Previous research has demonstrated that factors such as member task expertise, personality information sharing, emergent group states (e.g., cohesion), and communication significantly predict effective group decision making. The current study examined a less well researched area—the impact of language style. Language style, conceptualized as the words that provide the architecture for the context of speech by helping organize and give the meaning of context words. Language style is posited to reflect underlying personality, cognitive, and emotional mechanisms in people. It has been shown to validly predict behaviors including: deception, attraction, and improvements in mental health. We hypothesized that language style would significantly predict group decision making performance, even after controlling for typically studied variables. Participants (n=276) were three-person groups completed both surveys assessing personality characteristics and two intellective, problem-solving scenarios. For each scenario participants imagined they were stranded in a wilderness with various tools and materials. Participants ranked ordered these items in terms of their importance for the group’s survival both individually and as a group. Language style was examined by analyzing the vocal content of the interaction. Vocal context was collected by video recording and transcribing group interactions during the problem solving scenarios. The transcripts were analyzed using Linguistic Inquiry and Word Count (LIWC) software. Group development, in terms of forming and feedback, was experimentally manipulated using a 2X2 experimental design. Stepwise regression analysis controlling for member expertise, experimental condition, personality, and pre-decision agreement showed that exclusive language (e.g., but, or, except, etc.) (∆ R^2 = .164, p < .01) and causal language (e.g., because, effect, hence) (∆ R^2 = .214, p < .01) explained an additional 11.4% of the variance in group decision making performance. Exclusive language reflects the use of logic, reasoning, and making distinctions. Causal language reflects the thinking and about searching for causes. Negations reflect both making distinctions and negatively evaluating alternatives. Group members by answering questions about themselves. Participants received performance feedback by publicly informing each member how their individual rankings compared to the rankings of experts.

Participants completed two different decision making tasks: a desert survival task and a moon survival task. In both scenarios, the groups were stranded and left with a number of items that may aid in their survival. The ‘groups’ tasks were to rank order these items in terms of their importance to the groups’ survival with lower numbers indicating greater importance (e.g., an item ranked number one would be considered to be most important to survival). Participants completed each exercise both individually and as a group. The order in which the exercises were completed was counterbalanced across experimental conditions.

Control Variables
- Individual Task Expertise
  - Determined by comparing individuals’ ranking of each item to the items true rank as determined by survival experts.
  - Calculated the absolute value of the difference between the two rankings.
  - Higher scores reflected higher levels of task expertise.

Group Development
- Personality
  - Big Five
  - Self-esteem

Pre-Decision Agreement
- Kendall’s Coefficient of Concordance (Kendall’s W).

Language Style
- Transcribed group discussions
- Transcripts analyzed using LIWC (Pennebaker, Booth, & Francis, 2007)
- Counts words occurring in each category
- Reports results as percentages relative to total words in transcript.

Group Decision Quality
- Determined by comparing groups’ ranking of each item to the items true rank as determined by survival experts.
- Calculated the absolute value of the difference between the two rankings.
- Difference scores were calculated for each item and then summed to determine an expertise score.
- These scores were then reversed and standardized into z-scores
- Higher scores reflected higher levels of task expertise.

Decision Agreement
- Stepwise regression analyses controlling for member expertise, experimental condition, personality characteristics and two intellective, problem-solving scenarios.
- A: Yes. That is fine.
- B: What do you think?
- C: Okay.
- A: You put that for two. I
- C: Yeah, I think that is up there too.
- A: I did too. Only
- C: Yes, I think that is up there too.
- B: I put the map.
- C: That sounds good to me.
- A: Okay.
- C: Yes.
- B: Yes.
- C: Yes.
- B: Okay.
- C: Yes.
- B: I put a parachute.
- C: What do you think?
- A: Yes.
- C: I would put magnetic.
- B: Yes. That is fine.

Study Variables
- Development of Leadership in a Group (Gonzalez, A. L., et al., 2010)

Language Style
- Transcribed group discussions
- Transcripts analyzed using LIWC (Pennebaker, Booth, & Francis, 2007)
- Counts words occurring in each category
- Reports results as percentages relative to total words in transcript.

Group Decision Quality
- Determined by comparing groups’ ranking of each item to the items true rank as determined by survival experts.
- Calculated the absolute value of the difference between the two rankings.
- Difference scores were calculated for each item and then summed to determine an expertise score.
- These scores were then reversed and standardized into z-scores
- Higher scores reflected higher levels of group decision quality.

Procedure
- Provided informed consent
- Completed questionnaires assessing personality
- Engaged in forming task, or read a paper on the stages of group development
- Completed first-decision making task; first individually, and then as a group
- Received feedback or began the second task
- Completed second-decision making task; first individually, and then as a group
- Obtained video display, converse, deferred and provided extra credit.

Results

<table>
<thead>
<tr>
<th>Step 2 (Control Variables)</th>
<th>Individual Expertise</th>
<th>Group Development (forming and feedback)</th>
<th>Group Decision Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusivity</td>
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<tr>
<td>Familiarity</td>
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<td>Consequential</td>
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<td>Opinion</td>
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Discussion

These results suggest that understanding group interactions can be very useful in understanding effective versus ineffective groups. These results also suggest that cognitive complexity, above and beyond task factors, is important for effective group decision making. Future research should examine factors that influence groups’ ability to utilize cognitive complexity language.