

Learning what *must* and *can* must and can mean

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Table 1: Classification of modals

Category	Items
Lexical epistemics	ADJ <i>aware certain correct likely obvious sure unlikely</i> ADV <i>absolutely apparently certainly definitely maybe necessarily obviously perhaps possibly presumably probably surely</i> N <i>knowledge prediction suspicion</i> V <i>appear assume believe bet convinced detect discover doubt expect explain foresee gather guess hear imagine know me_thinks presume realize reckon seem sense suggest suspect think understand</i>
Lexical roots	ADJ <i>able capable eager forbidden necessary sufficient</i> ADV <i>unnecessarily</i> N <i>capacity potential rule</i> V <i>allow decide encourage force insist intend let let's manage order prefer promise recommend request require want wish wishing</i>
Lexical polysemous	ADJ <i>determined important impossible possible</i> N <i>impossibility</i> V <i>feel need persuade</i>
Functional epi/root	<i>can could got_to has_to may might must ought should suppose</i>
Functional future	<i>going_to shall will would</i>

Table 2: Modal input per category (12 adults, % of total utterances)

Lexical modality			Functional modality	
epistemic	root	epis/root	epis/root	future
15,750 (4.6%)	12,433 (3.7%)	2,434 (0.7%)	20,528 (6%)	22,661 (6.7%)
30,617 (9%)			43,189 (12.7%)	

Table 3: Functional modals by flavor (6 adults)

Modal	Total	Root	Epis	% root
<i>can</i>	5262	5230	32	99.4%
<i>have to</i>	1024	1020	4	99.6%
<i>could</i>	791	718	73	90.8%
<i>might</i>	592	205 (meta)	387	34.6%
<i>got to</i>	522	519	3	99.4%
<i>should</i>	338	318	20	94.1%
<i>must</i>	199	40	159	20.1%
<i>supposed to</i>	111	102	9	91.9%
<i>ought to</i>	12	12	0	100.0%
<i>may</i>	12	4	8	33.3%
Total	8863	8167	696	92.2%

Table 4: Modal output per category (12 children, % of total utterances)

Lexical modality			Functional modality	
epistemic	root	epis/root	epis/root	future
1,911(0.8%)	7,475 (3.3%)	1,003 (0.4%)	5,389 (2.4%)	2,305 (1%)
10,389 (4.6%)			7,694 (3.4%)	

Table 5: Polysemous modals by flavor (6 children)

Modal	Total	Root (+n repetitions)	Epis (+n repetitions)	% root
<i>can</i>	2004	180 (+27)	1	99.5%
<i>have to</i>	120	113 (+ 7)	0	100%
<i>could</i>	54	39 (+ 11)	4	90.7%
<i>might</i>	66	19 (+ 25) (meta)	15 (+ 8)	46.3%
<i>got to</i>	176	145 (+ 31)	0	100%
<i>should</i>	18	9 (+ 9)	0	100%
<i>must</i>	40	22 (+ 9)	6 (+ 3)	78.6%
<i>supposed to</i>	8	8	0	100%
<i>ought to</i>	12	12	0	100%
<i>may</i>	6	1 (+ 1)	4	20%
Total	2592	547	51	91%

Figure 1: Child first modal uses by flavor

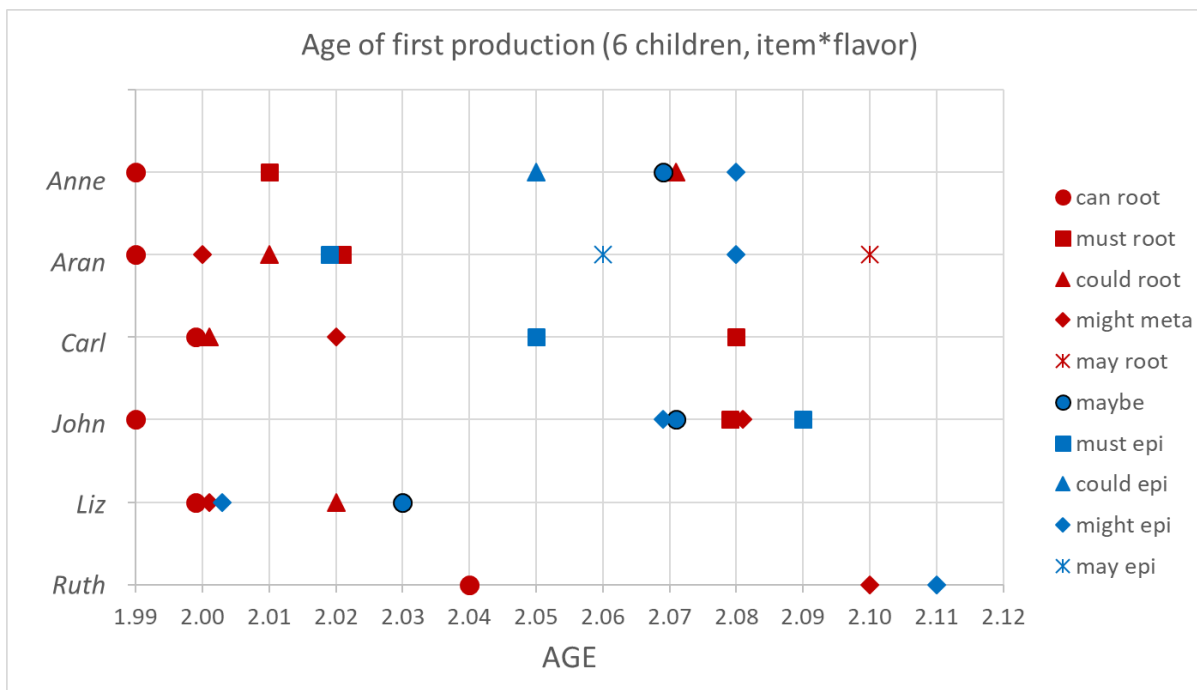


Table 6: Grammatical aspect (6 adults)

	Epistemic (n=696) <i>(n% of total epistemics)</i>	Root (n=8167) <i>(n% of total roots)</i>
Progressive	14 (2.0%)	28 (0.3%)
Perfect	65 (9.3%)	40 (0.5%)
Total	79 (11.4%)	68 (0.8%)

Table 7: Grammatical aspect per modal (6 adults)

	Root (n = 8159)			Epistemic (n = 704)		
	+ PERF	+ PROG	total	+ PERF	+ PROG	total
TOTAL	40	0	8159	65	14	704
can	0	0	5230	2	0	32
have to	0	0	1020	0	0	4
could	12	0	710	2	1	81
might	2	0	205	19	7	387
got to	0	2	519	0	1	3
should	24	10	318	0	1	20
must	0	0	39	41	3	160
supposed	2	0	102	0	1	9
ought to	0	1	12	0	0	0
may	0	0	4	1	0	8

Table 8: Lexical aspect (3 adults)

	Epistemic (n=316)	Root (n=4394)
eventive	17%	94%
stative	83%	6%

Table 9: Lexical aspect per modal (3 adults)

	Epistemic <i>(n = 447; excluded = 131)</i>			Root <i>(n = 5201; excluded = 807)</i>		
	+ stative	+ eventive	total	+ stative	+ eventive	total
TOTAL	83% (91%)	17% (9%)	316	6% (26%)	94% (74%)	4394
<i>can</i>	92% (96%)	8% (4%)	24	3% (31%)	97% (69%)	2665
<i>have to</i>	100% (100%)	0% (0%)	3	4.5% (11%)	95.5% (89%)	574
<i>could</i>	100% (100%)	0% (0%)	29	7% (24%)	93% (76%)	375
<i>might</i>	75% (86%)	25% (14%)	182	3% (9%)	97% (91%)	117
<i>got to</i>	50% (100%)	50% (0%)	2	9% (13%)	91% (87%)	403
<i>should</i>	70% (80%)	30% (20%)	10	20% (39%)	80% (61%)	161
<i>must</i>	96% (96%)	4% (4%)	57	11% (11%)	89% (89%)	19
<i>supposed</i>	100% (100%)	0% (0%)	5	41% (43%)	59% (57%)	68
<i>ought to</i>	-	-	0	22% (33%)	78% (67%)	9
<i>may</i>	100% (100%)	0% (0%)	4	33% (100%)	67% (0%)	3