

RUHR-UNIVERSITÄT BOCHUM

QUD STRUCTURE AS DISCOURSE STRUCTURE:

SEGMENTATION, LABELLING, AND GENRE CHARACTERISTICS OF LONGER TEXTS

Deck, Scheffler, Seemann | QUD-Anno Challenge | February 23th 2023

Contents

- 1. About Us
- 2. Texts
- 3. Approach
- 4. Segmentation
- 5. Labelling and Annotation
- 6. Agreement/Analysis
- 7. Future Plans



About Us

Jun.-Prof. Dr. Tatjana Scheffler

Digital Forensic Linguistics

Is QUD a model of discourse structure?



Hannah Seemann Transforming text across media

How do modal particles and discourse structure interact?



Oliver Deck

Disinformation/Bullshit

(How) Can we use QUDs to look at uncooperative speech?



Texts

3 Texts, ~900 words each

Flash Fiction

Susie lifts the lid of the abandoned teapot and swirls the water. The teabag sloshes against the sides. The tea is cold and bitter, but Susie doesn't mind because her landlady, Mrs Simpson, normally reuses tea bags. Usually, by the time Susie gets home, the tea mostly tastes of chlorine.

Political Interview

Laura Kuenssberg: Prime Minister, in the last few weeks, you've lost major votes in the Commons, you've chucked some MPs out of your own party, the highest court in the land has found you broke the law and gave the wrong advice to the Queen. How do you think this is going? **Prime Minister:** Well, I think that it's going about as well as could be, especially, if not slightly better.

Car Review

BMW cheerfully tells us the 2-series Active Tourer, the company's first stab at a people carrier, is doing rather better than expected. The production line's running at full capacity, there's an eightmonth waiting list for petrol models and for the 2015 year-to-date it's become the third best-selling car in the BMW range.



Approach

Segmentation, Harmonization, Annotation, Analysis

- Main focus: Compare QUD structure
- Therefore: Helpful to start from the same segmentation
 - Segment the texts separately, then harmonize the segments by consensus
 - Use consensus version of the segments to annotate and number QUDs individually
 - Analyze the resulting QUD trees



```
Laura Kuenssberg: Prime Minister, in the 1
you've chucked some MPs out of your own pa
the highest court in the land has found vo
How do you think this is going?
Prime Minister: Well, I think that it's go
LK: Really?
PM: Yeah.
Because look, this was always going to be
What we've got, basically, is a situation
And, yes, there are many people in all sor
And I am tasked with getting it over the
And I think we always knew that as we came
LK: You are blaming all of your woes on pe
PM: No, I think it's just the just the pre
And I think that things are actually much
Unemployment is at record lows.
Foreign direct investment is at record hig
We're seeing this country at the cutting e
we are doing fantastically well in so many
And if only we could all come together, ge
And it would be a great thing.
LK: But you're suggesting that people ough
when transparently, you have been trying
you who want to get Brexit done, which you
And the people on the other side, which vo
And that's transparent, you're trying to
PM: I think that the truth is, there's no
[there is] no way of delivering Brexit, so
And so that I think is, is the problem.
But I think once we get it done, and once
And they already are going very well for
LK: But as things stand, are you prime min
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Prime Minister, in the last few weeks, yo
you've chucked some MPs out of your own p
the highest court in the land has found v
How do you think this is going?
Well, I think that it's going about as we
Really?
Yeah
Because look, this was always going to be
What we've got, basically, is a situation
And, yes, there are many people in all so
And I am tasked with getting it over the
And I think we always knew that as we came
You are blaming all of your woes on people
No. I think it's just the just the predict
And I think that things are actually much
Unemployment is at record lows
Foreign direct investment is at record his
We're seeing this country at the cutting
we are doing fantastically well in so man
And if only we could all come together, q
But you're suggesting that people ought to
you who want to get Brexit done, which you
And the people on the other side, which y
And that's transparent, you're trying to
I think that the truth is, there's no way
no way of delivering Brexit, sort of 52%
And so that I think is, is the problem
But I think once we get it done, and once
once we can start thinking about how we c
how we can interact with the rest of the
how we can recover on our impetus, our mo
I think things will will go really well for
And they already are going very well for
But as things stand, are you prime minist
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Laura Kuenssberg: Prime Minister, in the you've chucked some MPs out of your own the highest court in the land has found How do you think this is going? Prime Minister: Well, I think that it's LK: Really? PM: Yeah. Because look, this was always going to be What we've got, basically, is a situatio And, ves, there are many people in all s And I am tasked with getting it over the And I think we always knew that as we can LK: You are blaming all of your woes on PM: No, I think it's just the just the pr And I think that things are actually much Unemployment is at record lows. We're seeing this country at the cutting we are doing fantastically well in so may And if only we could all come together, And it would be a great thing. LK: But you're suggesting that people out you who want to get Brexit done, which y And the people on the other side, which And that's transparent, you're trying to PM: I think that the truth is, there's n And so that I think is, is the problem. But I think once we get it done, and once And they already are going very well for LK: But as things stand, are you prime m PM: No, because obviously what the UK is

The extrication, after 45 years of our 1

Oliver Hannah Tatjana



Conjoined Phrases

Nearly all coordinated phrases should be split (1), cf. Riester et al. 2018

(1) Along the shelves are glass jars of coloured salts, and powders, and liquids.

In (2): verbal head I think... / false start / assertion at the end

But I think once we get it done, and once we can begin building a new partnership with our new friends, once we can start thinking about how we can do things differently, how we can interact with the rest of the world, how we can recover on our impetus, our mojos, as a global outward looking...

I think things will will go really well for us.



Disfluencies

Do incomplete sentences, false starts and repetitions convey meaning?

- The extrication, after 45 years of our legal system, from the orbit of European law, which is you know, has become very, very pervasive.It's a very complicated thing to do.
- (4) A11: because obviously what the UK is going through is a big constitutional change.
 - Q12: {What big constitutional change is the UK going through?}
 - >A12: The extrication, after 45 years of our legal system, from the orbit of European law, which is you know, has become very, very pervasive
 - >Q12.1: {How complex is the extrication from the orbit of European law?}
 - >>A12.1: It's a very complicated thing to do.



Discourse Markers

(5)LK: Let's talk about that. So let's be completely clear, under the proposals that you were about to take to Brussels, there would be extra checks on the island of Ireland, how and where?

may contradict Riester et al. (2018)

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(16) [German, SWR]
       Wir haben ja nun alle von Konflikten gehört,
       'Now, we have all heard of conflicts'
       {What about conflicts?}
> A<sub>4</sub>: aber [[es gibt immer]<sub>F</sub> [Konflikte]<sub>T</sub>]\sim
         'but [[there are always]<sub>F</sub> [conflicts]<sub>T</sub>]\sim'
> Q<sub>5</sub>: {What about the fact that there are always conflicts?}
>> A<sub>5</sub>: und [[das]<sub>T</sub> [bedeutet nicht automatisch, dass dann Tausende von
          Flüchtlingen bis nach Deutschland kommen|_{F}|_{\sim}.
           'and [[that]<sub>T</sub> [doesn't mean per se, that thousands of refugees will be
          coming to Germany]<sub>F</sub>]~.'
```



NAI in Narrative

- [As she checks Mrs Simpsons calendar,]_{NAI} Susie rubs the place where the elastic cap from work scrunched all day.

 A play.
- NAI content drives narrative:
 What does Susie see when she checks the calendar?

cf. Potts, 2002



12

Explicit vs. Implicit Questions

Q10: LK: But you're suggesting that people ought to come together, when transparently, you have been trying to create this idea of them and us,

> A10': you who want to get Brexit done, which you said every possible opportunity.

> A10": And the people on the other side, which you've just suggested, are only trying to hold you up and stop Brexit.

> Q11: And that's transparent, you're trying to create a situation of them and us are you not?

 Q10 could be read as explicit question, but there is no room for Johnson to answer Q7.1: {What is Boris Johnson saying about the people?}

> A7.1: LK: But you're suggesting that people ought to come together,

Q7.2: {What has Boris Johnson actually been doing to the public discourse?}

> A7.2: when transparently, you have been trying to create this idea of them and us,

> Q7.2.1: {What are the two sides of "them" and "us"?}

>> Q7.2.1.1: {Wo is "us"?}

>>> A7.2.1.1: you who want to get Brexit done, which you said every possible opportunity.

>> Q7.2.1.2: {Wo is "them"?}

>>> A7.2.1.2: And the people on the other side, which you've just suggested, are only trying to hold you up and stop Brexit.

Q7.3: And that's transparent, you're trying to create a situation of them and us are you not?



But

- Q3: {What is the tea like?}> A3: The tea is cold and bitter> Q4: {Does Susie care about the tea being cold and bitter?}
 - >> A4: but Susie doesn't mind
- No question type may be answered with a but-statement:
 *What does this contrast with?
- Annotators must infer the question from the answer, not the previous sentences

cf. Scheffler, 2013



Side Stories/Backtracking

- How to deal with recurrent implicit questions?
- → Overall structure of some narratives is best captured by a graph structure

```
[01.3 What does Susie do third?]
     [Q1.3.1 Why is the tea fresh?] ## really a subquestion of Q4 or so

    Mrs Simpson only makes fresh tea for Mr Johnson next door.

           [Q13 What is special about Mr Johnson's tea?]
            ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ldsymbol{ld}}}}}}}
     Susie wipes the rim of the cup with her sleeve
     then pours herself some tea.
     [Q14 What does the whiskey in the tea feel like?]
         - The whiskey is too dilute to be warm
           [014.1 Does Susie like the whiskey?]
             — but it's nice to know it's there.
[Q1.4 What does Susie do fourth after drinking the tea?]

    In the kitchen window, she sees the red elastic mark below her hairline.

     [Q15 What reaction does she have?]

    She suppresses a sigh

           [015.1 What does she feel then?]

    and the air sits heavy in her chest.

           [Q16 What is the reason for the sigh?]
            └─ [Q17 How does Susie feel all day?]

    Susie has a knack for ignoring discomfit.

                     [Q18 How does that knack affect her life?]

    It comes in handy at the factory.

                              [018.1 What is an example of that?]

    She felt an itch that morning

                                    [Q19 What did she do about the itch?]
                                      but didn't scratch it until after her shift had ended.
                               [Q18.2 What is another example of enduring discomfit?]

    She scrubs her face pink before each shift.

                                    [020 Why is that necessary?]
                                      A single flake of dead skin can ruin a microchip.
                                     [Q21 How does that constitute a discomfit?]
                                           But the factory is also vacuum-dry
                                            [022 What does she do against the dryness?]

    and she has to moisturise often.
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Visualization of part of the QUD tree structure of the narrative text



General Issues

- Initial questions: Question after What is the world like? Has to be inferred from the following sentence
- Numbering scheme for questions and answers

```
01.2: {What does Susie do second?}
                                                                                          01.2: [what does Susie do?]
   A1.2a: As she checks Mrs Simpson's calendar.

    A1.2a: As she checks Mrs Simpson's calendar,

                                                                                              A1.2b: Susie rubs the place where the elastic cap from work scrunched all day.
   Al 2b: Susie rubs the place where the elastic cap from work scrunched all day.
   Q1.2.1: {What does Susie see in Mrs Simpson's calendar [for today]?}
                                                                                               Q6: [what does Susie Find in the calender?]
    └─ A1.2.1: A play
                                                                                                └─ A6: A play.
   Q1.2.2: {How does busie's skin [that was under the elastic cap all day] feel li
                                                                                              Q7: [what does the place where the elastic cap from work scrunched all day feel
       - A1.2.2: The sk<mark>i</mark>n feels puckered and soft, like white and wrinkly fingertips
                                                                                                —— A7: The skin feel; puckered and soft, like white and wrinkly fingertips in th

    Q1.2.2.1: {What does Susie associate with white and wrinkly fingertips in

                                                                                                   Q8: [what does this make Susie think of?]
                                                                                                     – A8: Her mothe<mark>r</mark> used to read beside the clawfoot bathtub her father import
         - A1.2.2.1: Her mother used to read beside the clawfoot bathtub her fathe
       Q1.2.2.2: {What would Susie do while her mother read her beside the bathtub
                                                                                                       09: [what did Susie do when her mother read beside the bathtub?]

    — A1.2.2.2: Susie—who wasn't a Susie at all then—would tuck her chin over

                                                                                                        —— A9: Susie who wasn't a Susie at all then-would tuck her chin over the
        Q1.2.2.3: {What would happen to Susie in the tub?}
                                                                                                        — Q10: [what would happen after a while?]
          - A1.2.2.3a: The water would go cold.

    A10a: The water would go cold.

           A1.2.2.3b: Her skin would loose and crinkle.

    A10b: Her skin would loose and crinkle.
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Oliver

Hannah

Depth of the QUD tree



{Wh	at is the way things are?]	1
01:	(What happened recently to the Prime Minister?)	
-	Ala: Laura Kuenssberg: Prime Minister, in the last few weeks, you've lost major votes in the Common Alb: you've chucked some MPs out of your own party,	
	Alc: the highest court in the land has found you broke the law and gave the wrong advice to the Que	
	How do you think this is going?	
_	A2: Prime Minister: Well, I think that it's going about as well as could be, especially, if not sli	
	LK: Really?	
	A3.1: PM: Yeah. Q3.1.1: [Why does Johnson think that things are going as well as could be?]	
	— A3.1.1: Because look, this was always going to be a very difficult time.	
	- Q3.1.1.1: (Why was it always going to be a very difficult time?)	
	- 03.1.1.1: [What did people vote for?]	
	☐ A3.1.1.1: What we've got, basically, is a situation in which the people voted for lea	
	O3.1.1.1.3: [Who is tasked with following through on Brexit?]	
	☐ A3.1.1.1.3: And I am tasked with getting it over the line, getting Brexit done by Octob	
	- Q3.1.1.2: [Did the administration know it would be hard to get Brexit done by October 31?]	
	L A3.1.1.2: And I think we always knew that as we came up to that deadline, things would get	
	LK: You are blaming all of your woes on people who are trying to stop Brexit?	П
	A4: PM: No, I think it's just the just the predicament, is just the it's just the situation, that w (How is the situation that we're in as a country actually?)	П
	A5: And I think that things are actually much much better than they, than the political situation,	
	Q5.1 [In what ways are things better?]	
1	- A5.1a: Unemployment is at record lows.	
1	├─ A5.1b: Poreign direct investment is at record highs. ├─ A5.1c: We're seeing this country at the cutting edge of innovation in everything from battery t	П
	— A5.1c: We're seeing this country at the cutting edge of innovation in everything from battery t — A5.1d: We are doing fantastically well in so many ways.	
_	Q5.2: [How could things improve (further)?]	П
	Lamber A5.2: And if only we could all come together, get Brexit over the line, I think that fevers wor	П
	[What would be the result?]	П
	A6: And it would be a great thing.	
	(What is Boris Johnson actually doing?) Q7.1: [What is Boris Johnson saying about the people?]	
1	└─ A7.1: LK: But you're suggesting that people ought to come together,	
-	Q7.2: [What has Boris Johnson actually been doing to the public discourse?]	
1	— A7.2: when transparently, you have been trying to create this idea of them and us,	
	- Q7.2.1: (What are the two sides of "them and us"?)	
	├─ Q.2.1.1: [Who is "us"?] ├─ λ7.2.1.1: you who want to get Brexit done, which you said every possible opportunity.	
1	07.2.1.2: [Who is "them"?]	
i .	L A7.2.1.2: And the people on the other side, which you've just suggested, are only trying to	
_	Q7.3: And that's transparent, you're trying to create a situation of them and us are you not?	
	[Can Brexit make both sides happy?] A8a: PM: I think that the truth is, there's no way of getting Brexit done without, as it were, disp	
	A8a: PM: I think that the truth is, there's no way or getting Brexit done without, as it were, disp A8b: no way of delivering Brexit, sort of 52% Brexit and 48% Remain, that's just logically impossit	
09:	[What does Johnson think of this dilemma?]	
\vdash	A9: And so that I think is, is the problem.	
-	Q9.1: [(How) will this problem be overcome?]	
L	— A9.1: But I think once we get it done, and once we can begin building a new partnership with or OB 2: (Ave things partnership bod2).	П
	Q9.2: [Are things actually bad?]	
010	LK: But as things stand, are you prime minister sitting there and saying that the last couple of m	П
_	AlG: PM: No,	
	: (Why are the last couple of months anything like a normal situation?)	П
	All: because obviously what the UK is going through is a big constitutional change.	П
	: [What big constitutional change is the UK going through?] Al2: The extrication, after 45 years of our legal system, from the orbit of European law, which is	
	Q12.1: [How complex is the extrication from the orbit of European law?]	П
i .	- Al2.1: It's a very complicated thing to do.	П
_	Q12.2: {What is the most complex task of the extrication?}	П
	└─ Al2.2: And the most complex thing is clearly trying to unravel our relationship with the EU cus	
	: LK: Let's talk about that. So let's be completely clear, under the proposals that you were about t : [Should Johnson take the proposals to Brussels?]	
	Al4a: PM: Well, I mean, if I made the the proposals are not yet made,	П
_	Al4b: I probably ought to make them to the EU	П
015	: (Are the proposals really not yet made?)	П
	Al5: LK: But you know there are suggestions of what is out there, which you deny.	
	: So how would you describe what you will put forward? : {What is the influence of the EU on the suggestions?}	
	: [What is the influence of the EU on the suggestions?] Al7a: PM: What I can say is that, and I think this is crucial for everybody to understand, because	П
-	Al7b: If the EU is going to insist on customs checks as we come out as it as it is, then we will be	П
018	: {Where will those custom checks happen?}	П
	Al8: And there will have to be a system, for customs checks away from the border.	П
	: (What is the scope of the customs checks?) Al9: Now, we think those checks can be absolutely minimal and non-intrusive	П
	: (Will the customs checks need extra effort?)>	П
_	A20: and won't involve new infrastructure.	П
021	· (What will be the discussion point(s) with the RU?)	

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- 01: (What has the Prime Minister been doing in the last few weeks?)
 - Ala: Laura Kuenssberg: Prime Minister, in the last few weeks, you've lost major votes in the Commons,
     Alb: you've chucked some MPs out of your own party,
  - Alc: the highest court in the land has found you broke the law and gave the wrong advice to the Queen.
  Q2: How do you think this is going?
     - A2: Prime Minister: Well, I think that it's going about as well as could be, especially, if not slightly better.
         L- A3: PM: Yeah.
             — 04: (why is that?)
                 - A4: Because look, this was always going to be a very difficult time.
                 - Q5: (Why was it going to be a very difficult time?)
                     - A5a: What we've got, basically, is a situation in which the people voted for leaving the EU in the gr
                     - A5b:And, yes, there are many people in all sorts of positions, who don't think that was the right way
                     - A5c:And I am tasked with getting it over the line, getting Brexit done by October 31.
                     - A5d:And I think we always knew that as we came up to that deadline, things would get choppy, but...
                         - Q6: LK: You are blaming all of your woes on people who are trying to stop Brexit?
                             U7: [How is the situation compared to predictions?]
                                - A7a: PM: No, I think it's just the just the predicament, is just the it's just the situat
                                 - A7b: And I think that things are actually much much better than they, than the political
                                 Q8: [In what ways is the situation better?]
                                     - A8a: Unemployment is at record lows.
                                     - A8b: Foreign direct investment is at record highs.
                                     - ASc: We're seeing this country at the cutting edge of innovation in everything from h
                                     - A8d: we are doing fantastically well in so many ways.
                                     - Q9: (How good the situation still be improved?)
                                        - A9a: And if only we could all come together, get Brexit over the line, I think th
                                        - A9b:And it would be a great thing.
                                         - Q10: (What is the PM saying now?)
                                            - AlO: LK: But you're suggesting that people ought to come together,
                                            U11: [What has the PM been saying before?]
                                                - Alla: when transparently, you have been trying to create this idea of the
                                                - Allb: you who want to get Brexit done, which you said every possible oppo
                                                - Allc: And the people on the other side, which you've just suggested, are
                                                 012: And that's transparent, you're trying to create a situation of them
                                                    - AlZa: PM: I think that the truth is, there's no way of getting Brexit
                                                    - Al2bxs: no way of delivering Brexit, sort of 52% Brexit and 48% Remai
                                                    - Q13: (How can this be evaluated?)
                                                        - Al3: And so that I think is, is the problem.
                                                        - Q14: [What can be done after the problem is solved?]
                                                            - Al4: But I think once we get it done, and once we can begin be
                                                            Q15: [How does the PM evaluate this idea of the future?]
                                                                L Al5: I think things will will go really well for us.
                                                                   - Q16: {How are things going now?}
                                                                       - Al6: And they already are going very well for us
                                                                        Q17: LK: But as things stand, are you prime minis
                                                                           - A17: PM: No,
                                                                           _____ 018: {why?}
                                                                               - Al8a: because obviously what the UK is go
                                                                                - Al8b: The extrication, after 45 years of
                                                                               - Al8c:It's a very complicated thing to do.
                                                                               - A18d: And the most complex thing is clear
                                                                                Q19: LK: Let's talk about that. So let's
                                                                                   └─ Q20: [Are the proposals already made:
                                                                                       - A20a: PM: Well, I mean, if I made
                                                                                       - A20b; I probably ought to make th
                                                                                        Q21: [What about those proposals?
                                                                                           L- A21: LK: But you know there a
                                                                                               - 022: So how would you de-
                                                                                                  - Q23: [Why are there I
                                                                                                       - A23a: PM: What I
                                                                                                       - A23b: If the EU
                                                                                                       A23c: And there w
                                                                                                      └ Q24: (Will this b
                                                                                                           L A24a: But the
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[Q1 What has happened in the UK in the last few weeks?] - Laura Euenssberg: Prime Minister, in the last few weeks, you've lost major votes in the you've chucked some MPs out of your own party, the highest court in the land has found you broke the law and gave the wrong advice to t Q1.1 How do you think this is going? - Prime Minister: Well, I think that it's going about as well as could be, especially, - Q1.1.1 LK: Really? [01.1.2 What are the reasons for your evaluation?] - Because look, this was always going to be a very difficult time. [01.1.2.1 Why is this a difficult time?] - What we've got, basically, is a situation in which the people voted for leav - And, yes, there are many people in all sorts of positions, who don't think to - And I am tasked with getting it over the line, getting Brexit done by Octobe - And I think we always knew that as we came up to that deadline, things would - 01.1.2.1.1 LK: You are blaming all of your woes on people who are trying to - PM: No, I think it's just the just the predicament, is just the it's just th And I think that things are actually much much better than they, than the politi [Q1.1.2.2 Why is it actually going better than expected?] - Unemployment is at record lows. - Foreign direct investment is at record highs. - We're seeing this country at the cutting edge of innovation in everything fr - we are doing fantastically well in so many ways. [Q1.1.2.2.1 What does this mean for the future?] in And if only we could all come together, get Brexit over the line, I thin
 in a dit would be a great thing. [Q1.2 What should people do?] - LK: But you're suggesting that people ought to come together, [Q1.2.1 What have you really been doing?] - when transparently, you have been trying to create this idea of them and us. [Q1.2.1.1 Which people are you talking about?] - you who want to get Brexit done, which you said every possible opportunity. And the people on the other side, which you've just suggested, are only trying - Q1.2.1.2 And that's transparent, you're trying to create a situation of them and [Q1.2.1.2.1 Why are you creating two camps?] - PM: I think that the truth is, there's no way of getting Brexit done wit - no way of delivering Brexit, sort of 52% Brexit and 48% Remain, that's - And so that I think is, is the problem. [Q1.1.2.2 [repeat] Why is it actually going better than expected?] - But I think once we get it done, and once we can begin building a new partnership wi - [04 And when is it going to go well for us?] - And they already are going very well for us. Q1.3 LK: But as things stand, are you prime minister sitting there and saying that the because obviously what the UK is going through is a big constitutional change [Q1.3.1 What is the UK going through?] - The extrication, after 45 years of our legal system, from the orbit of European [Q8 How does that affect us?] - It's a very complicated thing to do. - And the most complex thing is clearly trying to unravel our relationship wit Q1.3.1.1 LK: Let's talk about that. So let's be completely clear, under the [Q1.3.1.1.1 When are the Ireland solutions going to be proposed?] - PM: Well, I mean, if I made the the proposals are not yet made, - [01.3.1.1.2 Who is making the proposal to whom?] - I probably ought to make them to the EU... [01.3.1.1.3 Who already knows about the proposal?]

LK: But you know there are suggestions of what is out there, which 01.3.1.1.4 So how would you describe what you will put forward? [01.3.1.1.4.1 What are the constraints for your statement?] - PM: What I can say is that, and I think this is crucial for eve - If the EU is going to insist on customs checks as we come out as it [Q1.3.1.1.4.2 Where will the border checks be?] - And there will have to be a system, for customs checks away from [Q1.3.1.1.4.3 What will the border checks look like?] - Now, we think those checks can be absolutely minimal and non-int - [Q1.3.1.1.4.4 What will people think about the border checks?] → But that is absolutely, Laura, that is where the argument is goid.

→ And that's where the negotiation will be will be tough.

What is the way things are?]

Oliver

- A21: But that is absolutely, Laura, that is where the argument is going to be

Q21: (What will be the discussion point(s) with the EU?)

Hannah

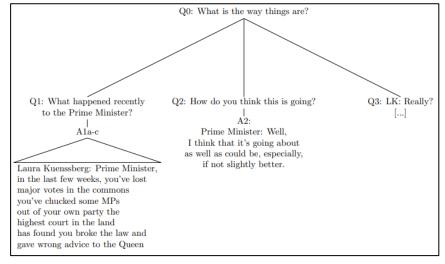
Tatjana

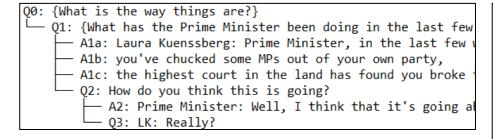
Depth of the QUD tree

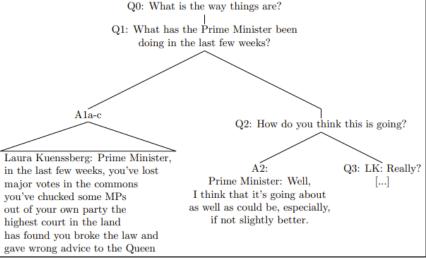
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Q0: {What is the way things are?}

— Q1: {What happened recently to the Prime Minister?}

— A1a: Laura Kuenssberg: Prime Minister, in the last ferestable in the Land for the
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Agreement & Analysis

Computational Approaches to QUD Trees

https://qud-comp.github.io/QUD-comp/

- Analyzing and evaluating QUD structures
- Generating potential questions
- Ranking potential questions
- Synthesizing QUD trees from RST trees
- Identifying duplicate questions

Can we automatically "parse" QUD structures?



20

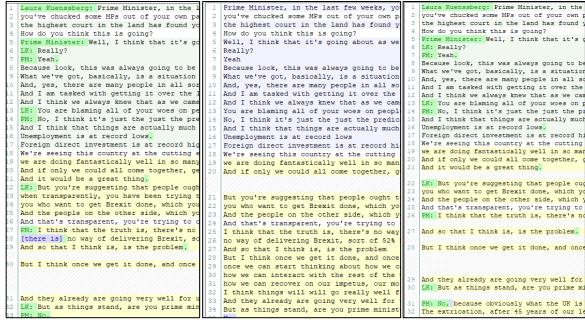
Quantitative Evaluation of Segmentation

- Evaluate segmentation on a per-token basis (boundary/non-boundary)
- Fleiss' kappa for three annotators

Narrative text: 0.937

Interview: 0.902

Both: 0.926



Quantitative Evaluation of the Tree Structure

- Based on harmonized segmentation, cf. de Kuthy et al. 2018
- Narrative text: 99 segments (99^2/2 "annotations")

H+O: 0.233

H+T: 0.644

O+T: 0.341

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10. Death is the way things stoll our bost ships in the last for meaks?

11. Death is the three decided one Set of any or one party.

12. Death is the three decided one Set of any or one party.

13. Death is the three decided one Set of any or one party.

14. Death of you think this is sping?

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16. Death of you think this is sping?

17. Death of you think this is sping?

18. Death of you think this is spin
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Oliver

Hannah

Tatjana



Quantitative Evaluation of the QUD Trees

- No results for the interview, since the leaves don't match:
 - Some interviewer contributions are seen as explicit questions, some as answers
 - Number of leaf segments varies between 36–46.



Future Plans

- Find (tentative) answers to the issues/questions mentioned
- Improve evaluation method:
 - Word-token-based evaluation of trees in order to compare QUD tree with different leaves
 - FairEval
- Compare QUD to other discourse models (e.g., RST)
 - How similar is the tree structure?
 - Are the problems similar?
- Can we see QUD structure as a kind of discourse structure?



Selected References

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