Appendix A. List of books selected for the picture book corpus.

|  |  |
| --- | --- |
| **Title** | **Author** |
| A dog with nice ears | Lauren Child |
| A Great Big Cuddle | Michael Rosen |
| A little bit Brave | Nicola Kinnear |
| A Squash and a Squeeze | Julia Donaldson |
| Aliens Love Underpants | Claire Freedman |
| All the colours I see | Allegra Agliardi |
| Along Came A Different | Tom McLaughlin |
| Animal Stories for 5 year olds | Helen Paiba |
| Barking for Bagels | Michael Rosen |
| Bedtime Stories for 5 year olds | Helen Paiba |
| Brown Bear, Brown Bear, What Do You See? | Bill Jnr Martin |
| But Excuse Me That is my Book | Lauren Child |
| Colin and Lee: Carrot and Pea | Morag Hood |
| Cyril and Pat | Emily Gravett |
| Dave the Lonely Monster | Anna Kemp |
| Dear Zoo | Rod Campbell |
| Dinosaur Roar! | Paul Stickland & Henrietta Stickland |
| Dogger | Shirley Hughes |
| Dogs don't do Ballet | Anna Kemp & Sara Ogilvie |
| Duck, Death, and the Tulip | Wolf Erlbruch |
| Each Peach Pear Plum | Allan Ahlberg & Janet Ahlberg |
| Elmer | David McKee |
| FArTHER | Grahame Baker-Smith |
| Fat Frog | Ruth Miskin |
| Five Minutes Peace | Jill Murphy |
| Fox & Goldfish | Nils Pieters |
| Fox's Socks | Julia Donaldson |
| Franklin's Flying Bookshop | Jen Campbell |
| Funny Stories for 5 Year Olds | Helen Paiba |
| George's Marvellous Medicine | Roald Dahl |
| Get up! | Ruth Miskin |
| Giraffe in the Bath and other tales | Russell Punter & Lesley Sims |
| Gracie la Roo goes to school | Marsha Qualey |
| Gracie la Roo sets sail | Marsha Qualey |
| Grandad's Island | Benji Davies |
| Granpa | John Burningham |
| Guess How Much I Love You | Sam McBratney |
| Hairy Maclary from Donaldson's Dairy | Lynley Dodd |
| Hampstead the Hamster | Michael Rosen |
| Heidi | Johanna Spyri |
| Hide and Seek |  |
| Hide-and-Seek Pig | Julia Donaldson & Axel Scheffler |
| Hippo has a Hat | Julia Donaldson |
| Horrid Henry and the Secret Club | Francesca Simon |
| Horrid Henry tricks the Tooth Fairy | Francesca Simon |
| Horrid Henry: Ghosts and Ghouls | Francesca Simon |
| Horrid Henry's Halloween Horrors | Francesca Simon |
| How to be a Lion | Ed Vere |
| Hubert Horatio How to raise your grown-ups | Lauren Child |
| I can hop | Ruth Miskin |
| I Need a New Bum | Dawn McMillan |
| I Want My Hat Back | Jon Klassen |
| If all the world were... | Joseph Coelho & Allison Colpoys |
| In the Bath | Ruth Miskin |
| Into the Forest | Anthony Browne |
| Is it a Mermaid? | Candy Gourlay |
| John Brown, Rose and the Midnight Cat | Jenny Wagner |
| Joy | Corrinne Averiss |
| Kitchen Disco | Clare Foges & Al Murphy |
| Little Beauty | Anthony Browne |
| Looking for Atlantis | Colin Thompson |
| Lost and Found | Oliver Jeffers |
| Loved To Bits | Teresa Heapy & Katie Cleminson |
| Magical Stories for 5 year olds | Helen Paiba |
| Me and my Fear | Francesca Sanna |
| Michael Rosen's Sad Book | Michael Rosen |
| Mog the Forgetful Cat | Judith Kerr |
| Monkey Puzzle | Julia Donaldson |
| Mr Men: Chinese New Year | Adam Hargreaves |
| Murray the Race Horse | Gavin Puckett |
| My Father's Arms are a Boat | Stein Erik Lunde |
| Nice Work for the Cat and the King | Nick Sharratt |
| Night-Time Cat | Julia Tedd |
| Nip and Chip | Ruth Miskin |
| No-Bot | Sue Hendra & Paul Linnet |
| Nog in the Fog | Ruth Miskin |
| Odd Dog Out | Rob Biddulph |
| of Thee I sing | Barack Obama |
| Oi Cat! | Kes Gray |
| Oi Dog! | Kes & Claire Gray |
| Oi Frog! | Kes Gray |
| Oi Goat! | Kes Gray |
| Owl Babies | Martin Waddell & Patrick Benson |
| Pants | Giles Andreae |
| Peace at Last | Jill Murphy |
| Peck peck peck | Lucy Cousins |
| Peppa goes to London | Lauren Holowaty |
| Peppa meets Father Christmas | Lauren Holowaty |
| Peppa the Mermaid | Lauren Holowaty |
| Peppa's Magical Unicorn | Lauren Holowaty |
| Princess Mirror-Belle and the Flying Horse | Julia Donaldson |
| Princess Mirror-Belle and the Sea Monster's Cave | Julia Donaldson |
| Rabbit & Bear Attack of the Snack | Julian Gough |
| Rabbit & Bear The Pest in the Nest | Julian Gough |
| Rabbityness | Jo Empson |
| Raccoon on the Moon | Russell Punter |
| Rag the Rat | Ruth Miskin |
| Red Ned | Ruth Miskin |
| Room on the Broom | Julia Donaldson |
| Rosie's Walk | Pat Hutchins |
| Ruby Red Shoes Goes to London | Kate Knapp |
| Ruby's Worry | Tom Percival |
| Run, run, run! | Ruth Miskin |
| Sharing a Shell | Julia Donaldson |
| Sophie Johnson Unicorn Expert | Morag Hood |
| Squishy McFluff the Invisible Cat: Seaside Rescue! | Pip Jones |
| Stardust | Jeanne Willis |
| Stick Man | Julia Donaldson |
| Sun Hat Fun | Ruth Miskin |
| Superworm | Julia Donaldson |
| Sweep | Louise Greig & Julia Sarda |
| That's not my puppy... | Fiona Watt |
| That's Not my Unicorn… | Fiona Watt |
| The Bad-Tempered Ladybird | Eric Carle |
| The BFG | Roald Dahl |
| The Building Boy | Ross Montgomery |
| The Bumblebear | Nadia Shireen |
| The Cat in the Hat | Dr Seuss |
| The Day the Crayons Quit | Drew Daywalt & Oliver Jeffers |
| The Day War Came | Nicola Davies |
| The Detective Dog | Julia Donaldson |
| The Flat Rabbit | Bardur Oskarsson |
| The Gift | Carol Ann Duffy |
| The Gruffalo | Julia Donaldson |
| The Gruffalo's Child | Julia Donaldson |
| The Heart and the Bottle | Oliver Jeffers |
| The Highway Rat | Julia Donaldson |
| The Jolly Christmas Postman | Janet Ahlberg & Allan Ahlberg |
| The Jolly Postman or Other People's Letters | Janet Ahlberg & Allan Ahlberg |
| The Last Chip: The Story of a Very Hungry Pigeon | Duncan Beedie |
| The Lion Inside | Rachel Bright |
| The Marvellous Moon Map | Teresa Heapy & David Litchfield |
| The Memory Tree | Britta Teckentrup |
| The Owl who was Afraid of the Dark | Jill Tomlinson |
| The Paper Dolls | Julia Donaldson |
| The Pond | Nicola Davies |
| The Scar | Charlotte Moundlic |
| The Smartest Giant in Town | Julia Donaldson |
| The Snail and the Whale | Julia Donaldson |
| The Storm Whale | Benji Davies |
| The Storm Whale in Winter | Benji Davies |
| The Tiger Who Came to Tea | Judith Kerr |
| The Twits | Roald Dahl |
| The Ugly Five | Julia Donaldson |
| The Very Hungry Caterpillar | Eric Carle |
| The Wonky Donkey | Craig Smith |
| Tiddler | Julia Donaldson |
| Tug, tug | Ruth Miskin |
| Very little Cinderella | Teresa Heapy & Sue Heap |
| We're Going on a Bear Hunt | Michael Rosen |
| What Happens Next | Shinsuke Yoshitake |
| What is Poo? | Katie Daynes |
| Whatever Next! | Jill Murphy |
| When Sadness comes to call | Eva Eland |
| Where the Wild Things Are | Maurice Sendak |
| Where's Spot? | Eric Hill |
| Willy and the Cloud | Anthony Browne |
| Willy the Wimp | Anthony Browne |
| Witchfairy | Brigitte Minne |
| Zog | Julia Donaldson |
| Zog and the Flying Doctors | Julia Donaldson |

Appendix B. List of CHILDES corpora included in the child-directed speech corpus

|  |  |  |  |
| --- | --- | --- | --- |
| Corpus | Child age range | n | Reference |
| Belfast | 2;0-4;5 | 8 | Henry, A. (1995). *Belfast English and Standard English: Dialect variation and parameter setting*. New York: Oxford University Press. |
| Gathercole/Burns | 3;0-6;4 | 12 | Gathercole, V. (1986). The acquisition of the present perfect: explaining differences in the speech of Scottish and American children. *Journal of Child Language*, *13*, 537–560 |
| Howe | 1;6-1;8 (session 1)  1;11-2;1 (session 2) | 16 | Howe, C. (1981). *Acquiring language in a conversational context.* New York: Academic Press. |
| Korman | 6-16 weeks | 6 | Korman, M., & Lewis, C. (2001). Mothers' and fathers' speech to their infants: Explorations of the complexities of context. In M. Almgren, A. Barreña, M.-J. Ezeizabarrena, I. Idiazaabal, & B. MacWhinney (Eds.), *Research on*  *child language acquisition* (pp. 431-453). Somerville, MA: Cascadilla Press |
| Lara | 1;9-3;3 | 1 | Jones, G., & Rowland, C. F. (2017). Diversity not quantity in caregiver speech: Using computational modeling to isolate the effects of the quantity and the diversity of the input on vocabulary growth. *Cognitive Psychology*, *98*, 1-21. doi:10.1016/j.cogpsych.2017.07.002. |
| Manchester | 1;8-3;0 | 12 | Theakston, A. L., Lieven, E. V. M., Pine, J. M., & Rowland, C. F. (2001). The role of performance limitations in the acquisition of verb-argument structure: an alternative account. *Journal of Child Language, 28*, 127-152. |
| MPI-EVA Manchester | 1;8-3;2 | 4 | Lieven, E., Salomo, D. & Tomasello, M. (2009). Two-year-old children’s production of multiword utterances: A usage-based analysis. *Cognitive Linguistics, 20* (3), 481-508. |
| Nuffield | 0;11 | 76 | McGillion, M., Pine, J. M., Herbert, J. S., & Matthews, D. (2017). A randomised controlled trial to test the effect of promoting caregiver contingent talk on language development in infants from diverse socioeconomic status backgrounds. *Journal of Child Psychology and Psychiatry, 58* (10), 1122-1131 |
| Tommerdahl | 2;6-3;6 | 23 | Tommerdahl, J. and Kilpatrick, C. (2014). The Reliability of Morphological Analyses in Language Samples. *Journal of Language Testing, 31* (1), 3-18. |
| Wells | 1;6-5;0 | 32 | Wells, C. G. (1981). *Learning through interaction: The study of language development.* Cambridge, UK: Cambridge University Press. |

Appendix C. Tregex search pattern for different types of relative clauses

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Example | the man who kicked the ball  the man who can kick the ball and win the game  the man who had kicked the ball  the man who can kick the ball  the man who is kicking the ball  the man who could be kicking the ball  the man who is a football player  the man who had been a football player  the man who could be a football player  the man who could have kicked the ball  the man who had been kicking the ball  the man who jumped  the man who jumped and kicked  the man who can jump  the man who is jumping  the man who can be jumping  the man who is happy  the man who has been happy  the man who has been jumping  the man who can be happy  the man who could be jumping  the man who could have jumped  the man who had been jumping | the fun that I had  the fun I had | the crayon that you draw with  the crayon with which I used  the crayon you drew with | the houses that were built  the houses that can be built  the houses that have been built  the houses that could have been built  the houses that were built by the workers  the houses that can be built by the workers  the houses that have been built by the workers  the houses that might have been built by the workers  the houses built  the houses built by the workers |
| Tregex pattern | NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP!<'s|'re|is|are|was|were|be)<NP))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<CC<<((VBD|VBG|VBZ|VB|VBP!<'s|'re|is|are|was|were|be)$NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP!<S<(VBD|VBG|VBZ|VB|VBP<have|has|had$(VP<NP))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<MD<(VP!<(VB<be)<NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP<'s|'re|is|are|was|were)<(VP<VBG<NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<MD<(VP<(VB<be)<(VP<VBG<NP))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP<'s|is|'re|are|was|were|be)<NP))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(VBD<had|have|has$(VP<(VBN<been)<NP))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<be$NP)))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<have$(VP<NP))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP|MD<had|have|has|would|could|should|will|can|may|might$(VP<(VP<(NP|ADJP))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP!<(VP<(VBN.VBN)|<(NP$--VBN|VB))!<S<(VBD|VBG|VBZ|VB|VBP!<'s|is|'re|are|was|were|be!$NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<CC<<((VBD|VBG|VBZ|VB|VBP!<'s|'re|is|are|was|were|be)!$NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<MD<(VP!<(VB<have)!<S!<(VB<be)!<NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP<'s|'re|is|are|was|were)<(VP<VBG!<NP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<MD<(VP<(VB<be)<(VP<VBG!<NP))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP<'s|'re|is|are|was|were)!<NP<(ADJP|PP)))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(VBD|VBG|VBZ|VB|VBP<had|have|has$(VP<(VBN<been)!<NP<(ADJP|PP)))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(VBD<had|have|has$(VP<(VBN<been)!<NP<(VP!<VBN!<NP)))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<be!$NP$(ADJP|PP))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<be!$NP$(VP!<NP<VBG))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<have$(VP!<S<(VBN!<been)!<NP))))))))  NP|VP<(NP$++(SBAR<WHNP<(S<:(VP<(VBD|VBG|VBZ|VB|VBP|MD<had|have|has|would|could|should|will|can|may|might$(VP!<(VB|VBN<be|been)<(VP!<VP!<NP!<S))))))) | NP|VP<(NP$++(SBAR!<<WHPP<<(WHNP!<<what|whose|wohever|whatever|how|however)<(S<NP<(VP!<NP!<<(PP<:IN|RP|TO)!<S))))  NP!,IN<(SBAR<,(S<NP<(VP!<NP!<<(PP<:IN|RP|TO)!<S))) | NP<(SBAR<<(WHNP!<<what|whose|whatever|how|however)<(S<NP<(VP!<NP<<(PP<:IN|RP|TO)!<S)))  NP|VP<(NP$++(SBAR<<(WHPP<WHNP!<<what|whose|whoever|whatever|how|however)<(S<NP<(VP!<NP!<<(PP<:IN|RP|TO)!<S))))  NP!,IN<(SBAR<,(S<NP<(VP!<NP<<(PP<:IN|RP|TO)!<S))) | NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<(VP<(VBD<is|are|was|were|be|gets|get|got)<(VP<VBN!<(PP<(IN<by)))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<be$(VP<(VBN!$(PP<(IN<by)))))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S!<NP<(VP<((VBD|VBZ|VB|VBP<had|have|has)$(VP<(VBN<been$(VP<VBN!<(PP<(IN<by))))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S!<NP<(VP<(MD$(VP<(VBD|VBZ|VB|VBP|MD$(VP<(VBN<be|been$(VP<VBN!<(PP<(IN<by))))))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<(VP<(VBD<is|are|was|were|be|gets|get|got)<(VP<VBN<(PP<(IN<by)))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S<:(VP<(MD$(VP<(VB<be$(VP<(VBN$(PP<(IN<by)))))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S!<NP<(VP<((VBD|VBZ|VB|VBP|MD<had|have|has|would|could|should|will|can|may|might)$(VP<(VBN<be|been$(VP<VBN<(PP<(IN<by))))))))))  NP|VP<(NP$++(SBAR<(WHNP!<<what|whose|whoever|whatever|how|however)<(S!<NP<(VP<(MD$(VP<(VBD|VBZ|VB|VBP|MD$(VP<(VBN<be|been$(VP<VBN<(PP<(IN<by))))))))))))  NP<NP<(VP<VBN!<(PP<(IN<by)))  NP.(VP<(VBN$..(PP<(IN<by)))) |
| **Relative clause type** | **Subject relative clause** | **Object relative clause** | **Oblique relative clause** | **Passive relative clause** |

Appendix D. Error analysis on the false positives and false negatives that machine extraction method produced among the 1000 random sentences extracted from each corpus. “NA” under Error source indicate those adverbial clauses that were indistinguishable from the object relative clause structure.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Corpus | Relative clause type identified | Sentence (relative clause italicised) | Error analysis | Error source | Error type |
| Child-directed speech | Object | “*Oh sorry the longest the longest it is.*” | Speech with repetitions | Text | False positive |
|  | Object | “*Is that all I get*?” | "that" mistaken as preposition by parser | Parser | False negative |
| Picture books | Object | “*That’s the way they are.*” | Adverbial clause | NA | False positive |
|  | Object | “*How will Dad know how to make my toast the way I like it*.” | Adverbial clause | NA | False positive |
|  | Object | “*Another present Rosemary would have liked was a boat*.” | “present” was parsed as an adjective | Parser | False negative |
|  | Object | “*I just love the way you talk*.” | Adverbial clause | NA | False positive |
|  |  |  |  |  |  |
|  | Object | “*I'm wearing the black patent leather shoes with the blue flowers I always wear.*” | “wear” was parsed as a punctuation | Parser | False negative |
|  | Oblique | “*There wasn’t* *much Hubert didn’t excel at*.” | "much Herbert" was parsed as a single NP | Parser | False negative |
|  | Passive | “*A book shop… a shoe shop… a florist… a tailor’s a toy store… a hairdressing salon… but HOLD ON!*” | “hold” was parsed as a past participle | Parser | False positive |
| Reading books | Object | “What manner of landlord could this be , who made a point of knowing his tenants as men and women the moment he came to the estate ?” | Adverbial clause | NA | False positive |
|  | Object | “*Communication can occur through gestures , eye contact ( or the lack of it ) , touch , and even the way you stand when you look at someone* .” | Adverbial | NA | False positive |
|  | Object | “*It contained all my worldly possessions : some clothes wrapped round the book grandmere used to teach me to read , a spoon and a knife*.” | "the book grandmere" parsed as a single NP | Parser | False negative |
|  | Oblique | “*I 'll tell you* *something that Mr. Jack Rabbit told about.*” | “told” was parsed as a verb of past tense but not dominated by a VP | Parser | False negative |
|  |  |  |  |  |  |

Appendix E. Lexical syntactic distribution of subject relative clauses

Table 1. Frequency of transitive and instransitive subject relative clauses per 1000 noun phrases (raw frequency in parenthesis) across the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| transitive | 0.48 (695) | 2.25 (249) | 4.32 (36172) |
| intransitive | 0.69 (1000) | 2.97 (329) | 4.84 (40586) |

Table 2. Frequency per 1000 noun phrases (raw frequency in parenthesis) and percentage of subject relative clauses containing “be” verbs across the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| Frequency | 0.40 (583) | 0.99 (110) | 1.37 (11469) |
| copula% | 34% | 19% | 15% |

Table 3. Frequency of transitive and instransitive subject relative clauses per 1000 noun phrases (raw frequency in parenthesis) in fiction and nonfiction in the reading book corpus

|  |  |  |
| --- | --- | --- |
|  | Fiction | Nonfiction |
| transitive | 3.95 (26454) | 5.63 (9431) |
| intransitive | 4.86 (32593) | 4.71 (7881) |

Table 4. Frequency per 1000 noun phrases (raw frequency in parenthesis) and percentage of subject relative clauses containing “be” verbs in fiction and nonfiction in the reading book corpus

|  |  |  |
| --- | --- | --- |
|  | Fiction | Nonfiction |
| Frequency | 1.29 (8614) | 1.61 (2687) |
| copula% | 15% | 16% |

Table 5. Percentages of animate head nouns and embedded nouns in the 100 randomly sampled transitive subject relative clauses from each of the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| Animate head nouns | 60% | 69% | 44% |
| Animate embedded nouns | 83% | 64% | 69% |

Table 5. Percentages of animate head nouns in the 100 randomly sampled intransitive subject relative clauses from each of the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| Animate head nouns | 34% | 41% | 39% |

Appendix F. Lexical syntactic distribution of object and oblique relative clauses

Table 1. Relative pronoun omission in object and oblique relative clauses by percentage (and by frequency per 1000 noun phrases and raw counts in the parenthesis) in the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
| Relative pronoun omission | Child-directed speech | Picture books | Reading books |
| object relative clauses | 77% (1.48, 2148) | 77% (3.08, 341) | 64% (3.14, 26326) |
| oblique relative clauses | 56% (0.11, 156) | 68% (0.31, 34) | 31% (0.35, 2972) |

Table 2. Percentages of animate head nouns in the 100 randomly sampled object relative clauses and 100 oblique relative clauses from each of the three corpora. Note that there were only 42 oblique relative clauses in the picture book corpus.

|  |  |  |  |
| --- | --- | --- | --- |
| Inanimate head nouns | Child-directed speech | Picture books | Reading books |
| object relative clauses | 98% | 97% | 94% |
| oblique relative clauses | 93% | 88% | 90% |

Table 3. Percentages of the embedded nouns being pronouns in the 100 randomly sampled object relative clauses and 100 oblique relative clauses from each of the three corpora. Note that there were only 42 oblique relative clauses in the picture book corpus.

|  |  |  |  |
| --- | --- | --- | --- |
| Embedded noun being pronoun | Child-directed speech | Picture books | Reading books |
| object relative clauses | 91% | 65% | 65% |
| oblique relative clauses | 84% | 69% | 74% |

Table 4. Percentages of animate embedded nouns in the 100 randomly sampled object relative clauses and 100 oblique relative clauses from each of the three corpora. Note that there were only 42 oblique relative clauses in the picture book corpus.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Animate embedded noun |  | Child-directed speech | | Picture books | Reading books |
| object relative clauses | pronoun | 97% | 100% | | 100% |
|  | Full NP | 89% | 77% | | 86% |
| oblique relative clauses | Pronoun | 99% | 100% | | 100% |
|  | Full NP | 69% | 92% | | 81% |

Appendix G. Lexical syntactic distribution of passive relative clauses

Table 1. Percentages of inanimate head nouns and embedded nouns in the 100 randomly sampled passive relative clauses from each of the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| Inanimate head nouns | 77% | 68% | 75% |

Table 2. Percentages of relative pronoun omission in the 100 randomly sampled passive relative clauses from each of the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| Relative pronoun omission | 97% | 93% | 86% |

Table 3. Percentages of by-phrase omission in the 100 randomly passive relative clauses from each of the three corpora

|  |  |  |  |
| --- | --- | --- | --- |
|  | Child-directed speech | Picture books | Reading books |
| By-phrase omission | 98% | 88% | 84% |

Table 4. Percentages of inanimate head noun, relative pronoun omission, and by-phrase omission in the 100 randomly passive relative clauses from each of the three corpora

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  | Child-directed speech | Picture books | Reading books |
| Animate head noun | Relative pronoun intact | By-phrase intact | 0% | 1% | 9% |
|  |  | By-phrase omitted | 1% | 3% | 8% |
|  | Relative pronoun omitted | By-phrase intact | 0% | 4% | 1% |
|  |  | By-phrase omitted | 22% | 24% | 7% |
| Inanimate head noun | Relative pronoun intact | By-phrase intact | 0% | 0% | 11% |
|  |  | By-phrase omitted | 13% | 5% | 19% |
|  | Relative pronoun omitted | By-phrase intact | 0% | 10% | 23% |
|  |  | By-phrase omitted | 64% | 53% | 22% |