Quantum Tales

by Spencer Churchill

General metrics

25,646	4,246	307	16 min 59 sec	32 min 39 sec
characters	words	sentences	reading time	speaking time

Score

93

This text scores better than 93% of all texts checked by Grammarly

Writing Issues

114	6	108
Issues left	Critical	Advanced

Plagiarism

3 %

13 sources

3% of your text matches 13 sources on the web or in archives of academic publications

Writing Issues

45 **Clarity**

11 Hard-to-read text

10 Passive voice misuse

8 Unclear sentences

13 Wordy sentences

3 Intricate text

10 **Correctness**

2 Comma misuse within clauses

1 Misplaced words or phrases

1 Wrong or missing prepositions

1 Determiner use (a/an/the/this, etc.)

1 Misspelled words

2 Incomplete sentences

1 Confused words

1 Incorrect verb forms

12 **Engagement**

12 Word choice

47 **Delivery**

47 Inappropriate colloquialisms

Unique Words

Measures vocabulary diversity by calculating the percentage of words used only once in your document

30%

unique words

Rare Words

Measures depth of vocabulary by identifying words that are not among the 5,000 most common English words.

48%

rare words

Word Length

Measures average word length

4.8

characters per word

Sentence Length

Measures average sentence length

13.8

words per sentence

Quantum Tales

Quantum Tales

Spencer Churchill

————————————

Copyright © 2021 Spencer Churchill

splch publishing

RSM, CA 92679

ISBN 978-1-7365474-0-3 (Hardcover)

ISBN 978-1-7365474-1-0 (Paperback)

ISBN 978-1-7365474-2-7 (Ebook)

_____

Table of Contents

_____

Introduction

Fairy Tales

Quantum Tales borrows fables from around the world to excite and educate readers about quantum algorithms. There are four popular fairy tales from England to China, and they all illustrate various applications for quantum computing.

* The Cowherd and the Weaver Girl (牛郎织女) is the Chinese Valentine's Day story that was modified to teach Quantum Teleportation.

* Goldilocks and the Three Bears comes from England and is the most fitting story to apply the Deutsch-Jozsa algorithm.

* Ali Baba and the Forty Thieves (علي بابا والأربعون لصا), a traditional Arabian oral story, perfectly demonstrates the power of Shor's algorithm.

* The Tortoise and the Hare (Ο λαγός και η χελώνα), originating from ancient Greece, is revitalized in a rematch using Grover's algorithm.

Quantum Algorithms

* Quantum Teleportation

* This algorithm is used as an example of sending quantum information by classical means.

* The Deutsch-Jozsa Algorithm

* This algorithm determines if a function is constant or balanced, meaning it returns either the same value (0 or 1) or both evenly (0 and 1).

* Shor's Algorithm

* This algorithm calculates the periodicity of a function and is most useful for prime factorization.[5]

* Grover's Algorithm

* This algorithm searches for an item in an unordered list.

QR Codes

There is a QR code in each story for a deep-dive into the content. The QR codes are presented[6] when the protagonist implements the quantum algorithm, and they give a more involved experience. Scan or click the QR codes and be redirected to the GitHub repository. Clicking the Google Colab link will run the code in the browser;[7] the jupyter notebook can also be viewed[8] in the repository.

Ways of Reading

For readers looking for an enjoyable twist on classic fairy tales, simply reading[9] the stories is more than enough; however, for curious readers, scan the QR codes and look at the code, variables, and outputs.[10] Also, browse the citations for great quantum resources. For advanced quantum readers, please review the code and submit a pull request if anything should be changed.[11]

_____

The Entangled Love of the Cowherd and Weaver Girl

As the first peonies broke into bloom, the seven imperial daughters of Heaven, with clouds tracing their steps, descended from their jade palace to bathe in the clear lake. The cool spring breeze swept up their long hair as they removed their silken gowns and draped them on overhanging branches. While they soaked, the breeze lifted one of the dresses and laid it gently upon the water. It was Zhīnǔ's dress — the youngest sister. Her sisters giggled at her misfortune as they donned their own[12] dry gowns and returned to Heaven.

Watering his oxen at the lake, the young cowherd Niúláng spied Zhīnǚ sitting unclothed beside the bank. Hastily, he removed his tunic and covered the girl. She explained that her clothes were wet from blowing into the lake and Niúláng, charmed by Zhīnǚ, offered to accompany her on a walk around the area while her dress dried in the sun.

Niúláng led Zhīnǚ up a nearby hill overlooking the water and surrounding countryside. He explained that he had come here to graze his oxen and watch the colorful clouds overhead. Niúláng eagerly described the beautiful hues of these clouds, oblivious to Zhīnǚ's deepening blush, but she [13] soon revealed it was she who weaves the clouds in Heaven.

To Niúláng, the clouds were mere shadows of Zhīnǚ's beauty; he would rather see empty skies than be without her.

Returning to the lake, Niúláng playfully tossed Zhīnǚ's clothes back into the water and asked her again to stay with him until her clothing dried. Her cheeks grew pink as she smiled and nodded.

The two grew closer and closer, finding themselves lost in love. The jade palace was rarely in Zhīnǚ's thoughts. As their love grew, so did their family, and Niúláng and Zhīnǚ began to share their tranquil life with two children. All this time, Zhīnǚ's heavenly dress rested along the lake bed.

Xīwángmǔ, Zhīnǚ's mother and Empress of Heaven, was bothered by the suspicious absence of new clouds. After questioning her daughters, she discovered that Zhīnǚ had betrayed Heaven and married a mortal. Driven to rage by her youngest daughter's foolishness, Xīwángmǔ ordered the unwilling princess back to the heavenly palace.

Niúláng, distraught from the loss of his beloved, swiftly returned to the lake. Clutching his wife's sodden dress, he cursed the heavens for stealing her. And a [14]

response came, not from the sky, but from Niúláng's most prized ox that had sipped from the heavenly[15] water.

The ox told Niúláng that if he wore its hide as a cloak, he could ascend to Heaven and find his wife. With a heavy heart, Niúláng killed the ox, covered his shoulders with its skin, and climbed toward the heavens with his children.[16]

Overjoyed to be reunited with Niúláng, Zhīnǚ nevertheless knew her mother well and was aware of what would come. She warned Niúláng that the arrival of a mortal and two half-celestials in Heaven would infuriate her mother and that she would separate them again.

As Zhīnǚ prepared for their inevitable separation, she remembered what Yùhuáng, her father and Emperor of Heaven, had taught her.

As all good rulers know, the exchange of ideas is the currency of power, and Yùhuáng had devised the strongest[17] method in the universe. He referred to this method as Quantum Teleportation, a secure way to encode and communicate information across the heavens at the speed of light.

Niúláng listened closely[18] as Zhīnǚ imparted her father's method of communication. Using starlight, they could connect particles and send messages to each other, despite whatever Xīwángmǔ might try.

Zhīnǚ demonstrated the process. She unclasped a crystal earring and held it high, splitting a beam of starlight into two photons. This pair, born from the same beam, was tightly related and entangled. If either photon in this entangled pair were changed, even slightly, its twin would reflect the change.[19] Zhīnǚ stored one photon for her and the other for Niúláng.

She handed Niúláng her other earring, and they worked together, entangling enough particles to communicate for an entire year, all organized by pairs. In time, Xīwángmǔ spotted Niúláng with Zhīnǚ in Heaven. Enraged once more,

Xīwángmǔ drew her jade hairpin, and as her hair tumbled around her feet, slashed a river between the couple, forming the Milky Way.

This heavenly river swept the two lovers apart. But, with their entangled particles, they sent messages back and forth throughout the year. And though Xīwángmǔ tried her hardest, she could never read the couple's messages.

The magpies, curious upon finding a new river of stars in the sky, flew up to ask Zhīnǔ what had happened. She explained what her mother had done and that she and Niúláng needed a way to entangle more particles each year. The magpies considered this, and on the seventh night of the seventh moon, flew to Heaven to form a bridge across the Milky Way for the two lovers.

Even now, despite her mother's interference, Zhīnǔ and Niúláng continue entangling particles each year to share their infinite love across the universe.

————————————

Goldilocks and the Quantum Spoon

Between a quiet town and a dark forest, there once was a vast field of wildflowers. Picking her way through this meadow was a girl with golden hair. As she walked, she hummed and searched for perfect flowers. You see, this girl was Goldilocks, and she needed everything to be just right.

She searched and searched, but few flowers struck her fancy: some stems were bent, some petals had brown tips, and some still had bees buzzing and bumbling about, so she turned and ventured into the forest. Goldilocks knelt over a delicate flower and pulled back a petal. "Is there a bee, or not a bee? That is the question," she mused.

Goldilocks gathered her final flowers and now held the most beautiful bouquet of honeysuckles and merrybells. But the surrounding trees had blocked the

sun, and she lost track of time between their shadowed trunks. So much time, in fact, that she found herself becoming hungry.

As often happens, she spied a humble cottage in a clearing deep in the woods. The cottage looked cozy, and tempting scents wafted toward her.

Goldilocks knew the smell of home-cooked porridge, but she did not know that the house belonged to three bears. Very fortunately for her, the three bears had sauntered into the forest to work up an appetite while their dinner cooled enough to eat.

Goldilocks knocked, waited, then knocked again. There was no response. The smells of hot oats and brown sugar filled the porch, and, finding the door was unlocked, she could not help but peek inside.

From the doorway's dark oak frame, she spotted a table set for three and one quantum computer. She hoisted herself into the largest chair, but the cushion was too deep, and her feet dangled awkwardly. The smallest chair was much too tight, so she relaxed into the medium chair, and it felt just right. There she waited, sniffing at the bowls of porridge and becoming even hungrier.

She waited and waited, but nobody came. "They must be very slow," she thought. "Their porridge will be cold before they get home!" So she scooted closer to the table.

There were three wooden bowls: one large, one medium, and one small — all filled with porridge. Goldilocks reached for a spoon, then hesitated. "Which porridge to try?" she pondered. Too cold would be unpleasant; too hot might burn her tongue.

Those close to Goldilocks knew she was well-versed in flowers and porridge, but she also knew her quantum algorithms. The key to making a well-informed decision on her porridge conundrum was to consider each bowl as either

entirely hot or entirely cold, or an equal blend of hot and cold porridge. By doing so, she could apply the Deutsch-Jozsa algorithm.

This algorithm would instantly reveal whether a given bowl was constant or balanced. A constant bowl of porridge would be completely hot or completely cold. A balanced bowl would be a mix of hot and cold porridge.

To avoid the misfortune of tasting the wrong porridge, she put the computer to work testing the bowls. The large and small bowls were both constant and therefore either too hot or too cold. The medium bowl was balanced, and thus, she knew it was just the right blend of hot and cold porridge.

She savored her success at finding the finest porridge and tasted and tasted until the bowl was all tasted. But this tasting had made Goldilocks very sleepy. She gently lifted her bouquet and got up from the table to find somewhere to rest. Upstairs, she found herself in a room with three beds: one large, one medium, and one small. Goldilocks eyed the large and small beds warily, but from her experience with the chairs and porridge, she settled decidedly into the medium bed and fell fast asleep.

But while Goldilocks was dreaming of more uses for quantum algorithms, the three bears returned: one large, one medium, and one small. The medium bear noticed his empty bowl and growled, for he was very hungry.

Goldilocks stirred when she heard this growl. She peeked out and saw three brown bears! The bears were approaching where she hid, following the sweet scent of her bouquet. Quickly, Goldilocks threw the flowers away from her and dashed to the open window.

The honeysuckles distracted the bears, and Goldilocks leaped from the window into the clearing.

The bears saw Goldilocks running toward the trees, but Goldilocks was refreshed, having eaten and slept, while the bears were tired from their

ambling. The medium bear, his tummy grumbling, sadly watched the thief escape into the forest while [39] the other two bears happily began slurping up their porridge.

_____

Ali Baba and the RSA Keys

A wealthy merchant fathered two sons, Ali Baba and Cassim. Cassim prided himself on living comfortably, having acquired [40] his father's business and marrying solely for further wealth. Ali Baba, on the other hand, welcomed a more humble lifestyle — becoming a woodcutter and marrying the woman he loved. [41]

While chopping wood one day, Ali Baba heard many heavy footsteps approaching somewhere nearby. From behind a large juniper tree, he spied forty thieves laden with treasure. As he watched, the leader of the thieves, called Lot, approached a sheer mountain face in the distance, whispered to it, and stood back as a cave magically opened up in the rock. One by one, Lot's thieves entered with their gold, and the cave closed behind them. Sometime later, the cave opened again to let out the now empty-handed thieves, closing behind them once more.

After the thieves had vanished, Ali Baba approached the face of the cliff himself and noticed a series of jumbled letters carved into the rock. He whispered them to the mountain, curious if they would open the cave, but alas, they did not. He transcribed the letters from the rock to a roll of papyrus and returned home.

Once there, Ali Baba found Cassim anxiously pacing and clenching his fists. He asked him what was wrong, and Cassim explained that a fellow trader had just

been killed in a nearby town. Their entire caravan had been looted and destroyed, and the thieves had left only an unintelligible note behind. Curious, Ali Baba asked to see the note and was shocked to discover letters as jumbled as those he'd seen etched into the mountain face. In addition, he spotted a small number scribbled on the corner of the note.

He remembered hearing stories from a trader about a band of thieves who communicated using secret messages. As they had grown prosperous and powerful, the group realized they required communications that could not be compromised. Messages that, even if viewed in broad daylight, would appear only as scrambled letters.

The trader had explained that these innovative thieves had begun using a cipher known as RSA to encrypt their secret messages. The cipher would scramble messages with a public key and unscramble messages with a private key. Only with the private key was the message able to be read. Thus, the leader of the thieves could receive reports from his members, employ spies, and monitor his thieving throng while remaining safe from prying eyes. The RSA cipher had helped them become very successful and wealthy.

Around the same time, Ali Baba's father had received a device that drew on the nature of atoms for computation. This mysterious computer could uncover the patterns of functions to factor numbers, a process referred to as Shor's algorithm.

The number to be factored appeared on the corner of the note. This number was called the modulus, the product of two prime numbers. These prime numbers were also used to create the public and private keys. If Ali Baba could find the two prime numbers which produced the modulus on the note, he could then easily generate the private key and read the secret message.

With his plan in place, Ali Baba began his work using the quantum computer. The fastest way to factor numbers was by means of Shor's algorithm, and there was not a moment to spare.

It was late at night when Ali Baba finally finished applying Shor's algorithm, and he had indeed succeeded in factoring the number and generating the thieves' private key. With this key, he decrypted the message etched in the rock, and it read, "Open sesame."

The next morning, Ali Baba hastened to the mountain, whispered "Open sesame," and watched as the cave magically opened. Not wishing to leave any sign of his entry, he rushed in and collected only a single sack of gold. Ali Baba returned home to show his wife the gold, and she burst into tears of joy. She hurried to Cassim and asked for a scale. Curious about what his penniless brother could possibly need to weigh, Cassim secretly applied wax to the inside of the scale.

After weighing the gold, Ali Baba's wife returned the scale, and when Cassim discovered a piece of gold stuck to the wax, he became envious. "Ali Baba has so much gold he can't count it! He needs to weigh it all!" he cried.

Driven by suspicion, Cassim decided to follow his brother. When Ali Baba left home the next morning to chop wood, Cassim watched from a safe distance. After several hours, he saw Ali Baba approach a cliff and enter a cave through a magical opening — a cave he could see was filled with treasure. Ali Baba quickly emerged with a bag of gold, the cave sealing itself once again behind him. Cassim, overwhelmed with envy of Ali Baba's gold, vowed to return and empty the magic cave of all its treasure.

At home that night, Cassim strapped great chests to all his mules. He led the caravan toward the cliff, but the entrance would not open when he approached. For hours Cassim scratched and smacked the rock in frustration, so distracted

that he did not notice the forty thieves approaching in silence. Turning at one point to catch his breath, Cassim was greeted with dozens of raised scimitars. Lot emerged from his horde. "What have we here?" he asked as his thumb grazed the edge of his scimitar. Cassim's eyes bulged.

"Look, habibi," Lot continued, "I appreciate a good theft as much as any other, but this is our secret cave, and now it's not so secret, is it?" Now he toyed with the hilt of his sword. Cassim quickly tried to expose Ali Baba as the cave's thief, but Lot's scimitar was quicker.

After a few weeks, Ali Baba mentioned to Cassim's wife that he had not seen his brother in many days. She explained that he had gone away weeks ago with his mules but had not returned. After months with no sign of Cassim, the two correctly guessed that the group of bandits had dispatched Cassim and his caravan. Ali Baba swore to avenge his brother and continued to secretly loot the cave. He quietly invested his newfound wealth back into the town, in particular the funding of a new school. There, he taught quantum computation and assured his students that quantum algorithms could prove very useful.

————————————————
Tortoise vs. Hare — Quantum Rematch

The wind rushed through his golden fur. The ground shook with his every leap. With ears slicked back, the Hare bolted across the green hills. Several animals glanced up as he thundered by. Breaking the beat of the Hare's pounding feet, the Weasel jeered, "Slowpoke!"

The Hare swiveled in mid-stride, skidding to a halt. "Who said that? Answer!" He thumped angrily as the surrounding animals howled with laughter. This was the Hare's last straw.

"For over two thousand years," the Hare began, "I have endured your jibes, snickers, and mockery. Well, that ends now!" His tail bristled. "I am the most agile, quick, dashing animal, and I will redeem all harekind." His roving eyes narrowed and settled on the dozing Tortoise.

After a humiliating loss to the Tortoise in a race millennia ago, the Hare had trained relentlessly. Despite his evident improvements in speed and agility, however, the other animals often reminded him of the loss.

The Tortoise, on the other hand, had spent his days resting under an olive tree, contemplating the world. Always introspective, always the philosopher, he was currently immersed in the study of quantum mechanics.

"There is no way you can best me," the Hare huffed. "We will race again, and I will win."

"You've become so quick," the Tortoise replied, his eyes opening. "I will certainly need time to get ready."

The Tortoise slowly blinked. The Hare's eye twitched.

The next morning, the Tortoise and the Hare both awoke early to prepare for the rematch. The Hare streaked across the old trail, over and over, improving his time with every passage. When the Hare looked to see how his rival was preparing, he noted the Tortoise merely wandering aimlessly — or so he thought. In reality, the Tortoise was dutifully recording the distance of every possible path.

Soon, the day of the big race arrived. The Fox marked the destination as he had long ago. And with an enthusiastic wave of the flag, the Tortoise and the Hare started off.

The Hare bounded and zig-zagged through bushes and shrubs at an astonishing speed. Occasionally, he would pause and stretch, looking behind with a smirk. Never spotting the Tortoise, the Hare would scratch his ears, fluff his tail, and

once again dash over the game trail toward the finish line. It was the best he had felt in years.

Meanwhile, the Tortoise shuffled over to his quantum computer and withdrew the long list of routes. He remembered that one path would ensure his victory, but he had forgotten the way! There were far too many paths to search, so instead, he opted to use Grover's algorithm. This would highlight the path he wanted to find while minimizing all others.

In the blink of an eye, the Tortoise's computer had found the shortest path, so he headed off in a direction quite different from the Hare's.

Instead of following the same worn route, the Tortoise kept to the path given by Grover's algorithm, avoiding the bushes and shrubs and reducing the distance covered by the Hare's leaps and bounds. The Tortoise slowly, but directly, made his way toward the finish line.

From atop a hill, the Hare looked behind himself once more, squinting against the sun, trying to spot the Tortoise. "Typical," he thought. "The Tortoise is even slower than last time."

Now he turned to finish the race. But when he did, he saw the Tortoise trudging forward across the finish line.

The Hare charged down the slope but was too late to overtake the Tortoise.

"How… how?" panted the Hare.

The Tortoise winked at his opponent and offered with a wry smile, "It's the shortest path that wins the race."

————————————————

Acknowledgments

I need to begin by thanking my family and friends for reading the stories and listening to me during the process. I'm sure that they'd prefer to do anything

besides hearing me decide between "find," "determine," and "reveal," but their consistent support helped me finish this project.

I am so fortunate to have such a talented artist help tell my stories. Larissa's illustrations reinspired me countless times when I was in the midst of writer's block. I can't imagine being asked to illustrate a fairy tale book and then get quantum computers thrown at me, but she did a wonderful job researching and bringing my vision to life.

For the quantum community that welcomed me, gave invaluable feedback, and kept me excited about quantum, I thank you all. To everyone in the Qiskit community, thank you for ranking the most interesting quantum algorithms that directly shaped this book.

For the first reason there exists any book at all, I'd love to extend thanks to the original story-tellers who created these fairy tales. Our world is a much richer place because these stories exist. I am so grateful that they've been preserved and can now be shared with a new purpose.

The other reason I'm able to publish this book is due to the tremendous support from the Unitary Fund. I came to them with an idea to introduce quantum algorithms through stories, and they have helped me since. Their fund is founded on open-source ideologies and hopes to bring quantum to everyone. It has been an absolute pleasure to work with the Unitary Fund.

I specifically want to thank Travis Scholten for supporting my project to receive funding. I would also like to thank Nathan Shammah and William Zeng for helping me narrow my focus and providing countless resources to bring these stories to publication-standards.

_____

Bibliography

Æsop. The Æsop for Children. Chicago, Rand McNally, 1919. Library of Congress.

"Deutsch-Jozsa Algorithm." Learn Quantum Computation using Qiskit, Qiskit, https://qiskit.org/textbook/ch-algorithms/deutsch-jozsa.html.

Diyab, Hanna. "Ali Baba and the Forty Thieves." Wikipedia, 19 May 2006, https://en.wikipedia.org/wiki/Ali_Baba_and_the_Forty_Thieves.

"Goldilocks and the Three Bears." Mother's Nursery Tales, by Katharine Pyle, E. P. Dutton, 1918, pp. 207-213. Project Gutenberg.

"Grover's Algorithm." Learn Quantum Computation using Qiskit, Qiskit, https://qiskit.org/textbook/ch-algorithms/grover.html.

"Quantum Teleportation." Learn Quantum Computation using Qiskit, Qiskit, https://qiskit.org/textbook/ch-algorithms/teleportation.html.

Shi, Li Wei. "The Cowherd and the Weaver Girl." Chinaculture.org, 16 August 2010, http://en.chinaculture.org/focus/focus/2010qixi/2010-08/16/content_391106.htm.

"Shor's Algorithm." Learn Quantum Computation using Qiskit, Qiskit, https://qiskit.org/textbook/ch-algorithms/shor.html.

1.	*No part of this publication may be reproduced, or stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without written permission of the publisher.*	Hard-to-read text	Clarity
2.	imagination**,**	Comma misuse within clauses	Correctness
3.	*are used*	Passive voice misuse	Clarity
4.	*Names, characters, places, events, locales, and incidents are the products of the author's imagination, or are used fictitiously.*	Unclear sentences	Clarity
5.	** This algorithm calculates the periodicity of a function and is most useful for prime factorization.*	Hard-to-read text	Clarity
6.	*are presented*	Passive voice misuse	Clarity
7.	browser code	Wordy sentences	Clarity
8.	*be viewed*	Passive voice misuse	Clarity
9.	~~simply~~ → merely	Word choice	Engagement
10.	*For readers looking for an enjoyable twist on classic fairy tales, simply reading the stories is more than enough; however, for curious readers, scan the QR codes and look at the code, variables, and outputs.*	Hard-to-read text	Clarity
11.	*For advanced quantum readers, please review the code and submit a pull request if anything should be changed.*	Unclear sentences	Clarity
12.	~~own~~	Wordy sentences	Clarity
13.	~~, but she~~ → . However, she	Hard-to-read text	Clarity

14.	~~And~~ → Moreover,, Furthermore,	Inappropriate colloquialisms	Delivery
15.	~~heavenly~~ → holy	Word choice	Engagement
16.	*With a heavy heart, Niúláng killed the ox, covered his shoulders with its skin, and climbed toward the heavens with his children.*	Unclear sentences	Clarity
17.	~~strongest~~ → most robust, most potent, most vital, most substantial	Word choice	Engagement
18.	*closely*	Misplaced words or phrases	Correctness
19.	*If either photon in this entangled pair were changed, even slightly, its twin would reflect the change.*	Unclear sentences	Clarity
20.	~~But~~ → However, Nevertheless	Inappropriate colloquialisms	Delivery
21.	~~And~~ → Moreover,, Furthermore,	Inappropriate colloquialisms	Delivery
22.	*You*	Inappropriate colloquialisms	Delivery
23.	*were bent*	Passive voice misuse	Clarity
24.	*She searched and searched, but few flowers struck her fancy: some stems were bent, some petals had brown tips, and some still had bees buzzing and bumbling about, so she turned and ventured into the forest.*	Intricate text	Clarity
25.	~~But~~ → However,, Nevertheless,	Inappropriate colloquialisms	Delivery
26.	~~, in fact,~~	Wordy sentences	Clarity
27.	~~tempting~~ → pleasing, captivating	Word choice	Engagement
28.	~~while~~ → . At the same time,	Hard-to-read text	Clarity
29.	*From the doorway's dark oak frame,*	Unclear sentences	Clarity

she spotted a table set for three and one quantum computer.

30.	~~largest~~ → most prominent, most giant, most oversized	Word choice	Engagement
31.	~~smallest~~ → most miniature, most petite	Word choice	Engagement
32.	cold,	Comma misuse within clauses	Correctness
33.	~~finest~~ → most OK	Word choice	Engagement
34.	~~But~~ → However,, Nevertheless,	Inappropriate colloquialisms	Delivery
35.	~~, but from~~ → . However, from	Hard-to-read text	Clarity
36.	~~But~~ → However,, Nevertheless,	Inappropriate colloquialisms	Delivery
37.	~~very hungry~~ → starving, famished, ravenous	Word choice	Engagement
38.	*was refreshed*	Passive voice misuse	Clarity
39.	~~while~~ → . In contrast,	Hard-to-read text	Clarity
40.	~~having acquired~~ → acquiring	Wordy sentences	Clarity
41.	*Ali Baba, on the other hand, welcomed a more humble lifestyle — becoming a woodcutter and marrying the woman he loved.*	Unclear sentences	Clarity
42.	*been killed*	Passive voice misuse	Clarity
43.	~~he'd~~ → he had	Inappropriate colloquialisms	Delivery
44.	~~In addition~~ → Also, Besides	Wordy sentences	Clarity
45.	thieves' leader	Wordy sentences	Clarity

46.	~~very~~ → wildly	Word choice	Engagement
47.	in appeared	Wrong or missing prepositions	Correctness
48.	*were also used*	Passive voice misuse	Clarity
49.	~~the~~ public	Determiner use (a/an/the/this, etc.)	Correctness
50.	~~easily~~ → quickly	Word choice	Engagement
51.	*If Ali Baba could find the two prime numbers which produced the modulus on the note, he could then easily generate the private key and read the secret message.*	Hard-to-read text	Clarity
52.	~~by means of~~ → using, utilizing, employing, through	Wordy sentences	Clarity
53.	~~, and he~~ → . He	Hard-to-read text	Clarity
54.	*With this key, he decrypted the message etched in the rock, and it read, "Open sesame."*	Unclear sentences	Clarity
55.	~~possibly~~	Wordy sentences	Clarity
56.	~~, and when~~ → . When	Hard-to-read text	Clarity
57.	~~can't~~ → cannot	Inappropriate colloquialisms	Delivery
58.	*was greeted*	Passive voice misuse	Clarity
59.	~~habibi~~ → Habibi	Misspelled words	Correctness
60.	~~it's~~ → it is	Inappropriate colloquialisms	Delivery
61.	*quicker*	Incomplete sentences	Correctness
62.	~~in~~	Wordy sentences	Clarity
63.	to loot the cave secretly	Inappropriate colloquialisms	Delivery

64.	~~in particular~~ → particularly	Wordy sentences	Clarity
65.	*This*	Intricate text	Clarity
66.	~~best~~ → beat	Confused words	Correctness
67.	~~You've~~ → You have	Inappropriate colloquialisms	Delivery
68.	*so quick*	Incomplete sentences	Correctness
69.	Tortoise is, or Tortoise was	Incorrect verb forms	Correctness
70.	~~aimlessly~~	Wordy sentences	Clarity
71.	~~And~~ → Moreover,, Furthermore,	Inappropriate colloquialisms	Delivery
72.	~~off~~	Wordy sentences	Clarity
73.	*This*	Intricate text	Clarity
74.	~~But~~ → However,, Nevertheless,	Inappropriate colloquialisms	Delivery
75.	~~It's~~ → It is	Inappropriate colloquialisms	Delivery
76.	*I*	Inappropriate colloquialisms	Delivery
77.	*my*	Inappropriate colloquialisms	Delivery
78.	*me*	Inappropriate colloquialisms	Delivery
79.	*I need to begin by thanking my family and friends for reading the stories and listening to me during the process.*	Unclear sentences	Clarity
80.	~~I'm~~ → I am	Inappropriate colloquialisms	Delivery
81.	*I'm*	Inappropriate colloquialisms	Delivery
82.	~~they'd~~ → they would	Inappropriate colloquialisms	Delivery

83.	*me*	Inappropriate colloquialisms	Delivery
84.	*I*	Inappropriate colloquialisms	Delivery
85.	*my*	Inappropriate colloquialisms	Delivery
86.	*me*	Inappropriate colloquialisms	Delivery
87.	*I*	Inappropriate colloquialisms	Delivery
88.	*I*	Inappropriate colloquialisms	Delivery
89.	~~can't~~ → cannot	Inappropriate colloquialisms	Delivery
90.	*being asked*	Passive voice misuse	Clarity
91.	*me*	Inappropriate colloquialisms	Delivery
92.	~~, but she~~ → . However, she	Hard-to-read text	Clarity
93.	~~a wonderful~~ → an excellent, a fantastic	Word choice	Engagement
94.	*my*	Inappropriate colloquialisms	Delivery
95.	*me*	Inappropriate colloquialisms	Delivery
96.	*me*	Inappropriate colloquialisms	Delivery
97.	*I*	Inappropriate colloquialisms	Delivery
98.	*you*	Inappropriate colloquialisms	Delivery
99.	*you*	Inappropriate colloquialisms	Delivery
100.	~~interesting~~ → exciting	Word choice	Engagement
101.	~~I'd~~ → I would	Inappropriate colloquialisms	Delivery
102.	*I'd*	Inappropriate colloquialisms	Delivery
103.	*I*	Inappropriate colloquialisms	Delivery

104.	~~they've~~ → they have	Inappropriate colloquialisms	Delivery
105.	*be shared*	Passive voice misuse	Clarity
106.	~~I'm~~ → I am	Inappropriate colloquialisms	Delivery
107.	*I*	Inappropriate colloquialisms	Delivery
108.	*me*	Inappropriate colloquialisms	Delivery
109.	*I*	Inappropriate colloquialisms	Delivery
110.	*my*	Inappropriate colloquialisms	Delivery
111.	*I*	Inappropriate colloquialisms	Delivery
112.	*me*	Inappropriate colloquialisms	Delivery
113.	~~helping me narrow~~ → narrowing	Wordy sentences	Clarity
114.	*my*	Inappropriate colloquialisms	Delivery
115.	*All rights reserved. No part of this publication may be reproduced,*	in any form or by any means, electronic, mechanical … http://hdr.undp.org/sites/default/files/lesothonhdr2006.pdf	Originality
116.	*stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying,*	in any form or by any means, electronic, mechanical … http://hdr.undp.org/sites/default/files/lesothonhdr2006.pdf	Originality
117.	*and incidents are the products of the author's imagination, or are used fictitiously. Any resemblance to actual events, locales, or persons, living or dead, is entirely coincidental.*	How to Avoid Legal Issues when Writing About Real People https://www.wikihow.com/Avoid-Legal-Issues-when-Writing-About-Real-People	Originality
118.	*Ali Baba and the Forty Thieves (علي بابا والأربعون لصا), a traditional*	Jarmen Kell And The Forty Thieves | Command and Conquer …	Originality

https://cnc.fandom.com/wiki/Jarmen_Kell_And_The_Forty_Thieves

119.	*As their love grew, so did their family,*	Bios The Jenner Cowgirls - 100% Natural | Dry Aged Beef … http://www.jennerfamilybeef.com/bios-the-jenner-cowgirls.html	Originality
120.	*across the heavens at the speed of light.*	THE SECRET BEHIND STAR WARS - The New York Times https://www.nytimes.com/1985/08/11/magazine/the-secret-behind-star-wars.html	Originality
121.	*to form a bridge across the Milky Way*	七夕節 (Qīxì jié) Double Seventh Festival | ChinaX https://projects.iq.harvard.edu/chinax/event/%E4%B8%83%E5%A4%95%E7%AF%80-q%C4%ABx%C3%AC-ji%C3%A9-double-seventh-festival	Originality
122.	*The next morning, the Tortoise and the Hare*	TELL ME A STORY: The Tortoise and the Hare (a tale told … https://web.kitsapsun.com/archive/1998/11-22/0076_tell_me_a_story__the_tortoise_and.html	Originality
123.	*headed off in a direction quite different from*	The Acts of Simon Magus in the First Century AD http://simonmagus.com/draft/sm.doc	Originality
124.	*I need to begin by thanking my family and friends for*	Maricopa County Jail Stories: Welcome To Experience of … https://ldsbiker.blogspot.com/2010/08/welcome-to-experience-of-estralla-jail.html	Originality
125.	*I am so fortunate to have such a*	I am so fortunate to have such a caring sensitive doctor … https://www.mdvip.com/patients/member-testimonials/i-am-so-fortunate-have-such-caring-sensitive-doctor	Originality

| 126. | *Our world is a much richer place because* | How to Produce A Low Budget Short Movie - Sofy.tv - Blog https://sofy.tv/blog/low-budget-short-movie/ | Originality |
| 127. | *It has been an absolute pleasure to work with the* | United States : HFF announces senior financing for NEXT Apartments in Chicago | Originality |