

Rounding and magnitude: Pragmatic halos are bigger for larger numbers

Bodo Winter

University of Birmingham, Birmingham, United Kingdom

Greg Woodin

University of Birmingham, Birmingham, United Kingdom

Alexandra Lorson

University of Groningen, Groningen, Netherlands

Abstract

Round numbers are often interpreted approximately (Krifka, 2002), with "pragmatic halos" (Lasersohn, 1999) that encompass multiple permissible values. For example, stating "there were 200 people at the meeting" would be acceptable even if the exact count were 197 or 204. In line with the idea that larger numbers have more approximate representations (e.g., Cheyette & Piantadosi, 2020), we demonstrate that rounding and pragmatic halos are magnitude-dependent. First, an analysis of every single number in two large corpora (COCA, BNC) shows that indicators of rounding predict frequency (cf. Woodin et al., 2023), but crucially in interaction with magnitude, with round numbers over-represented for larger magnitudes. Second, we show that jigsaw puzzles often systematically deviate from what is advertised on the box in a way that depends on magnitude, e.g., a 1,000-piece puzzle may contain 1,024 pieces, whereas a 50-piece puzzle is more likely to contain the stated value exactly.