

Analyzing Children's Stories

Why Is It So Important
to Read to Our Kids?



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Understand how and why
children's text is important

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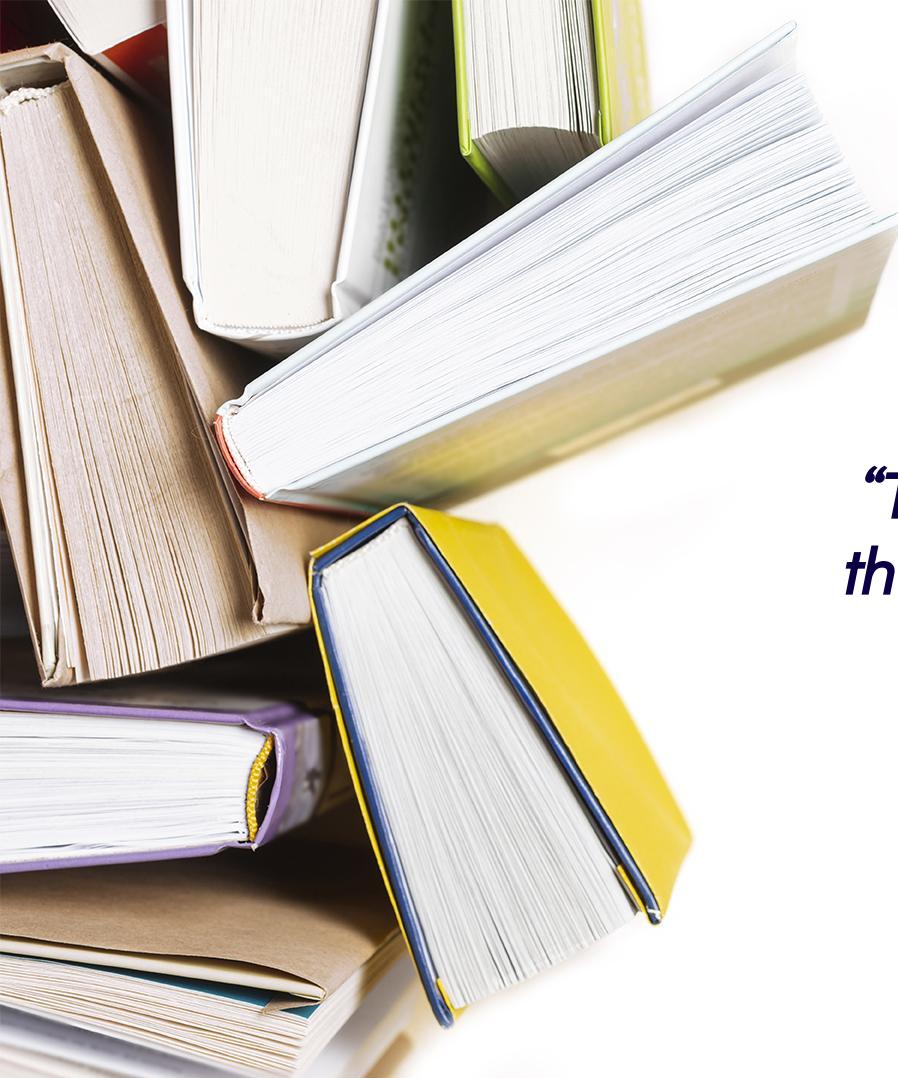
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“The more that you read, the more things you will know. The more you learn, the more places you’ll go.”

-Dr. Seuss,

“I Can Read With My Eyes Shut!”



01

Objectives:

Understand how and why
children's text is important





250,000,000

Children Worldwide Can't Read!

-United Nations Report, 2014



Introduction

A good children's book not only offers a sense of JOY, but the LANGUAGE itself is crucial to childhood development
...here's why

Objective 1: What Makes a Good Children's Book?

- Strong characters that evoke strong emotion
- A story that teaches
- Mind-expanding thought, vocabulary and visuals

Objective 2: Importance of NLP in Childhood Development

- Improves concentration and memory
- Boosts critical thinking
- Develops empathy

02

Methodology:

Pre-processing Data
& EDA



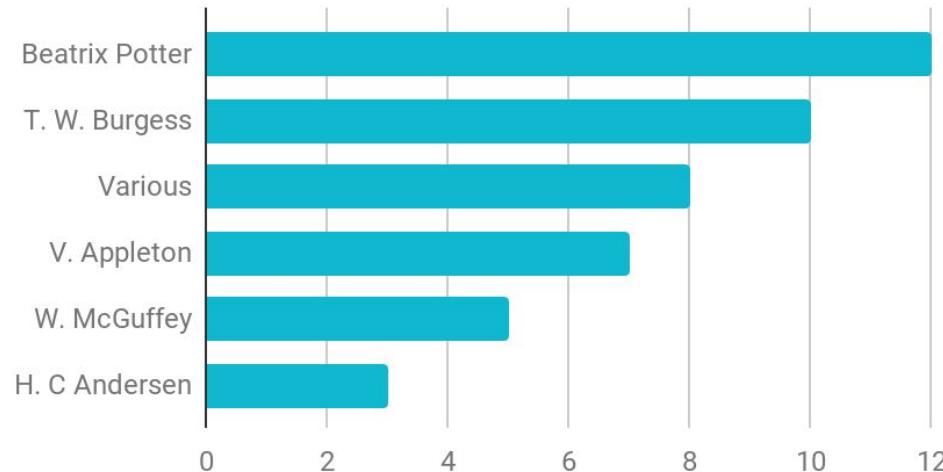


The Data

1. **Data Source**
The Gutenberg Project
2. **Data Cleaning**
Initial Insights
3. **EDA**
Authors, Books, Text

The AUTHORS

Authors With the Most Number of Books



- Beatrix Potter
- T.W. Burgess

Top 5 WORDS

Beatrix Potter

Thornton W.
Burgess

1

pigling

fox

2

duchess

frog

3

flopsy

prickly

4

kitten

bear

5

mice

meadow



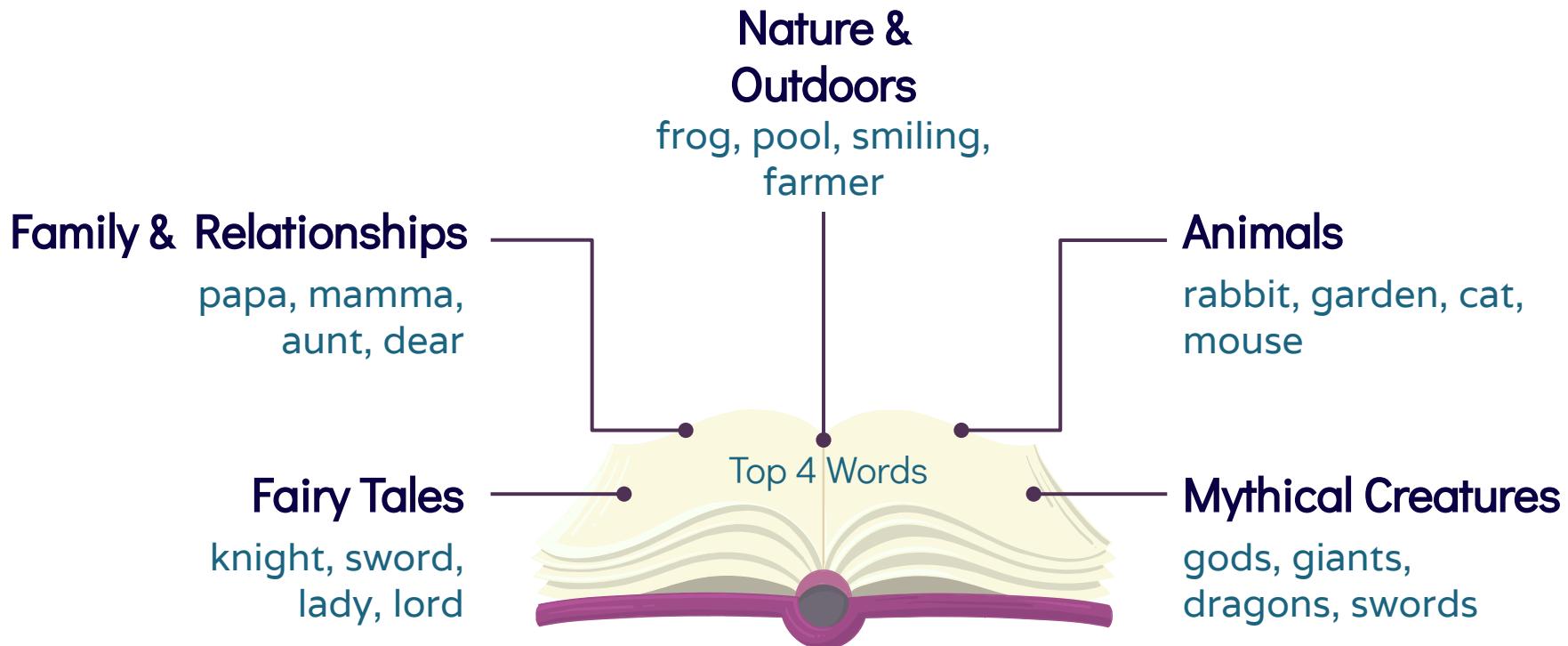
03

Results Analysis:

Interpreting NMF Topic
Modeling Results



Main Topics



Cross-Topic Words: Frog + Animals

Documents: “The Adventures of Grandfather Frog” By: Thornton W. Burgess

Text: “*Grandfather Frog* goes out to see the great world.”

“*Grandfather Frog* is stubborn.”

“*Grandfather Frog* keeps on.”

(frog, 314 times, note the prominent life lessons)

Insights: *Frog* (word) as a character or a name when referenced in most *animal* (topics)

Cross-Topic Words: Frog + Nature

Document: “The Tale of Solomon Owl” By: Arthur Scott Bailey

Text: “*What shall I do?*” asked Solomon Owl. “*Insects are scarce at this season of the year. Of course, there are frogs—but I don’t seem to care for them. And there are fish—but they’re not easy to get, for they don’t come out of the water and sit on the bank, as the frogs do.*”

(frog, 49 times)

Insights: Frog (word) as food, or prey when referenced in most nature (topics)

04

Conclusion:

Practical Applications



In Summary:

- Hundreds of millions of primary school age children need books worldwide
- NLP education and techniques can and *should* be available to all
- These classic stories & tales are often our first exposure with text language, and they greatly shape the way we all learn, develop and cope with emotions in adulthood
- Understanding NLP in children's books, can help us teach our children lifelong skills
- We all globally benefit from this...children are the future!

Future Steps & Applications

- Study NLP data in early childhood development centers
 - Target preschools, primary schools, parents
 - Help other countries & reach the most vulnerable
- Analyze newer books and look at book trends over time
 - Make predictions
 - Identify racism, sexism
 - CorEx anchor words
 - Look at sentiment analysis in specific characters
- Get user data from some outside source: Amazon
 - ★ Finish book recommender!!



Recommendations



Rabbit

“The Tale of Peter Rabbit”
Beatrix Potter



Frog

“The Adventures of Grandfather Frog”
T.W. Burgess



Princesses

“The Fairy Book”
Miss Mulock



Knights

“Hero-Myth and Legends”
Maud Isabel Ebbutt



Mamma

“The Fairy Godmothers and Other Tales”
Mrs. Alfred Gatty



Farmer

“The Adventure of Buster Bear”
T.W. Burgess

“Today a reader, tomorrow a leader.”

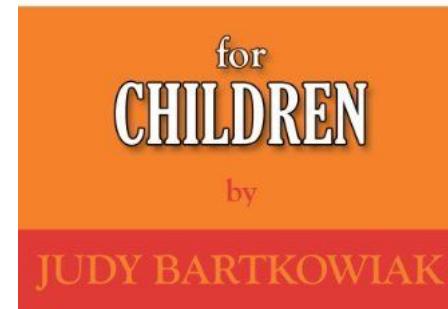
-Margaret Fuller



Alternative Resources:

- A. Scholarly Articles on Child Development Research
 - a. connection between language and reading in children
 - b. "How Reading Books Fosters Language Development Around the World" - David K. Dickinson et al.
 - i. <https://downloads.hindawi.com/archive/2012/602807.pdf>

- B. Lots of books on Amazon!
 - a. "We all want our children to grow up in a safe and happy world where they will learn and play, make friends and be free of stress, don't we? If only that could be the case for all our children."





Thanks!

Any questions?

Shannon McDonnell

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