Probabilistic Scarcity: Processing Disfluency Increases Attractiveness By Reducing Subjective Probability

Baler Bilgin, Koc University, Turkey
Nükhet Agar, Koc University, Turkey

We find that processing disfluency (vs. fluency) increases attractiveness by reducing subjective probability. The proposed effect fails to arise when the true source of disfluency is revealed (Study 1), and the directional ambiguity in the interpretation of numerical probabilities is reduced either naturally (Study 2) or experimentally (Study 3).

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Baler Bilgin, Koç University, Turkey
Nukhet Agar, Koç University, Turkey

EXTENDED ABSTRACT

A large body of research has documented that the ease with which information is processed (i.e., processing fluency) enhances evaluation (Schwarz 2004). More recently, researchers have examined whether and when processing disfluency may signal value to consumers (Briñol, Petty, and Tormala 2006). We add to this recent stream of literature by studying the impact of (dis)fluency on subjective probability, and in turn on attractiveness. In so doing, we reveal an indirect effect of (dis)fluency in contrast to prior research that focused predominantly on its direct effect on judgments via naïve theories (e.g., Pocheptsova, Labroo and Dhar 2010) or the affective reactions it elicits (e.g., mood or emotions).

The current experiments provided participants with a numerical probability associated with an outcome, and examined the impact of (dis)fluency on their subjective probability and attractiveness ratings. Although precise, numerical probabilities are directionally ambiguous in that they may be interpreted positively (i.e., suggesting occurrence of the outcome) or negatively (i.e., suggesting non-occurrence of the outcome; Teigen and Brun 1995). A positive interpretation tends to increase subjective probability relative to a negative interpretation (Bilgin and Brenner 2013). We propose that disfluency (vs. fluency) would encourage a negative interpretation of an otherwise directionally ambiguous numerical probability, decreasing its subjective probability. A misattribution of processing difficulty associated with disfluency to the difficulty of the target outcome occurring motivates this proposition. Hence, the locus of the effect is predicted to be at the level of interpretation of a directionally ambiguous numerical probability. Resulting reduction in subjective probability due to disfluency is proposed to increase perceptions of unattainability, enhancing perceived attractiveness (Cialdini 1993).

We expected that the predicted effects should only hold when the perceived diagnosticity of the (dis)fluency experience remains intact. For example, revealing the true source of the processing (dis)fluency should eliminate its diagnosticity and effect on judgments (Schwarz 2004). Also, (dis)fluency becomes diagnostic when the judgment context affords a certain level of ambiguity (Haddock et al. 1999). The directional ambiguity in the interpretation of numerical probabilities naturally varies across the probability scale. High numerical probabilities, which are almost exclusively interpreted positively, are less directionally ambiguous than low numerical probabilities (Teigen and Brun 1995). Hence, the proposed effect of (dis)fluency should be more prominent for low than high numerical probabilities. One can also eliminate directional ambiguity experimentally by forcing participants to interpret a numerical probability in one direction (Bilgin and Brenner 2013). In this case, (dis)fluency should be non-diagnostic to a subjective probability task.

The current experiments used an office-drawing scenario in which participants were told that their current office is 70-square feet and has one window. They were then told that they may get a larger office (100-square feet) with two windows depending on the outcome of a drawing (adapted from Bilgin and LeBœuf 2010). In all experiments, the fluency manipulation involved presenting the scenario in either easy-to-read font, or difficult-to-read font. We collected mood measures (Winkielman and Cacioppo 2001), and dread and eagerness measures to control for participants’ reactions to the drawing (Bilgin 2012).

In experiment 1 (n=99), participants were told that they had a 30% chance of moving into a larger office with two windows. Participants were randomly assigned to one of three conditions: fluent, disfluent, and disfluent with source attribution. Participants in the source attribution condition were informed that the information may be difficult to read because of the font (adapted from Novemsky et al., 2007). After reading the scenario, participants rated their confidence in drawing a larger office with two windows (0 = not confident at all; 10 = certain). We expected to find no reliable differences between the fluent-font and source attribution conditions, and expected both to be reliably higher than the disfluent-font condition. Planned contrasts confirmed our predictions, supporting a misattribution account of our findings.

In experiment 2 (n=89), we utilized the natural variance in directional ambiguity across the probability scale. Participants were randomly assigned to one cell of a 2 (processing fluency: fluent vs. disfluent) x 2 (objective probability magnitude: 30% vs. 70%) between-subjects design. Roughly half of the participants were told that their chance of moving to a larger office was 70%, while for the other half this was 30%. We found that disfluency (vs. fluency) reduced subjective probability only when the numerical probability was 30%, and thus was directionally ambiguous, but not when it was 70%, as expected.

Experiment 3 (n=83) utilized a forced-interpretation manipulation that asked participants to write down why the outcome was unlikely to be a larger office. Participants in the no-forced interpretation condition skipped this part, and all participants rated subjective probability and attractiveness (the order in which these two questions appeared was counterbalanced). Participants were randomly assigned to one cell of a 2 (processing fluency: fluent vs. disfluent) x 2 (directional interpretation: forced-negative vs. no-forced interpretation) between-subjects design. Disfluency reduced subjective probability in the no-forced interpretation condition, replicating our central finding. The effect failed to arise, however, when forced interpretation of a numerical probability in one direction eliminated directional ambiguity, rendering (dis)fluency non-diagnostic to the judgment. The findings for attractiveness mimicked subjective probability ratings as expected: attractiveness of a larger office was higher insofar as its subjective probability seemed lower. This interaction suggests that the locus of the effect of (dis)fluency on subjective probability is at the level of interpretation. Findings also support the probabilistic scarcity effect, with reduced subjective probability enhancing attractiveness.

Our findings contribute to subjective probability, metacognition and scarcity literatures. They identify processing (dis)fluency as a factor that cues a direction of interpretation for otherwise directionally ambiguous numerical probabilities. They also add to the recent stream of metacognition research that suggests disfluency may enhance attractiveness (e.g., Pocheptsova et al. 2010), and document an indirect effect of (dis)fluency on judgments. They also suggest that eliminating directional ambiguity of numerical probabilities is a novel way to block the unwanted effects of (dis)fluency on judgments. Finally, we find that probabilities may induce a sense of scarcity, thereby affecting consumer evaluations.
REFERENCES


