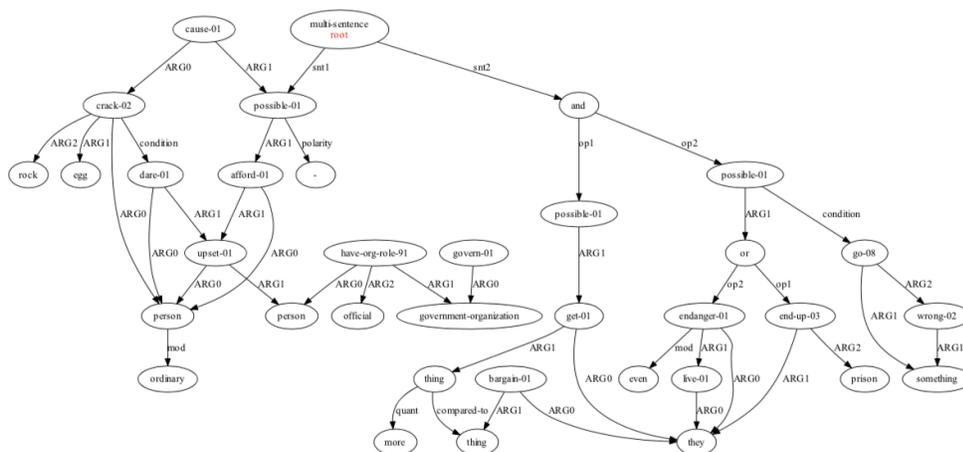


0. Announcements: (1) **Final take-home due date of Thursday Dec 19, 4:30pm.** (2) A4 due time moved to Tuesday, Dec 10, 11:59 **PM** (extra 12 hours), with the usual lecture time on the 10th converted to optional drop-in office hours, in the usual classroom. No need to sign up.

1. Recall the big example from the Groschwitz et al. (2018) slides.



Jonas Groschwitz (personal communication, 2019), graciously responding to a quick inquiry, said that the original sentence, in blue below, comes from the DARPA BOLT section of the AMR corpus¹, indeed, [bolt12_3991_0111.13]. He thinks that it might be a translation from a Chinese discussion-board message.

The ordinary people cannot afford to upset government officials, for if the ordinary people dared to upset government officials,

[The version proposed in class, “if they dared to do so”, seems more mellifluous to me.]

they would be cracking eggs against rocks.

[Jonas also thought this was an idiom². Google investigation turns up:

(1) 这就像是鸡蛋碰石头³ = can't succeed, literally “this is like knocking a chicken egg on a rock”; and

(2) 以卵击石 = attempt the impossible (literally, “to strike a stone with an egg [ovum?]”, to invite disaster by overreaching.⁴

(3) 鸡蛋碰石头的做法 = a recipe for a dish called “eggs touching stone [pot]”?

PropBank lists for crack-02: ARG1: the thing broken (in the AMR graph, the egg), ARG2: instrument (in the AMR graph, the rock)]

Not only could they get more than they bargained for; if something went wrong, they could end up in prison, or even endanger their lives.

¹ LDC catalog entry LDC2017T10 says, “It contains a sembank (semantic treebank) of over 39,260 English natural language sentences from broadcast conversations, newswire, weblogs and web discussion forums”, and “

² Remember idioms from our unit on TAGs? How is AMR dealing with these “semantically non-decompositional constructions”?

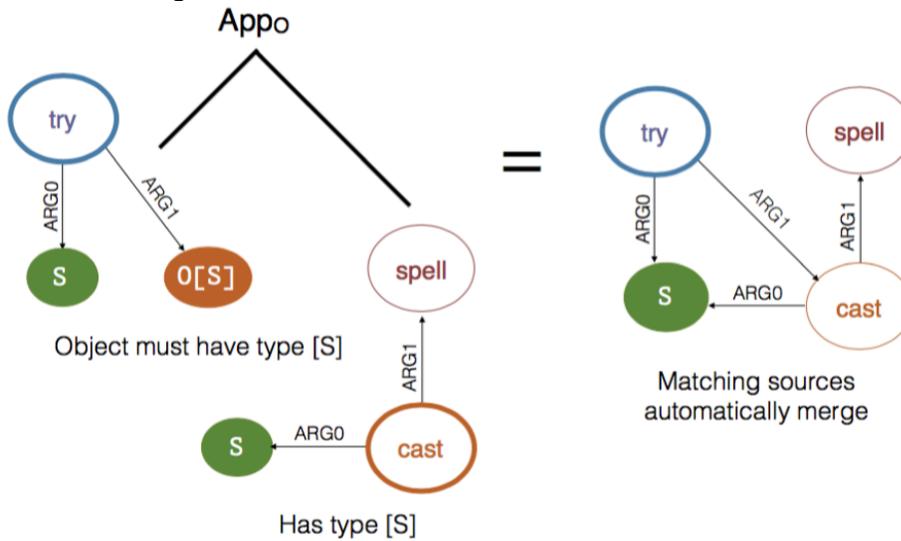
³ <https://teachmechinese.wordpress.com/2017/01/20/chinese-idioms-involving-the-chicken>

⁴ <http://www.standardmandarin.com/idiom/literally-to-strike-a-stone-with-egg-idiom-to-attempt-the-impossible>

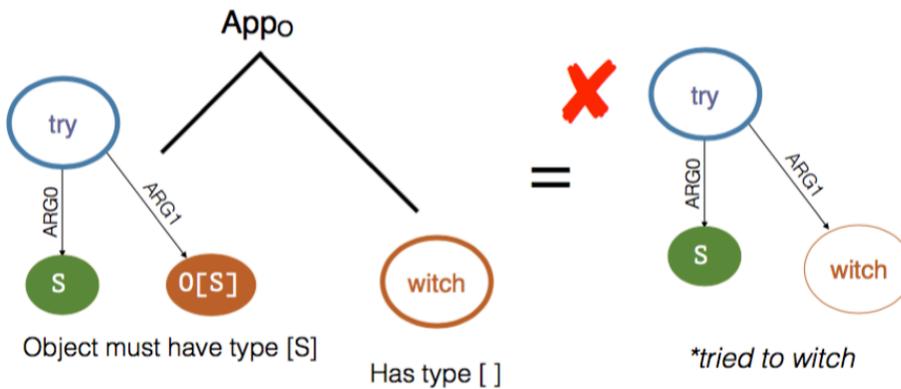
⁵ <https://www.douguo.com/cookbook/1239735.html>

2. A method for semantic parsing into AMR by successive graph mergings (seemingly like CCG). From Groschwitz et al. (2018) slides, part of analyzing “The witch tried to cast a spell”.

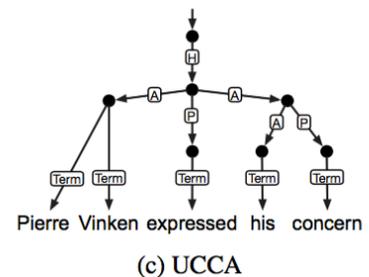
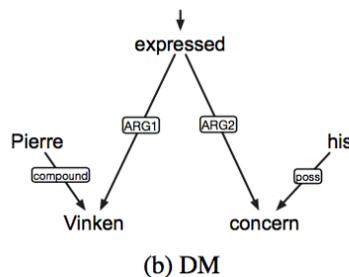
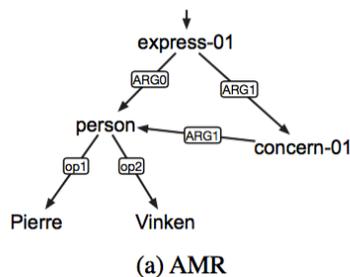
a. Allowed merge



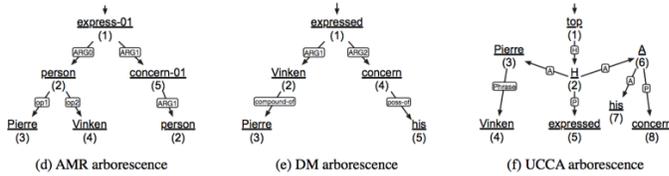
b. Types (there they are again...) prevent a syntactic/semantic mismatch



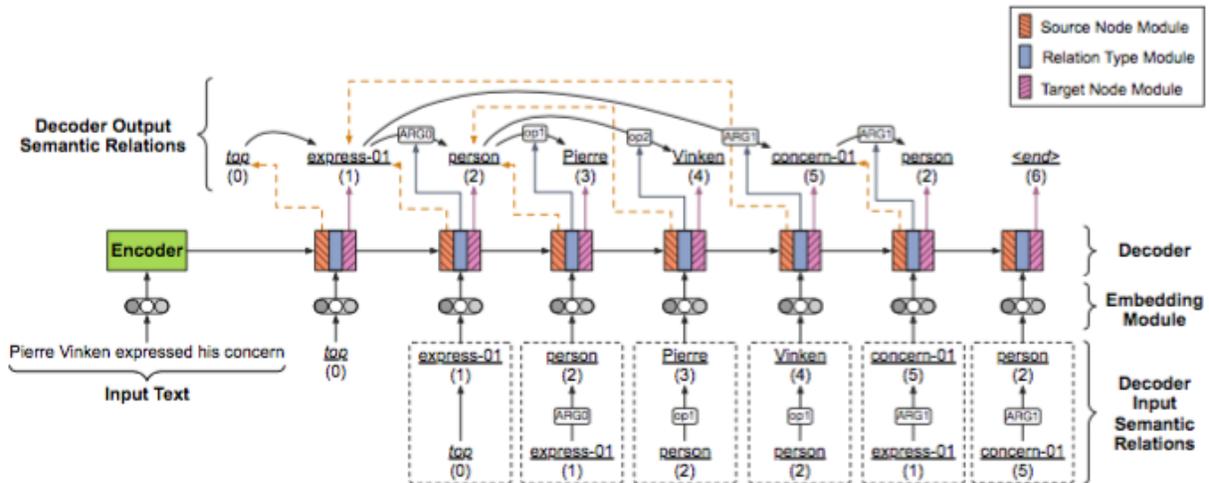
3. A state-of-the-art method for semantic parsing into AMR, or other formalisms. From Zhang et al. (2019): three different formalisms’ semantic representation of “Pierre Vinken expressed his concern”.



4. From Zhang et al (2019): Convert training data to a unified (and back-convertible) format as directed rooted trees (\Rightarrow topological sort possible),



and learn to build such trees one edge (semantic relation) at a time, based on prior semantic relation.



5. Some takeaways.

1. Language is complicated --- each language has constraints often based on lots of types/features and sub-types/features, and we only looked at one language.
 - On the other hand, language(s) did apparently evolve to be learnable, which surely affects its properties and maybe makes it a really great domain for machine learning
2. The landscape of evaluating how well our systems learn language is in flux, and perhaps lessons about evaluation can be learned from our current situation.
3. Our discussions of design desiderata, and seeing multiple formalisms or methods for doing "the same thing", will, with luck, help inspire your own research.