

# Appendix

## 1 Case Study

Table 1 presents the generated stories in OutGen from LongLM<sub>base</sub> and SimCoS. LongLM<sub>base</sub> incorporating multiple phrases struggles with logical consistency and verbosity, often repeating themes of solitude. In contrast, SimCoS utilizes a greater number of phrases more effectively, creating a coherent and logically structured narrative that included a variety of elements such as the blooming process, human interactions, and a final ending.

## 2 Further Discussion

Fig. 1 presents an analysis of performance variations with different  $\alpha$  values on the OutGen test set. This hyperparameter impacts the measurement of distances between story subgraphs, with extreme values potentially skewing towards either text or logical similarity. This underscores the sensitivity of Distinct and Coverage metrics to  $\alpha$  selection, emphasizing the importance of balance to ensure comprehensive evaluation in story generation.

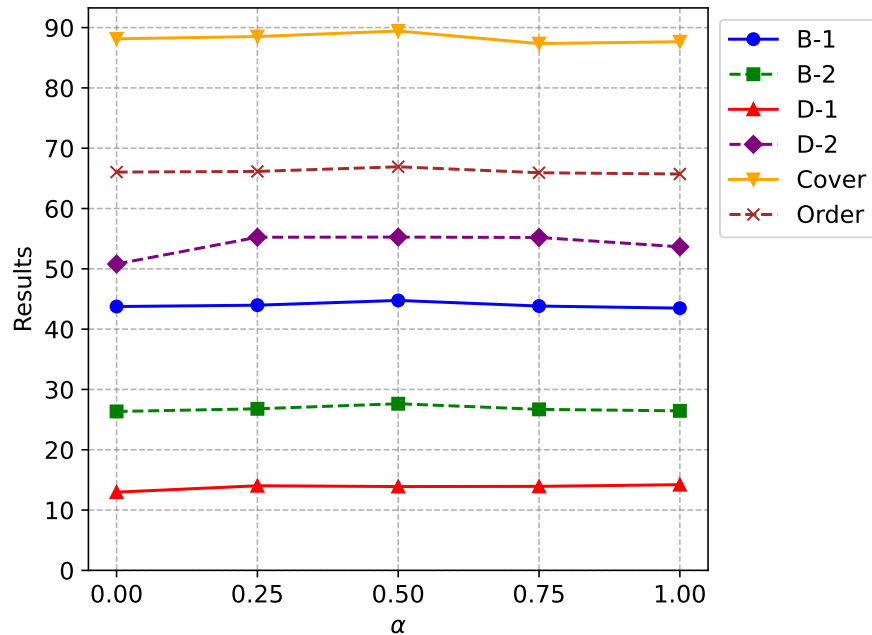


Figure 1: Performance with different hyperparameter  $\alpha$  on the test set of OutGen,  $0 \leq \alpha \leq 1$ .

Table 1: The given outline and generated stories for the case study.

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**Outline:** “闹别扭的樱桃树”, “相继开出了淡粉色”, “总喜欢独树一帜”, “一颗颗漂亮”, “初夏时节”, “看护果林”, “大大小小”, “樱桃园”, “樱桃树”  
 “the sulking cherry tree”, “blooming in light pink one after another”, “always likes to be unique”, “each one beautiful”, “early summer”, “tending to the orchard”, “of various sizes”, “cherry orchard”, “cherry tree”

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**Reference Story:** 在樱桃园里有一棵小樱桃树, 它总喜欢独树一帜。春天来了, 大大小小的樱桃树都相继开出了淡粉色的樱花, 只有那颗小樱桃树不愿意开花。初夏时节, 其他樱桃树都结满了一颗颗漂亮的果子, 也只有它不愿意结果。看护果林的老伯伯看到后, 认为这颗小樱桃树没有用了, 于是就把它砍了。

In the **cherry orchard**, there was a small **cherry tree** that **always liked to be unique**. When spring came, **cherry trees of various sizes** bloomed in **light pink one after another**, but the small **cherry tree** refused to bloom. In **early summer**, the other **cherry trees** were laden with **beautiful cherries**, yet this small tree refused to bear fruit. The old man **tending to the orchard** saw this and thought the little **cherry tree** was useless, so he cut it down.

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**LongLM<sub>base</sub>** 初夏时节,樱桃园里开出了淡粉色的樱桃树,它们总是独树一帜,总是独一无二。初夏时候,大大小小的桃子树,都长得一模一样,总喜欢独占一棵大树的树枝。樱桃们总是独来独往,总是喜欢独处一室,总爱独处一个人独处。

In **early summer**, the **cherry orchard** bloomed with **light pink cherry trees**, which **always liked to be unique** and were always one of a kind. In early summer, **cherry trees of various sizes** all grew the same, always liking to occupy a large tree’s branch alone. The cherries always kept to themselves, always liking to stay in a room alone, always loving to be alone.

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**SimCoS** 初夏时节,樱桃园里大大小小的樱桃树相继开出了淡粉色的桃子,它们总喜欢独树一帜,给人一种很舒适的感觉。初夏时候,人们总是独占一颗颗漂亮的小樱桃,这让人们很不舒服。这天,大家一起去看护果林,果园里长出了好多樱桃。可是,大家都嫌弃这些小樱桃不够漂亮。最后,果子都成熟了,只剩下一颗小树苗。这下可好了,大家都不嫌弃。

In **early summer**, the **cherry orchard’s cherry trees of various sizes** bloomed **light pink** cherries one after another; they **always liked to be unique**, giving a very comfortable feeling. In early summer, people always monopolized the **beautiful cherries**, which made others uncomfortable. One day, everyone went to **tend to the orchard**, and the orchard was filled with many cherries. However, people found these small cherries not beautiful enough. Finally, the fruits matured, leaving only a small sapling. Now, everyone did not dislike them anymore.

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