

Putting Context in SNACS: A 5-Way Classification of Adpositional Pragmatic Markers

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SNACS

- A framework that provides a network of semantic labels called “supersenses” for annotating **adpositional semantics** in corpora
 - Prepositions, prepositional phrases, postpositions
 - English, Mandarin Chinese, Korean, German, Hindi (**Schneider et al. 2018**; Peng et al. 2020; Hwang et al. 2020; Prange and Schneider 2021; **Arora et al. 2022**)
- Capturing event participant or thematic roles, adjunct relations, and relations between entities

SNACS

The v2.6 hierarchy contains 52 **semantic** supersense labels, organized into three major subhierarchies:

- CIRCUMSTANCE (18 labels)
- PARTICIPANT (15 labels)
- CONFIGURATION (19 labels)

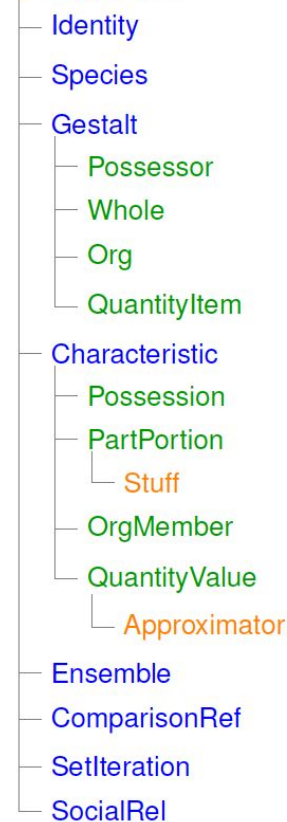
Circumstance

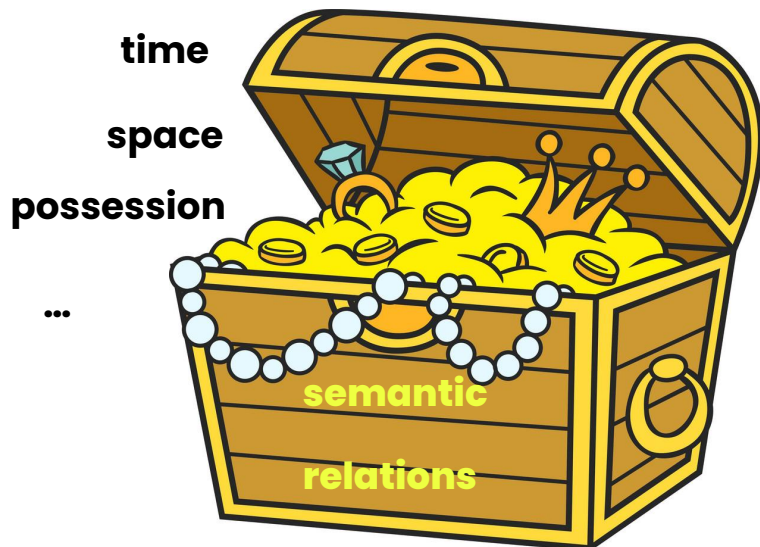


Participant



Configuration





- Our talk is **on:TIME** Friday.
- The LAW-XVI workshop is held **in:LOCUS** Marseille.
- Research labs **with:POSSESSION** large GPU resources
- I will explain the paper **in** detail:**MANNER**.

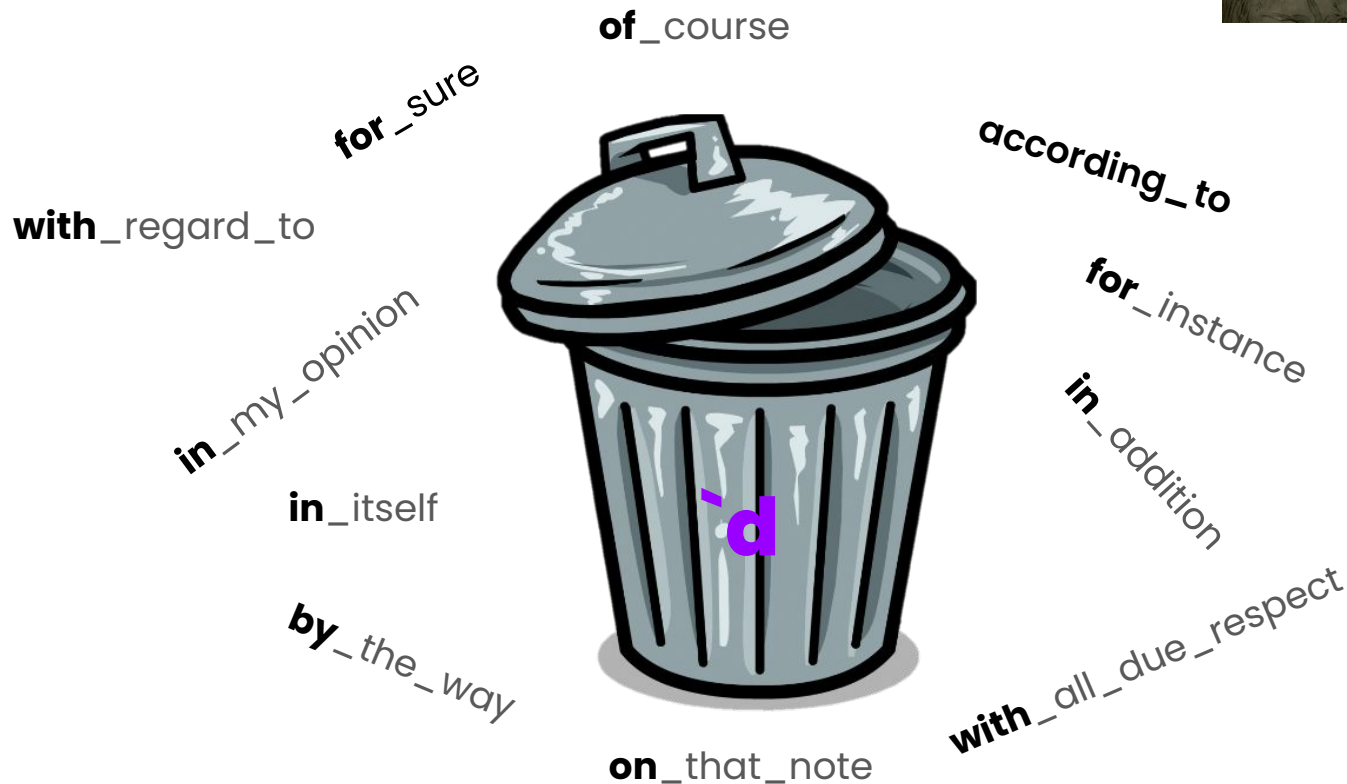
The Problem Is ...



What about
pragmatic relations?

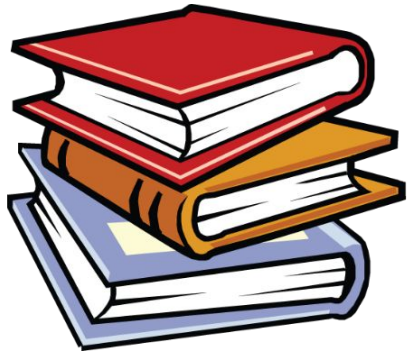
- A: **Without** a doubt, she's the best in the field of Computational Linguistics.
- B: **For** sure, I couldn't agree more
- **In** my opinion, pragmatics is so fun

Special Label in SNACS: `d

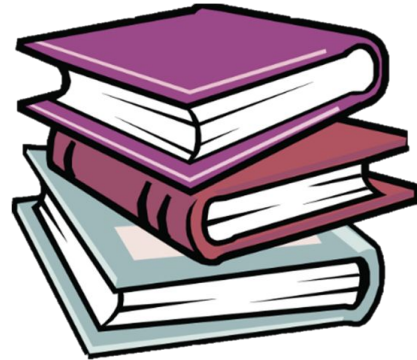


Contributions

- Taxonomy of 5 categories
 - ~~Solves~~ begins to address prepositional pragmatic markers in English
- Annotation study
- Remaining challenges



**pragmatic
markers**



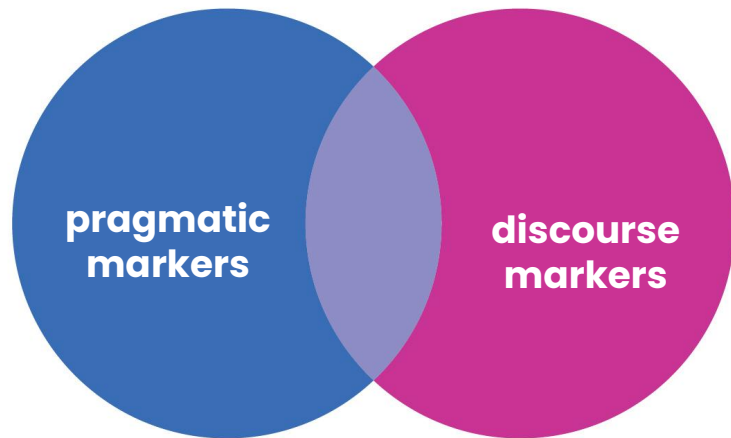
**discourse
markers**

Pragmatic Markers

- Fraser (1990) & Maschler and Schiffrin (2015): linguistic devices to convey a speaker's potential **communicative intentions**, which do not belong to the context meaning of the proposition
- Fraser (1996): come in different linguistic forms (syntactic, lexical, phonological etc.)
 - Basic pragmatic markers
 - Commentary pragmatic markers
 - Parallel discourse markers
 - Discourse markers
- Fraser (2009): a further taxonomy concerning “meta-comments” under discourse markers

Pragmatic Markers vs. Discourse Markers

- cf. computational approaches to discourse connectives, **semantic** and/or pragmatic
 - Covered by existing SNACS labels



[CONDITIONAL] We can go inside **if** it is raining

[CAUSAL] The forecast was wrong. **As a result**, we got caught in the rain.

Adpositional Pragmatic Markers

- Pragmatic uses of adpositions do not directly comment on the content of the sentence. Rather, they add **contextual information** that situates that content in discourse: e.g. link to a prior utterance and specifies that the current proposition
 - Your state of domicile impacts financial matters. For instance, Florida has no state income tax.

Adpositional Pragmatic Markers

- Signaling the speaker's opinion or perspective
- Heralding a topical change in the discourse
- Positioning the speaker's utterance with respect to the larger context

Taxonomy

- **Context**
 - **Topical**
 - **Focus**
 - **Commentary**
 - **Coherence**
- The **Context** subhierarchy and **Topical** & **Focus** were first introduced in the Korean SNACS project (Hwang et al., 2020, K-SNACS)
 - Information structure

Topical

- adpositions that mark the information topic in a sentence
- emphasizes the topic in a discourse that is presented in contrast to the available discourse referent, thereby signaling a change of topic in discourse

Bill prefers beaches for vacations. **As** for me, I prefer the mountains.

Focus

- adposition that indicate the information structure focus of a sentence, contributing meanings of contrastiveness, likelihood, or value judgements (among others); often evoking an implicitly understood pragmatic list (a set of alternatives or scale)

Don't forget to invite Bill **as** well.

There's nothing wrong with the idea, **in** itself.

Commentary

- marks material with the speaker's orientation towards the main content, such as hedging, attributing it to themselves or someone else, or revealing their attitude (positive or negative) toward it or its veracity

In my opinion, this is our only option.

Without a doubt, she's the best in her field.

For sure, we can change it.

Coherence

NOTE: we are defining a narrow technical meaning

- signals how two propositions (i.e. clauses or sentences) are related in the discourse at a pragmatic level
- targets a coarser level of granularity than discourse annotation frameworks such as PDTB (Prasad et al., 2014, PDTB), RST (Mann and Thompson, 1988, RST), and SDRT (Asher and Lascarides, 2003, SDRT)
 - JUXTAPOSITION, ELABORATION, EXCEPTION, INSTANTIATION, CONTRAST, CONCESSION ...

(semantic) I need \$10 (in order) to: PURPOSE see the movie.

(pragmatic) Despite recent fluctuations in stock price, we

CONTEXT

- used directly for miscellaneous pragmatic meanings not covered by the aforementioned subtypes
- Metadiscourse expressions that comment on the speaker's plan for the discourse
 - **by** the way
- Topic orientation markers, as defined in Fraser (2009)
 - **on** that note, speaking **of**, moving **on** ...
- Markers signaling something about the relationship between interlocutors such as politeness or formality
 - **with** all due respect

Caveat

A prepositional expression can even serve **multiple pragmatic roles** in English.

The interpretation of such markers depends on their specific use in context;

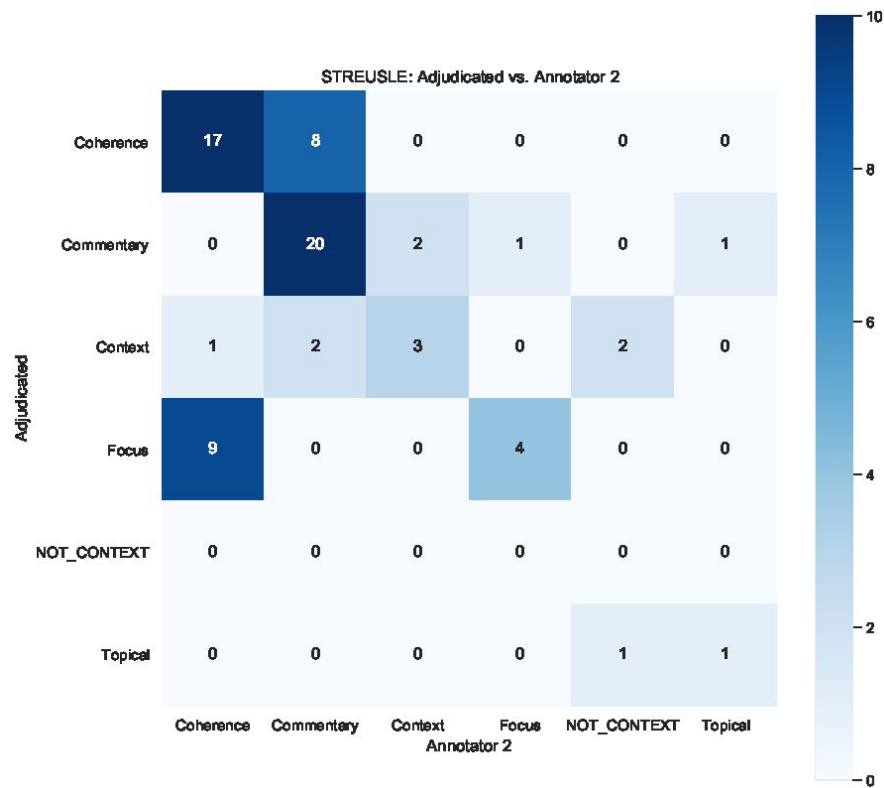
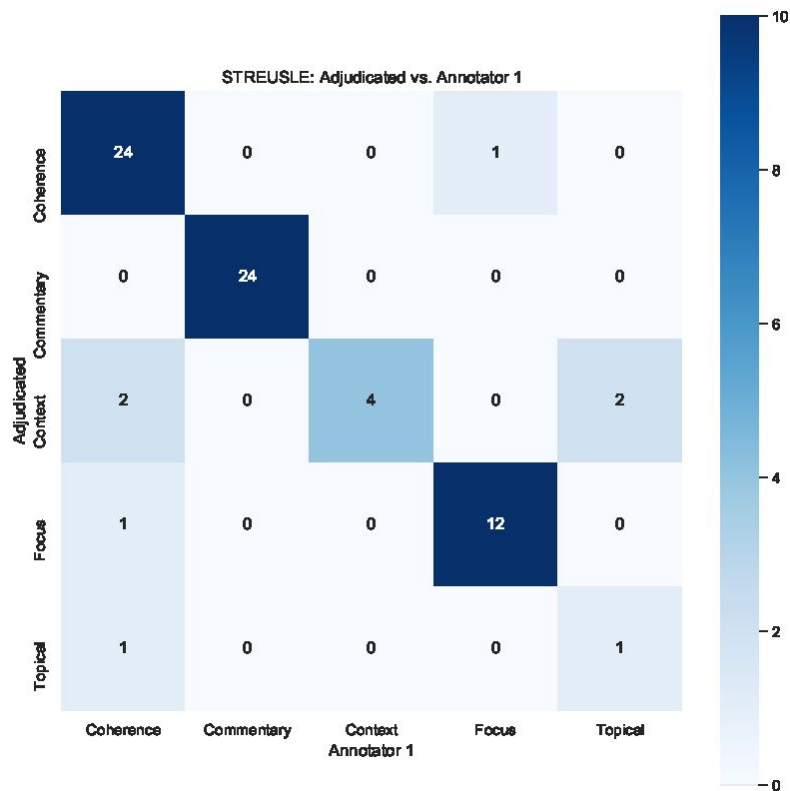
Their contributions to a given discourse could be multi-dimensional, with some being primary and others being secondary.

Data & Annotation

	Data Composition	# annotation instances	Raw Agreement	Cohen's Kappa
PASTRIE (Kranzlein et al., 2020)	Reddit produced by presumed speakers of four native languages	74	56.8%	0.41
STREUSLE (Schneider and Smith, 2015; Schneider et al., 2018)	web reviews from the Reviews section of the English Web Treebank (Bies et al., 2012)	72	59.7%	0.42
The Little Prince, LPP (Schneider et al., 2020)	English translation of the fiction story Le Petit Prince	19	89.5%	0.83

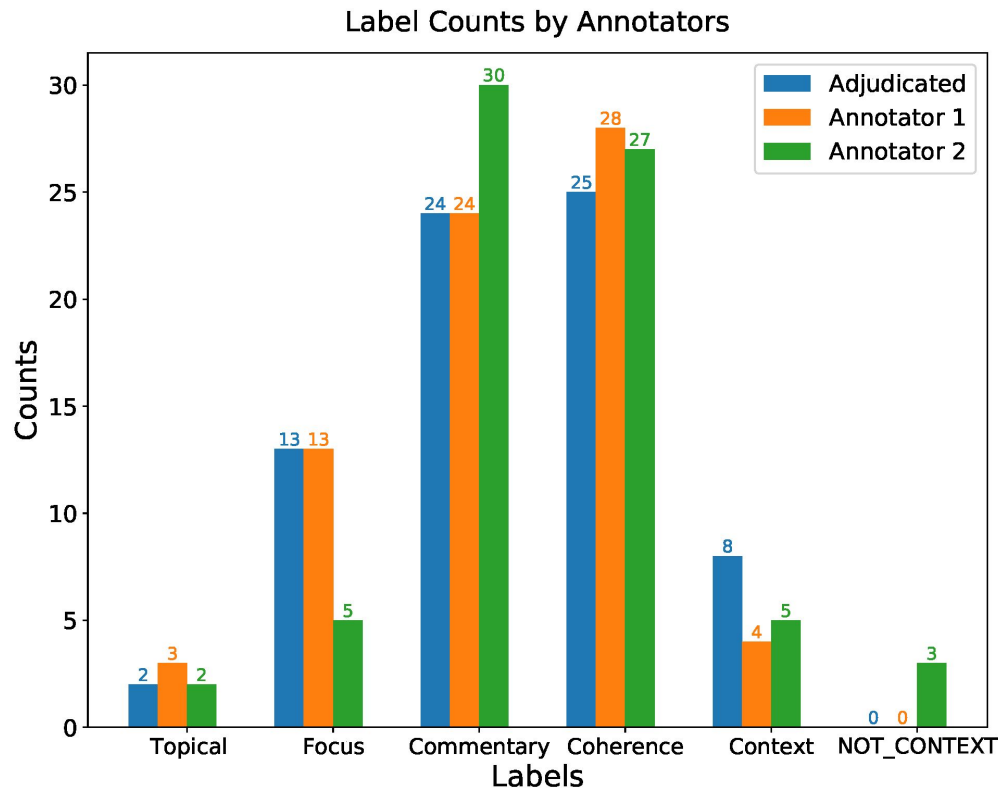
Confusion

- Focus vs. Coherence
- Coherence vs. Commentary



Annotator Differences

- Annotator 1 achieved higher agreement with the adjudicated version than Annotator 2
- Annotator 2 underused the FOCUS label, which is unsurprising due to dearth of transparent and unambiguous cues in English



Sources of Confusion

- Focus vs. Coherence
 - **as** well
- Coherence vs. Commentary
 - **in** fact



Focus vs. Coherence

- In English, focus is less often cued adpositionally; and to the extent that it is, there is an apparent overlap between FOCUS and COHERENCE usages

It rained yesterday.

- a. **Additionally**, it hailed. [COHERENCE]
- b. It **even** hailed. [FOCUS]

It rained yesterday. It hailed **as well**.

Focus vs. Coherence

1. It was a lovely visit to Marseille. We walked by the harbor every evening. We enjoyed the conference **as well:**_____.
2. I recently threw a surprise birthday party for my wife at Fraiser's. We had 30 guests for the event, and everyone came away from the evening impressed with **not only the food, but the outstanding service as well:**_____. The management was easy to deal with during the planning stages, and the execution by the kitchen and wait staff was flawless.
3. They are honest about 'immediate' concerns versus 'recommended' repairs and have very fair prices. Such a convenient location **as well:**_____ with coffee shop and bradley food and beverage right around corner.

Focus vs. Coherence

1. It was a lovely visit to Marseille. We walked by the harbor every evening. We enjoyed the conference as well:COHERENCE.
2. I recently threw a surprise birthday party for my wife at Fraiser's. We had 30 guests for the event, and everyone came away from the evening impressed with **not only the food, but the outstanding service** as well:FOCUS. The management was easy to deal with during the planning stages, and the execution by the kitchen and wait staff was flawless.
3. They are honest about 'immediate' concerns versus 'recommended' repairs and have very fair prices. Such a convenient location as well:? with coffee shop and bradley food and beverage right around corner.

Coherence vs. Commentary

- in fact: a prototypical discourse marker in English, but it mediates various types of relationships between discourse units, as attested in PDTB 3.0
 - EXPANSION.CONJUNCTION, EXPANSION.LEVEL-OF-DETAIL, COMPARISON.CONTRAST, and COMPARISON.CONCESSION.
- E.g. The sauce was dry and the enchiladas did not taste good.at all. **In fact** my friend vomited after our meal. With higher than average prices to boot!

Coherence vs. Commentary

1. The question isn't about Is smoking Marijuana a progress ?. In fact, we don't care because we want to guarantee freedom not societal progress. In conclusion, we fight for the same results (on societal issues only).
 2. Practicing your joke is crucial . You do n't need to have it completely memorized—in fact , you " should n't " memorize it — but you need to be really comfortable with it , so comfortable that you can continue on with telling it even if you get nervous or sidetracked , which is very possible once you 're in front of an audience .
- the assignment of **COHERENCE** to “in fact” is grounded in the criterion that COHERENCE marks the linking between the two propositions, according to the guidelines.
 - The **COMMENTARY** reading depends on the interpretation of the single proposition that “in fact” is embedded in—i.e. whether it is also signaling something about the interlocutors' attitude towards the content.

Discussion

- Suggestion 1



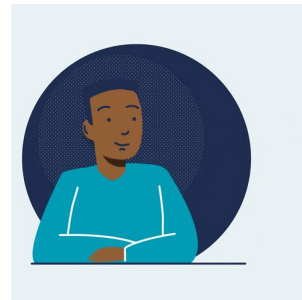
Adopt the construal analysis (SCENE~FUNCTION)

- The drugs put her in:GOAL~LOCUS a coma.
- works by:ORIGINATOR~AGENT Shakespeare

- Status overruled
- Explanation: In SNACS annotation, **the scene role is the meaning assigned by the scene of a sentence** (e.g. head predicate, head nominal, or the construction). However, **pragmatic labels are what they are by virtue of not being directly related to any of the aforementioned elements**. To call either label as scene or function would essentially violate the construal analysis, by definition.

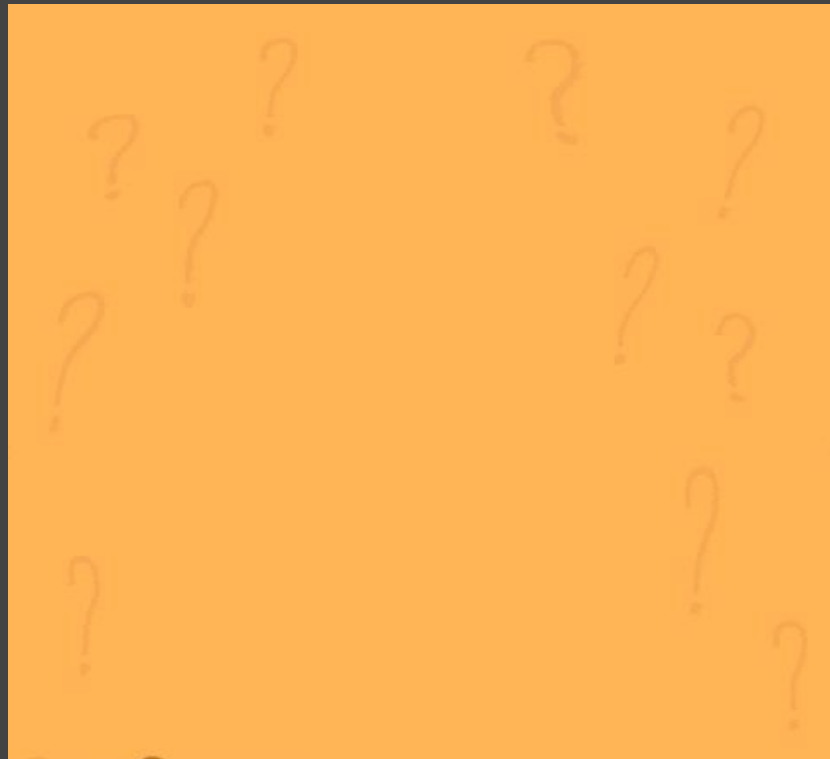
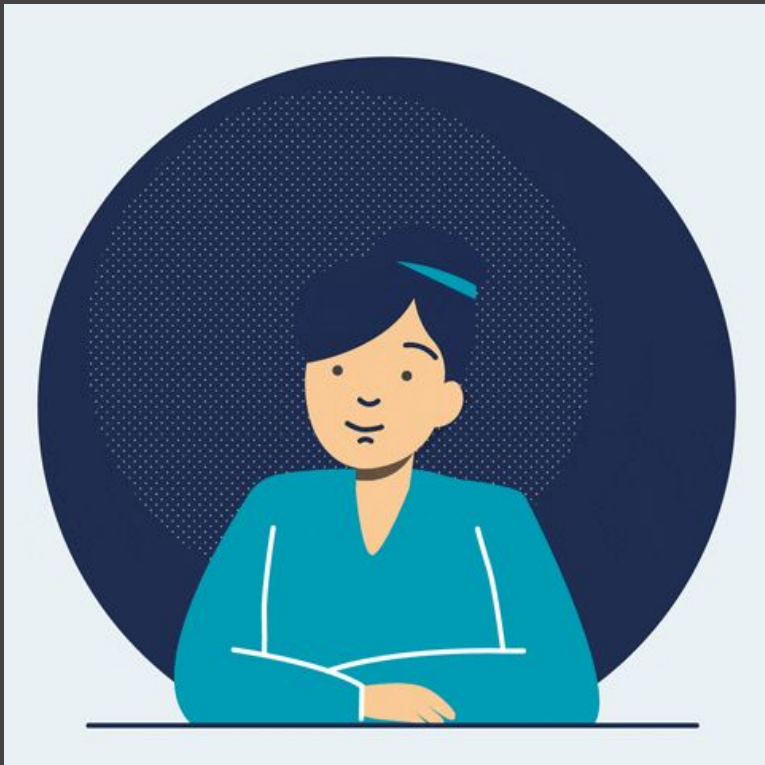
Discussion

- Suggestion 2 a combined categorization
 - Status under discussion; open to your opinions
-
- Explanation: More than one label from the taxonomy is applied when one single label is insufficient to capture **different aspects of the markers** in question that correspond to layered readings (e.g. salience, ambiguity etc.).



Conclusion

- Taxonomy to annotate adpositional pragmatic markers in English
- More work needed to characterize multi-functional markers like “in fact”
- **Context**
 - **Topical**
 - **Focus**
 - **Commentary**
 - **Coherence**



THANK YOU 🙌
MERCI

The Paper

<http://www.lrec-conf.org/proceedings/lrec2022/workshops/LAWXVI/pdf/2022.lawxvi-1.15.pdf>