

**Knowing what other people know:
Implications for the confidence heuristic**

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Abstract

When we are uncertain we may turn to other people for their advice. The level of confidence they have in their advice can influence the choices we opt in and out of. Making decisions in this way indicates that confidence is used heuristically, whereby a speaker's confidence is taken as being a cue to their knowledge, competence or accuracy. This study considers whether people apply the confidence heuristic when provided with information relating to a speaker's performance, and hence their judgmental biases. 86 participants observed three speakers answering general knowledge questions, with each speaker demonstrating a different level of confidence and bias. Half the participants also received feedback about the speakers' performance. Participants then completed a general knowledge questionnaire, choosing from answers given by the three speakers. A speaker's level of confidence had a greater effect on choice when no feedback was given than when it was. The addition of feedback led to a reduction in the influence of a highly confident, but overconfident, speaker and increases in the influence of the medium and low confidence speakers. Feedback did not have any significant effects on participants' confidence in their answers, but it did result in a slight increase in accuracy. A further experiment considered how speakers are perceived when listeners are provided with information relating to the speaker's performance. The results indicate that people do, to a certain extent, continue to apply the confidence heuristic in their judgments of others even when there is evidence to suggest that the level of expressed confidence used by the speaker is misleading.

Introduction

When we have a choice to make we tend not to turn to complete strangers for their advice. Where possible we will seek the advice of someone who we have had some contact with before - perhaps a friend or acquaintance, a colleague who we recall having an interest in a particular area, or a family member. Over time we may build up a picture of the style with which they express their advice or information - they may always be extremely confident in the advice they proffer or they may be uncertain in what they say.

Since previous research has proposed that we utilise confidence heuristically, whereby we associate a person's confidence with attributes relating to a speaker's competency (Price & Stone, 2004; Thomas & McFadyen, 1995), we may seek out the advice of the highly confident person and stop asking the person who expresses their uncertainty. In doing so we believe that we are using an effective decision-making strategy, using confidence as a heuristic which allows us to determine the quality of another person's information. Confidence heuristic use has been demonstrated in many different arenas, and ranging across many different task types (e.g. Pulford & Colman, 2005; Wesson & Pulford, 2005; Zarnoth & Sniezek, 1997).

However, as we interact with other people we may also become aware not only of the way in which they express themselves and how confident they are, but also of their tendency to judgmental biases. We may learn that the highly confident person is not always justified in being so confident as they are actually not as accurate as their confidence would suggest, whereas perhaps our uncertain friend actually knows more than their chosen level of confidence would suggest. How does this affect our use of the confidence heuristic? Paese and Kinnaly (1993) suggest that not being able to receive feedback regarding another's performance compounds our insensitivity to the judgmental biases of others, hence leading to a great reliance on the confidence heuristic. Therefore, if feedback is available, one would expect there to be less reliance on the confidence heuristic, and hence this experiment investigates this hypothesis.

Method

Participants

86 students, aged between 18 and 39 years old ($M = 20.98$), took part in the experiment.

Materials

A PowerPoint presentation was prepared. On each slide a general knowledge question appeared, followed one-by-one by three responses each given by a 'friend'. One response was spoken with high confidence, one with medium confidence and one with low confidence, using confidence cues developed in a previous pilot study (Wesson & Pulford, 2006). In the Feedback condition, the correct answer was revealed after all three responses had appeared. In the No Feedback condition, the answers were not revealed.

An additional 24-item general knowledge questionnaire was also used, which consisted of difficult general knowledge questions, to encourage confidence heuristic use, followed by three possible answers. The purpose of this questionnaire was to see if participants picked up on the speakers' judgemental biases, as demonstrated in the PowerPoint presentation, and whether this effected the speakers' subsequent influence. As with the PowerPoint presentation, the 'speakers' in the questionnaire each provided an answer to each question, again with confidence cues attached. Accuracy was kept constant at all times.

Design & Procedure

A 3 (Speaker Confidence) x 2 (Feedback Condition) mixed design, with repeated measures on the first variable was used. The dependent variables were; the percentage of time each speaker's answers were chosen, the participant's mean confidence in their answers. Participants watched the presentation and then completed the general knowledge questionnaire, choosing their answers from the three provided, and indicating their confidence in the chosen answer (0 - 100%).

In a further experiment an additional 88 participants viewed the Feedback condition PowerPoint presentation only, and then filled in a questionnaire regarding their perceptions of the speakers. Participants were asked to choose which speaker they liked and trusted most/least, and whom they thought was most/least intelligent, competent, and optimistic, as well as to give an estimate of each speaker's overall accuracy, so as to investigate people's reasoning behind their decision-making strategies.

Discussion

The results indicate that receiving feedback about the quality of a speaker's performance affects the influence that a speaker's confidence had upon the choices participants made but had a minimal effect on the confidence they had in their choice of answer. Overall the results lend support to Paese and Kinnaly's (1993) suggestion that not being able to receive feedback regarding another's performance compounds our insensitivity to the judgmental biases of others, hence leading to a great reliance on the confidence heuristic. If we do not know an answer ourselves, we will not be able to detect other people's inaccuracies. But when feedback is made available people do appear to pick up on the discrepancy between their overall confidence and their accuracy, leading to a seemingly reduced, but not obsolete, use of the confidence heuristic: Higher levels of confidence are still associated with perceptions of competence, intelligence and accuracy, even when there was evidence to the contrary.

It would seem then that one's ability to monitor another's judgmental biases is important in how we perceive them, and their subsequent influence. However, there is evidence to suggest that some people are better at this, or more willing to engage in the extra cognitive effort involved, and hence further research should consider the reasons behind this.

References

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Influence of Confidence on Confidence in Choice

Although participants were slightly more confident in their chosen answers when feedback was given than when it was not ($M = 43.93\%$ vs. $M = 37.92\%$), there were no main effects of Condition, or Speaker Confidence, nor a significant Speaker Confidence x Feedback condition interaction, (all $p > .05$).

Influence of Confidence on Choice Accuracy

Participants in the No Feedback condition showed accuracy levels no better than would be expected by chance whereas those in the Feedback condition showed a slight, but significant, improvement in accuracy levels ($M = 33.75\%$ vs. $M = 37.85\%$), $t(84) = 2.11, p = .04$.

Influence of Confidence and Feedback on Perceptions of Speakers

An additional experiment was conducted to determine participants' perceptions of speakers who used different confidence levels in the Feedback condition only. Table 2 illustrates these results.

Table 2.

Perceptions of speakers using different confidence levels when feedback is provided (% participants)

	Speaker Confidence			χ^2		Speaker Confidence			χ^2
	High	Medium	Low			High	Medium	Low	
Most Liked	29.5	35.2	35.2	.57	Least Liked	54.5	20.5	25.0	18.09**
Most Trusted	23.9	47.7	28.4	8.48*	Least Trusted	53.5	22.7	23.9	15.98**
Most Intelligent	39.8	40.9	19.3	7.80*	Least Intelligent	29.5	19.3	51.1	13.93**
Most Competent	43.2	45.5	11.4	19.18**	Least Competent	21.6	23.9	54.5	17.89**
Most Optimistic	63.6	20.5	15.9	36.64**	Least Optimistic	17.0	12.5	70.5	54.84**

Note. * $p < .05$ ** $p < .001$. Degrees of Freedom = 2

Participants in this additional experiment were also asked to estimate how accurate each of the three speakers were in the PowerPoint presentation. Although each speaker was correct the same number of times (33.33%), participants did perceive differences in the accuracy of the three speakers, as indicated by a significant main effect of Speaker Confidence, $F(2, 174) = 12.02, p < .001$. In relation to their actual accuracy levels, the high confidence speaker's accuracy was overestimated by 12.87%, the medium confidence speaker's by 8.49% and the low confidence speaker's by 3.24%, thus the participants' perceptions of the low confidence speaker's accuracy were the most realistic.

Results

Influence of Confidence on Choice

The percentage of times each speaker's answers were chosen was calculated (Table 1). A Speaker Confidence x Feedback Condition ANOVA found a main effect of Speaker Confidence, $F(2, 168) = 29.84, p < .001$, and a Speaker Confidence x Feedback Condition interaction, $F(2, 168) = 9.70, p < .001$. Across the two conditions, as a speaker's confidence increased so too did the percentage of times that speaker's answers were chosen, although the extent to which this occurred depended upon the Feedback Condition.

Table 1.

Mean percentage of agreement with each speaker in each feedback condition

	Speaker Confidence		
	High	Medium	Low
No Feedback	54.54 (23.57)	26.70 (13.81)	18.56 (13.48)
Feedback	38.49 (23.57)	35.12 (13.59)	26.29 (14.16)

Figure 1 shows that feedback had a detrimental effect on the influence that a speaker expressing high confidence has on choice, with agreement with this speaker's answers dropping by 16.05% when feedback was given compared to when it was not. For the medium and low confidence speakers, feedback led to significant increases in agreement.

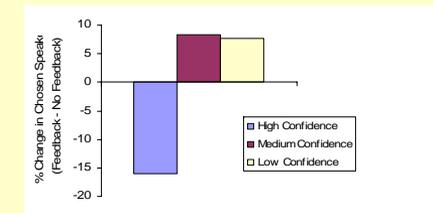


Figure 1. Mean percentage change in agreement with speakers between feedback Conditions