Roles and the lexical semantics of role-denoting relational adjectives
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Introduction In this talk we examine the lexical semantics of role-denoting relational adjectives (RAs) such as *presidential*, arguing for a model of the semantics where lexical information is available for compositional operations, and arguing against recent theories that claim RAs denote properties of kinds. Role-denoting RAs have a meaning that is similar but not identical to that of a possessor. (1a) and (2a) have the implication that the referent of the nominal has a relation to the president with respect to their official duties and responsibilities while in office. Although the referents in (1b) and (2b) may be used by the president during their time in office, they do not have an implication that they have any necessary connection to the office itself; the president’s desk may be a favorite desk brought to use in a private study, and the president’s advisor may refer to an advisor in non-official matters, such as personal finances.

(1) a. the presidential desk b. the president’s desk (i.e., his personal desk)
(2) a. a presidential advisor b. the president’s advisor (i.e., a personal finance advisor)

This observation holds for event nominals like *visit* as well. The use of the RA implicates that the visit is an official duty of the president. This relation does not obtain when the agent (the president) is represented as a possessor (compare (3a) and (3b)), or with a verbal predication (see (4)).

(3) a. the president’s visit (to his mother) b. a presidential visit (#to the president’s mother)
(4) The president visited his mother $\not\Rightarrow$ There was a presidential visit to the president’s mother.

Criticism of Previous Theories Recent semantic accounts of relational adjectives have claimed that Carlsonian kinds play a role in their predication. McNally & Boleda (2004) propose that RAs are properties of kinds. They assume that a common noun such as *arquitecte* ‘architect’ (Catalan) has a kind argument (type $k$) in addition to an argument for an ordinary individual (type $o$). A Carlsonian $R$ relation asserts that the ordinary individual is an instantiation of the kind. Relational adjectives such as *tècnic* ‘technical’ are interpreted intersectively and predicated of the kind.

(5) $\lambda x_k \lambda y_o [R(y_o, x_k) \land \text{architect}(x_k) \land \text{technical}(x_k)]$

Arsenijevic et al. (2014) extend this account to ethnic adjectives (EAs) such as *French*. These adjectives are also predicates of kinds, but encode an additional Origin relation that asserts that the kind arises in the nation denoted by the adjective.

(6) $\lambda y_o \exists x_k [\text{wine}(x_k) \land \text{Origin}(x_k, \text{France}) \land R(y, x_k)]$

McNally & Boleda and Arsenijevic et al. predict that RAs should be able to be used predicatively when their argument is a kind. But some RAs (such as *medical*) cannot be used predicatively even with kind-referring expressions (such as *doctors*/*a doctor*) (as in (7b)). Moreover, some RAs (such as *public*) can be used predicatively even when their argument is not a kind (as in (8)). These inconsistencies weaken the case for RAs simply being properties of kinds.

(7) a. Why would someone choose not to become a medical doctor? (Google)
   b. *Doctors/*a doctor can be medical.
This university is public, but there are also some private universities and colleges on the island. (Google)

As demonstrated in (9), RAs can show different relations between the adjective and the modified noun. This calls into question the strategy of specifying a relation internally to the adjective, such as with EAs and Origin. And although an Origin relation is intuitive for the EA subclass, what relation to use for other classes of RA is not clear, making the strategy difficult to generalize.

(9)  
(a) gynecological clinic (clinic for gynecological problems)
(b) gynecological education (education about gynecology)
(c) gynecological conference (conference for gynecologists)

Last, we worry about the proliferation of kinds, especially about considering too many utterances to be kind-related and trivializing the notion of what counts as a kind.

Proposal  The core of the adjective presidential is president and is represented as a frame, a structured representation consisting of functional attributes and their values. We decompose the concept for president and model president as making reference to an event of leading an institution (e.g., a presidency), where a president is the agent of this event. This event is extended over time and has as its subparts the events that a president participates in during the course of their presidency. Additionally, since officeholder for the presidency does not stay the same, the role of the president as agent is separate from the person implementing the office at some particular time i.

(10)  
president (of the USA) \sim t x \exists e [\text{IMPL}_t(A\text{GENT}(e)) = x \land \text{lead}(e) \land \text{THEME}(e) = \text{USA}]

An event nominal such as visit will be a predicate of events. A presidential visit is modeled as a visit that occurs as part of the lead event from president. The participant role president has in the visit event is not specified; it is inferred from the president’s duties and responsibilities while in office. This predicts roles other than agent (such as theme) should be available for presidential visit, contra other accounts of RAs, such as Alexiadou & Stavrou (2011). (12) shows an example confirming this prediction, where the theme of the event is the US president.

(11)  
presidential visit \sim \lambda e' \exists x \exists e [\text{IMPL}_t(A\text{GENT}(e)) = x \land \text{lead}(e) \land \text{visit}(e') \land e' \subseteq e]

(12)  
Will NBA champions continue to visit the White House under Donald Trump? One of the first players to make the presidential visit gives his opinion. (Google)

A non-event nominal is in a relation with the agent of the lead event rather than the event itself. In the case of presidential desk, the agent of lead is equated to the be possessor of the desk. This avoids incorrectly attributing possession to the officeholder. We surmise the uniqueness of presidential desk is a consequence of the uniqueness of president, following observations that possessors determine uniqueness for the noun phrase if the head noun is a functional concept, as is the case here (Löbner, 2011).

(13)  
presidential desk \sim t y \exists x \exists e [\text{IMPL}_t(A\text{GENT}(e)) = x \land \text{lead}(e) \land \text{desk}(y) \land \text{POSSESSOR}(y) = A\text{GENT}(e)]

Lastly, presidential advisor is considered to encode an event of advising. The agent of the leading event from president is asserted to be the theme of the advising, again distinguishing assertions
about the role of the president from the officeholder at a particular time.

\[ \text{presidential advisor} \sim \lambda y \lambda x \exists e \exists e' \left[ \begin{array}{l} \text{IMPL}_i(\text{AGENT}(e)) = x \land \text{lead}(e) \land \text{advise}(e') \land \text{AGENT}(e') = y \land \text{THEME}(e') = \text{AGENT}(e) \end{array} \right] \]

**Conclusion** In our analysis we distinguish the agent of leading an institution/nation from its implementor. In this way, we can model why the adjective *presidential* predicates of the role corresponding to the president rather than an ordinary individual. This shows that lexical information is vital to understanding attributions with RAs; analyses that expose the lexical semantics of modifiers and modificees offer a better chance of correctly capturing the fine-grained and manifold meanings found with RAs and how they interface with world knowledge. Our results are discussed in the context of a decompositional theory of lexical meaning that allows for subcompositional processes. And, although we focus on *presidential*, our results are generalizable to other role-adjectives such as *senatorial*, *papal*, *gubernatorial*, and *royal*, providing additional insight into how natural language represents roles.

**References**