

Dimensions of Dehumanization: Integrating Theoretical Perspectives Using Factor Analysis

Nathan Liang^{a*}, Emily Gerdin^b, & Gordon T. Kraft-Todd^c

^a Duke University, ^b Yale University, ^c Boston College

nathan.liang@duke.edu
[@1nathan_liang](https://twitter.com/1nathan_liang)

Introduction

- Dehumanization: viewing certain groups or individuals as less human than others
 - Predicts increased violence and cruelty, lower prosociality [1], [2], [3]
 - Four major theories all involving ratings of people/groups/entities on various traits:

Stereotype content model [4]	Mind perception [5]
• Warmth (e.g., "Sincere")	• Agency (e.g., "Thinking")
• Competence (e.g., "Confident")	• Patency (e.g., "Experiencing joy")

Human uniqueness/nature [6]	Infrahumanization [7]
• Animalistic (e.g., "Polite")	• Primary (e.g., "Fear")
• Mechanistic (e.g., "Curious")	• Secondary (e.g., "Melancholy")

Our research goal was to examine whether these measures exhibit a shared latent structure when applied to judgments of racial groups

Study 1: Exploratory Factor Analysis

- U.S. MTurk sample (N=383, March 2018)
- Participants responded to k=59 items in Qualtrics survey:

"To what extent do the following behaviors, emotions, and characteristics describe [Americans/Arabs/Asians/Africans]?"

- Between-subjects design
- Slider response: "Very little" to "Very much" (0-100)
- Measure items aggregated across all four theories
- 5-factor exploratory factor analysis (EFA) solution from maximum likelihood estimation and varimax rotation (Fig. 1a)
- Perceptions of racial groups differ across factors (Fig. 2a)
 - Arabs viewed least positively
 - Americans viewed most negatively
 - Asians and Americans viewed oppositely on spectrum of thoughtfulness

Dehumanization decomposes into a 4-factor structure disproportionately explained by valence judgments

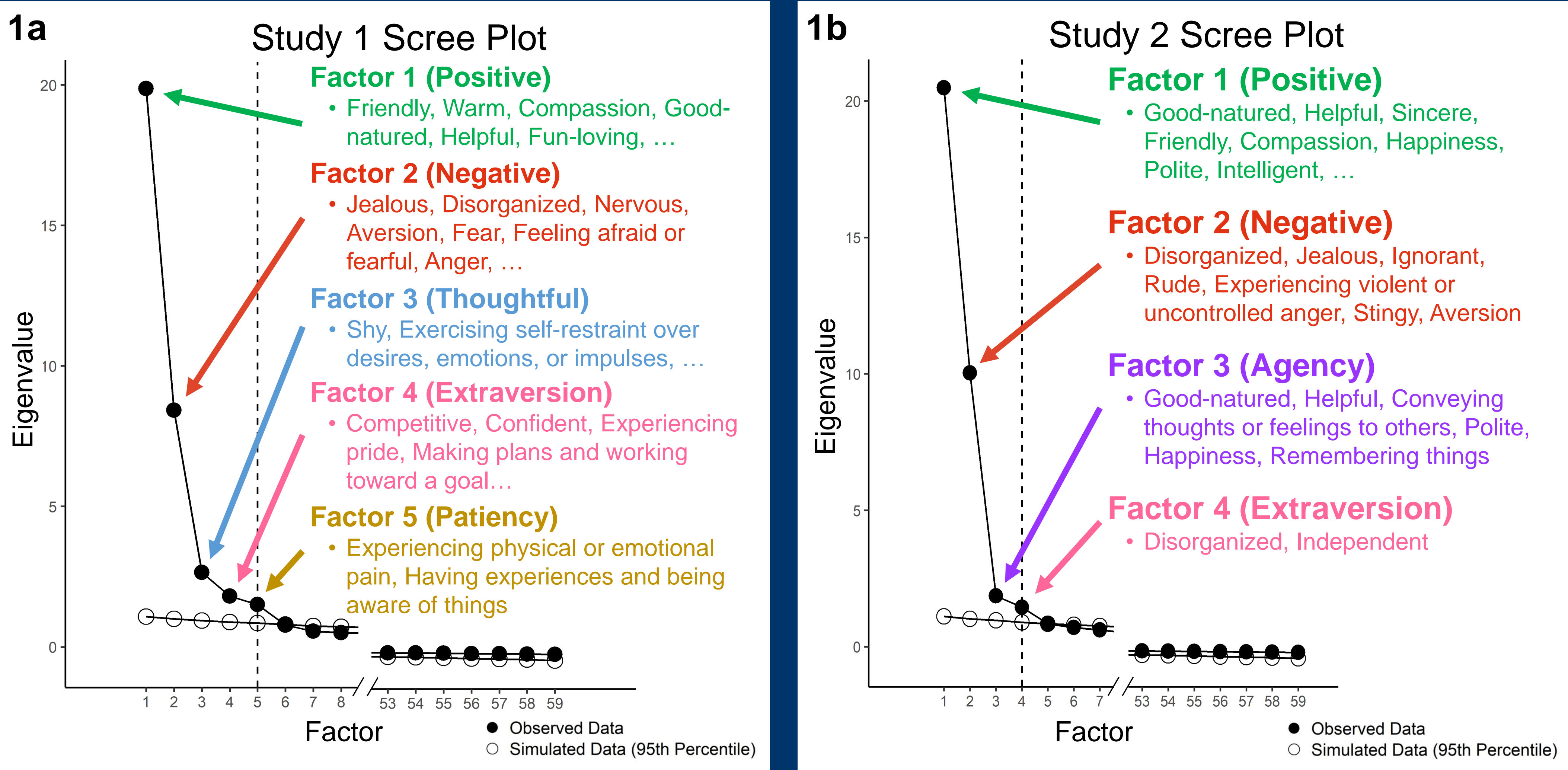


Figure 1a, 1b: Scree plots of varimax-rotated EFA on both pilot and replicatory data with parallel analysis. Analyses were collapsed across target racial groups. Examples of the strongest items for each factor are listed in descending order of strength alongside each corresponding factor name where loading |score| > .4.

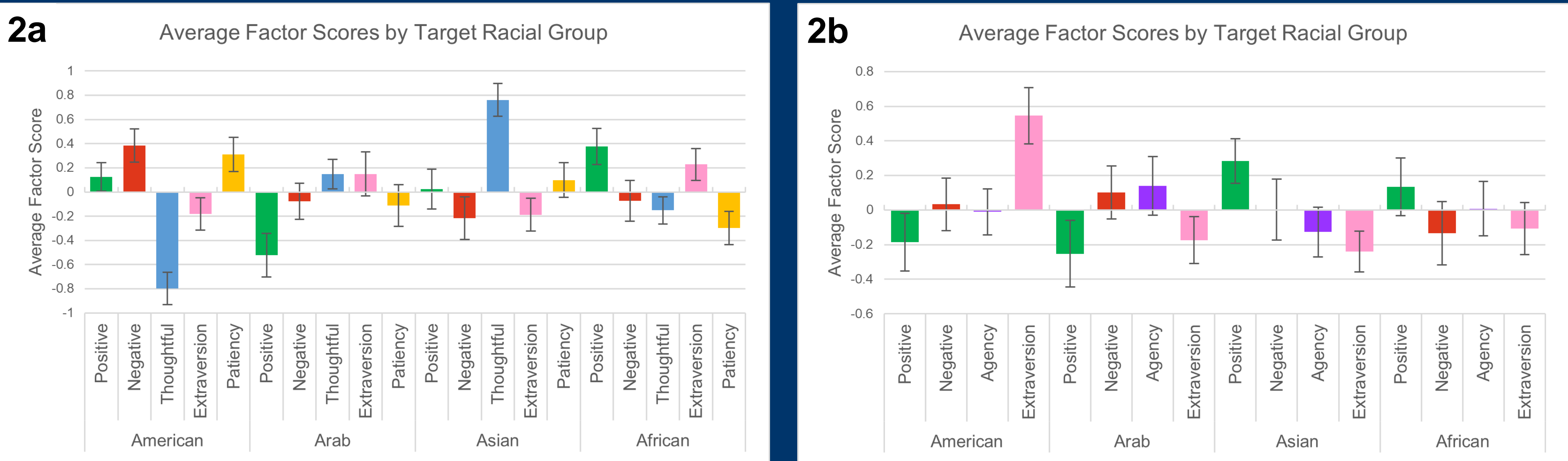


Figure 2a, 2b: Predicted factor scores for both pilot (1a, left) and replicatory (1b, right) data as calculated from the corresponding weights matrix of each dataset used to find estimated factor loadings. Results split by racial group. Error bars represent 95% confidence intervals. NOTE: Because we employ varimax rotation of our factors, the "Positive" and "Negative" factors are orthogonal.

1a

Factor	SS Loadings	% of Variance	Cumulative %
1 (Positive)	15.64	26.50	26.50
2 (Negative)	8.10	13.74	40.24
3 (Thoughtful)	4.53	7.68	47.92
4 (Extraversion)	3.41	5.79	53.70
5 (Patency)	2.24	3.79	57.49

1b

Factor	SS Loadings	% of Variance	Cumulative %
1 (Positive)	18.03	30.56	30.56
2 (Negative)	10.70	18.13	48.69
3 (Agency)	3.22	5.45	54.14
4 (Extraversion)	1.54	2.61	56.75

Table 1a, 1b: Total percentage of variance accounted for by the EFA for both pilot (1a, left) and replicatory (1b, right) data collapsed across target racial groups. All values rounded to two decimal places.

Study 2: Preregistered Replication

- Preregistered replication (cf. left sidebar)
- U.S. MTurk sample (N=374, July 2020)
- Identical protocol to Study 1
- 4-factor EFA solution from maximum likelihood estimation and varimax rotation (Fig. 1b)
- Current dehumanization measures seem to be largely and robustly explained by positivity and negativity (Fig. 1b, Table 1a, b)
- After a 2-factor solution, factors become inconsistent depending on model parameters
- Racial groups characterized similarly as in Study 1 (Fig. 2b)
 - Asians viewed more positively than both Americans and Arabs
 - Arabs viewed most negatively and most agentic
 - Americans viewed as more extraverted than any other group

Discussion

- Positive and negative judgments dominate the EFA model in both studies, adding to a growing literature casting doubt upon the construct of dehumanization [8], [9], [10]
- Nevertheless, attitudes and beliefs indexed by current dehumanization measures are still meaningfully predictive of serious real-world outcomes such as support for violence, demanding further inquiry

Future Directions

- Understanding whether the beliefs captured by the items loading strongly for the two valence factors are the most predictive of behavioral outcomes
- Conducting cross-cultural research to assess the generalizability of a robust 2-factor model

References

[1] Haslam, N., & Loughnan, S. (2014). Dehumanization and infrahumanization. *Annual Review of Psychology*, 65, 399-423. <https://doi.org/10.1146/annurev-psych-010213-115045>

[2] Kiehl, N., & Bruneau, E. (2017). Backlash: The politics and real-world consequences of minority group dehumanization. *Personality and Social Psychology Bulletin*, 43(1), 87-104. <https://doi.org/10.1177/0146167216675334>

[3] Kiehl, N., Bruneau, E., Waytz, A., & Cotterill, S. (2015). The ascent of man: Theoretical and empirical evidence for blatant dehumanization. *Journal of Personality and Social Psychology*, 109(5), 901-931. <https://doi.org/10.1037/pspp0000048>

[4] Fiske, S., Cuddy, A., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, 82(6), 878-902. <https://doi.org/10.1037/0022-3514.82.6.878>

[5] Gray, H. M., Gray, K., & Wegner, D. M. (2007). Dimensions of Mind Perception. *Science*, 315(5812), 619-619. <https://doi.org/10.1126/science.1134475>

[6] Haslam, N., Loughnan, S., Kashima, Y., & Bain, P. (2008). Attributing and denying humanness to others. *European Review of Social Psychology*, 19(1), 55-85. <https://doi.org/10.1080/10463280801981645>

[7] Leyens, J.-P., Rodriguez-Perez, A., Rodriguez-Torres, R., Gaunt, R., Paladino, M.-P., Vaes, Demoulin, S. (2001). Psychological essentialism and the differential attribution of uniquely human emotions to ingroups and outgroups. *European Journal of Social Psychology*, 31(4), 395-411. <https://doi.org/10.1002/ejsp.50>

[8] Enock, F., Tappin, S., & Over, H. (2020, March 18). No convincing evidence that outgroup members are dehumanised: Revisiting trait and emotion attribution in intergroup bias. <https://doi.org/10.31234/osf.io/hm82v>

[9] Bloom, P. (2017, November 20). The Root of All Cruelty? *The New Yorker*. <https://www.newyorker.com/magazine/2017/11/27/the-root-of-all-cruelty>

[10] Over, H. (2021). Seven Challenges for the Dehumanization Hypothesis. *Perspectives on Psychological Science*, 16(1), 3-13. <https://doi.org/10.1177/1745691620902133>