

Lecture 2 part 2: Communicative agents and incentives

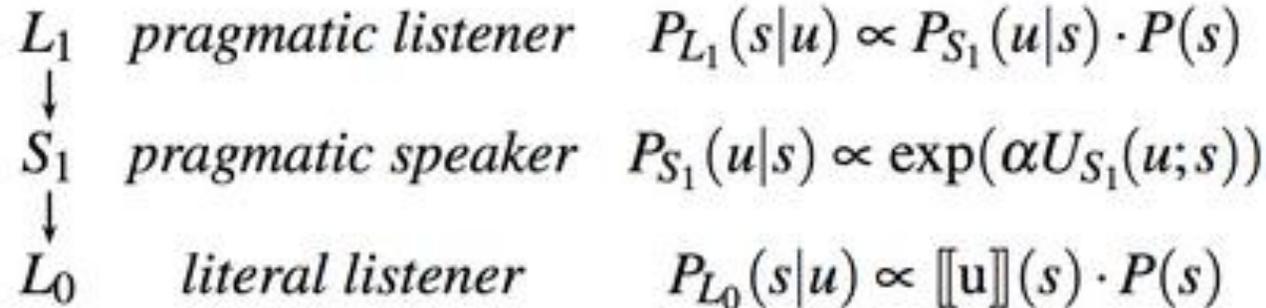
**Linguistics, NLP, and PolComm
ESSLLI 2025, Bochum**

Asad Sayeed and Ellen Breitholtz



Rational speakers

L1 uses a probability function over what S1 is expected to say to get s .



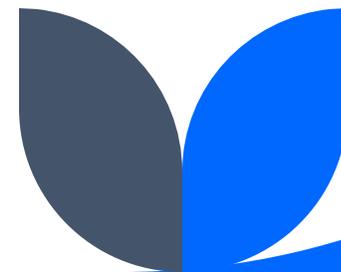
Speaker S1 uses a utility tradeoff function U to decide what u to use to signal s to L0.

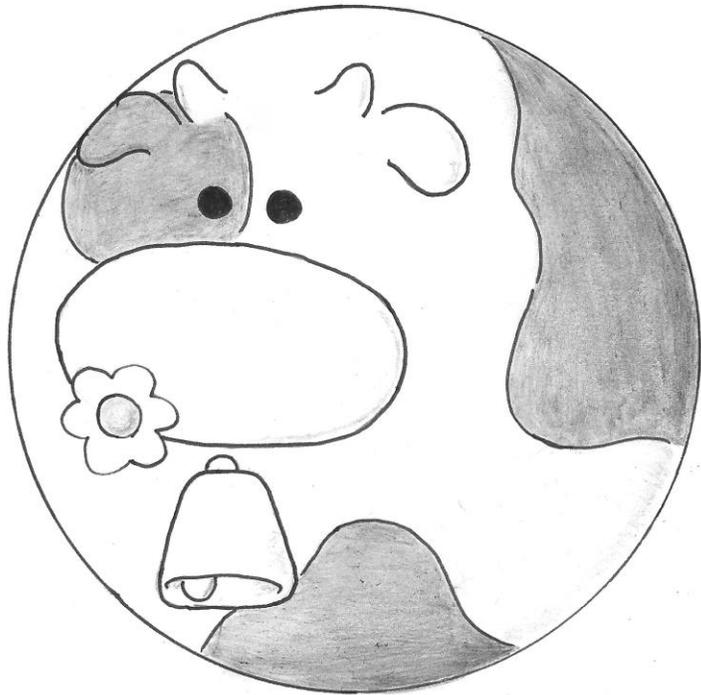
L0 just interprets utterances u as being true and finds entities s compatible with u .



Intuition: political communication is strategic.

- Politicians (S0) say things in order to get a "naïve" listener (L0) to respond by giving them votes, etc.
- Voters (L1) attempt to ferret out what S0 actually wants them to do and decide whether they want to do it.
- Utility is updated accordingly (e.g., when they win/lose elections etc).





Spherical cows

- Useful theoretical model that you can refine to take particular situations into account (e.g. Henderson and McCready...).
- Scalability, intractability issues.
- Difficulty grounding directly in the linguistic environment

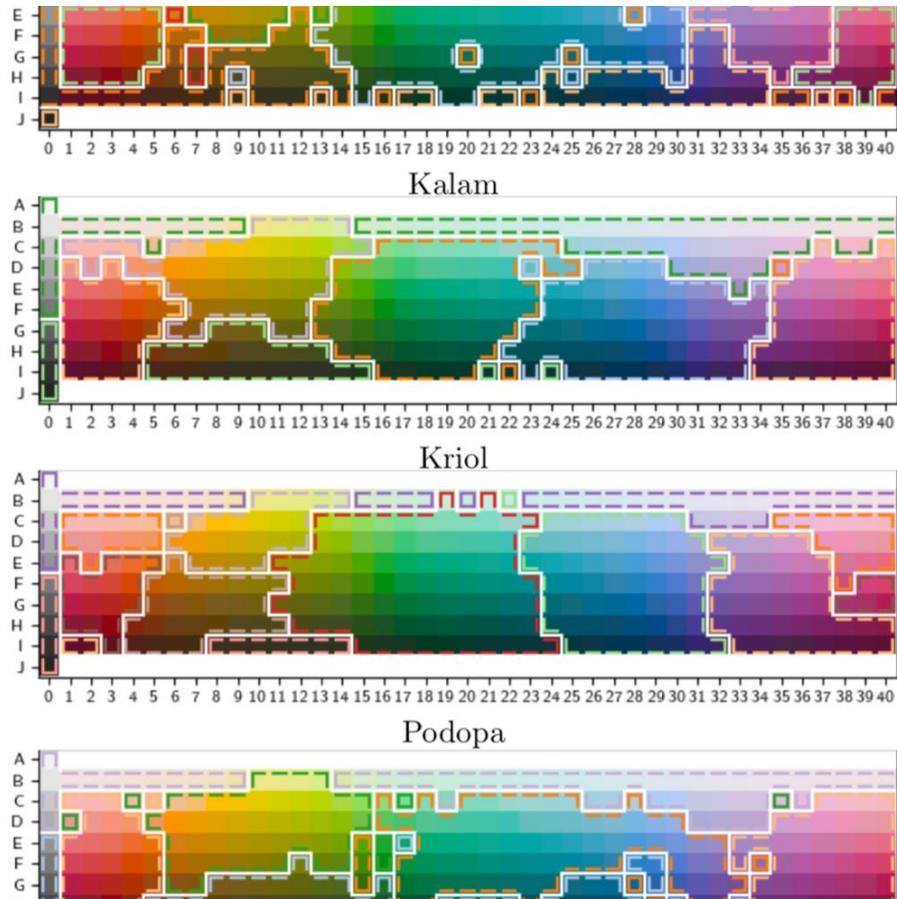


Cooperation

Even assuming full cooperation, hard to operationalize.

Political communication involves some amount of "bad faith" (e.g. dogwhistles).





But lets assume "good faith".

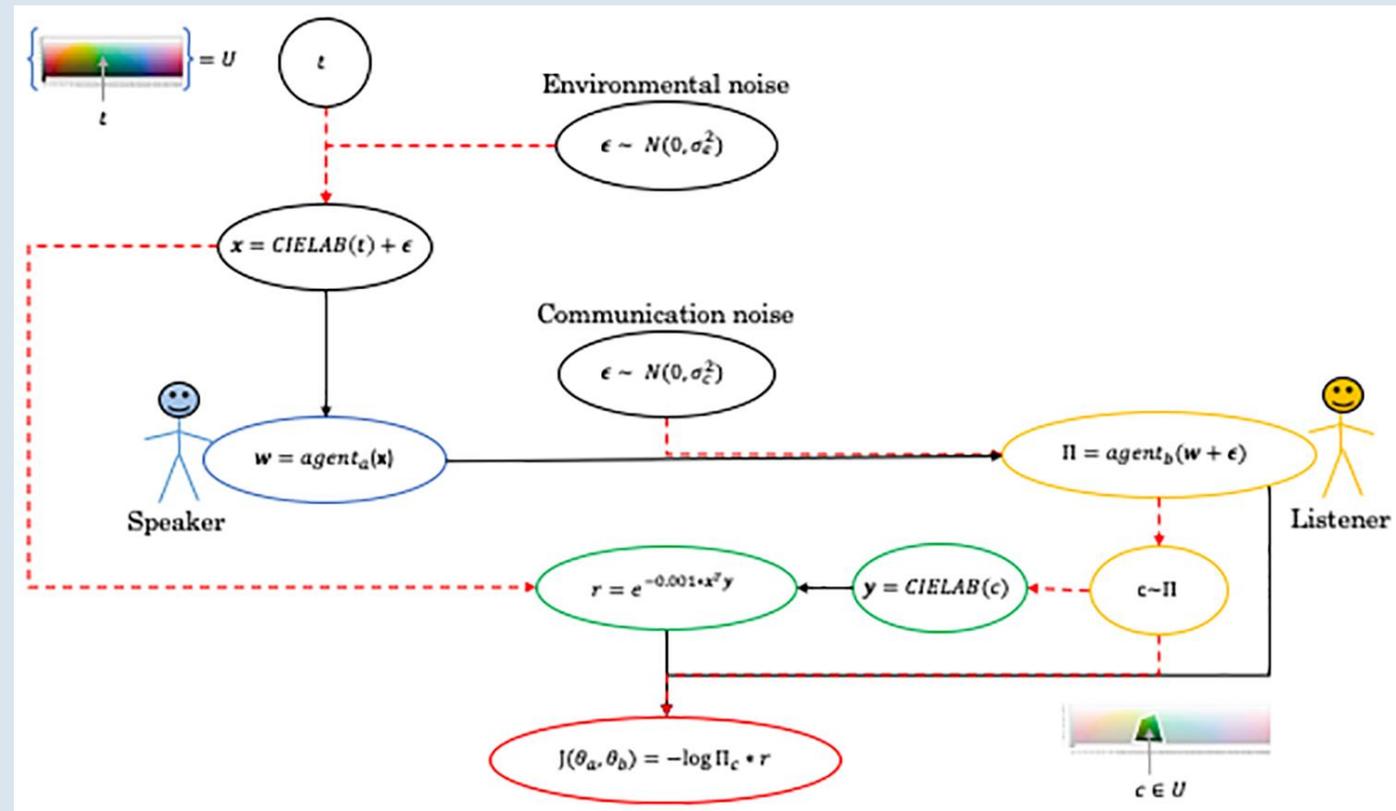
- World Colour Survey (Berlin and Kay, 1969).



Simulating human colour maps

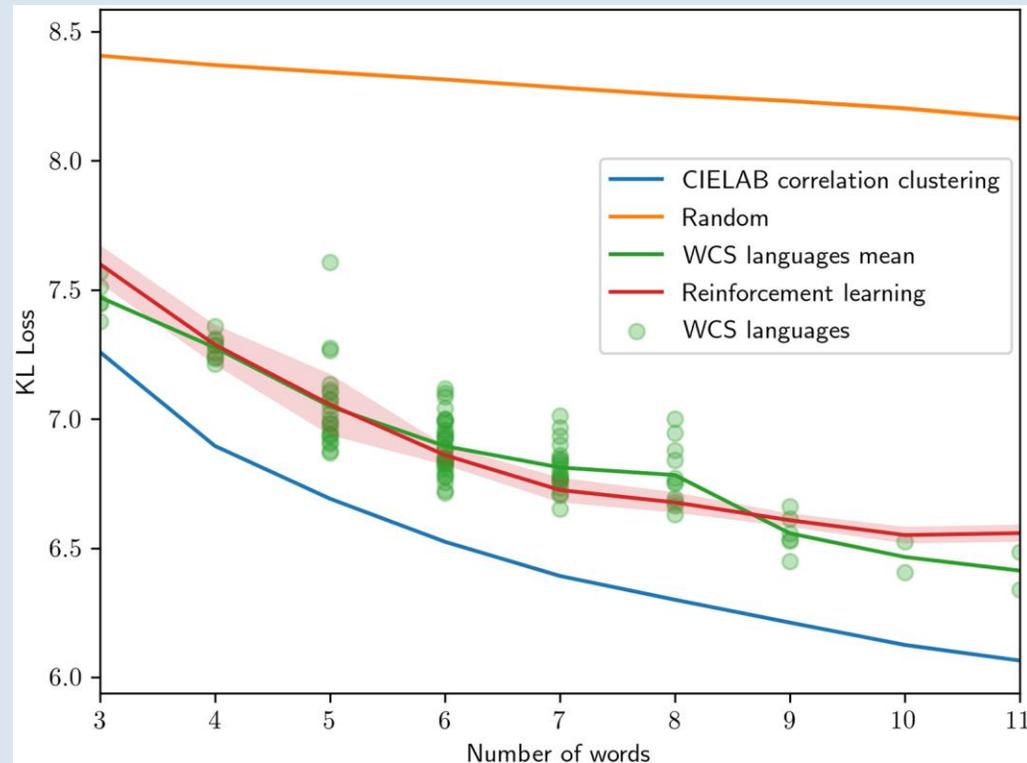
Speaker and listener agents separately trained through reinforcement learning in a dual-agent simulation. (Kågebäck, Carlsson, Dubhashi, Sayeed, 2020)

Approximate operationalization of RSA?



Matches what humans do?

Uncertainty vs number of colour terms approximately matches in both human and simulated settings.



Cooperation

Even assuming full cooperation, hard to operationalize.

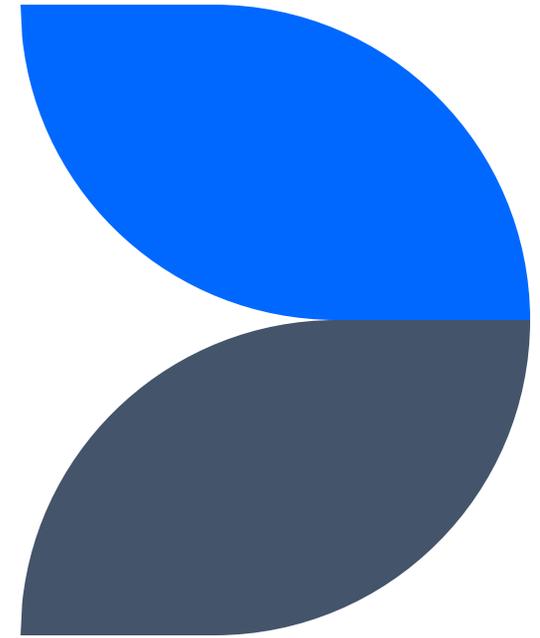
Political communication involves some amount of "bad faith" (e.g. dogwhistles).

Future research question: model utility in a reinforcement-learning simulation where it is costly to be understood?

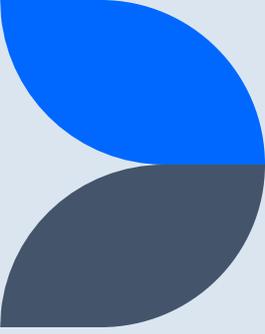


Sidney Sweeny

A postscript

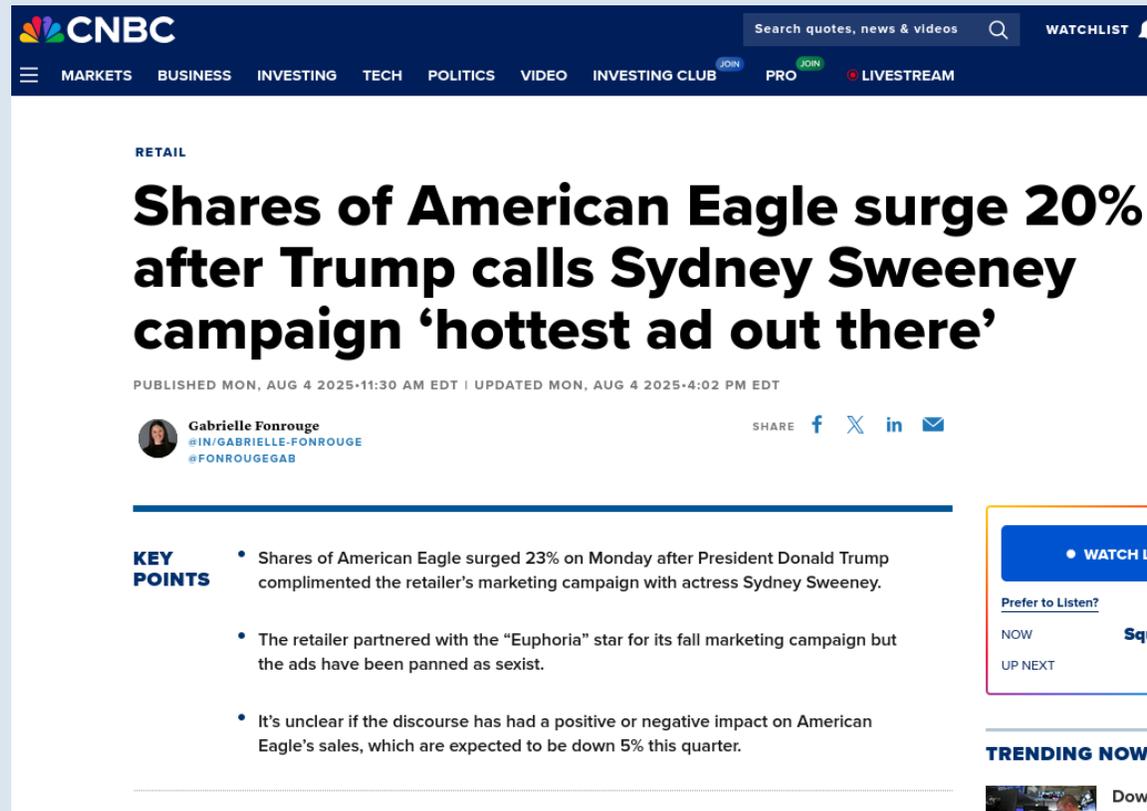


Jeans/Genes



What to make of this?

Activity for tomorrow.
Think about it.



The image is a screenshot of a CNBC news article. The top navigation bar is dark blue with the CNBC logo on the left, a search bar in the center, and 'WATCHLIST' with a bell icon on the right. Below the navigation bar, there are several menu items: 'MARKETS', 'BUSINESS', 'INVESTING', 'TECH', 'POLITICS', 'VIDEO', 'INVESTING CLUB', 'PRO', and 'LIVESTREAM'. The article is categorized under 'RETAIL'. The main headline is 'Shares of American Eagle surge 20% after Trump calls Sydney Sweeney campaign 'hottest ad out there''. Below the headline, it says 'PUBLISHED MON, AUG 4 2025-11:30 AM EDT | UPDATED MON, AUG 4 2025-4:02 PM EDT'. The author is 'Gabrielle Fonrouge' with social media handles '@IN/GABRIELLE-FONROUGE' and '@FONROUGEGAB'. There are share icons for Facebook, X, LinkedIn, and Email. A 'KEY POINTS' section follows, containing three bullet points. On the right side, there is a 'WATCH LIVE' button and a 'Prefer to Listen?' section with 'NOW' and 'UP NEXT' options. At the bottom right, there is a 'TRENDING NOW' section with a small image and the text 'Dow fi'.

RETAIL

Shares of American Eagle surge 20% after Trump calls Sydney Sweeney campaign 'hottest ad out there'

PUBLISHED MON, AUG 4 2025-11:30 AM EDT | UPDATED MON, AUG 4 2025-4:02 PM EDT

Gabrielle Fonrouge
@IN/GABRIELLE-FONROUGE
@FONROUGEGAB

SHARE [f](#) [X](#) [in](#) [✉](#)

KEY POINTS

- Shares of American Eagle surged 23% on Monday after President Donald Trump complimented the retailer's marketing campaign with actress Sydney Sweeney.
- The retailer partnered with the "Euphoria" star for its fall marketing campaign but the ads have been panned as sexist.
- It's unclear if the discourse has had a positive or negative impact on American Eagle's sales, which are expected to be down 5% this quarter.

WATCH LIVE

Prefer to Listen?

NOW **Sque**

UP NEXT

TRENDING NOW

Dow fi