Comprehensive Annotation of Multiword Expressions in a Social Web Corpus

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tinyurl.com/mwecorpus

Outline

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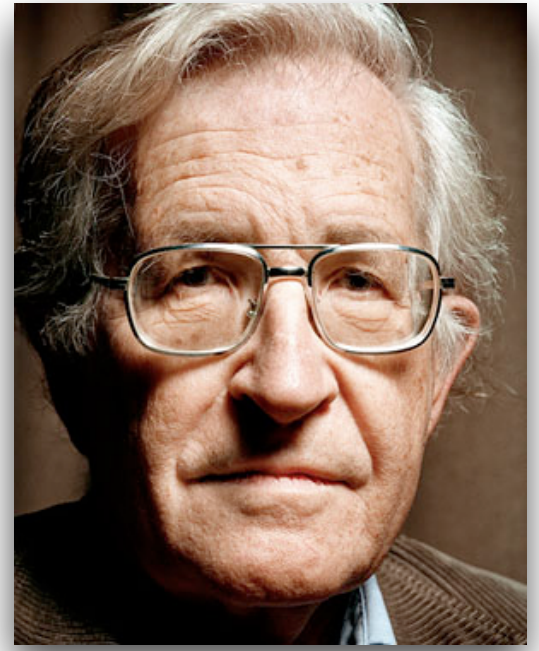
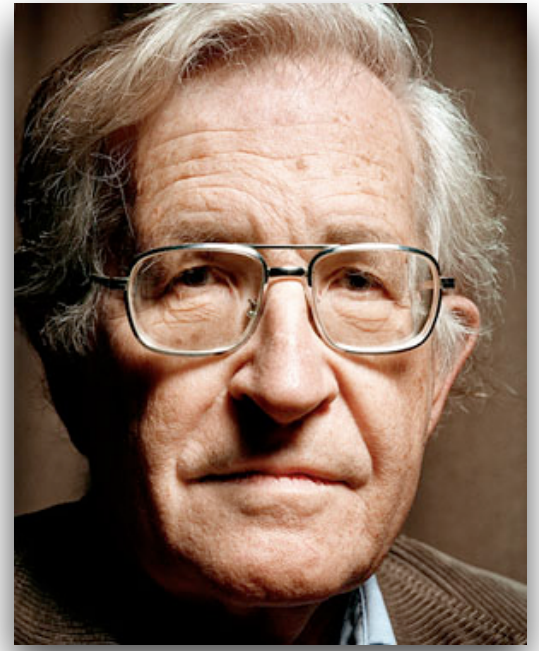
- multiword expressions
- annotation process
- the corpus

daddy longlegs

daddy longlegs



Noam Chomsky →



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↘

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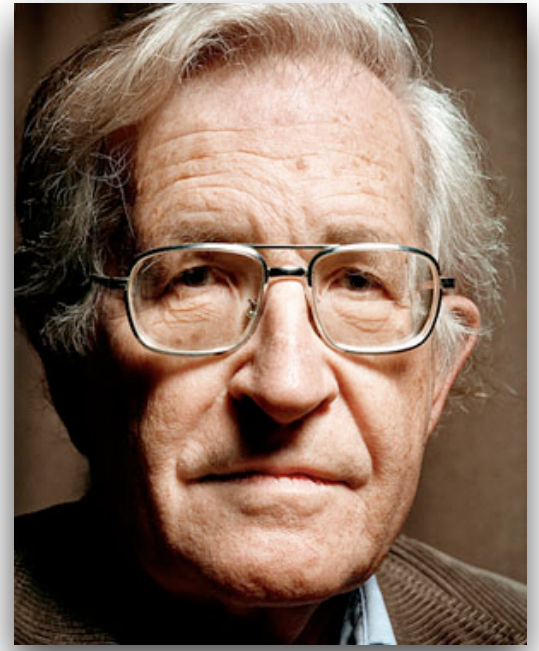

daddy longlegs

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The aliens will destroy Earth unless we

their demands.

The aliens will destroy Earth unless we

accept

their demands.

The aliens will destroy Earth unless we

accept

agree to

accede to

yield to

give in to

their demands.

The aliens will destroy Earth unless we

accept

agree to
accede to
yield to
give in to

comply with
cooperate with
go along with

their demands.


Jonathan Huang

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Noam Chomsky refused to give in to the vicious daddy longlegs .

Noam_Chomsky refused to give in to the vicious daddy longlegs .

Noam_Chomsky refused to give_in_to the vicious daddy longlegs .

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.

Lexical segmentation

Noam_Chomsky

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to

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.

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Challenges

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- Not superficially apparent in text
- Number/frequency
  - Too many expressions to list all of them
  - Individually rare, but frequent in aggregate
- Diversity
  - Many different construction types
  - Semantically unrestricted
  - Can be **gappy**

Fred Jelinek

daddy longlegs, hot dog

dry out

depend on, come across

pay attention (to)

put up with, give in (to)

under the weather

cut and dry

in spite of

pick up where __ left off

easy as pie

You're welcome.

To each his own.

The structure of this paper is as follows.

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Examples

My wife had taken_ her '07_Ford_Fusion _in for a routine oil_change .

Examples

They gave me the run around and missing paperwork only to call back to tell me someone else wanted her and I would need to come in and put down a deposit .

Examples

They gave_ me _the_run_around and missing paperwork only to call_back to tell me someone else wanted her and I would need to come_in and put_down~ a ~deposit .

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They gave_ me _the_run_around and missing paperwork only to call_back to tell me someone else wanted her and I would need to come_in and put_down~ a ~deposit .

weak MWE (collocation); cf. highly~recommended

Examples

Among the animals that were available to touch were pony's , camels and EVEN AN OSTRICH !!!

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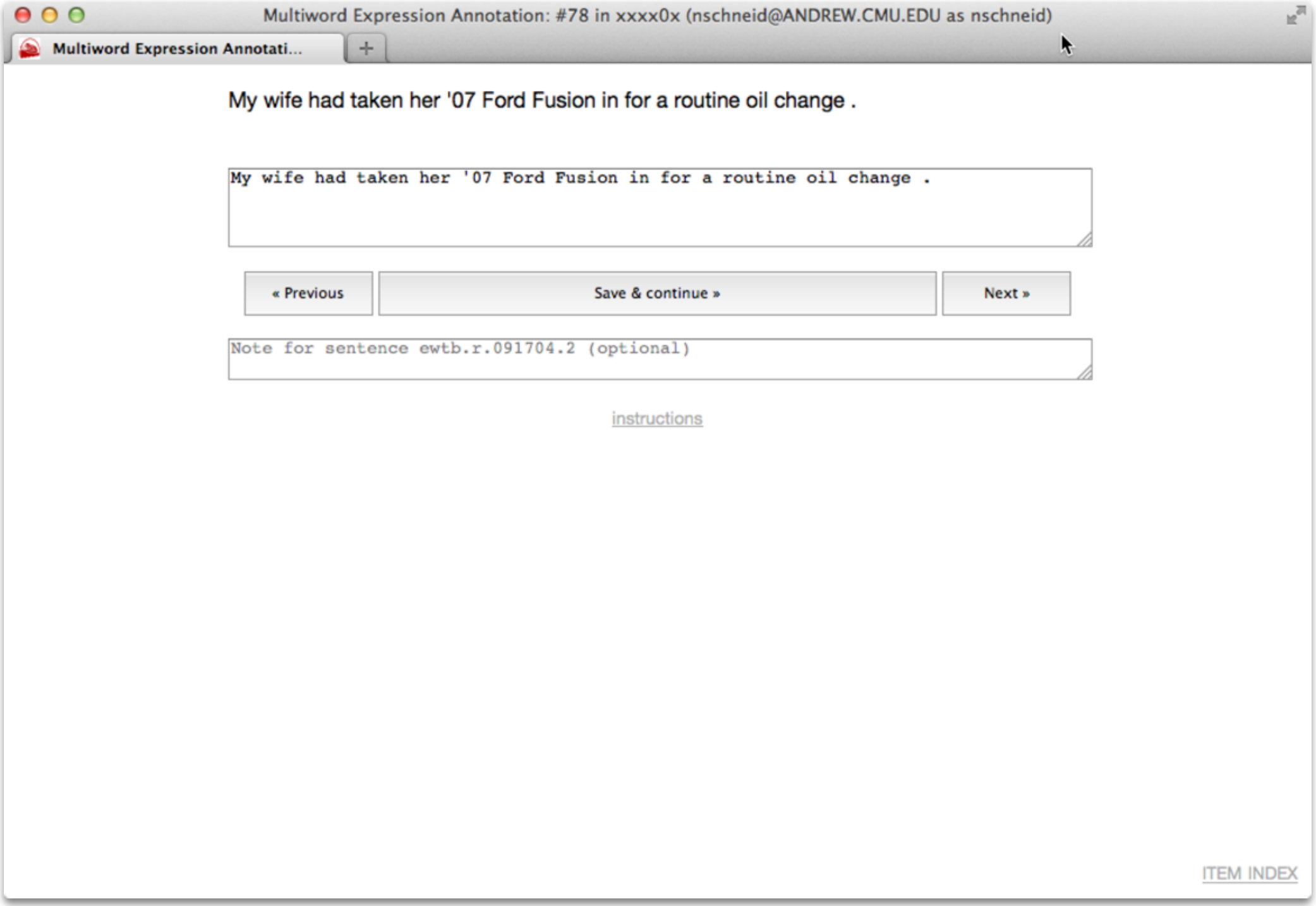
Among the animals that were available to touch were pony's , camels and EVEN AN OSTRICH !!!

No MWEs here. (This sentence is in the minority: 57% of all sentences/72% >10 words contain an MWE.)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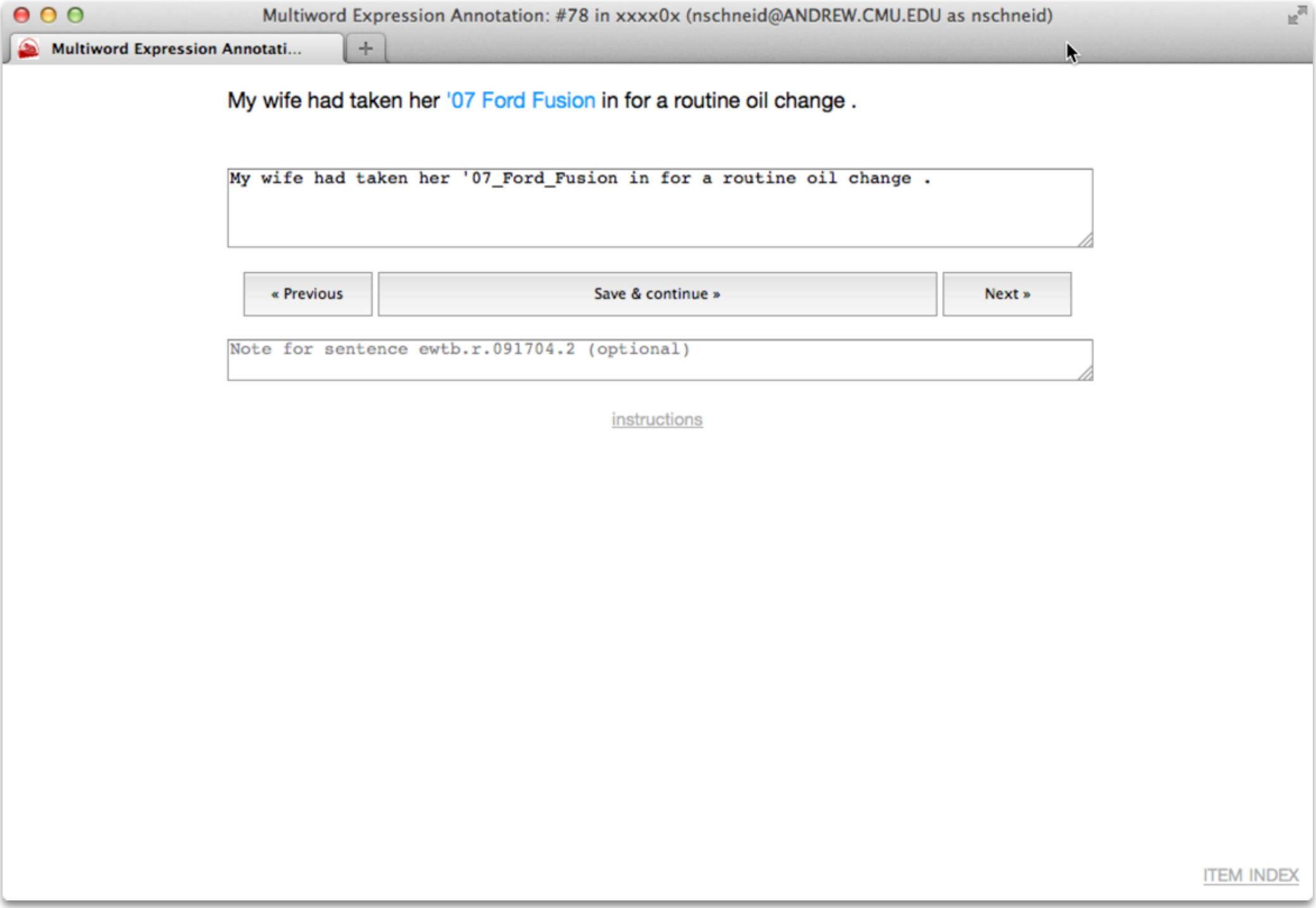
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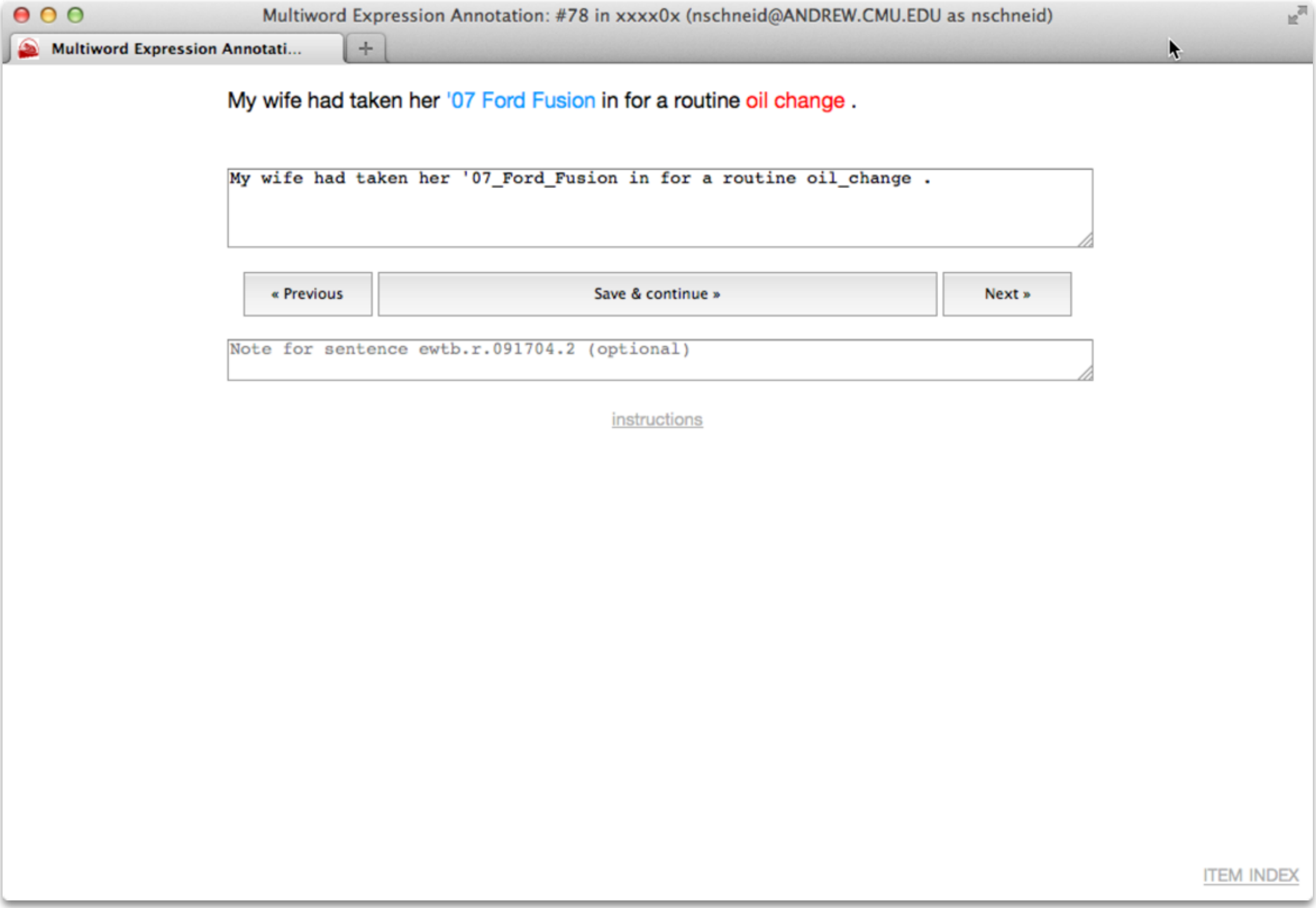
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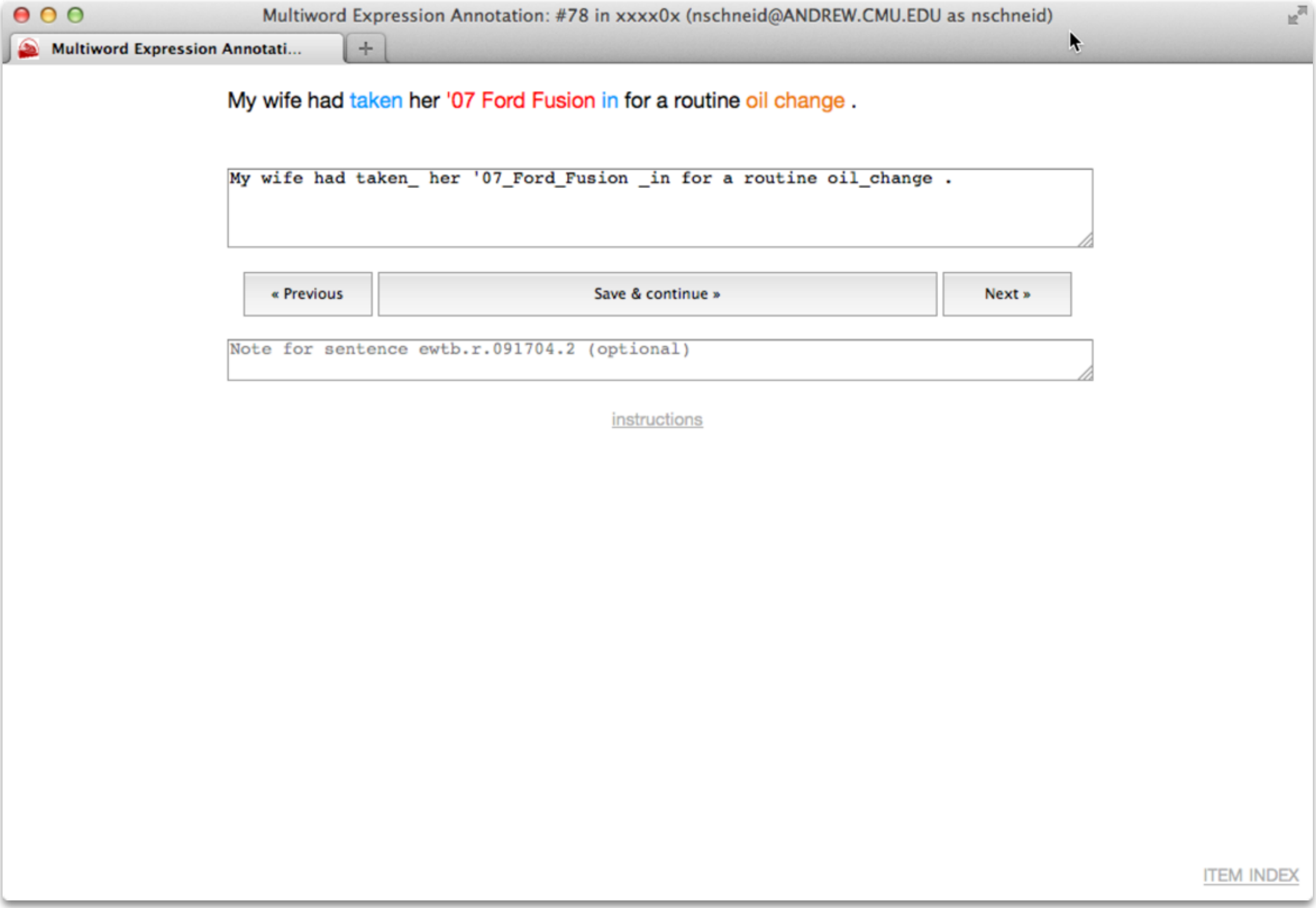
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- The entire **Reviews** subsection of the English Web Treebank (Bies et al. 2012), fully annotated for MWEs
  - 723 reviews
  - 3,800 sentences
  - 55,000 words
  - found 3,500 MWE instances

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- Every sentence: negotiated consensus between at least 2 annotators
  - IAA between *pairs*: ~77%

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- **SemCor** (Miller et al. 1993)
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- **Wiki50** (Vincze et al. 2011)
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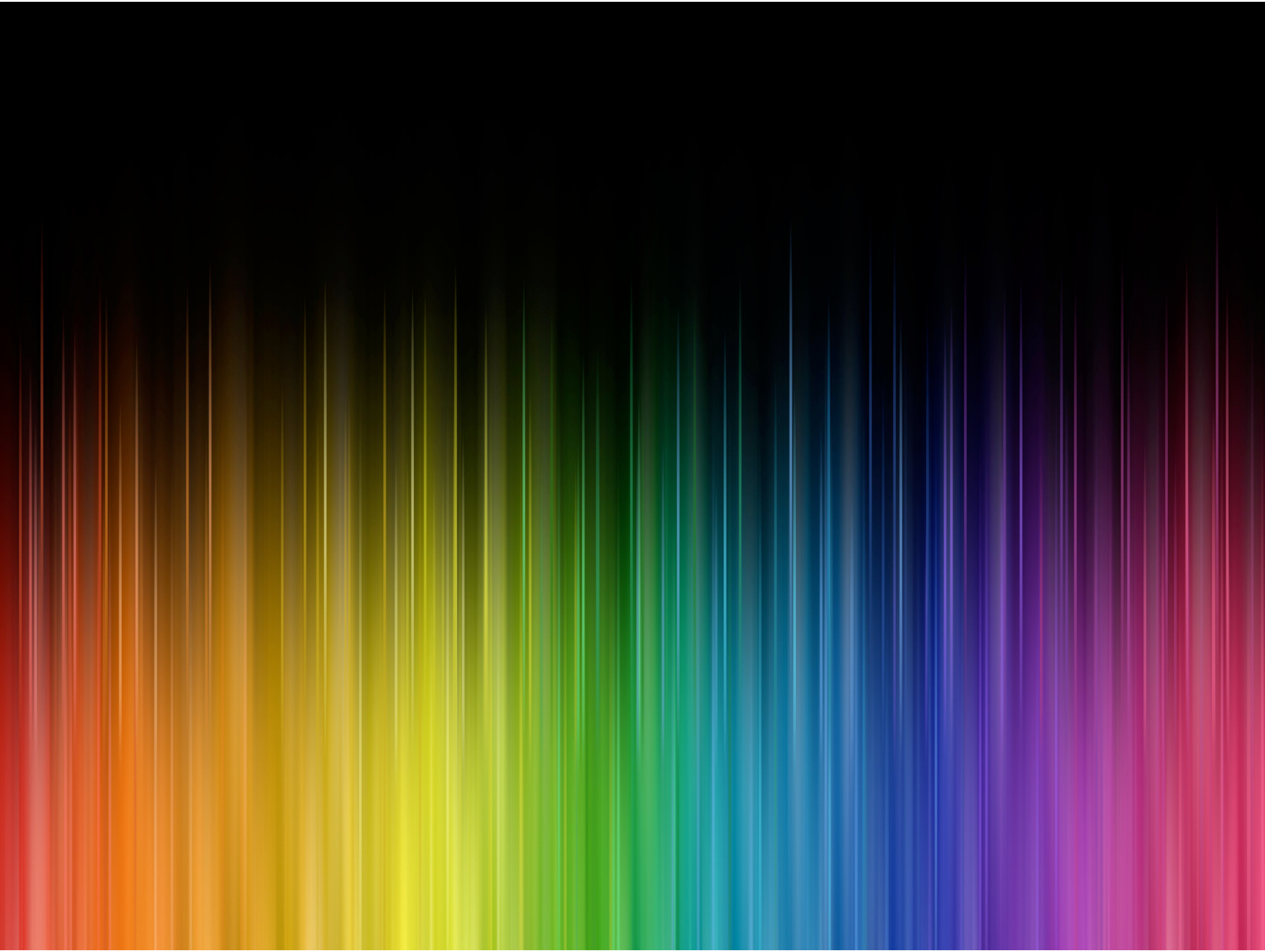

Preview:
A tool for identifying MWEs in context

(sequence tagging, but with gaps!)

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- **Discriminative lexical semantic segmentation with gaps: running the MWE gamut.** Nathan Schneider, Emily Danchik, Chris Dyer, and Noah A. Smith. *TACL* 2014.

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Many_thanks
(*Several thanks)

Thanks_a_million
(*Thanks a thousand)

Thanks_a_lot
(?Lots of thanks)

POS pattern	MWEs *contig.*	*gappy*	most frequent types (lowercased lemmas) and their counts
N_N	331	1	**customer service: 31** oil change: 9 wait staff: 5 garage door: 4
^_^	325	1	santa fe: 4 dr. shady: 4
V_P	217	44	**work with: 27** **deal with: 16** **look for: 12** **have to: 12** ask for: 8
V_T	149	42	**pick up: 15** **check out: 10** show up: 9 end up: 6 give up: 5
V_N	31	107	take time: 7 give chance: 5 waste time: 5 have experience: 5
A_N	133	3	front desk: 6 top notch: 6 last minute: 5
V_R	103	30	**come in: 12** come out: 8 take in: 7 stop in: 6 call back: 5
D_N	83	1	**a lot: 30** **a bit: 13** a couple: 9
P_N	67	8	**on time: 10** in town: 9 in fact: 7
R_R	72	1	**at least: 10** at best: 7 as well: 6 of course: 5 at all: 5
V_D_N	46	21	**take the time: 11** do a job: 8
V~N	7	56	*do job: 9* *waste time: 4*
^_^_^	63		home delivery service: 3 lake forest tots: 3
R~V	49		***highly recommend: 43*** *well spend: 1* *pleasantly surprise: 1*
P_D_N	33	6	over the phone: 4 on the side: 3 at this point: 2 on a budget: 2
A_P	39		pleased with: 7 happy with: 6 interested in: 5
P_P	39		**out of: 10** due to: 9 because of: 7
V_O	38		**thank you: 26** get it: 2 trust me: 2
V_V	8	30	get do: 8 let know: 5 have do: 4
N~N	34	1	*channel guide: 2* *drug seeker: 2* *room key: 1* *bus route: 1*
A~N	31		*hidden gem: 3* *great job: 2* *physical address: 2* *many thanks: 2* *great guy: 1*
V_N_P	16	15	**take care of: 14** have problem with: 5
N_V	18	10	mind blow: 2 test drive: 2 home make: 2
^_$	28		bj s: 2 fraiser 's: 2 ham s: 2 alan 's: 2 max 's: 2
D_A	28		**a few: 13** **a little: 11**