P.12-P.13 — Analysis-of-variance summary tables

comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'that' stories.

Table P.1 Incomplete stories

A. RELATIVE SUPPORTING CONTEXT (2 AVAILABLE REFERENTS).
NEUTRAL PRAGMATICS
That stories
Jane had lost her mummy at the fair.
By the gate, a man was selling sandwiches and another man was selling balloons.
Jane said to the man that.....

David kept the football in his room.
One brother was looking for it in the garage and his other brother was looking for it in the shed.
David showed the brother that.....

A headmaster was praising somebody for getting ten out of ten.
One of the pupils was sitting by the window and another pupil was sitting by the door.
The headmaster told the pupil that.....

Mary found a gold ring.
Over the road a lady was wearing a hat and another lady was wearing a scarf.
Mary told the lady that.....

Mr Smith knew that the cinema was next to the town hall.
A man was on his way to see a pantomime and another man was on his way to see a show.
Mr. Smith showed the man that.....

Paul scored a goal.
One of his brothers liked T.V and another of his brothers liked reading.
Paul told the brother that.....

Peter was excited that he had passed the exam.
One friend was walking the dog and another friend was playing with a ball.
Peter told the friend that.....

Linda was lonely.
One of her friends was playing outside and another friend was playing indoors.
Linda told the friend that.....

With stories
WHO CONTEXT RELATIVE
The hairdresser was holding a hairdryer and a brush.
She saw a lady who had curlers in her hair and a lady who had colour in her hair.
The hairdresser dryed the hair of the lady with.....

A doctor held some scissors and some plasters.
He saw a lady who had a cut leg a lady who had a cut arm.
The doctor covered over the cut for the lady with.....

WHICH CONTEXT RELATIVE
Lisa had some drumsticks and a flute.
She found a tin which had a black lid on it and she found another tin which had a red lid on it.
She banged hard on the tin with.....

Jack picked up a cloth and vase.
He had a table which had crumbs on it and another table which had chocolate on it.
Jack cleaned the table with.....

THAT CONTEXT RELATIVE
A fireman was holding a hose and a bucket.
There was one house that had a garage and another house that had two chimneys.
The fireman put out the fire coming from the house with....

Mr Bigfoot was very clumsy.
He saw a bird that had a red tail and a bird that had a brown tail.
The man accidently trod on the bird with.....

NO CONTEXT RELATIVE
A lady picked up a pen and a ruler.
She had a stripy pad and a spotty pad.
She wrote on the pad with.....

A boy was just given his pocket money and a comic.
He saw a big-earred dog and a floppy-eared dog
The boy bought the dog with.....

PLAUSIBLE INFERENCE
That stories
Peter won a prize.
He saw one of his grumpy cousins and also his friendly cousin.
Peter told the cousin that.....

A policeman wanted all drivers to stop.
A car was whizzing along the road and another car was parking.
The policeman shouted to the car that.....

Susan knew that the party was at 7pm.
A friend was ill in bed and another friend asked Susan the time of the party.
Susan told the friend that.....

A farmer had just planted some vegetables.
One of his pigs was tredding on his carrots and another pig was asleep.
The farmer shouted to the pig that.....

A nurse was telling patients that she wanted to make the beds.
One of the patients was in the bathroom and another patient was asleep.
The nurse told the patient that.....

A teacher wanted somebody in the class to be quiet.
In the class, a girl was writing and a girl was messing about.
The teacher warned the girl that.....

A lady had just made the tea.
One of her sons was at home and her other son was in Australia.
The lady told her son that.....

Betty wanted somebody to partner her in a game of tennis.
She saw a boy at the tennis club and another boy at the swimming club.
Betty told the boy that.....

<u>With stories</u>
WHO RELATIVE
Katy held a sponge and a towel.
She had a son who had a wet face and another son who had a dry face.
Katy dried her son with.....

Judy held a blanket and a book.
She had a child who slept soundly and another child who had the flu.
Judy covered over the child with.....

WHICH RELATIVE
Daniel held a pen and some scissors.
He had a book which had stories in it and a book which had cut-outs in it.
Daniel cut pieces out of the book with.....

A man had a spoon and a knife.
He saw a dish which had ice-cream in it and a dish which had nothing in it.
He ate from the dish with.....

THAT RELATIVE
A girl carried some scissors and some glue.
She had a box that had a broken lid and box that had a good lid.
She mended the box with.....

Tom was holding a comb and some shampoo.
He had a dog that had dirty hair and a dog that had clean hair.
Tom washed the dog with.....

NO RELATIVE
A man was carrying a football.
He saw a field covered in grass and a field full of hay.
He played on the field with.....

A barber was holding a comb and some scissors.
A bald man and a curly headed man came into the shop.
The barber cut the hair of the man with.....

A. COMPLEMENT SUPPORTING CONTEXT (1 AVAILABLE REFERENT).
NEUTRAL PRAGMATICS
That stories
Jane had lost her mummy at the fair.
By the gate, a lady was selling sandwiches and a man was selling balloons.
Jane said to the man that.....

David kept the football in his room.
His brother was looking for it in the garage and his cousin was looking for it in the shed.
David showed the brother that.....

A headmaster was praising somebody for getting ten out of ten.
A teacher was sitting by the window and a pupil was sitting by the door.
The headmaster told the pupil that.....

Mary found a gold ring.
Over the road a man was wearing a hat and a lady was wearing a scarf.
Mary told the lady that.....

Mr Smith knew that the cinema was next to the town hall.
A man was on his way to see a pantomime and a lady was on her way to see a show.
Mr. Smith showed the lady that.....

Paul scored a goal.
One of his brothers liked T.V and one of his friends liked reading.
Paul told the brother that.....

Peter was excited that he had passed the exam.
His brother was walking the dog and his friend was playing with a ball.
Peter told the friend that.....

Linda was lonely.
One of her friends was playing outside and her sister was playing indoors.
Linda told the friend that.....

With stories
WHO RELATIVE
The hairdresser was holding a hairdryer and a brush.
She saw a lady who had curlers in her hair and a man who had colour in his hair.
The hairdresser dryed the hair of the lady with.....

A doctor held some scissors and some plasters.
He saw a lady who had a cut leg a man who had a cut arm.
The doctor covered over the cut for the lady with.....

WHICH RELATIVE
Lisa had some drumsticks and a flute.
She found a tin which had a black lid on it and she found a saucepan which had a red lid on it.
She banged hard on the tin with.....

Jack picked up a cloth and vase.
He had a table which had crumbs on it and a chair which had chocolate on it.
Jack cleaned the table with.....

THAT RELATIVE
A fireman was holding a hose and a bucket.
There was one house that had a garage and a factory that had two chimneys.
The fireman put out the fire coming from the house with....

Mr Bigfoot was very clumsy.
He saw a bird that had a red tail and a squirrel that had a brown tail.
The man accidently trod on the bird with.....

NO RELATIVE
A lady picked up a pen and a ruler.
She had a stripy book and a spotty pad.
She wrote on the pad with.....

A boy was just given his pocket money and a comic.
He saw a big-earred dog and a floppy-eared rabbit
The boy bought the dog with.....

PLAUSIBLE INFERENCE
That stories
Peter won a prize.
He saw one of his grumpy neighbours and also his friendly cousin.
Peter told the cousin that.....

A policeman wanted all drivers to stop.
A car was whizzing along the road and a lorry was parking.
The policeman shouted to the car that.....

Susan knew that the party was at 7pm.
Her sister was ill in bed and one of her friends asked Susan the time of the party.
Susan told the friend that.....

A farmer had just planted some vegetables.
One of his pigs was tredding on his carrots and a horse was asleep.
The farmer shouted to the pig that.....

A nurse was telling patients that she wanted to make the beds.
One of the visitors was in the bathroom and one of the patients was asleep.
The nurse told the patient that.....

A teacher wanted somebody in the class to be quiet.
In the class, a boy was writing and a girl was messing about.
The teacher warned the girl that.....

A lady had just made the tea.
One of her sons was at home and her daughter was in Australia.
The lady told her son that.....

Betty wanted somebody to partner her in a game of tennis.
She saw a boy at the tennis club and a girlfriend at the swimming club.
Betty told the boy that.....

<u>With stories</u>
WHO RELATIVE
Katy held a sponge and a towel.
She had a son who had a wet face and a daughter who had a dry face.
Katy dried her son with.....

Judy held a blanket and a book.
She had a son who slept soundly and a daughter who had the flu.
Judy covered over the daughter with.....

WHICH RELATIVE
A man had a spoon and a knife.
He saw a dish which had ice-cream in it and a plate which had nothing on it.
He ate from the dish with.....

Daniel held a pen and some scissors.
He had a magazine which had stories in it and a book which had cut-outs in it.
Daniel cut pieces out of the book with.....

THAT RELATIVE
Tom was holding a comb and some shampoo.
He had a dog that had dirty hair and a cat that had clean hair.
Tom washed the dog with.....

A girl carried some scissors and some glue.
She had a box that had a broken lid and tin that had a good lid.
She mended the box with.....

NO RELATIVE
A man was carrying a football.
He saw a field covered in grass and a yard full of hay.
He played on the field with.....

A barber was holding a comb and some scissors.
A bald man and a curly headed lady came into the shop.
The barber cut the hair of the lady with.....

Table P.2 'With' completions by the children

	2 AVAILABLE REFS.								1 AVAILABLE REF.							
	PLAUSIBLE				NEUTRAL				PLAUSIBLE				NEUTRAL			
S.	th	who	wh	-	th	who	wh	-	th	who	wh	-	th	who	wh	-
QUESTIONNAIRE																
1	Pr	R+	R+	R	R	R	R	R	Pr	R	Pr	R	R	R	R	Pr
2	R	R	R	R	R	R	R	R	Pr	Pr	Pr	R	Pr	Pr	R	R
3	R	Pr	R	R	Pr	R	R	R	Pr	Pr	Pr	Pr	Pr	R	Pr	Pr
4	R+	R	R	Pr	R	R	R	R	Pr	R	R	R	R	Pr	R	R
5	R+	Pr	Pr	R+	R	Pr	R	R	Pr	R	Pr	R	Pr	R	R	R
6	R	R	R	Pr	Pr	R	R	R	Pr	Pr	Pr	R	R	Pr	Pr	Pr
7	Pr	R	R	R	R	R	R	R	Pr	Pr	R	Pr	Pr	R	Pr	R
8	Pr	R	R	R	R	R	R	R	R	Pr	R	R	Pr	R	Pr	R
9	R+	R	R+	R	R	R	R	R	R	Pr	Pr	R	R	R	R	R
VERBAL																
10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
11	Pr	R	R	R	R	R	R	R	R	R	R	R	R	R	Pr	Pr
12	Pr	Pr	R	R	Pr	R	R	Pr	Pr	Pr	Pr	Pr	R	Pr	R	R
13	R+	R	R	R	R	R	R	R	R	R	Pr	R	R	R	R	R
14	R+	R	R	R	R	R	R	R	Pr	Pr	R	R	R	R	R	Pr
15	Pr	R	R+	R	R	R	R	R	Pr	Pr	R	Pr	R	Pr	R	R
16	R	R	R	Pr	R	R	R	R	Pr	Pr	R	R	Pr	R	R	R
17	Pr	R	R	R	R	Pr	R	R	R	Pr	Pr	Pr	Pr	R	R	R
18	R+	R	R	R	R	R	R	R	Pr	R	R	R	R	R	R	R

Table P.3 'With' completions by the adults.

	2 AVAILABLE REFS.								1 AVAILABLE REF.							
	PLAUSIBLE				NEUTRAL				PLAUSIBLE				NEUTRAL			
S.	th	who	wh	-	th	who	wh	-	th	who	wh	-	th	who	wh	-
QUESTIONNAIRE																
1	Pr	R+	Pr	R	R	R	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr
2	R+	R+	R	R	R	R	R	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	R
3	R	R+	R	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	R
4	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr
5	R	R+	R	R	Pr	R	R	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr
6	R+	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr
7	Pr	R+	R	R	R	Pr	R	R	Pr	Pr	R	Pr	R	R	Pr	Pr
8	Pr	Pr	Pr	Pr	Pr	R	Pr	Pr	R	Pr	Pr	Pr	R	Pr	Pr	R
9	Pr	Pr	R	R	Pr	R	Pr	R	Pr	Pr	Pr	R	R	Pr	Pr	R
VERBAL																
10	Pr	R	R	Pr	R	Pr	R	R	Pr	R	Pr	R	Pr	Pr	R	R
11	Pr	Pr	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	R	R	Pr	R	R
12	Pr	Pr	Pr	Pr	R	R	Pr	R	Pr	Pr	Pr	Pr	R	Pr	Pr	R
13	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr
14	Pr	R+	R	R	Pr	R	R	Pr	Pr	Pr	R	Pr	Pr	Pr	R	Pr
15	Pr	R	Pr	R	R	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	R	Pr	Pr
16	Pr	Pr	R	R	Pr	R	Pr	Pr	Pr	Pr	Pr	R	Pr	Pr	Pr	R
17	Pr	Pr	R	R	Pr	Pr	R	R	Pr	Pr	Pr	Pr	Pr	Pr	R	R
18	Pr	R	Pr	Pr	R	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr	Pr

Table P.4 'That' completions by the children

	2 AVAILABLE REFS.								1 AVAILABLE REF.							
	PLAUSIBLE				NEUTRAL				PLAUSIBLE				NEUTRAL			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
QUESTIONNAIRE																
1	R+	R+	R	C	R	C	R+	C	C	C	C	C	C	R+	R	C
2	R+	C	R	R	R	R	C	C	C	R+	R	C	R	C	C	C
3	R	R	R+	R+	R	R+	R	R+	C	C	R	R	R	C	R	R
4	R+	R+	R+	C	R+	C	R+	R	C	C	C	R+	C	R	R+	C
5	R+	R+	R+	R+	R+	C	C	R+	C	C	C	C	C	C	C	R+
6	C	C	R	R+	R+	C	C	R	C	C	R+	C	C	C	C	C
7	R	C	C	C	R	C	C	C	C	C	C	C	C	R	C	C
8	R+	C	R+	R+	R+	R+	R	C	C	C	C	C	R+	R+	C	C
9	C	C	C	C	C	R+	C	C	C	C	R+	C	C	C	C	R+
VERBAL																
10	R	R	R+	R+	R+	R	R+	R+	C	C	R+	R+	C	R+	R	R+
11	R	R	R+	R	C	C	C	R	C	C	R+	R	C	R	R	R
12	C	R+	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	R	R	R+	R+	C	R	R+	R+	C	C	R	C	C	C	R+	R+
14	R	R	R	R	C	R+	R+	R	C	C	R+	R	C	R	R	R+
15	R	C	R+	C	C	C	R+	R+	C	C	C	C	C	C	R+	R+
16	R+	R	C	R+	C	R	R+	C	C	R	C	C	C	R	R	C
17	R	R	R	C	R	C	R	R+	C	C	R	C	C	C	R	R
18	R	R+	R	C	R	R+	R	R+	C	C	R+	R	R+	C	C	R

Table P.5 'That' completions by the adults

	2 AVAILABLE REFS.								1 AVAILABLE REF.							
	PLAUSIBLE				NEUTRAL				PLAUSIBLE				NEUTRAL			
S.	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
QUESTIONNAIRE																
1	R+	R	R+	R	R	C	R+	R	R+	C	C	C	C	C	C	C
2	R+	R+	R+	R	R	R+	R+	R	C	C	C	C	C	C	C	C
3	R+	C	C	R	R+	C	R+	C	C	C	C	C	C	C	C	C
4	C	R+	C	C	R	C	C	C	C	C	C	C	C	C	C	C
5	R	R+	R	R	R	R+	C	R	C	C	C	C	C	C	C	C
6	C	C	R	C	C	C	C	C	C	C	C	C	C	C	C	C
7	R+	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	R	C	R+	R	R	R	C	C	C	C	R	C	C	C	C	C
9	R+	R+	R	R	R+	R+	C	R	C	C	C	C	C	C	C	C
VERBAL																
10	R	C	R	R	R	R	C	C	C	C	C	C	C	C	C	C
11	R	R	R+	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	R	C	R	C	C	C	C	C	C	C	C	C	C	C	C
14	R	R+	R+	R	C	C	R	C	C	R	C	C	C	C	C	C
15	R	R	R	R	C	C	R	R	C	C	C	C	C	C	C	C
16	C	C	C	R	C	C	C	C	C	C	C	C	C	C	C	C
17	R	R	R	C	R+	C	C	R	C	C	C	C	C	C	C	C
18	C	R	R	C	C	R	C	C	C	C	R	C	C	C	C	C

Table P.6 'With' relative completion scores for the child and adult group.

WITH	2 AVAILABLE REFS.		1 AVAILABLE REF.	
	PLAUSIBLE	NEUTRAL	PLAUSIBLE	NEUTRAL
CHILDREN(8-11 YEARS)				
QUESTIONNAIRE	28	33	15	21
VERBAL	30	33	20	29
TOTAL	58	66	35	50
ADULTS				
QUESTIONNAIRE	21	16	3	8
VERBAL	13	14	5	12
TOTAL	34	30	8	20

Table F.7 that relative completion scores for the child and adult group.

THAT	2 AVAILABLE REFS.		1 AVAILABLE REF.	
	PLAUSIBLE	NEUTRAL	PLAUSIBLE	NEUTRAL
CHILDREN(8-11 YEARS)				
QUESTIONNAIRE	23	20	7	13
VERBAL	28	22	11	19
TOTAL	51	42	18	32
ADULTS				
QUESTIONNAIRE	24	18	2	0
VERBAL	22	8	2	0
TOTAL	46	26	4	0

Table P.8 Analysis-of-variance summary table comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'with' stories in the child age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
completion (R/NR)	117.36	1	117.36	35.50	<.001
presentation form(QV)					
X R/NR	6.25	1	6.25	1.89	n.s
error	52.89	16	3.31		
semantic X R/NR	42.25	1	42.25	40.03	<.001
QV X sem X R/NR	3.36	1	3.36	3.18	n.s
error	16.89	16	1.06		
pragmatic X R/NR	14.69	1	14.69	24.05	<.001
QV X prag X R/NR	0.03	1	0.03	0.05	n.s
error	9.78	16	0.61		
sem X prag X R/NR	1.36	1	1.36	1.32	n.s
QV X sem X pra X R/NR	0.69	1	0.69	0.68	n.s
error	16.44	16	1.03		

Table P.9 Analysis-of-variance summary table comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'with' stories in the adult age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
completion (R/NR)	75.11	1	75.11	18.94	<.001
presentation form(QV) X R/NR	0.44	1	0.44	0.11	n.s
error	63.45	16	3.97		
semantic X R/NR	36.00	1	36.00	11.55	<.005
QV X sem X R/NR	7.11	1	7.11	2.28	n.s
error	49.89	16	3.12		
pragmatic X R/NR	1.78	1	1.78	1.21	n.s
QV X prag X R/NR	1.78	1	1.78	1.21	n.s
error	23.44	16	1.47		
sem X prag X R/NR	7.11	1	7.11	6.52	<.05
QV X sem X pra X R/NR	0.44	1	0.44	0.41	n.s
error	17.45	16	1.09		

Table P.10 Analysis-of-variance summary table comparing presentation form (questionnaire, verbal) and type of relative (that, who, which, none) for 'with' stories in the child age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	29.58	17			
presentation form (QV)	3.13	1	3.13	1.89	n.s
error	26.45	16	1.65		
Within Subjects	26.75	54			
relative type	7.93	3	2.64	7.32	<.001
QV X relative type	1.49	3	0.50	1.37	n.s
error	17.33	48	0.36		

Table P.11 Analysis-of-variance summary table comparing presentation form (questionnaire, verbal) and type of relative (that, who, which, none) for 'with' stories in the adult age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Between Subjects	31.94	17			
presentation form (QV)	0.22	1	0.22	0.11	n.s
error	31.72	16	1.98		
Within Subjects	26.75	54			
relative type	6.44	3	2.15	2.51	n.s
QV X relative type	2.89	3	0.96	1.12	n.s
error	41.17	48	0.86		

Table P.12 Analysis-of-variance summary table comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'that' stories in the child age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
completion (R/NR)	0.03	1	0.03	0.01	n.s
presentation form(QV) X R/NR	8.03	1	8.03	1.41	n.s
error	91.45	16	5.72		
semantic X R/NR	51.36	1	51.36	45.94	<.001
QV X sem X R/NR	0.25	1	0.25	0.22	n.s
error	17.89	16	1.12		
pragmatic X R/NR	0.69	1	0.69	0.87	n.s
QV X prag X R/NR	0.03	1	0.03	0.04	n.s
error	12.78	16	0.80		
sem X prag X R/NR	14.69	1	14.69	14.59	<.005
QV X sem X pra X R/NR	0.69	1	0.69	0.69	n.s
error	16.11	16	1.01		

Table P.13 Analysis-of-variance summary table comparing semantic context (two,one), pragmatic context (P,N), presentation form (questionnaire, verbal) and relative/non-relative completions for 'that' stories in the adult age group.

Source	Sum of Squares	d.f	Mean Squares	F	p
Within Subjects					
completion (R/NR)	128.44	1	128.44	38.37	<.001
presentation form(QV) X R/NR	4.00	1	4.00	1.20	n.s
error	53.56	16	3.35		
semantic X R/NR	128.44	1	128.44	45.11	<.001
QV X sem X R/NR	4.00	1	4.00	1.41	n.s
error	45.56	16	2.85		
pragmatic X R/NR	16.00	1	16.00	31.14	<.001
QV X prag X R/NR	1.78	1	1.78	3.46	n.s
error	8.22	16	0.51		
sem X prag X R/NR	7.11	1	7.11	22.26	<.001
QV X sem X pra X R/NR	1.78	1	1.78	5.57	<.05
error	5.11	16	0.32		

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