Analysis of Patterns in Dev Set **December 4, 2014**
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Modular approach to pattern recognition

There seem to be a few base patterns starting from a tagged term:

- nn(Noun1, term)
- amod(Adj1, term)
- appos(Noun1, term)
- appos(term, Noun1) Doesn't actually appear in dev set, but looks plausible
- conj_and(Noun1, term) Handles case that parse mistakes appositive for conjuction
- conj_and(term, Noun1) "

After getting a match for one of the base patterns, extend Noun1 to get appositive:

- appos(Noun1, Noun2)
- appos(Noun2, Noun1)
- conj_and(Noun1, Noun2)
- conj_and(Noun2, Noun1)

Next extend either Noun1 or Noun2 to attach "of" phrase:

- prep_of(Noun1, Noun3)
- prep_of(Noun2, Noun3)

Next entend the right-most noun to get parenthetical phrase. Don't need parse for this.

- If extracted phrase so far includes "(", extend to the next ")"
- If end of extracted phrase is followed by "(", extend to the next ")"

Patterns in current dev set, where <term> has been tagged with a target class

<entity>, <term>	appos(entity, term)	Neil deGrasse Tyson, an astrophysicist
		John Arterberry, executive deputy chief
		Petra Koepke-Eberler, 48, a music teacher
		Madame Violetta, a classical singing teacher
<term> <entity>	nn(entity, term)	critic Andre Bazin
		President Hu
		Chinese President Hu
		Canadian Pacific Railway
		President Bush
		Persian Gulf War
<term> <entity>	amod(entity, term)	French critic Ander Bazin
		Persian calligraphy
		Iraqi government
<term> <entity> of N	nn(entity, term) prep_of(entity, N)	
		the Hindu festival of Holi
<entity>, <term> N	amod(N, term) appos(entity, N)	
		Yenching University, a Christian institution

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<entity>, <term> N of N2	nn(N, term) appos(N, entity) prep_of(entity, N)	Susan Michael, the U.S. director of the International Christian Embassey Jerusalem
<term> N (<entity>)	nn(N, term) ???(N, entity)	the first Mormon president (Mitt Romney)

Patterns to recover from bad parses:

<term>, <entity>	conj_and(entity, term)	community leader, Iyal al-Ashouri
	[note: appos is often mis-parsed as conj_and. This pattern may be unreliable]	
<term> N, <entity>	amod(N, term) conj_and(entity, N)	Christian community leader, Iyal al-Ashouri
	[note: appos is often mis-parsed as conj_and. This pattern may be unreliable]	
<entity>, <term> N	nn(N, term) conj_and(entity, N)	Daniel Peterson, a West Indian immigrant, and Olivia John
	[note: another appos parsed as conj_and]	
<term> <entity> N	nn(N, term) nn(N, entity)	Persian Emperor Xerxes (Brazil's Rodrigo Santoro)
<entity> -- <term>	dep(term, entity)	a Mormon -- Mitt Romney

Not an implicit relation – Open IE can handle it.

<entity> V in <term>	handled by Open IE	Peterson's mother, who also had roots in the Caribbean