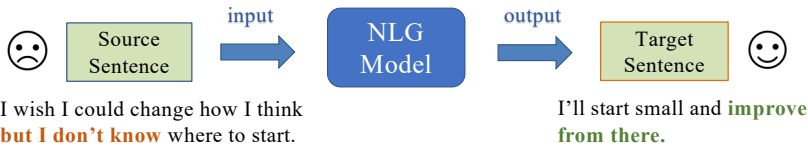# Learning Disentangled Meaning and Style Representations for Positive Text Reframing

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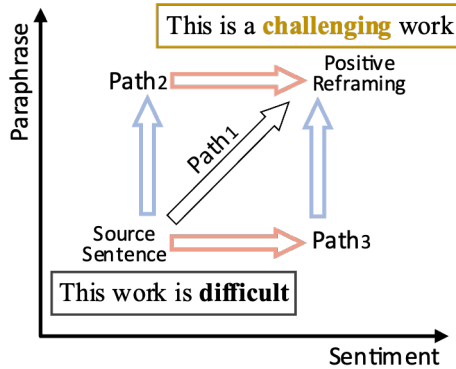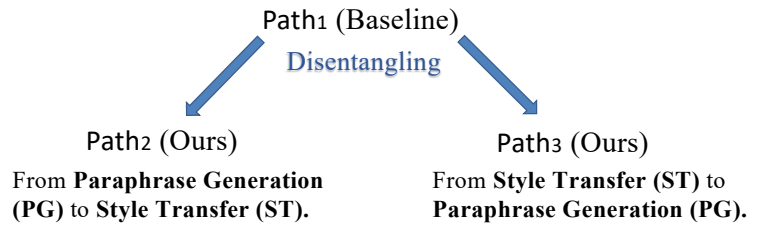
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Positive Text Reframing

I wish I could change how I think **but I don't know** where to start.

I'll start small and **improve from there.**

Target 1: transfer the sentiment attributes of the source sentence into a sentence that gives a positive perspective. (**style aspect**)

Target 2: preserving the original sense of the context. (**meaning aspect**)

Ideas

**Disentangle** the two targets about meaning and style which are implicitly implemented by the straightforward end2end baseline methodology.

Path1 (Baseline)

Disentangling

Path2 (Ours)
From **Paraphrase Generation (PG)** to **Style Transfer (ST)**.

Path3 (Ours)
From **Style Transfer (ST)** to **Paraphrase Generation (PG)**.

Transfer the sentiment style for changing the style and **paraphrase** the sentences for preserving the meaning explicitly.

Implementation

Model Structure and Training Strategy ※
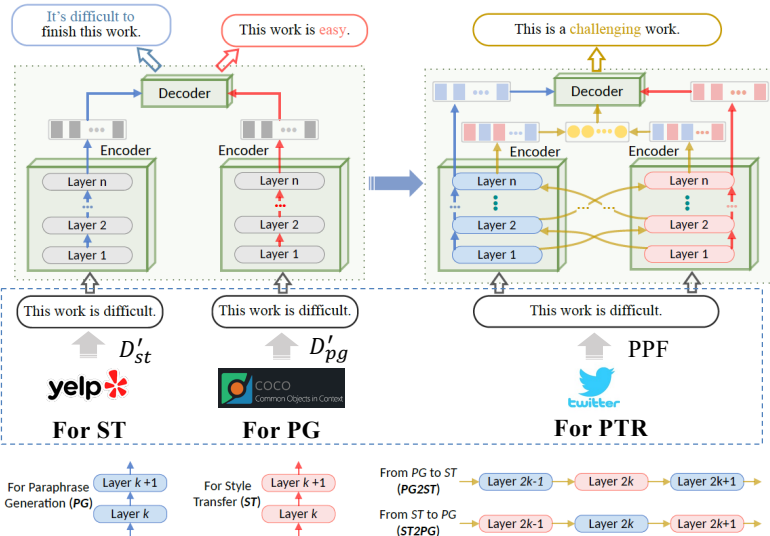
Pseudo Dataset Synthesis
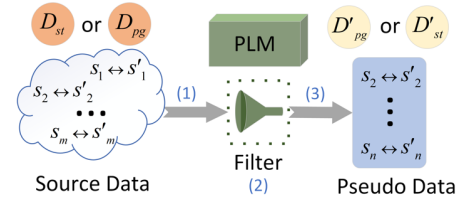
Notion	Explanation
PPF	Positive Psychology Frames
D'_{pg}	Pseudo data for paraphrase generation
D'_{st}	Pseudo data for sentiment transfer

Dataset	Train	Validation	Test
PPF	6,679	835	835
D'_{pg}	15,181	134	1,899
D'_{st}	14,807	139	215
Fine-Tuning Filter — STSB	5,749	1,500	1,379
Fine-Tuning Filter — TE-sentiment	45,615	2,000	12,284

Experiment

Method		R-1	R-2	R-LCS	BLEU	BScore	ΔTB	Avg.Len	PPL
		Evaluating Meaning Preservation					**Evaluating Positive Transfer**		
BART	(Ziems et al., 2022)	27.7	10.8	24.3	10.3	**89.3**	**0.23** ①	24.4	-
	ST (ours)	32.5	13.4	26.6 ②	10.1	88.4	0.22	**26.9**	**24.6**
	PG (ours)	32.8	**13.7**	**27.1**	10.6	88.3 ③	0.17	26.8	26.6
	PG2ST (ours)	32.6	13.5	26.9	10.3	88.4	0.19	26.7	24.8
	ST2PG (ours)	**32.9**	13.6	**27.1**	**10.9**	88.4	0.20	26.6	25.6
T5	(Ziems et al., 2022)	27.4	9.8	23.8	8.7	88.7	0.38	**35.3**	-
	ST (ours)	**31.1**	11.2	25.4	**8.9**	88.7	**0.39**	24.3	**14.0**
	PG (ours)	30.8	11.2	**25.5**	8.7	88.7	0.33	23.5	15.4
	PG2ST (ours)	**31.1**	11.2	**25.5**	**8.9**	88.7	0.35	23.4	14.5
	ST2PG (ours)	30.8	**11.3**	25.5	8.8	88.7	0.33	23.0	15.1

① ST performs better in terms of transferring the sentiment

② PG performs better in terms of preserving the semantic

③ ST2PG balances the functions of ST and PG

※ Source Code URL: https://github.com/codesedoc/DMSR