Linguistic style:

*How* things are said as opposed to *what* is said
Linguistic style:

*How* things are said as opposed to *what* is said

Example:

Client: “At what time does your shop close?”

Shopkeeper: “At five o’clock.”
Shopkeeper: “Five o’clock”
Linguistic style:

How things are said as opposed to what is said

Example:

Client: “At what time does your shop close?”
Client: “What time does your shop close?”

Shopkeeper: “At five o’clock.”
Shopkeeper: “Five o’clock”
Linguistic style:

How things are said as opposed to what is said

Example:

Client: “At what time does your shop close?”
Client: “What time does your shop close?”

Shopkeeper: “At five o’clock.”
Shopkeeper: “Five o’clock”

[Levelt & Kelter, 1982]
Linguistic style:

*How* things are said as opposed to *what* is said

Example:

Client: “At what time does your shop close?”

Client: “What time does your shop close?”

Shopkeeper: “At five o’clock.”

Shopkeeper: “Five o’clock”

[Levelt & Kelter, 1982]
Linguistic style:
for us: function word class usage

Coordination is not just exact matching:
Client: “At what time does your shop close?”
Shopkeeper: “In two hours.”
Shopkeeper: “Five o’clock”
VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.
VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.

JULES: He just massaged her feet, massaging someone's feet is nothing, I massage my mother's feet.
JULES: It was a foot massage, a foot massage is nothing, I give my mother a foot massage.

JULES: He just massaged her feet, massaging someone's feet is nothing, I massage my mother's feet.

VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.
VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.

JULES: It was a foot massage, a foot massage is nothing, I give my mother a foot massage.

Matching on article presence.
JULES: It was a foot massage, a foot massage is nothing, I give my mother a foot massage.

VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.

Matching on article presence.
JULES: It was a foot massage, a foot massage is nothing, I give my mother a foot massage.

VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.

Matching on article presence.
But matching ≠ coordination!
(can happen by chance)
What we want: how much *Vincent’s* inclusion of an article (say) immediately triggers the usage of articles in *Jules’* reply?

**NOT:** how similar Vincent’s style is to Jules’ style in general ... or even in this particular conversation
What we want: how much Vincent’s inclusion of an article (say) immediately triggers the usage of articles in Jules’ reply?

Compare rate of article usage in Vincent’s and Jules’ utterances?
What we want: how much *Vincent’s* inclusion of an article (say) immediately triggers the usage of articles in *Jules’* reply?

*Compare rate of article usage in Vincent’s and Jules’ utterances?*

not capturing *immediate* triggering
What we want: how much Vincent’s inclusion of an article (say) immediately triggers the usage of articles in Jules’ reply?

Correlation of article usage?
What we want: how much Vincent’s inclusion of an article (say) immediately triggers the usage of articles in Jules’ reply?

**Correlation of article usage?**

Symmetric, so not measuring a directed triggering effect
What we want: how much *Vincent*’s inclusion of an article (say) immediately triggers the usage of articles in *Jules*’ reply?

\[
Coordination_{(J \text{ to } V)}(\text{art.}) = P(J^{\text{art.}} | J \text{ replied to } V, V^{\text{art}})
\]
What we want: how much *Vincent’s* inclusion of an article (say) immediately triggers the usage of articles in *Jules’* reply?

\[ \text{Coordination}_{(J \text{ to } V)}(\text{art.}) = P(J_{\text{art.}} | J \text{ replied to } V, \text{Vart}) \]

does not control for style similarity
What we want: how much Vincent’s inclusion of an article (say) immediately triggers the usage of articles in Jules’ reply?

\[
\text{Coordination}_{(J \text{ to } V)}(\text{art.}) = P(J_{\text{art.}} | J \text{ replied to } V, V_{\text{art}}) - P(J_{\text{art.}} | J \text{ replied to } V)
\]

Trigger

Control (for inherent similarity)
What we want: how much Vincent’s inclusion of an article (say) immediately triggers the usage of articles in Jules’ reply?

\[
Coordination_{(J \text{ to } V)}(\text{art.}) = P(J^{\text{art.}} | J \text{ replied to } V, \text{art.}) - P(J^{\text{art.}} | J \text{ replied to } V)
\]

In words: “How much does the probability of Jules using an article increase as a direct consequence of Vincent using an article”
Overall coordination: average over all pairs of users \((B,A)\)

“Triggered” probability

Control probability

\[P(B^{art.} \mid B \text{ replied to } A, A^{art})\]

\[P(B^{art.} \mid B \text{ replied to } A)\]

Coordination
Coordination effect in social networks!

“Triggered” probability $P(B_{art.} | B$ replied to $A, A_{art}$)

Control probability $P(B_{art.} | B$ replied to $A$)

p-value<0.0001
Coordination and power differences

Two very different empirical settings:

Wikipedia community of editors:
- 240,000 conversational exchanges on “talk pages”
- users become admins through elections

U.S. Supreme Court oral arguments:
- 50,000 verbal exchanges
- between Justices and lawyers
Coordination and power differences

Hypothesis: Higher power → others coordinate more towards you

Coordination towards high-power people (purple)

Coordination towards low-power people (green)
Hypothesis: Higher power → others coordinate more towards you

Coordination towards high-power people (purple) vs. Coordination towards low-power people (green)

purple > green?
Hypothesis: Higher power $\rightarrow$ others coordinate more towards you

Coordination towards high-power people (purple)

Coordination towards low-power people (green)

purple $>$ green?
Hypothesis: Higher power $\rightarrow$ others coordinate more towards you

Wikipedia: towards admins towards non-admins

purple > green?
Hypothesis: Higher power $\rightarrow$ others coordinate more towards you

Supreme Court:
Track a fixed group of users as they undergo status change
Track a fixed group of users as they undergo status change

Coordination towards users increases after these gain higher status
Track a fixed group of users as they undergo status change. Coordination decreases after these users gain higher status.
SVM classification with various features

- Bag of words (20,000 features)
- Coordination (9 features)
- "Stylistic" (18 features)

Difference from 50%

Train & Test Court
Train & Test Wiki

* indicates significant difference.