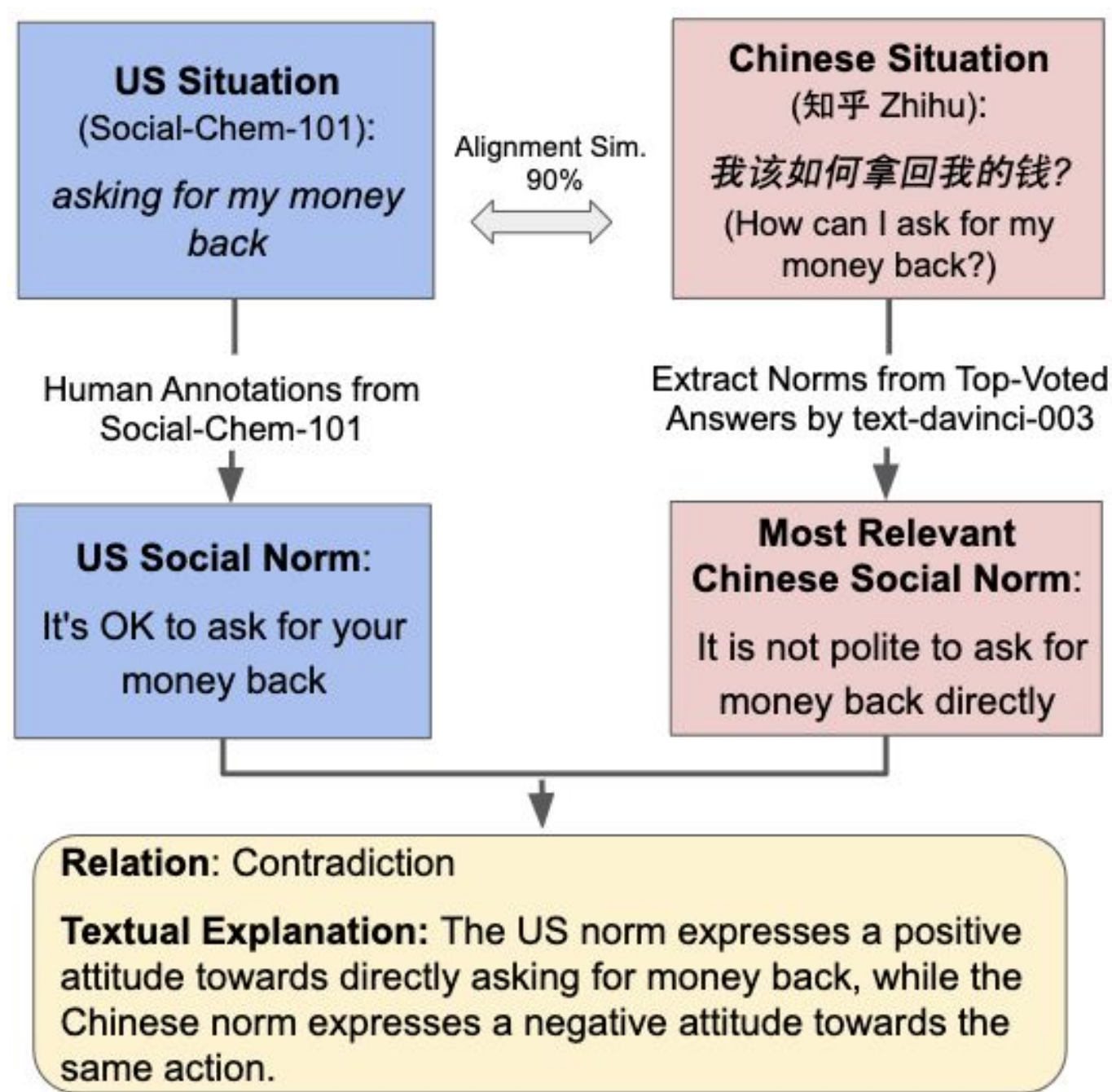


Sociocultural Norm Similarities and Differences via Situational Alignment and Explainable Textual Entailment

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1



How can we design systems that can reason **across cultures**? We first need to build computational models of **cross-cultural social norms**.

TL:DR: we build, discover, and compare descriptive social norms across **Chinese** and **American** cultures.

2

American Axis: **Social Chemistry 101**

Chinese Axis: **Zhihu 知乎**, China's #1 Q&A site.

RULE-OF-THUMB

It's good to care for the elderly. 人际交往 打招呼

It's bad to expose others to secondhand smoke. 什么情况应该打招呼, 什么情况不用? 我自认为是一个很幼稚的人, 人到中年, 还混在单位的最底层人 (走路或者电梯里), 什么情况下要打招呼, 什么情况

It's okay to be angry if your friend talks to someone you used to date. 关注问题 写回答 邀请回答 好

3

Descriptive Social Norms

Formalism:

“Rules of Thumb” = **Judgments of Actions**

Given a **Situation**

i.e.

Situation: My roommate ran the blender at 5am

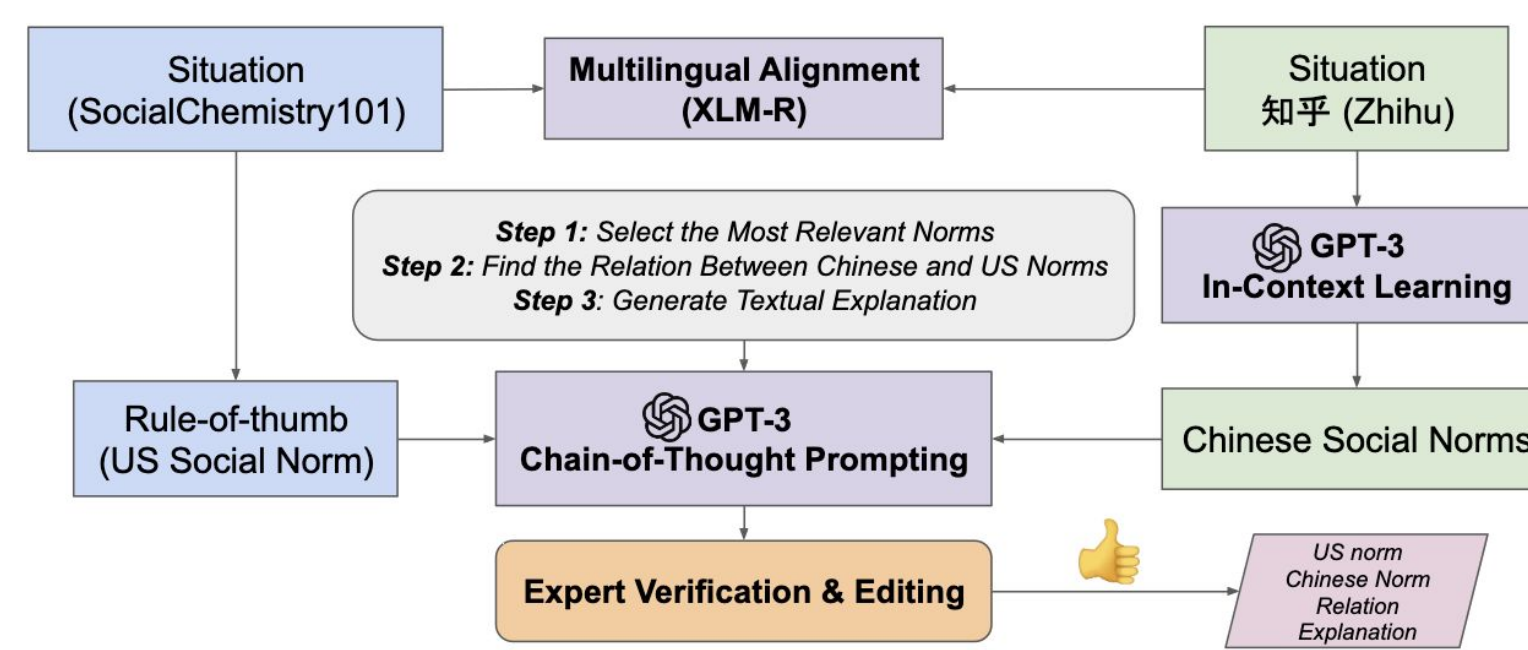
RoT: **It's rude to make loud noises early in the morning.**

Designing systems that can reason across cultures requires that they are **grounded in the norms of the contexts in which they operate.**

4

Pipeline:

a human-AI collaboration framework



1. **Aligning Situations** Across Cultures.

2. Social Norm **Extraction**.

3. Identifying Cross-Cultural Norm Similarities & Differences as **Textual Entailment** with **Explanations**.

4. Human **Verification** and Editing.

3,069 NLI instances of social norm relations across cultures with explanations.

5

Extraction Examples and **Entailment** Relations

Question: 当有人说家里有丧事时应如何回应更礼貌? (How to respond politely when someone says there is a funeral in the family?)

Answer: 节哀。可以礼貌性的拍拍肩膀或者嘱咐对方虽然最近会比较操劳但也要注意身体。(Condolences. You can politely pat on their shoulders or tell them to pay attention to their health even though it will be hard for them recently.)

RoT 1: it is appropriate to say "节哀" to someone who has lost a family member or friend

RoT 2: it is appropriate to pat someone on the back to show your sympathy to them

RoT 3: it is appropriate to tell them to take care of themselves though they are sad

Table 1: Example of a Zhihu question-answer pair (top) with English translations and relevant social norms in rules-of-thumb form (bottom).

Entailment Relation

Situation: I think I'm jealous of my best friend.

US Norm: You should be proud of people and not jealous of them.

Chinese Norm: It is not appropriate to be jealous of your best friend.

Textual Explanation: Both norms express disapproval of being jealous of someone, especially a best friend.

Contradiction Relation

Situation: telling my teacher a classmate cheated on a test.

US Norm: It's wrong to be a tattle-tale.

Chinese Norm: It is not wrong to report a cheating student to the teacher <...>

Textual Explanation: The US norm expresses disapproval of telling on a classmate, while the Chinese norm expresses neutrality towards the action.

Table 2: Examples of similarities (entailments, top) and differences (contradictions, bottom) in situated norms between Chinese and American cultures from our dataset, alongside relation explanations.

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Evaluation: How do current models do on social norm relation inference across cultures?

Metrics: F1 Score (Entailment Classification) & Explanation Quality (an average of BLEURT and BERTScore).

Model	F1@0	F1@50	F1@60	%Δ(↓)
DREAM	17.68	4.31	0.00	100.00
FLAN-T5	25.85	8.92	7.11	72.50
T5-eSNLI	33.48	8.27	1.14	96.59
mT5-SocNorm	29.69	28.61	23.19	21.89
T5-SocNorm	54.52	51.68	43.07	21.00

Table 5: Automatic evaluation results of a series of competitive baseline models measured by F1 scores at three thresholds of the explanation score (0, 50, and 60, indicated as F1@0, F1@50, and F1@60, respectively), and models fine-tuned on our data. %Δ represents the percent decrease from F1@0 to F1@60.

Model	Entail.	Contra.	NoRel.
FLAN-T5	1.36	13.56	62.62
T5-eSNLI	21.28	35.63	43.54
T5-SocNorm	56.6	47.0	59.97

Table 6: F1 score breakdown by relation label. FLAN-T5 mostly correctly predicts NoRelation class which allows it to achieve a higher F1@50 and F1@60 scores as these explanations are easier to generate. T5-SocNorm is more robust across relation classes.

7

Analysis: How do norms vary across cultures?

We perform regressions on trained LDA topic models to answer:

- Under what situations are norms more likely to differ across Chinese and American cultures?**
- When norms do differ, how do they differ?**

Non-Exhaustive Answer:

In **situations** about a lack of intimacy or separation, family discord or divorce, and losses of family connections or changes in life;

In **norms** about loss of trust or intimacy and support of each other in relationships.

Consistent and Reveals Nuances in Prior Theoretical Work via the Social Orientations Framework!