

# Dramatic Conversation Disentanglement

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## Contributions



<https://static.kentkc.org/project/dramatic-conversation-disentanglement/>

- We draw on theoretical research to **operationalize a conversational thread in dramatic texts** and **annotate a dataset** of 10,033 dialogue turns (2,209 threads) from 831 movies.
- We **compare the performance** of several disentanglement models on this dramatic dataset to see if model architectures designed for or models trained on Kummerfeld et al., “A Large-Scale Corpus for Conversation Disentanglement” (ACL 2019) perform **in the domain of drama**, inherently different from Internet Relay Chat logs.
- We apply the best-performing model to analyze and disentangle 808 films in SCRIPTBASE-J (Gorinski & Lapata, “What’s This Movie About?” NAACL 2018). In this data, we see that: a) unlike shot lengths, average thread lengths **do not decrease significantly** over the past 40 years (contrary to expectation), and b) characters portrayed by actors who are **women**, while underrepresented, **initiate more new conversational threads relative to their speaking time**.

## Threading drama

**GEORGIE.** Morning.  
**GEORGIE SR.** How’s the ankle?  
**GEORGIE.** I will be all right. Think I will be able to start against Nacodoches?  
**GEORGIE SR.** I can’t play favorites Georgie, depends on how hard you work.  
**MISSY.** Mom, Sheldon can’t find his bowtie.  
**MARY.** Really? I laid it out for him.  
**GEORGIE SR.** Leave it alone Mary, he doesn’t need a damn bowtie.  
**MARY.** It’s his first day of school, let him wear what he wants.  
**SHELDON (o.s.).** MOM, I CAN’T FIND MY BOWTIE!!!  
**MARY** Oh dear Lord, why’s he gotta wear a bowtie?  
**GEORGIE.** Can I drive in with you?  
**GEORGIE SR.** Sure.  
**MARY.** Everybody’s gonna know he’s your brother. You can’t hide. It’s gonna be awful for you.

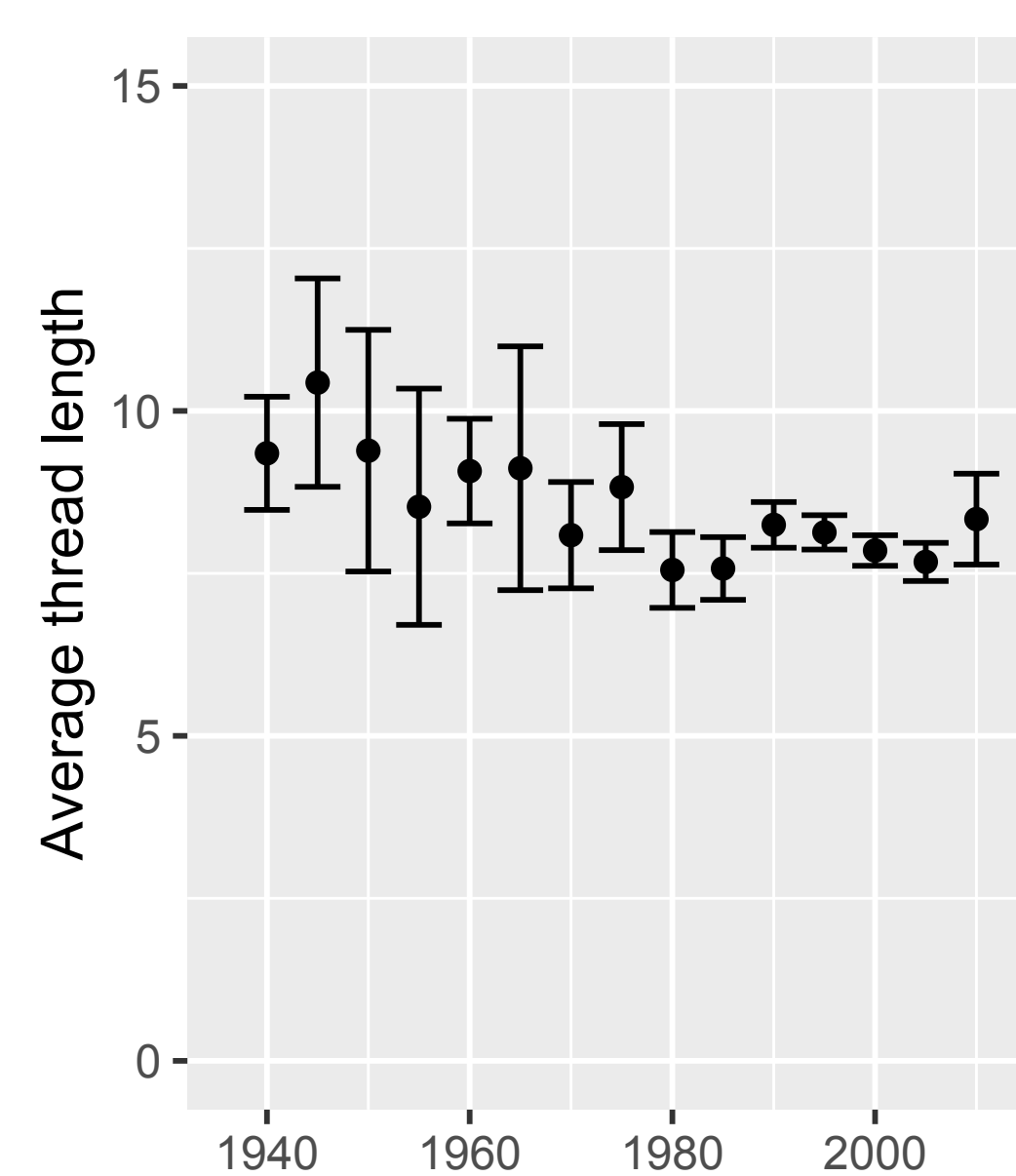
- The interaction structure involves an *utterance of interest* (UOI) and its *parent utterance*:  $u_{\text{interest}} \rightarrow u_{\text{parent}}$ .
- Dialogues in drama are **speech acts**: “All talk responds to a need, engages a purpose, and performs an action” (Robert McKee, *Dialogues*, 2016).
- A conversational thread is a **cluster of semantically and pragmatically coherent utterances** that are part of a conversation.
- Those utterances share a single, **sustainable focus of attention**, either on a character (who has other characters’ attention, or the **floor**) or a **topic** (often related to the wants and needs of a character), as well as other observable contextual relations.

## Experimental results

Model	Link prediction		Clustering	
	Acc.		1–VI	Exact match F <sub>1</sub>
<b>trained with Kummerfeld et al. (2019) data</b>				
BERT baseline	51.10 [49.28-52.96]		62.05 [60.22-64.07]	6.42 [4.67-8.13]
6-way classifier	60.84 [59.35-62.35]		86.85 [85.88-87.90]	11.62 [8.91-14.37]
<b>trained with our dataset</b>				
Previous	90.26 [89.78-90.75]		85.29 [84.65-86.20]	14.95 [12.13-17.50]
Featurized	89.75 [88.86-90.65]		85.61 [84.54-86.88]	15.25 [11.66-19.14]
BERT baseline	89.44 [88.49-90.44]		88.78 [87.85-89.83]	25.25 [20.90-29.73]
+ attn. alignment	<b>90.28</b> [89.31-91.27]		88.62 [87.54-89.80]	<b>25.88</b> [21.11-30.63]
+ aux. task	90.12 [89.26-91.02]		87.63 [86.59-88.86]	21.20 [17.19-25.54]
6-way classifier	87.23 [86.24-88.27]		<b>90.11</b> [89.28-91.05]	25.40 [21.67-29.27]

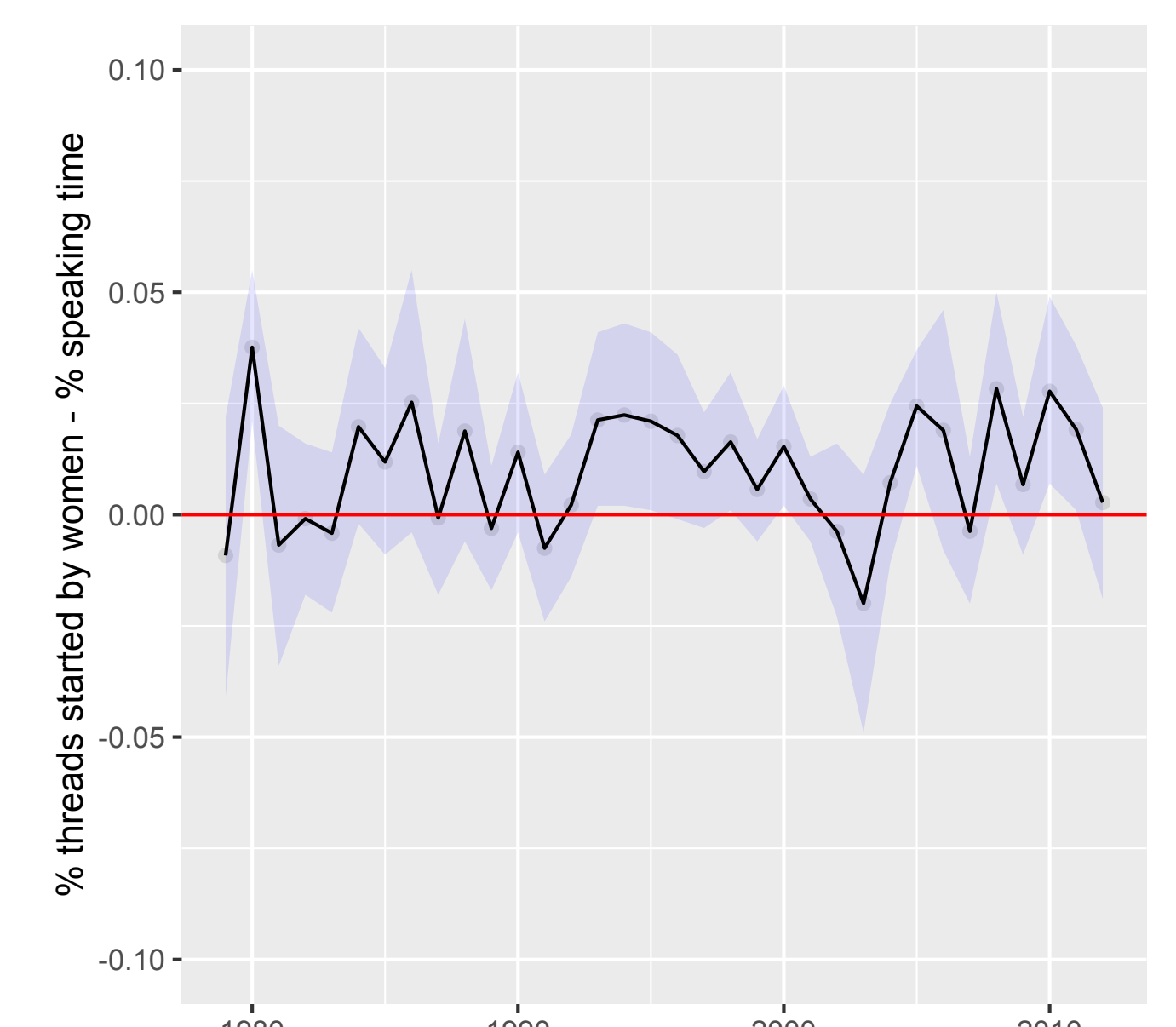
- This table is abbreviated. See paper for details.
- The 6-way classifier, adapted from “Structural Characterization for Dialogue Disentanglement” (Ma et al., ACL 2022), was chosen for analysis (right).

## Analysis: thread length



We know shot lengths are decreasing, but are conversational threads in movies getting shorter over the years?  
**—No, it’s been stable.**

## Analysis: gender and floor claiming



We know that, on average, male characters speak three times as much in films as their female counterparts, but what is the pattern of floor claiming?  
**—Women are written to initiate more conversational threads than men relative to their speaking time.**

## Example annotations

type	scene ID	turn ID	line ID	speaker	anno.	line
SCENE	S60					EXT. ONE OF THE EXITS-MADISON SQUARE GARDEN-NIGHT-1910
ACTION	S60		A822			Emily and Junior are standing , waiting for Kane .
DIALOGUE	S60	L141	D1144	JUNIOR	T0	Is Pop Governor yet , Mom ?
ACTION	S60		A823			Just then , Kane appears , with Reilly and several other men .
ACTION	S60		A824			Kane rushes toward Emily and Junior , as the men politely greet Emily .
DIALOGUE	S60	L142	D1145	KANE	T1	Hello , Butch !
DIALOGUE	S60	L142	D1146	KANE	D1145	Did you like your old man ’s speech ?
DIALOGUE	S60	L143	D1147	JUNIOR	D1146	Hello , Pop !
DIALOGUE	S60	L143	D1148	JUNIOR	D1147	I was in a box .
DIALOGUE	S60	L143	D1149	JUNIOR	D1148	I could hear every word .
DIALOGUE	S60	L144	D1150	KANE	D1149	I saw you !

## Data stats

set	train	dev	test
# titles	563	127	141
# unique speakers	1,711	371	389
# dialogue lines	11,672	2,639	2,743
# turns	5,988	1,298	1,475
# action lines	8,756	2,059	1,980