Additional Information: **Investment task design**
Author(s)
Submission
1) Have any data been collected for this study already?
No

2) What's the main question being asked or hypothesis being tested in this study?
We examine whether the process of transmitting information through speech distorts the information and how such distortions differ between different kinds of information content. **This experiment uses investment decisions in the context of earnings surprises as the setting, and transmitters are incentivized based on the performance of an investment made by the listener who hears their message.**

3) Describe the key dependent variable(s) specifying how they will be measured.

Our experiments involve transmission of information about two unknown states: (i) the earnings performance of a US company that sells IT equipment and (ii) the earnings performance of a US company that sells building materials. We cross-randomize the level and certainty of the predictions in the original messages.

Primary outcomes:

(i) the respondent's belief about the message originator's prediction about the state of the world;
(ii) the respondent's belief about the originator's uncertainty, as measured on a scale ranging from 0 (extremely uncertain) to 100 (extremely certain).
(iii) We will examine the transcripts of transmitted messages. Using a large language model (such as GPT-5-2) we will classify each transcript according to whether it contains explicit statements about the original message's level prediction and the original message's uncertainty.
(iv) Participants then allocate a total of $100 across three state-contingent assets tied to the earnings outcome: (i) earnings at least 2% above expectations, (ii) earnings at least 2% below expectations, or (iii) earnings within ±2% of expectations. Allocations must sum to $100 and can be distributed freely across assets. After the earnings announcement (Q1 2026), only the asset corresponding to the realized outcome pays off, yielding $2 per $1 invested; the other assets pay zero. Our outcome here is the amount allocated to bucket (i) minus the amount allocated to bucket (ii); we examine the mean of this outcome across the 4 level x certainty quadrants in our original scripts, controlling for prior beliefs about the company's earnings performance.

Secondary outcome:
The respondent's belief movement about the unknown state (difference between posterior mean, elicited after the respondent listens to a message about the state, and prior mean, elicited beforehand); we examine the mean of this outcome across the 4 level x certainty quadrants in our original scripts, controlling for prior beliefs about the company's earnings performance.

For all main outcomes, we will z-score within company and then pool together the observations from both companies.

Each participant is randomly matched to a respondent in a separate survey who allocates $100 across three assets that pay off depending on whether a company's performance is higher than expected, lower than expected, or exactly as expected. One in 100 of these investment decisions is randomly selected for implementation. After the company's performance is realized, the amount invested in the correct asset is doubled and paid out. If the matched respondent's decision is randomly selected to be eligible for bonus payment, both the investor and the original participant who provided the voice recording receive the resulting payoff. The investor bases their decision solely on the voice recording, so the participant's incentive is to provide information that enables the most accurate investment choice.

All three beliefs are incentivized through random incentives. Respondents will be told at the start that 1 in 100 respondents will be randomly chosen to be eligible for a bonus payment and have one of the incentivized tasks be paid out according to the formulas below.
(a) Beliefs about the true state of the world are incentivized with the following formula:
(i)Probability of winning $20 [in %] = 100 minus 5 times the sum, over all ranges, of (Your % for that range − Correct %)², where the "correct %" is 100% for the range that actually contains the true value and 0% for all other ranges. While this formula might look complicated, what it means is simple: to maximize your chance of winning the bonus, set each bar to the percentage chance you truly think that range will occur.

(b) Beliefs about the message originator's beliefs and certainty are incentivized as follows:
(i) For 50% of respondents, there will be no incentive and the question will be phrased as a direct question about the message originator's beliefs.
(ii) For 50% of respondents, the question will be phrased as a second-order question ("your job is to predict what people would on average respond to the direct question") and responses will be incentivized with the following formula:
(1) For beliefs about the originator's prediction: Probability of winning $20 [in %] = 100 − 10*(Response [in %] - Average response to direct question [in %] )^2
(2) For beliefs about the originator's certainty: Probability of winning $20 [in %] = 100 − 2*(Response - average response to the direct question)^2
If a respondent is selected to be eligible for a bonus, one of the incentivized beliefs of that respondent will be randomly selected to be the one that counts for payment.

4) How many and which conditions will participants be assigned to?

The full experiment comprises two separate data collections that build on each other, a transmitter experiment and a listener experiment. The two experimental collections rely on different respondent samples.

Transmitter experiment:
Participants listen to two short recordings played consecutively and without a break, each one of an opinion piece providing a qualitative narrative about whether earnings performance of a company is higher or lower than expected. Then, they record their own summary of these recordings, separately for the first and second company.

A randomly chosen 50% of transmitters will be asked their prior belief about each variable before hearing the recordings, and all transmitters will be asked for the beliefs described above after recording their transmitted message for each company.

Recording treatment arms:
Within each company, we randomize three key features of the original recordings:
Level of variable: We randomize whether the piece argues for higher than expected or lower than expected earnings.
Uncertainty of message: Second, we randomize the uncertainty of the original message. We randomly assign respondents to original opinions that either argue that earnings will certainly be higher (or lower) than expected, or that earnings will probably be higher (or lower) than expected but that things could go either way.

Randomization is stratified: each transmitter hears two recordings, one with a “higher” and one with a “lower,” one with “high uncertainty” and one with “low uncertainty”.

Respondents receive incentives for transmitting all information contained in the original messages. Each participant is randomly matched to a respondent in a separate survey who allocates $100 across three assets that pay off depending on whether a company’s performance is higher than expected, lower than expected, or exactly as expected. One in 100 of these investment decisions is randomly selected for implementation. After the company’s performance is realized, the amount invested in the correct asset is doubled and paid out. If the matched respondent’s decision is selected, both the investor and the original participant who provided the voice recording receive the resulting payoff. The investor bases their decision solely on the voice recording, so the participant’s incentive is to provide information that enables the most accurate investment choice.

Listener experiment:

This involves a separate set of respondents. For each of the two companies, respondents first state their prior belief about the earnings surprise and then listen to a recording about the company. As before, the order of the companies is randomized. For each company, respondents are randomly matched to a transmitter and listen either to the same original recording as the one the transmitter heard, or that transmitter’s transmitted recording. There is a 30% chance of hearing the original and 70% chance of hearing the transmitted recording.

After listening to a recording, respondents are incentivized to forecast the future development of the variable as well as to guess the prediction of the message originator and

the certainty of the original message and  to make an investment decision. (The same outcomes described above, incentivized in the same way).

5) Specify exactly which analyses you will conduct to examine the main question/hypothesis.

Our main analyses compare the sensitivity of our main outcomes to the positive versus negative surprise prediction and high versus low uncertainty randomizations, between the original and transmitted recordings.

Specifically: to examine distortions of information about the level of a variable, we compare the following two quantities: (1) the difference between average beliefs among listeners who heard original recordings in the “higher” condition and average beliefs among listeners who heard original recordings in the “lower” condition, and (2) the difference between average beliefs among listeners who heard transmitted recordings in the “higher” condition and average beliefs among listeners who heard transmitted recordings in the “lower” condition. By “belief” here, we mean the belief about the message originator’s prediction, not the listener’s own belief about the state of the world (because the latter is a function of transmission of both level and certainty information).

Similarly, to examine distortions of information about the certainty of a message, we will conduct an identical comparison except using listeners’ beliefs about the certainty of the message originator and comparing between the high versus low uncertainty conditions.

Third, we will analyze whether transmitted scripts contain information about whether the earnings are expected to be higher or lower and about the uncertainty of the prediction.

Fourth, to examine distortions in investment decisions, we will compare listeners’ average investment decisions between original and transmitted
messages across our four key quadrants (lower + low uncertainty, lower + high uncertainty, higher + high uncertainty, higher + low uncertainty).

Finally, to examine distortions in downstream beliefs about the world, we will compare listeners’ average belief movements (posterior minus prior) between original and transmitted messages across our four key quadrants (lower + low uncertainty, lower + high uncertainty, higher + high uncertainty, higher + low uncertainty).

6) Describe exactly how outliers will be defined and handled, and your precise rule(s) for excluding observations.

We will exclude responses below the 5th and above the 95th percentile of prior beliefs, taking these extreme responses as indications of either inattention or very outlandish and potentially distortionary beliefs about the subject matter. To deal with potential outliers in the beliefs about the state of the world and beliefs about the originator’s beliefs about the state of the world, we winsorize them at the 2nd and 98th percentile. Beliefs about the originator’s certainty are naturally bounded between 0 and 100, so we don’t need to winsorize them. We include an attention check and a set of comprehension questions on the study instructions. Subjects that fail the attention check are excluded from the study. If a subject fails to answer all comprehension questions correctly within the first two trials, we exclude

that subject from the data collection. When moving from the transmitter experiment to the listener experiment, we exclude transmitted recordings that are below the 5th percentile of recording length or below the 5th percentile of transcript word count, as a proxy for recordings that are silent or otherwise completely lack content.

7) How many observations will be collected or what will determine sample size?

No need to justify decision, but be precise about exactly how the number will be determined.
In the transmitter experiment, we plan to collect 300 completes.
In the listener experiment, we plan to collect 1200 respondents.

8) Anything else you would like to pre-register? (e.g., secondary analyses, variables collected for exploratory purposes, unusual analyses planned?)