## Motivation

- Automatically generating textual description from structured input is crucial to improving accessibility of database to lay users.
- As Data-to-text generation garnered increasing attention in recent years, effort in both dataset and model development have been driving progress in this field.
- Yet, existing datasets mostly deals with generating paragraph from multiple record input or only focus on a small number of domains, and factual consistency with the database record is not considered.

Our Contribution

In our work, we focus on providing a large, open domain corpus, with each input being asemantic tuple from a database record, annotated with sentence description that covers all facts in the tuple and attends to information from the table schema and title.

Related Datasets and Work

- WebNLG corpus (Gardent et al., 2017a), presented a semiautomatic framework for microplanning and knowledge base verbalization.
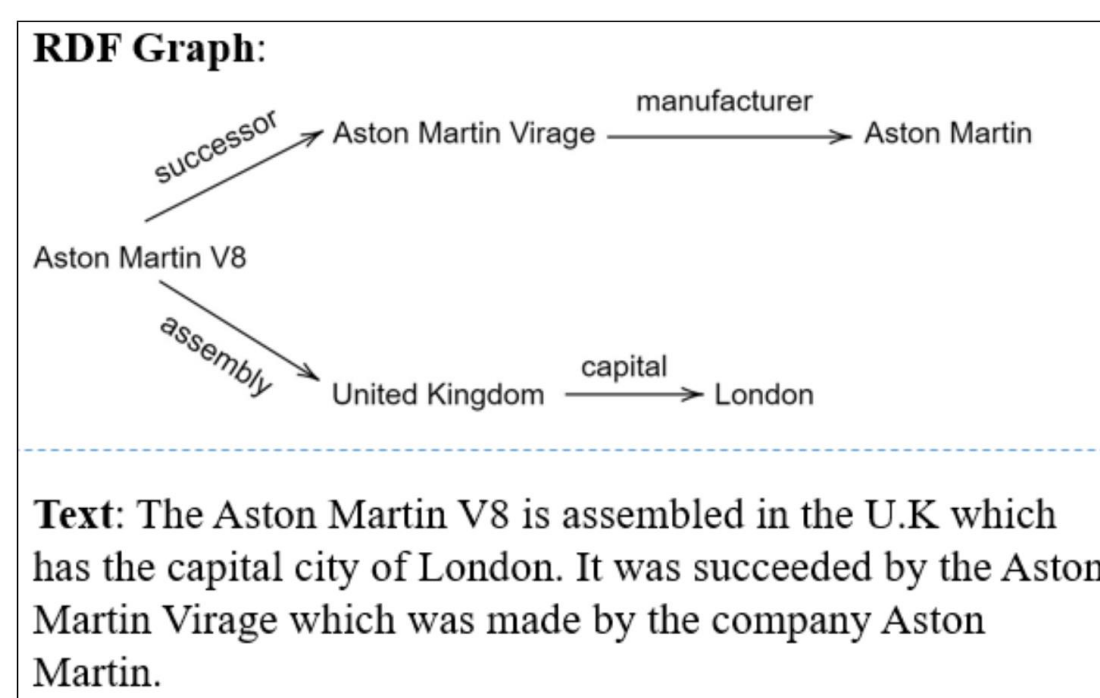
- Neural Wikipedian (Vougiouklis et al., 2018) loosely aligned a large set of data triples in DBPedia and Wikidata with Wikipedia biographies

Triples	dbr:Walt_Disney dbo:birthDate ''1901-12-05''
	dbr:Walt_Disney dbo:birthPlace dbr:Chicago
	dbr:Mickey_Mouse dbo:creator dbr:Walt_Disney
Textual Summary	Walt Disney was born in Chicago, and was the creator of Mickey Mouse.

Related Datasets and Work

- the E2E Dataset (Duseket al., 2018) focused on the restaurant domain with rich syntactic structure and lexical choices

Flat MR	NL reference
name[Loch Fyne], eatType[restaurant], food[French], priceRange[less than £20], familyFriendly[yes]	Loch Fyne is a family-friendly restaurant providing wine and cheese at a low cost.
	Loch Fyne is a French family friendly restaurant catering to a budget of below £20.
	Loch Fyne is a French restaurant with a family setting and perfect on the wallet.

- WikiTableQuestions (Pasupat et al., 2016)

x = Greece held its last Summer Olympics in which year?

y = 2004

Our Annotations

Metrics of Semantic Factual Consistency

(Chen et al., 2020)
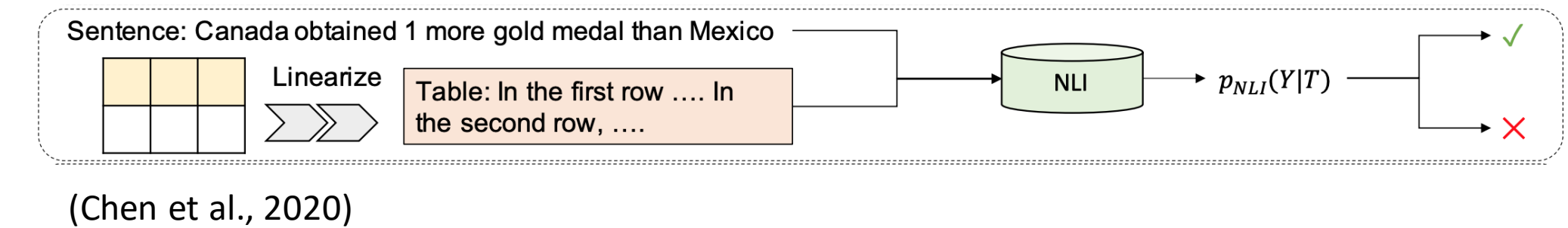
Model Improvement and Long-Term Ideas

- Aggregation
- Combine Generation and Parsing (similar to back translation)
- Use External Data
- Pretrained Language Models (e.g., BART)

Current SOTA Experimental Results

	BLEU			METEOR			TER		
	SEEN	UNSEEN	ALL	SEEN	UNSEEN	ALL	SEEN	UNSEEN	ALL
GTR-LSTM (Distiawan et al., 2018)	54.00	29.20	37.10	0.37	0.28	0.31	0.45	0.60	0.55
GCN-EC (Marcheggiani and Perez-Beltrachini, 2018)	55.90	-	-	0.39	-	-	0.41	-	-
GRU (Castro Ferreira et al., 2019)	56.09	25.12	42.73	0.42	0.22	0.33	0.39	0.64	0.51
Transformer (Castro Ferreira et al., 2019)	56.28	23.04	42.41	0.42	0.21	0.32	0.39	0.63	0.50
Step-by-Step (Moryossef et al., 2019)	53.30	34.41	47.24	0.44	0.34	0.39	0.47	0.56	0.51
PlanEnc (Zhao et al., 2020)	64.42	38.23	52.78	0.45	0.37	0.41	0.33	0.53	0.42
DualEnc (Zhao et al., 2020)	63.45	36.73	51.42	0.46	0.37	0.41	0.34	0.55	0.44

Table 1: WebNLG 2017 Challenge Results.

System	BLEU	NIST	METEOR	R-L	CIDEr
T-Gen	65.93	8.61	44.83	68.50	2.23
Best Prev.	66.19†	8.61†	**45.29**‡	**70.83**$^\diamond$	2.27$^\bullet$
S_0	66.52	8.55	44.45	69.34	2.23
$S_0 \times 2$	65.93	8.31	43.52	69.58	2.12
S_1^R	**68.60**	**8.73**	45.25	70.82	**2.37**
S_1^D	67.76	8.72	44.59	69.41	2.27

Table 1: Test results for the E2E generation task, in

(Shen et al., 2019)