# Supporting Information

## Jiang et al. 10.1073/pnas.1422930112

### SI Text

Statistical tests were conducted to determine whether the two LF pairs differed significantly in INS. Based on the involvement level of the followers, the two LF pairs were labeled as LF1 (more involvement) and LF2 (less involvement), respectively. For each channel, after converting the INS increases into $z$ values, one-sample $t$ test was performed on the mean $z$ values across the participant pairs ($P < 0.05$, corrected by FDR). In addition, an ANOVA was performed on each channel across all groups to detect any differences across the three pairs ($P < 0.05$, corrected by FDR).

For both pairs of LF, a significant INS increase was found at CH6 (LF1: $t_{(10)} = 4.891$, $P = 0.001$; LF2: $t_{(10)} = 3.253$, $P = 0.009$) (Fig. S2). The ANOVA revealed significant differences among the LF1, LF2, and FF pairs at CH6 ($F_{(2,30)} = 5.544$, $P = 0.009$). Further post hoc analysis showed significant differences between LF1 and FF ($P = 0.003$) and between LF2 and FF ($P = 0.023$), but not between LF1 and LF2 ($P = 0.434$). Given these results, the two LF pairs were combined for all analyses reported in the paper.

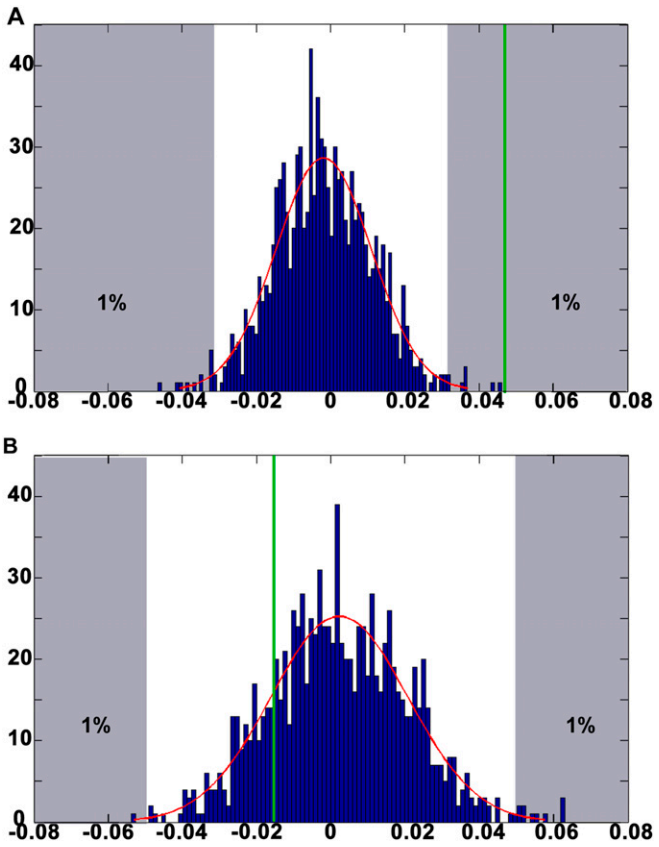


**Fig. S1.** Results of permutation analysis (between-group randomization 1,000 times). The figure shows the distributions of the permutated INS increases at CH6 for the LF pairs (*A*) and FF pairs (*B*). The upper and lower 1% areas are highlighted by gray rectangles. The green lines indicate the positions of the true means of the original 11 groups. Please note that the mean for the original LF pairs was within the 1% area whereas that for the original FF pairs was not.

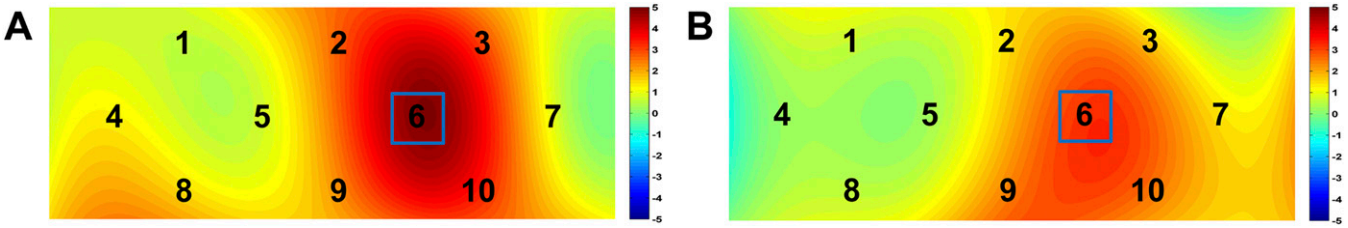


**Fig. S2.** Shown are *t* maps for the INS increases for LF1 (*A*) and LF2 (*B*).

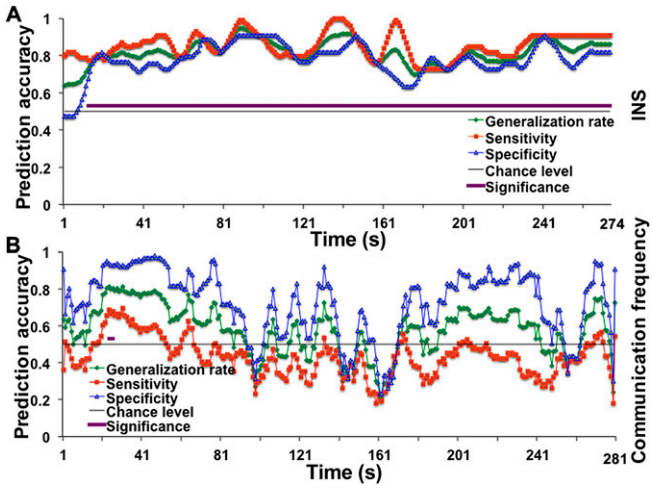


**Fig. S3.** Time course of prediction accuracy based on the moment-to-moment data. (*A*) Prediction results based on the INS data. (*B*) Prediction results based on communication frequency. There were a total of 274 time points for *A* after shifting 6 s toward the left due to fNIRS signal delay (*Materials and Methods*) and 280 time points for *B*. The time courses were smoothed by using a moving average method (span = 9 s). The purple line above the chance-level line indicates the time points where all three accuracy indexes were significantly higher than the chance level (0.50).

**Table S1. Leaderless group discussion evaluation criteria**

| Aspects | Criteria | Scoring guide | | | | |
|---|---|---|---|---|---|---|
| | | High | Medium-high | Medium | Medium-low | Low |
| Group coordination | When evaluating a member's skills at group coordination, please consider all of the following three aspects and give him/her an overall score:<br>1. Ability to coordinate the group discussion and to guide group discussion toward reaching a consensus. Typical behaviors: "Now we agree on the point of . . ., I think we can move on . . .."<br>2. Ability to bring relief to a tense atmosphere and to create a comfortable context for further discussion for all members.<br>3. Ability to deal with controversial issues and to help the team get out of entangled discussions. Typical behaviors include pointing out to others that the discussion is digressing from the intended topic and reminding the group how much time is left. | 5 | 4 | 3 | 2 | 1 |
| Active participation | Frequency with which the member talks. | 5 | 4 | 3 | 2 | 1 |
| New perspectives | Ability to come up with new perspectives and solutions when trying to solve difficult questions. | 5 | 4 | 3 | 2 | 1 |
| Input quality | Quality of the member's input to the group discussion in terms of richness of the information provided and relevance to the main topic. | 5 | 4 | 3 | 2 | 1 |
| Logic and analytic ability | Ability at analyzing the question or topic thoroughly and deeply, identifying the main point, and summarizing different opinions from other members. | 5 | 4 | 3 | 2 | 1 |
| Verbal communication | Ability to express his/her own perspective clearly, in an orderly fashion, and fluently. Signs of low ability include many pauses and unsystematic and disorderly presentation. | 5 | 4 | 3 | 2 | 1 |
| Nonverbal communication | Effective use of nonverbal communication such as facial expressions and body gestures. | 5 | 4 | 3 | 2 | 1 |