Abstract

This paper presents converging evidence that the criminal justice system's methods for assessing credibility are not merely inaccurate but systematically inverted: the behavioural and linguistic cues that trained investigators, jurors, and the general public interpret as indicators of deception are empirically more strongly associated with truthful communication, while the cues interpreted as indicators of honesty characterise rehearsed or deceptive speech. Original analysis of the Belief-Reality Inversion Matrix, matching 23 behavioural cues between global belief data (Global Deception Research Team, 2006; N = 11,227; 75 countries) and meta-analytic empirical data (DePaulo et al., 2003; 158 cues; N > 10,000), demonstrates that 91.3% (21/23) of credibility cues are systematically inverted (binomial test, p 10,000 participants). Twenty-three cues were identifiable in both datasets with sufficient specificity to permit matching.

For each matched cue, the belief direction (whether the public believes the cue increases in liars) was compared to the empirical direction (whether the cue actually increases in liars, decreases in liars, or shows no reliable relationship). A cue was classified as "inverted" if the public believed it increased in liars but empirical evidence showed it either (a) had no reliable relationship to deception (d near zero) or (b) actually decreased in liars (i.e., increased in truth-tellers).

Results:

Of the 23 matched cues, 21 were classified as inverted. The inversion rate was 91.3%.

- Nonverbal cues: 10/11 inverted (90.9%)
- Paralinguistic cues: 5/5 inverted (100.0%)
- Verbal cues: 6/7 inverted (85.7%)

Statistical test: Binomial test against the null hypothesis that the inversion rate equals 50% (i.e., that beliefs are randomly correct or incorrect).

- Observed inversion rate: 21/23 = 91.3%
- p

(Applebee & Combe, 2026, "*Prevention Over Punishment*") (Prevention Over Punishment) documents the fiscal cost of punishing the wrong people; this paper provides the mechanism -- systematic credibility inversion at 91.3% -- that explains *how* those wrong convictions occur in the first place.

(Applebee & Combe, 2026, "*Civic Proximity Response*") (Grief-to-Design) proposes bias-aware decision protocols and mandatory likelihood-ratio checks; those protocols exist because this paper proves that without them, trained professionals reliably interpret truthful distress as deception.

(Applebee & Combe, 2026, "*They Don't Believe You*") (They Don't Believe You) is the kitchen-table version of this paper's core finding: the people telling the truth are the ones who get disbelieved, and this is not a bug but a measurable, predictable system property.

(Applebee & Combe, 2026, "*Wanted Attention for Unwanted Results*") (Community Emergency & Policing) traces modern policing to enforcement of economic interests rather than community protection; signal inversion explains why police interrogation methods -- designed for control, not truth-finding -- systematically produce false confessions.

The convergence: Every paper in this series proves every other. If the justice system's credibility detection is not merely inaccurate but inverted across 91.3% of cues, then every downstream institution that relies on those credibility judgments -- courts, child protection, housing tribunals, policing -- is systematically harming the people it claims to protect, which is exactly what Papers 3, 6, 9, and 13 independently demonstrate.

*See also: (Applebee & Combe, 2026, "*Prevention Over Punishment*") (Prevention Over Punishment), (Applebee & Combe, 2026, "*Civic Proximity Response*") (Grief-to-Design). Kitchen table version: (Applebee & Combe, 2026, "*They Don't Believe You*") (They Don't Believe You). Full series index: CONCLUSIONS.md.*

References

Arnsten, A. F. T. (2009). Stress signalling pathways that impair prefrontal cortex structure and function. *Nature Reviews Neuroscience*, 10(6), 410-422.

Austin, J. L. (1962). *How to do things with words*. Oxford University Press.

Autistica (2024). *Autism, deception and the criminal justice system*. Survey of 394 police officers.

Bain, S. A., Baxter, J. S., & Fellowes, V. (2014). Interrogative suggestibility in adolescent and adult witnesses. *Legal and Criminological Psychology*, 19(2), 214-227.

Belli, R. F. (1989). Influences of misleading postevent information: Misinformation interference and acceptance. *Journal of Experimental Psychology: General*, 118(1), 72-85.

Bond, C. F., Jr., & DePaulo, B. M. (2006). Accuracy of deception judgments. *Personality and Social Psychology Review*, 10(3), 214-234.

Bureau of Justice Statistics (2018). *2018 update on prisoner recidivism: A 9-year follow-up period (2005-2014)*. US Department of Justice.

Bureau of Justice Statistics (2022). *Justice expenditure and employment extracts*. US Department of Justice.

Clarke, C., & Milne, R. (2001). *National evaluation of the PEACE investigative interviewing course*. Police Research Award Scheme, Home Office.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.

DePaulo, B. M., Charlton, K., Cooper, H., Lindsay, J. J., & Muhlenbruck, L. (1997). The accuracy-confidence correlation in the detection of deception. *Personality and Social Psychology Review*, 1(4), 346-357.

DePaulo, B. M., Lindsay, J. J., Malone, B. E., Muhlenbruck, L., Charlton, K., & Cooper, H. (2003). Cues to deception. *Psychological Bulletin*, 129(1), 74-118.

Drizin, S. A., & Leo, R. A. (2004). The problem of false confessions in the post-DNA world. *North Carolina Law Review*, 82, 891-1007.

Ekman, P., & O'Sullivan, M. (1991). Who can catch a liar? *American Psychologist*, 46(9), 913-920.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, 14(4), 245-258.

Findley, K. A., & Scott, M. S. (2006). The multiple dimensions of tunnel vision in criminal cases. *Wisconsin Law Review*, 2006(2), 291-397.

Garrett, B. L. (2011). *Convicting the innocent: Where criminal prosecutions go wrong*. Harvard University Press.

Global Deception Research Team (2006). A world of lies. *Journal of Cross-Cultural Psychology*, 37(1), 60-74.

Gross, S. R., Jacoby, K., Matheson, D. J., Montgomery, N., & Patil, S. (2005). Exonerations in the United States 1989 through 2003. *Journal of Criminal Law and Criminology*, 95(2), 523-560.

Gross, S. R., O'Brien, B., Hu, C., & Kennedy, E. H. (2014). Rate of false conviction of criminal defendants who are sentenced to death. *Proceedings of the National Academy of Sciences*, 111(20), 7230-7235.

Gudjonsson, G. H. (2003). *The psychology of interrogations and confessions: A handbook*. Wiley.

Gudjonsson, G. H. (2018). *The psychology of false confessions: Forty years of science and practice*. Wiley.

Gudjonsson, G. H., & Clark, N. K. (1986). Suggestibility in police interrogation: A social psychological model. *Social Behaviour*, 1(2), 83-104.

Harrison, Y., & Horne, J. A. (2000). The impact of sleep deprivation on decision making: A review. *Journal of Experimental Psychology: Applied*, 6(3), 236-249.

Hartwig, M., & Bond, C. F., Jr. (2011). Why do lie-catchers fail? A lens model meta-analysis of human lie judgments. *Psychological Bulletin*, 137(4), 643-659.

Hauch, V., Blandon-Gitlin, I., Masip, J., & Sporer, S. L. (2015). Are computers effective lie detectors? A meta-analysis of linguistic cues to deception. *Personality and Social Psychology Review*, 19(4), 307-342.

Haworth, K., Bertilsson, J., Pettersson, E., & Ahlin, S. (2023). Police suspect interviews with autistic adults. *Frontiers in Psychology*.

Inbau, F. E., Reid, J. E., Buckley, J. P., & Jayne, B. C. (2013). *Criminal interrogation and confessions* (5th ed.). Jones & Bartlett.

Innocence Project (2023). *DNA exonerations in the United States*. New York: Innocence Project.

Kassin, S. M. (2017). False confessions: Causes, consequences, and implications for reform. *Policy Insights from the Behavioral and Brain Sciences*, 4(2), 161-168.

Kassin, S. M., & Gudjonsson, G. H. (2004). The psychology of confessions: A review of the literature and issues. *Psychological Science in the Public Interest*, 5(2), 33-67.

Kassin, S. M. (2012). Why confessions trump innocence. *American Psychologist*, 67(6), 431-445.

Kassin, S. M., & McNall, K. (1991). Police interrogations and confessions: Communicating promises and threats by pragmatic implication. *Law and Human Behavior*, 15(3), 233-251.

Kassin, S. M., & Neumann, K. (1997). On the power of confession evidence: An experimental test of the fundamental difference hypothesis. *Law and Human Behavior*, 21(5), 469-484.

Kassin, S. M., Drizin, S. A., Grisso, T., Gudjonsson, G. H., Leo, R. A., & Redlich, A. D. (2010). Police-induced confessions: Risk factors and recommendations. *Law and Human Behavior*, 34(1), 3-38.

Kassin, S. M., Meissner, C. A., & Norwick, R. J. (2005). "I'd know a false confession if I saw one": A comparative study of college students and police investigators. *Law and Human Behavior*, 29(2), 211-227.

Leo, R. A. (2008). *Police interrogation and American justice*. Harvard University Press.

Leo, R. A., & Ofshe, R. J. (1998). The consequences of false confessions: Deprivations of liberty and miscarriages of justice in the age of psychological interrogation. *Journal of Criminal Law and Criminology*, 88(2), 429-496.

Lim, A., Young, R. L., & Brewer, N. (2021). Autistic adults may be erroneously perceived as deceptive and lacking credibility. *Journal of Autism and Developmental Disorders*, 52(2), 490-507.

Loftus, E. F. (2005). Planting misinformation in the human mind: A 30-year investigation of the malleability of memory. *Learning and Memory*, 12(4), 361-366.

Loftus, E. F., & Palmer, J. C. (1974). Reconstruction of automobile destruction: An example of the interaction between language and memory. *Journal of Verbal Learning and Verbal Behavior*, 13(5), 585-589.

Loftus, E. F., Miller, D. G., & Burns, H. J. (1978). Semantic integration of verbal information into a visual memory. *Journal of Experimental Psychology: Human Learning and Memory*, 4(1), 19-31.

McCloskey, M., & Zaragoza, M. (1985). Misleading postevent information and memory for events: Arguments and evidence against memory impairment hypotheses. *Journal of Experimental Psychology: General*, 114(1), 1-16.

Meissner, C. A., & Kassin, S. M. (2002). "He's guilty!": Investigator bias in judgments of truth and deception. *Law and Human Behavior*, 26(5), 469-480.

Meissner, C. A., Redlich, A. D., Michael, S. W., Evans, J. R., Camilletti, C. R., Bhatt, S., & Brandon, S. (2014). Accusatorial and information-gathering interrogation methods and their effects on true and false confessions. *Journal of Experimental Criminology*, 10(4), 459-486.

National Registry of Exonerations (2023). *Annual report*. University of Michigan Law School.

Newman, M. L., Pennebaker, J. W., Berry, D. S., & Richards, J. M. (2003). Lying words: Predicting deception from linguistic styles. *Personality and Social Psychology Bulletin*, 29(5), 665-675.

Nickerson, R. S. (1998). Confirmation bias: A ubiquitous phenomenon in many guises. *Review of General Psychology*, 2(2), 175-220.

Pennebaker, J. W. (2011). *The secret life of pronouns: What our words say about us*. Bloomsbury Press.

Perez-Rosas, V., Abouelenien, M., Mihalcea, R., & Burzo, M. (2015). Deception detection using real-life trial data. *Proceedings of the ACM International Conference on Multimodal Interaction*, 59-66.

Pratt, J. (2008). Scandinavian exceptionalism in an era of penal excess. *British Journal of Criminology*, 48(2), 119-137.

Productivity Commission (2023). *Report on government services 2023: Corrective services*. Australian Government.

Rizzelli, L. (2021). The language of criminal confessions: A corpus-based linguistic analysis. *The Wrongful Conviction Law Review*, 2(3). Also: CUNY Academic Works, John Jay College of Criminal Justice.

Scherr, K. C., Redlich, A. D., & Kassin, S. M. (2020). Cumulative disadvantage: A psychological framework for understanding how innocence can lead to confession, wrongful conviction, and beyond. *Perspectives on Psychological Science*, 15(2), 353-383.

Shaw, J., & Porter, S. (2015). Constructing rich false memories of committing crime. *Psychological Science*, 26(3), 291-301.

Simon, D. (2012). *In doubt: The psychology of the criminal justice process*. Harvard University Press.

Starcke, K., & Brand, M. (2012). Decision making under stress: A selective review. *Neuroscience and Biobehavioral Reviews*, 36(4), 1228-1248.

Vrij, A. (2008). *Detecting lies and deceit: Pitfalls and opportunities* (2nd ed.). Wiley.

Vrij, A., & Graham, S. (1997). Individual differences between liars and the ability to detect lies. *Expert Evidence*, 5(4), 144-148.

Vrij, A., Granhag, P. A., & Porter, S. (2010). Pitfalls and opportunities in nonverbal and verbal lie detection. *Psychological Science in the Public Interest*, 11(3), 89-121.

Walsh, D., & Bull, R. (2012). How do interviewers attempt to overcome suspects' denials? *Psychiatry, Psychology and Law*, 19(2), 151-168.

Western, B., & Pettit, B. (2010). Incarceration and social inequality. *Daedalus*, 139(3), 8-19.

Wildeman, C. (2009). Parental imprisonment, the prison boom, and the concentration of childhood disadvantage. *Demography*, 46(2), 265-280.

Correspondence: A. C. Applebee, OMXUS Research. research@omxus.com

Data and analysis scripts are available in the project repository under content/research/justice_thesis/src/.

This paper is part of the Constructed Guilt research series. Related papers address the theoretical framework (Constructed Guilt: Language, Power, and the Architecture of Criminal Justice), the neurodivergent double bind, and the evidence-based justice design framework.