Appendices

A. Distribution of *shenme* in child-directed Mandarin

Semantic contexts	Count (%)
In *wh*-questions	976 (97.7%)
In the restriction of universals	2 (0.2%)
In (bare) conditional clauses	3 (0.3%)
In polar questions	3 (0.3%)
In imperfectives	9 (0.9%)
In imperatives	2 (0.4%)
In epistemic uncertainty contexts	4 (0.4%)
Total	**999**

B. Frequency of different licensers of *shenme* in child Mandarin[1]

Licensers or licensing contexts for *shenme*	Age < 4 years	Age > 4 years
bu 'not'	1009	890
mei 'not'	471	617
dou 'all'	122	126
Epistemic modal adverbs	56	26
Non-factive predicates	201	162
Imperfective aspects	>50	>50
Imperatives	>50	>50
Polar questions	>50	>50
Conditional clauses	>50	>50

C. Experimental design

Experimental conditions	Number of stimuli
Wh-questions	4
In the scope of sentential negation	4
Conditional clauses	4
Epistemic uncertainty contexts introduced by a modal adverb	4
Polar questions	4
Perfect tense	4
Grammatical filler condition	14
Ungrammatical filler condition (with word order error of *dou*)	4
Trials	4
Total	46

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[1] Not all licensers or licensing conditions for *shenme* can be automatically tracked for their frequency in the child speech of the included subcorpora. Therefore, some licensing contexts were manually analysed for frequency, for which a maximum value of 50 was employed. Thus, '>50' in the table means that the frequency of the relevant licensing context is at least 50.

D. Examples of stimuli per condition

(1) *Wh*-questions:
Weinixiong   wen   Xiaozhu: "Xiaoguanzi   li   you   shenme
Winnie the Pooh   ask   Piglet   little jar   inside   have   *shenme*
haochi-de   ne?"
delicious-ADJ   Q-marker
'Winnie the Pooh asks Piglet: "What is there in the little jar that is delicious?"'

(2) Negative contexts introduced by sentential negation:
Xiaozhu   he   ta-de   pengyou-men   jintian   shenme   zuoye
Piglet   with   he/she-GEN   friend-PL   today   *shenme*   homework
ye   bu yong   zuo.
even   not need   do
'Piglet and her friends do not need to do any homework today.'

(3) Conditional clauses:
Buguan   Weinixiong   you   shenme   mafan,   pengyou-men
regardless of   Winnie the Pooh   have   *shenme*   trouble   friend-PL
dou   hui   qu   bangmang.
all   will   go   help
'Whatever trouble Winnie the Pooh has, (his) friends are willing to help.'

(4) Epistemic uncertainty contexts introduced by an epistemic modal adverb:
Tiaotiaohu   he   Weinixiong   keneng   zhengzai   kan
Tiger   with   Winnie the Pooh   possibly   PROG   read
shenme   gushi   shu.
shenme   story   book
'Tiger and Winnie the Pooh are possibly reading a storybook.'

(5) Polar questions:
Xiaozhu   dui   Weinixiong   shuo: "Xiangzi   li   hai   you
Piglet   to   Winnie the Pooh   say   suitcase   inside   still   have
shenme   binggan   me?"
shenme   biscuit   Q-marker
'Piglet says to Winnie the Pooh: "Are there still any biscuits in the suitcase?"'

(6) Unlicensed condition of the perfect tense:
* Weinixiong   zuotian   xiawu   mai-le   shenme   da
Winnie the Pooh   yesterday   afternoon   buy-PERF   *shenme*   big
nangua   song   gei   Xiaozhu.
pumpkin   send   for   Piglet
Intended: 'Winnie the Pooh bought a pumpkin for Piglet yesterday afternoon.'

(7) Grammatical filler condition:
Weinixiong   zuotian   dai   pengyou-men   qu   canjia-le
Winnie the Pooh   yesterday   take   friend-PL   go   participate-PERF
yi-ge   shengrihui.
one-CL   birthday party
'Winnie the Pooh took his friends to a birthday party yesterday.'

(8) Ungrammatical filler condition with post-positioned restriction of the universal *dou* 'all':

    * Meici   xiaxue   de   shihou,   dou   Tiaotiaohu   he   pengyou-men

      every time   snow   REL   while   all   Tiger   with   friend-PL

      dui   xueren.

      build   snowman

      Intended: 'Every time it snows, Tiger builds a snowman with his friends.'

E. Model summaries

I. The test condition of *wh*-questions

Random effects:	Groups	Child	Variance	Std.Dev.
	Child	(Intercept)	0.60023	0.7747
	Item	(Intercept)	0.03448	0.1857

Number of obs: 488, groups: Child, 122; Item, 4

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)
	(Intercept)	2.1254	0.4884	4.352	1.35e-05 ***
	Age	0.1861	0.2252	0.827	0.408

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects

       (Intr)

Age   -0.821

II. The test condition of negative contexts introduced by sentential negation

Random effects:	Groups	Child	Variance	Std.Dev.
	Child	(Intercept)	3.34198	1.8281
	Item	(Intercept)	0.09643	0.3105

Number of obs: 488, groups: Child, 122; Item, 4

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)
	(Intercept)	-2.0251	0.6529	-3.102	0.00192 **
	Age	2.3405	0.4094	5.718	1.08e-08 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects

       (Intr)

Age   -0.878

III. The test condition of conditional clauses

Random effects:	Groups	Child	Variance	Std.Dev.
	Child	(Intercept)	3.211e+00	1.7919494
	Item	(Intercept)	1.047e-07	0.0003235

Number of obs: 488, groups: Child, 122; Item, 4

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)
	(Intercept)	-3.7520	0.6867	-5.464	4.65e-08 ***
	Age	2.9071	0.4232	6.869	6.48e-12 ***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects
        (Intr)
Age   -0.936

IV. The test condition of epistemic uncertainty contexts

Random effects:	Groups Child	Child	Variance	Std.Dev.
	Child	(Intercept)	3.4771	1.8647
	Item	(Intercept)	0.2495	0.4995
	Number of obs: 488, groups: Child, 122; Item, 4			

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)	
	(Intercept)	-4.9386	0.7762	-6.362	1.99e-10	***
	Age	2.4604	0.3666	6.711	1.93e-11	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects
        (Intr)
Age   -0.901

V. The test condition of polar questions

Random effects:	Groups Child	Child	Variance	Std.Dev.
	Child	(Intercept)	1.72583	1.3137
	Item	(Intercept)	0.07049	0.2655
	Number of obs: 488, groups: Child, 122; Item, 4			

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)	
	(Intercept)	-2.5387	0.5149	-4.931	8.19e-07	***
	Age	1.8983	0.2900	6.546	5.89e-11	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects
        (Intr)
Age   -0.900

VI. The test condition of perfect tense

Random effects:	Groups Child	Child	Variance	Std.Dev.
	Child	(Intercept)	1.762	1.327
	Item	(Intercept)	0.000	0.000
	Number of obs: 488, groups: Child, 122; Item, 4			

Fixed effects:		Estimate	Std. Error	z value	Pr(>|z|)	
	(Intercept)	3.9065	0.5375	-7.267	3.66e-13	***
	Age	1.7100	0.2546	6.715	1.88e-11	***

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Correlation of Fixed Effects
        (Intr)
Age   -0.944