

The paradox of trait impressions in naturalistic contexts: rich information, sparse predictive cues

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Abstract

People spontaneously infer traits that shape critical decisions. Prior research identified important impression cues across channels (face, body, clothing, environment), but often studied them in isolation. These findings may not generalize to naturalistic contexts, where people rapidly form impressions from rich, multi-channel cues. We addressed this by quantifying comprehensive cues (Study 1) and manipulating individual cues (Study 2) in everyday images using computational tools. Across two large-scale, pre-registered studies ($N = 3,004$, U.S. representative), we found that despite abundant information, only a sparse set of cues predicted impressions. These cues carried either unique information beyond other cues, shared information with other cues, or both. Many cues previously theorized as important did not explain trait impressions directly but shaped how other cues influenced judgments. We confirmed for a subset of predictions manipulating the predictive cues causally changed impressions. Our findings advance understanding of how trait impressions form in complex, naturalistic environments.