Telephone call mid-afternoon New Year's Day, 1967:

Somewhat uncertain female voice: "I have two questions. The first is sort of an etiquette one. I went to a New Year's Eve party and unexpectedly stayed over. I don't really know the hosts. Ought I to send a thank-you note? Second, when you meet a fellow and you know he's worth twenty-seven million dollars because that's what they told me, twenty-seven million, and you know his nationality, how do you find out his name?"

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INFO/CS 4300 Hall of Fame
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—as 1/2/67
Linguistic style:

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

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.”
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[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?”

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Shopkeeper: “Five o’clock”

[Levelt & Kelter, 1982]
Linguistic style coordination

Linguistic coordination occurs:
  instantaneously
  non-consciously
Measuring coordination
VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.
Measuring coordination

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.
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.

JULES: He just massaged her feet, massaging someone's feet is nothing, I massage my mother's feet.
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VINCENT: Antwan probably didn't expect Marsellus to react like he did, but he had to expect a reaction.

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Matching on article presence.
Measuring coordination

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.

But matching ≠ coordination!
(e.g., chance or bad guys like articles)
Measuring coordination

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?
Measuring coordination

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
Measuring coordination

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

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

Trigger
Measuring coordination

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

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

does not control for style similarity
Measuring coordination

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

\[
\text{Coordination}_{(J \text{ to } V)}(\text{art.}) = \frac{P(J^{\text{art.}} | J \text{ replied to } V, V^{\text{art}})}{1 - P(J^{\text{art.}} | J \text{ replied to } V)}
\]
Measuring coordination

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

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

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

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

\[
P(B^{art.} | B \text{ replied to } A)
\]
Coordination effect in social networks!

“Triggered” probability $P(B^{art.} | B \text{ replied to } A, A^{art})$

Control probability $P(B^{art.} | B \text{ replied to } A)$
Symmetric?

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

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

Control (for inherent similarity)

In words: “How much does the probability of Jules using an article increase as a direct consequence of Vincent using an article”
Asymmetry -> Who’s got the upper hand?
Hypothesis: Higher power → others coordinate more towards you

Coordination towards
high-power people
(purple)

Coordination towards
low-power people
(green)
**Hypothesis:** Higher power $\rightarrow$ others coordinate more towards you

purple $>$ green?

Coordination towards
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Hypothesis: Higher power $\rightarrow$ others coordinate more towards you

Coordination towards high-power people (purple)

Coordination towards low-power people (green)
Coordination and power differences

Higher power (by status) → others coordinate more towards you

Wikipedia: purple > green?
Coordination and power differences

Higher power (by status) → others coordinate more towards you

Wikipedia:

purple > green?

Diagram showing coordination and power differences among different elements.
Track a fixed group of users as they undergo **status change**
Coordination and status change

Track a fixed group of users as they undergo status change.

Coordination towards users increases after these gain higher status.
Coordination and status change

Track a fixed group of users as they undergo status change

Coordination by users decreases after these gain higher status