~~day / but screen for Plags?~~

□ AI check-in . Fri CMS report: 2-3 pgs, whatever font. [≈eith

[: discourse phenomena hinting @ structre.

<1 handout >

(remarks: discussion re: AI projects not scanned)

enough data? <(histbeg, instances)>

Ⓧ quick ("regexp") eyeballing to ~~so~~ check feasibility:

Ⓧ quick "visualization" by clustering based on feature-vector choices.

Ⓧ question assumptions from paper, extend concepts from paper

"group instances to alleviate sparsity (e.g., by gender?)

Ⓧ data-cleaning = data carpentry is important.
    this is why AI has you do it!

Ⓧ sanity-checking ~~to~~ code on synthetic data.

Lecture 6: remaining presentations
: discourse phenomena hinting @ structure <write this last>

No ~~class~~ next Tuesday   ↑ I handout

<presentations>

Last lecture (Tuesday), we ~~began~~ talked about on-line conversations, an obvious form of language-based social interaction

For ~~this~~ the next couple of lectures, we'll be briefly introducing some ~~of the~~ classic work on understanding the structure of conversations and other discourse.

do all ex's on handout to speed things along.

~~groups of 3~~ ~~structured~~
"coherent structured group of sentences [Jurafsky; Martin text]
        - ~~a~~ 'monologues'; conversations.

~~The~~ ~~high-level~~ bit is th
The executive summary is that there is a tremendous amount going on behind the scenes when you speak or listen 'naturally'.

~~much of~~
[note: some will be mostly not-currently ~~imp~~ fully-implemented,]
        for reasons that will rapidly become obvious

        But I still want to present this material b/c I think it's fundamental to understanding discourse, and I think ~~a~~ ~~not in~~ this stuff may represent big opportunities for future systems.

(1) "rules" of conversation [not our focus]
        I just want to quickly mention some important related work, that's interesting but not what I want to focus on.

        You may have ~~tuned~~ intuitions about how conversations are spsed to go.

        Like, if someone asks you a question, you're not spsed to leave it hanging, but instead @ least 'acknowledge' it.   [you can "free" people to not, or feel really uncomfortable when they don't not]

        But there are also subtler 'rules' that seem to influence how we

example: Grice's [1975, 1978] maxims   (theory of conversational implicature)
↳ developed as part of his

  'maxim of quantity': <see handout ⊘ #1>

    I put in there a recent Google-plus post regarding the
      accepted papers @ NIPS (a machine learning conference)
        ↳ very competitive
      "impressed that Michael Jordan has five papers".

    Then there's a comment by the original poster as follow-up.

    Why is the o.p. making this comment? What do they have to
      "apologize" for?
    (after all, indeed, was true)   ... the ~~start~~ post ⇒ exactly five
                                                   that's the inference we draw!

  'maxim of relevance': be relevant.
    [Rogers; Norton 2011]: 'artful dodgers'
      political scientists exploring the strategy "Don't answer
        the question you were asked, answer the question
q: how much was   you wish you were asked" (McNamara)
non-verbal shift   ^Robert
controlled for.
                    - ~~people who answ~~
another example: - experiment: same q, two groups of respondents
'There's a leopard in
next room':   ↙
→ wouldn't say that if there's   (one) answered the q, but not very fluently
always a leopard in the room.   other gave an off-topic answer that was
                                       fluent
                                     ↳ eval'd more 'highly' ↓

    That's all quite cool, but let's now turn to sthg else
                                                              ⊘ note that a 'prompt' as
(II) structure of conversation **   what I want to focus on.   to what the q was
                                                              kept the evaluators> keep off what
                                                                track better the topic
                                                                             was the topic.
                                                              [do not ask for
                                                                interpretation;
                                                               assert interpretation

(A) excursion into pronominal anaphora · pronouns referring to a referent entity
  - demonstrates a way to infer hidden structure in language

    so let's talk about how people determine what a pronoun refers to —
      since that's surely part of figuring out what someone is talking
      about.

  ⊛ Note: pronoun behavior is lang dependent.
      Our point is to use it to develop intuitions about structure,
      but other langs can indicate structure in diff. ways.

starting w/ a very simple example

2(a) Jill blames herself .

(clearly, 'herself' is Jill)

2(b)

/ *himself
↳ syntactically unacceptable
(assuming Jill is ♀. No * if Jill is ♂,
so, gender and other features have to match.
Fine, but that's not structural.

2(c) Jill ~~thought~~ thinks Bob ~~blames~~ blames herself   ~~(student proposal: it's who is the subject of the verb that's involved)~~

* This is not a legal sentence :
What's wrong? In (a) 'herself' was allowed to refer to 'Jill'.

But ~~when~~ here, for some reason it seems like the
only possible referent for 'herself' is Bob, which
doesn't match gender-wise . (~~unless Bob is female~~)

notice the practice
of constructing
sentences that
vary as little as
possible and still
get @ the point
being examined.

So, maybe there's a locality constraint .

┌──────────────────────────────────┐
│ locality constraint.??   │
│ Three ~~Two~~ counterexamples (3): │
└──────────────────────────────────┘

students proposed
exactly this
and observe
it involves
non-reflexive
before I wrote anything down.

2d   "Jill thinks Bob blames her" is ok, not local
                                ↓
                        ┌ non-reflexive pronoun
                        │ maybe those have different rules
                skipped─┤ (Indeed, w/ (a) you couldn't
                        │ have
                        └ "Jill blames her"
                                      ✗

2e
(c) Bob confronted Bill (all) by himself .
                          =
                          ↓
                         ADV
                              ✗
                    not local.

              ┌ even tho' local,   ┐
              └ matches in features   ┘

┌ ?: perhaps Bill was all by
│   himself ?
│   But hopefully the point that
│   it's 'more likely' Bob
└   stands .

Example #3 on handout.

- "it" is @ first blush the wine, despite semantic constraints,
  (wine could perhaps be brown.
  maybe "brown" is one of those wine words, like "oaky").

  and the fact that there's a semantically valid possible referent
  much ~~closer~~ — the table.
       more local

⇒ more evidence for hidden structure that can over-ride strong
   "world-knowledge" constraints.

Q. Another convo - artificial, but "paired" in order to make a pt,
w/ as few changes as possible

~~so new of~~ ~~that practie~~

The example on your handout are a little contrived b/c ~~we~~ we wanted to have as little
as possible changes btwn diff. variants, whereas in real life there are
often many redundant signals.

So, just bear with me.

Again using pronouns as a probe.

(2(a)) "it" = the book ⊗   vs. 2(b), ~~which~~ which differs only by an 'anyway'

"it" more likely to be theory.

So, the single word 'anyway' is changing how we understand the
structure of this discourse.

Whereas now look @: 2(c)

(2(c)) mixes 2(a) with an xtra line

~~"they've"~~ . "they've" = quarks

but it seems weird. Can try to then claim L5 "it"
is "theory", ~~but it would have~~ or alternatively
in L6 say 'oh by the way back to what I was
saying'. q: or, re-analyse as "it" was the theory   q: the problem?
                q: is it just change of topic   that is   Or an actual
                                                          "inaccessibility"?

incoherent dialog if segment structure violated.

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1 (Albert)

2 (He) ... (book) ⟶ signal: entry into new topic?

3 It actually ....

4 theory   quarks

5 Anyway   (it)

6 They've

(only plural referent) ⟶ signal of return: why does speaker bother?