Your spouse needs professional help: Determining the Contextual Appropriateness of Messages through Modeling Social Relationships

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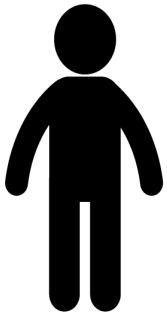
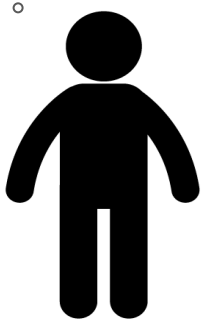
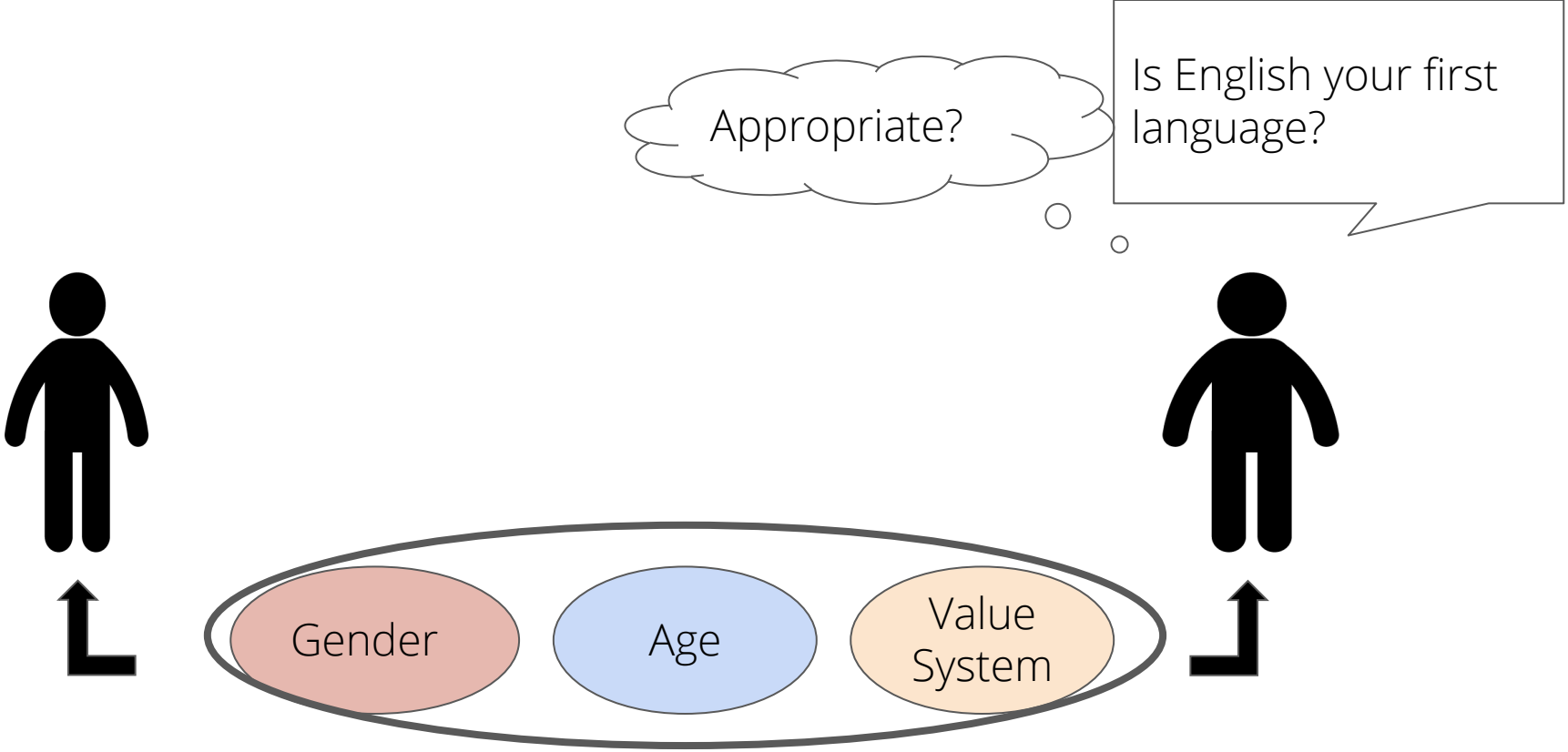


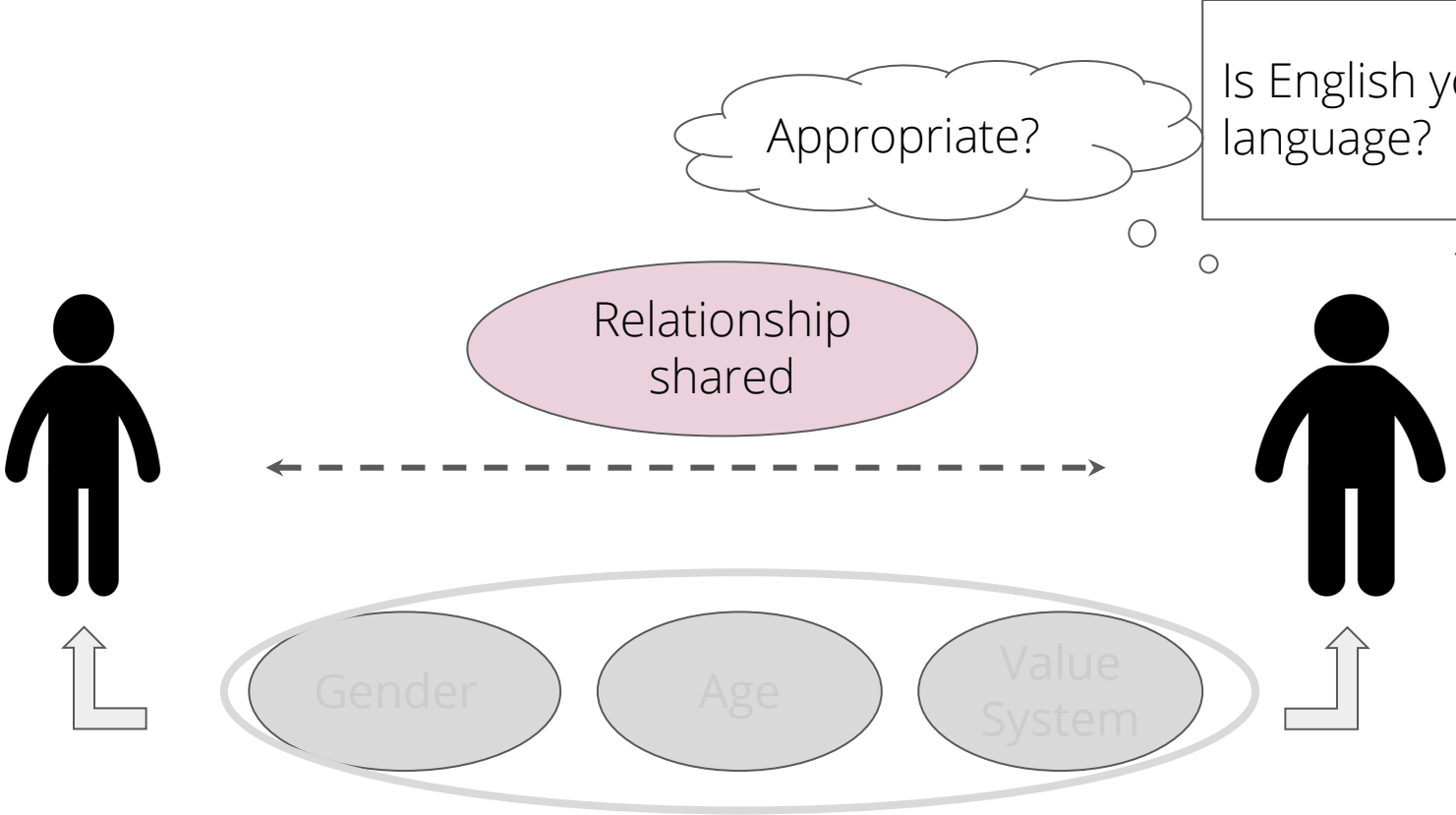
Appropriate?

Is English your first language?





Communication between individuals are a complex functions of multiple factors.



Communication between individuals are a complex functions of multiple factors.

Language has many ways to describe our relationship to others. Each relationship has its own norms!

Family

Social

Romance

Para-Social

Organizational

Peer-group

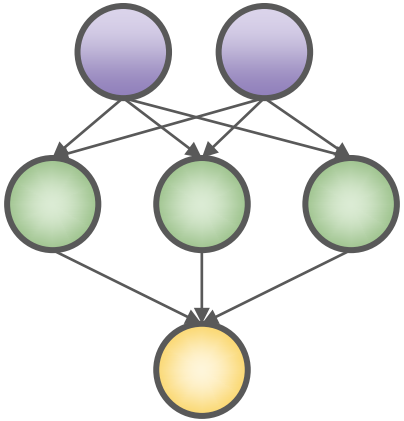
Role-based

Antagonist

Dataset Creation

Building a Model

Apply the model to understand



How much of the conversations are context-sensitive

Its usefulness to model other language behavior in conversations

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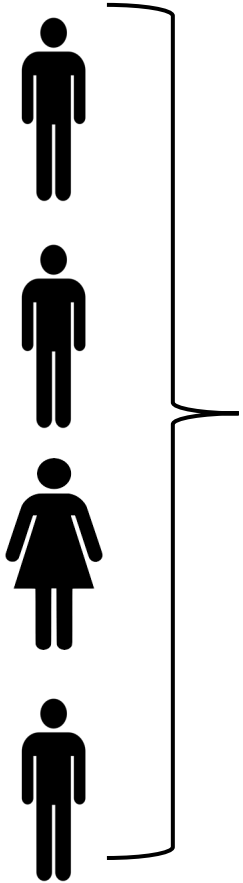
Dataset Creation (Phase 1)



Manually generated 401 sentences such that their appropriateness differs across relationships

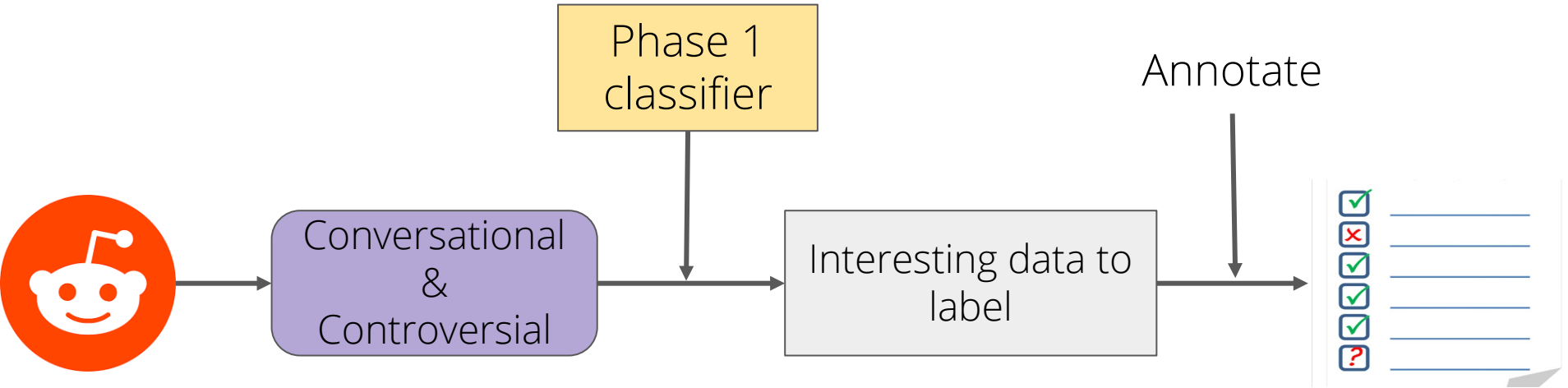
Phase 1 classifier

"You look super cute today"

😊 Parent to their child

😬 Boss to their employee

Dataset Creation (Phase 2)



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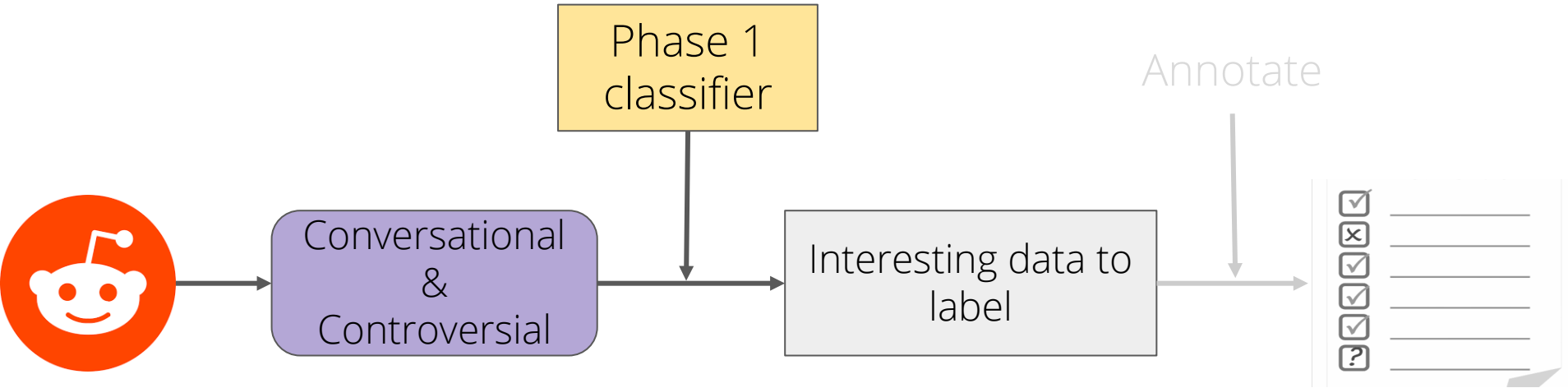

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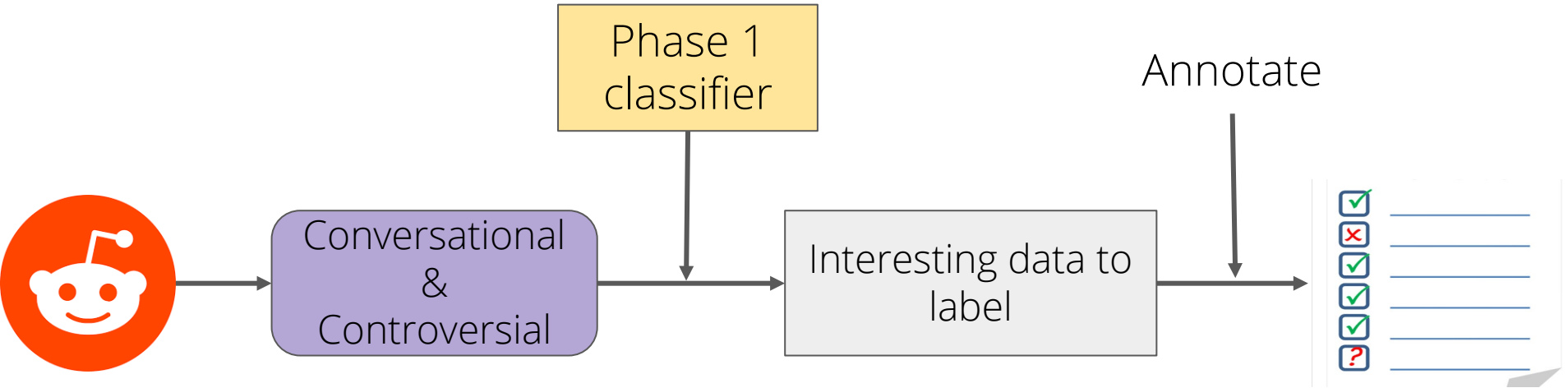

Annotating appropriate is complex!

Measuring Annotation Quality

- Two trained annotators labeled 41 contexts, making 2,159 initial appropriateness judgments
- Initial agreement: Kripperdoff's α = 0.46 🤯
- Why did annotators disagree? (in order)
  - Disagreement on message meaning (most cases)
  - Mistakes
  - Disagreement on appropriateness
- Solution: Annotators adjudicate the meaning of each message and then re-annotated
  - Final agreement α = 0.92
- Caveat: One dataset—not necessarily expected to generalize

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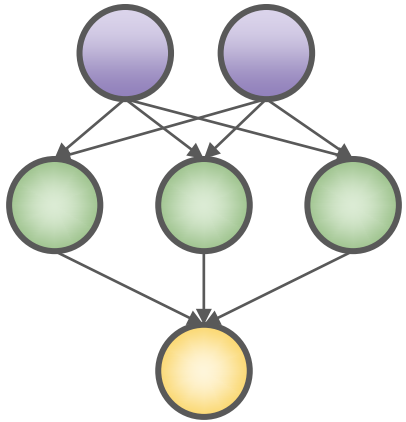


How much of the conversations are context-sensitive

Its usefulness to model other language behavior in conversations

Can computational models identify contextual appropriateness?

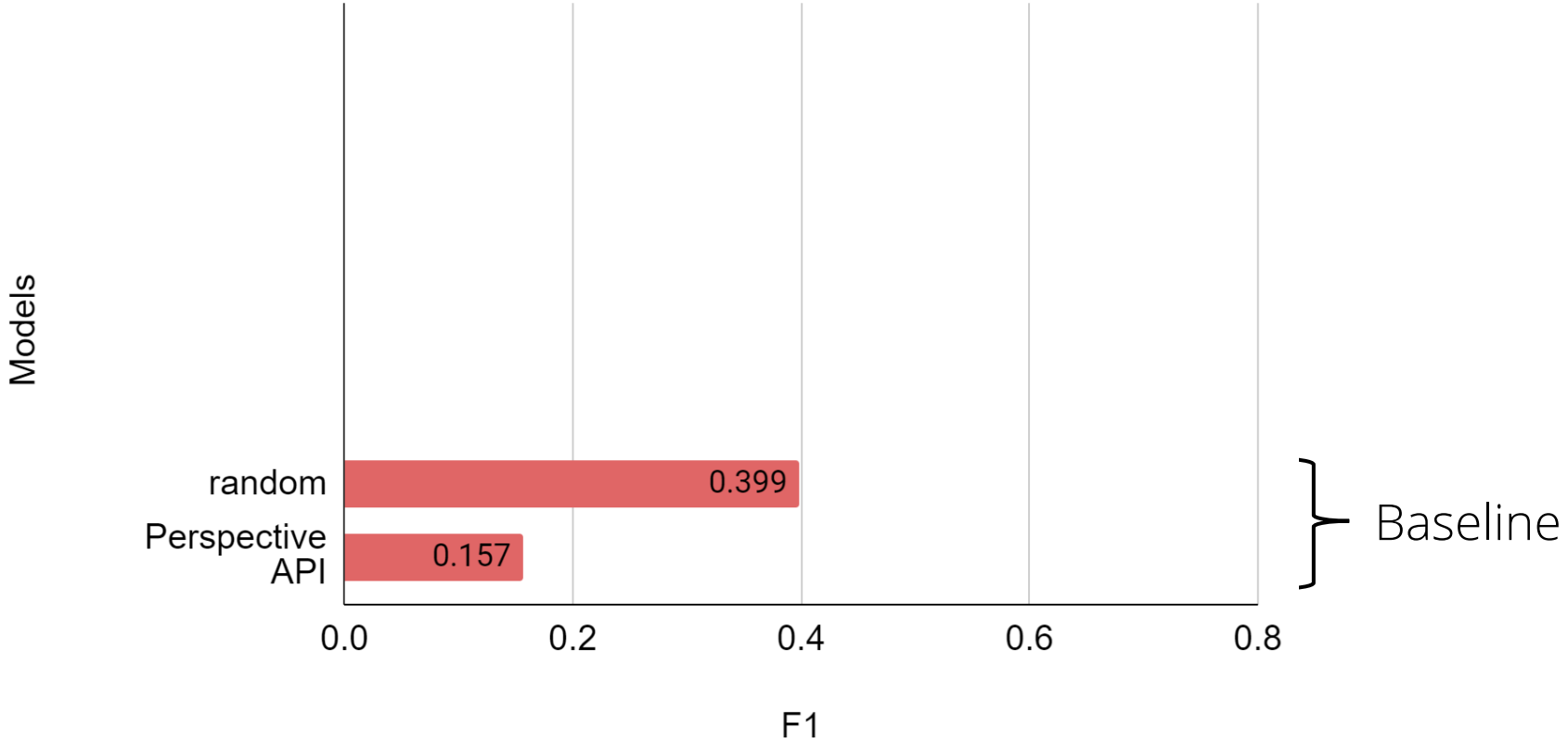
Task: Given the social relationship identify if it would be appropriate to say a particular message

Example: Would asking “Is English your first language?” be considered appropriate between work colleagues

Prompt-based: ‘Is it appropriate for `person1` to say "`quote`" to `person2`, "yes" or "no"? [mask]’
Positive class: Inappropriate

Fine-tuning: Person1 saying “Quote" to person2 is inappropriate. *Label (1/0)*

Can computational models identify contextual appropriateness?



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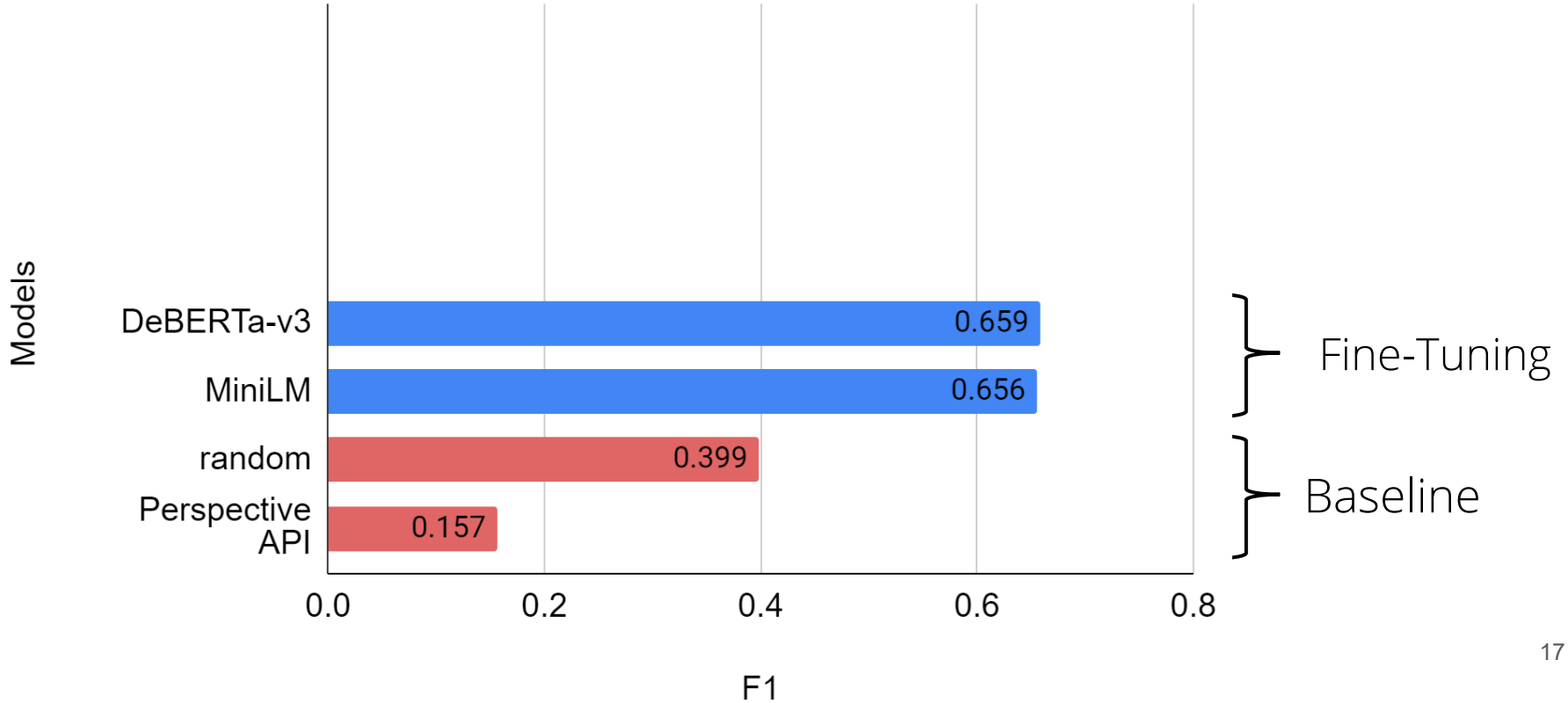

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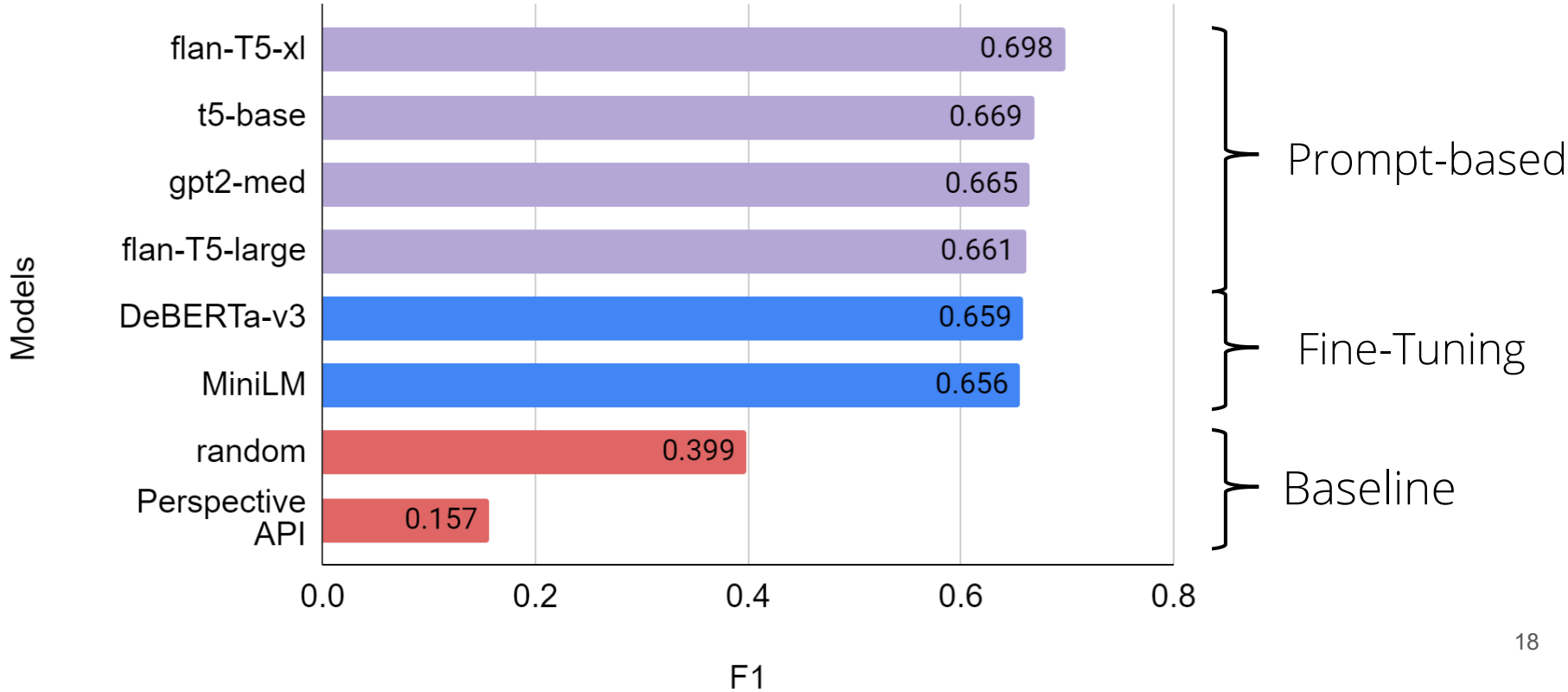

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How much of the conversations are context-sensitive

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How much of the conversations are sensitive to relationship-context?

"When you die do you want to be buried or cremated?"

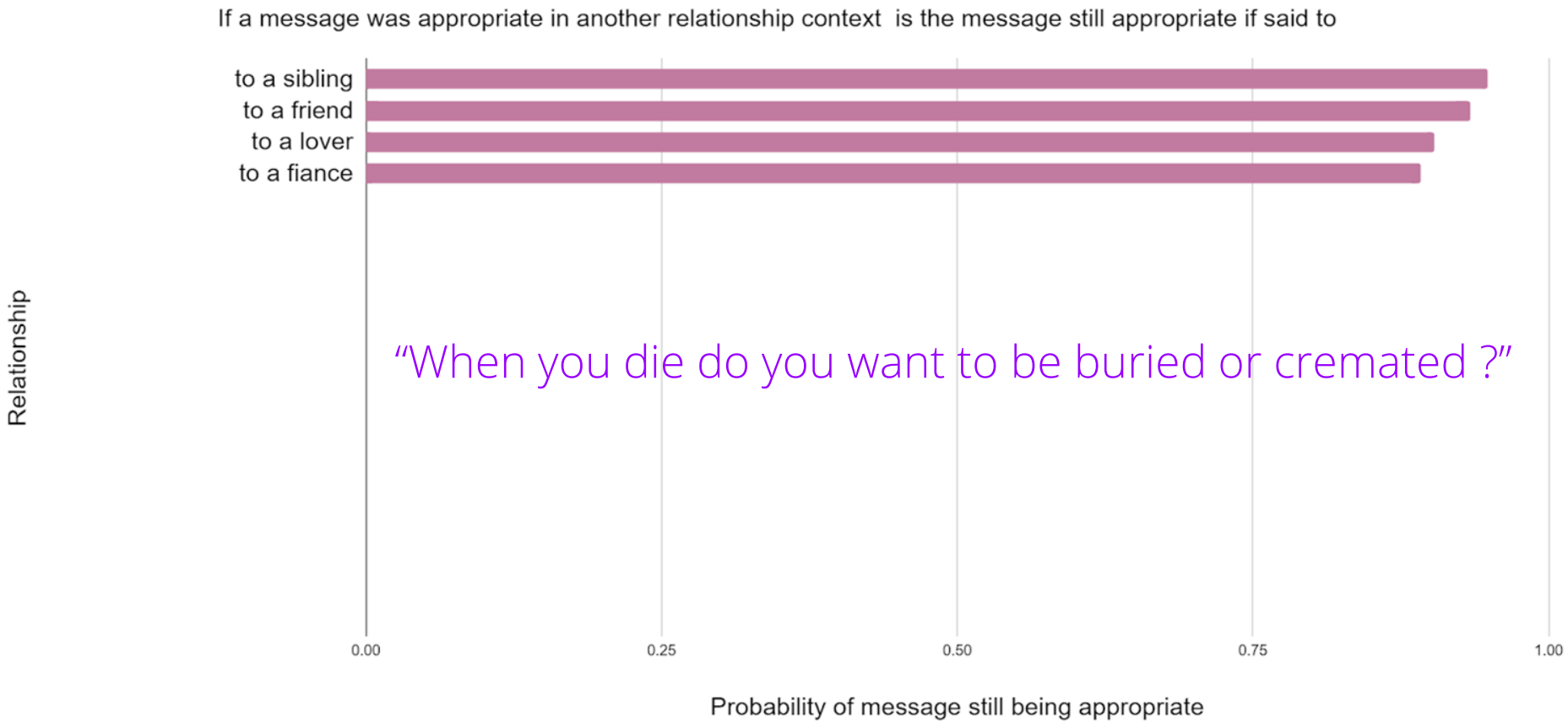
What if we switch context?

Still appropriate?

"When you die do you want to be buried or cremated?"

How much of the conversations are sensitive to relationship-context? (PRIDE; Tigunova et al 2021)

- Dialogue dataset with a known relationship between speaker and spoken to.
- Based on movie dialog but filtered down to generic messages
- We use a dataset of 47,801 messages across 18 relationships



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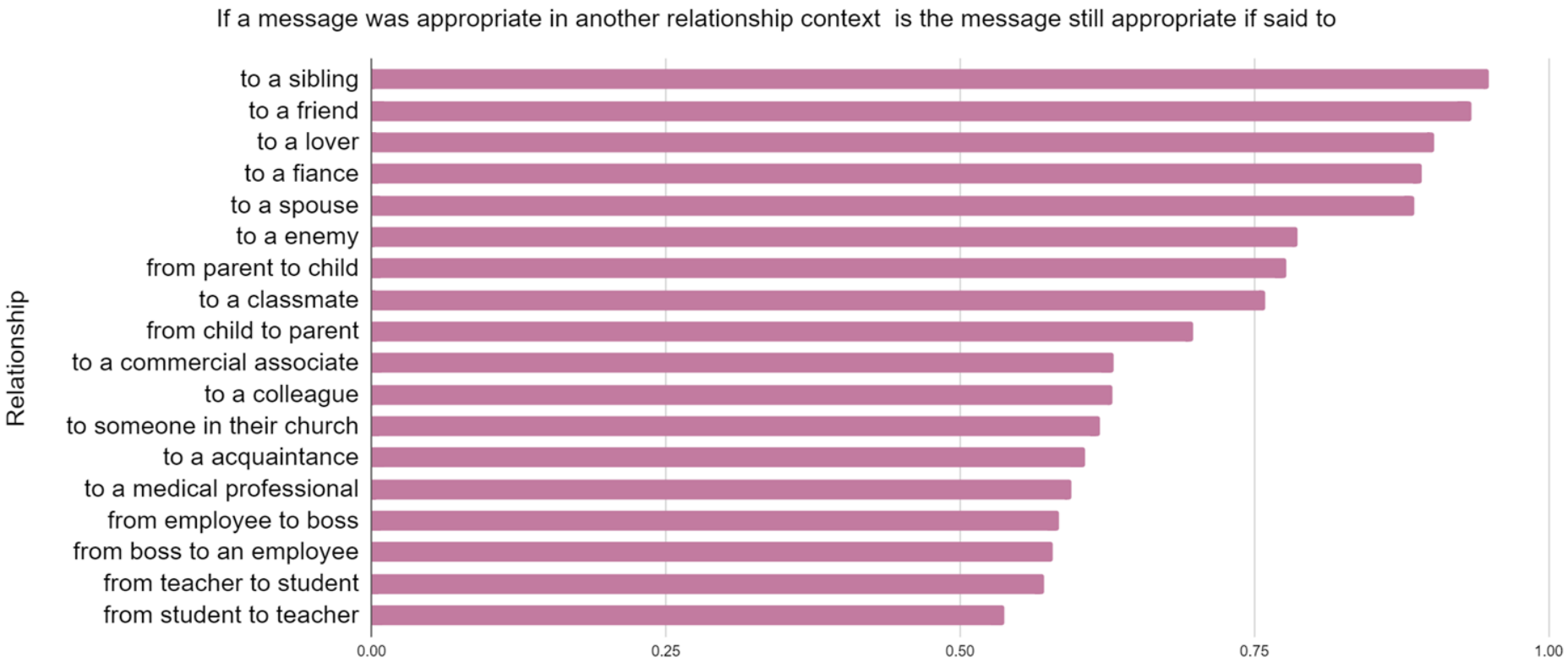


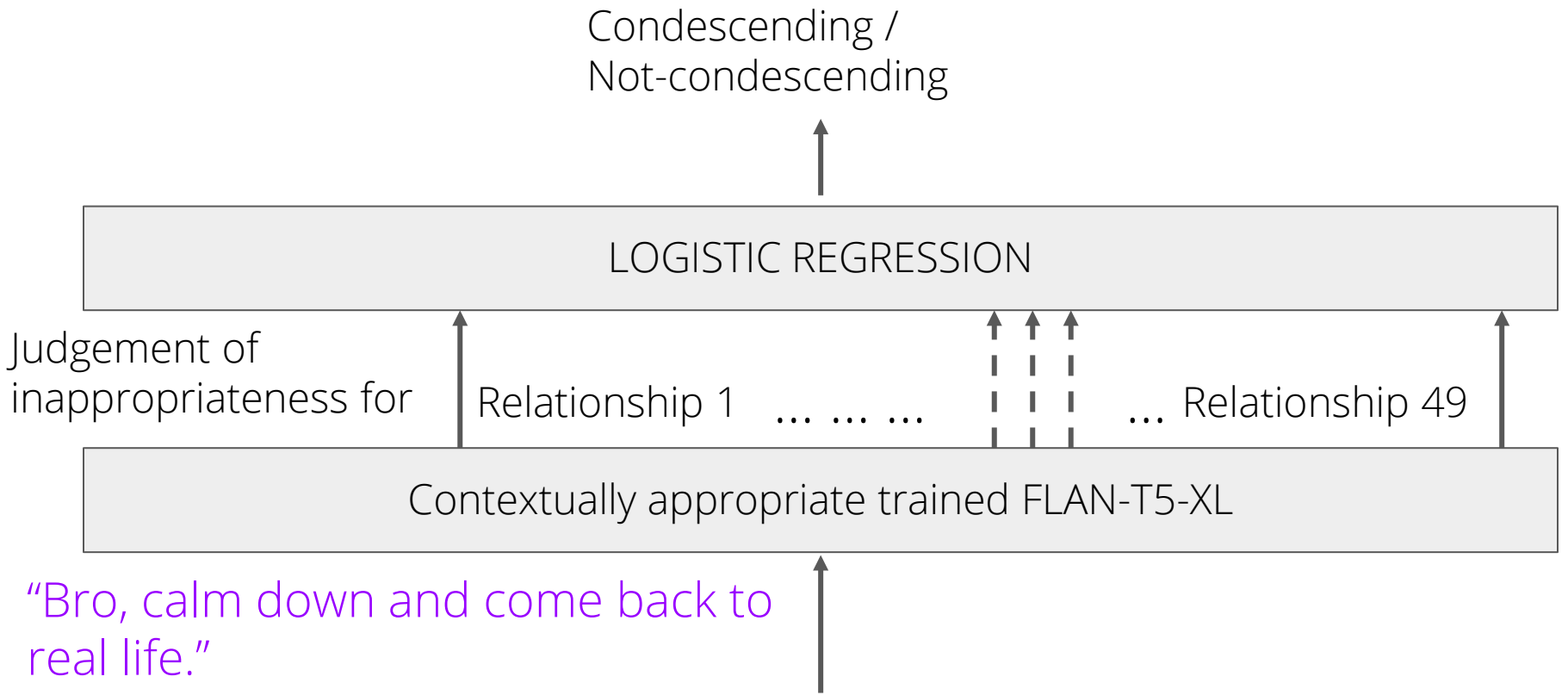
~1/5th of the conversations
change their appropriateness with context

Is appropriateness helpful for modeling other language behaviors? (Talkdown; Wang and Potts 2019)

- Aim: Detect condescending utterances.
- Binary Classification task.
- Why:
  - Appropriateness and condescension are related
  - Condescension is inappropriate in hierarchical relationships.

    “Bro, calm down and come back to real life.”

Is appropriateness helpful for modeling other language behaviors?



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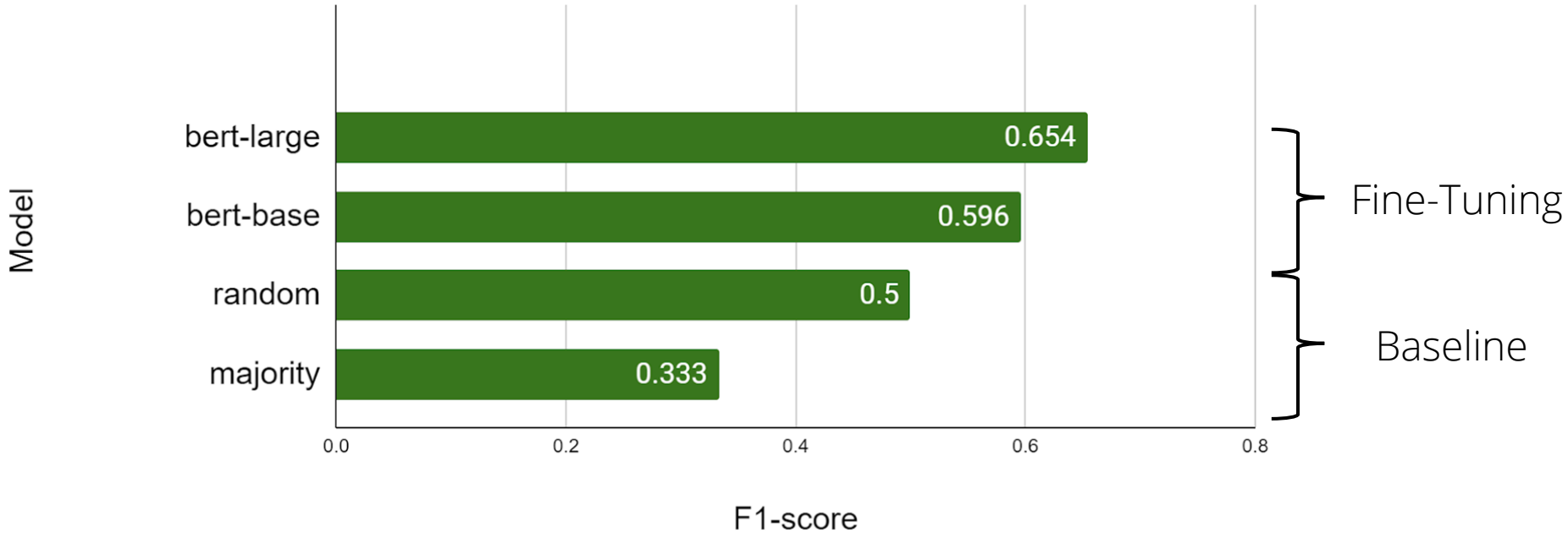

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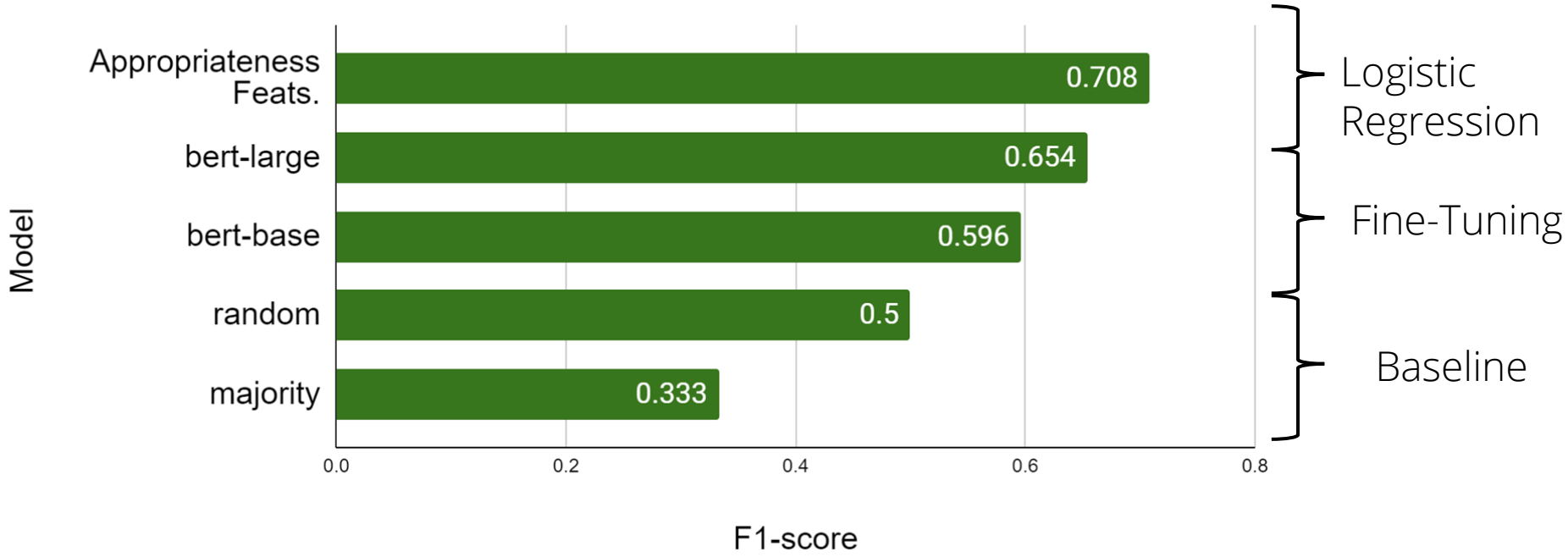
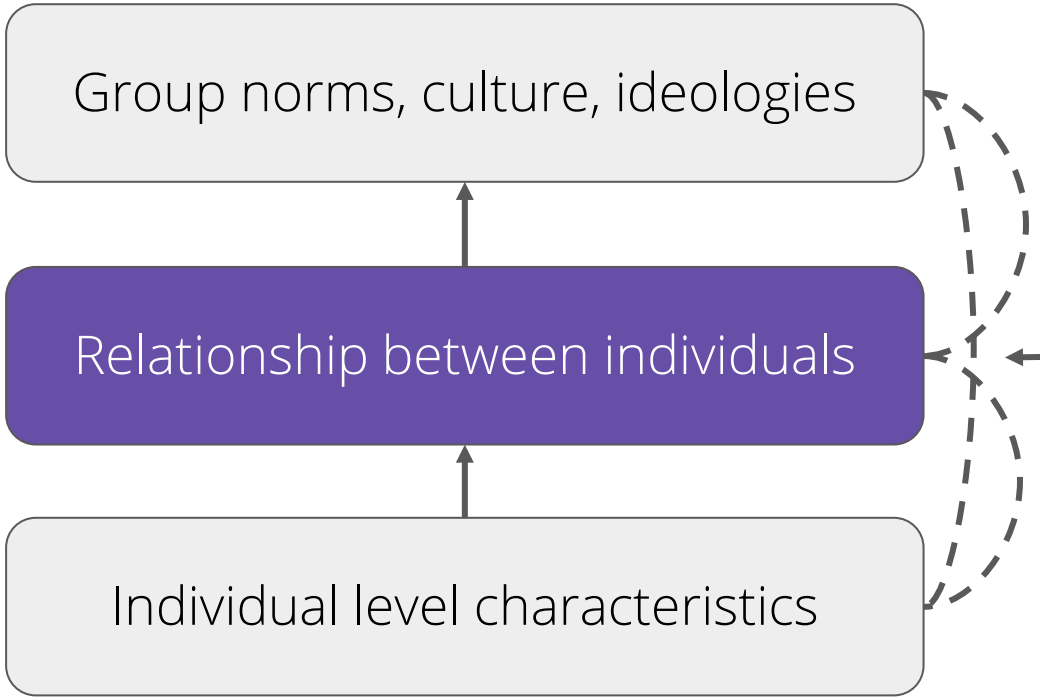


"Bro, calm down and come back to real life."

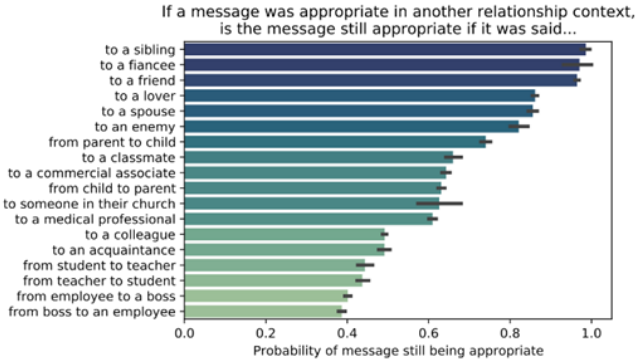
Limitations

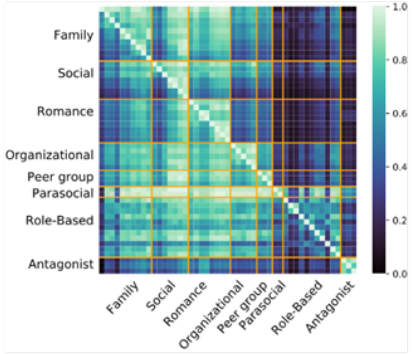


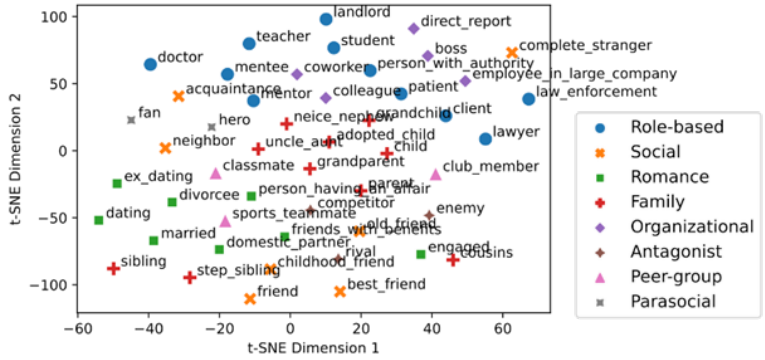
- More relationships to be analyzed; each with more nuance
- More #annotators; diverse viewpoints.

- This work focuses on this aspect

Thank you!!







- We introduce a new dataset of 12K appropriateness judgments across 49 relationships.
- An estimated 1 in 5 messages change their appropriateness in a new context
- Incorporating contextuality helps understand other antisocial behaviors

https://github.com/davidjurgens/contextual-appropriateness

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