Demonstrating Ensemble Perception of Social Status

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Introduction

Ensemble perception

- The visual system's ability to extract summary statistical information from groups of similar objects—often in a brief glance[1].
- Ensemble perception has been shown in recent years to take place when viewing both low and high-level stimuli[1].
- People can extract summary statistical data quickly when looking at visually simple stimuli, such as the orientation of shapes[2], and more complex information such as the average attractiveness of faces[3].

Research Question

- We wanted to see if ensemble perception took place with even higher-level social stimuli, such as social status/socioeconomic status (SES).
- Does Ensemble Perception occur for social status?

Overview of Studies

- **Study 1** served as an initial test of whether or not participants engaged in the ensemble perception of social status. Participants performed an in-lab procedure.
- **Study 2** was an online replication of study 1 with minor methodological changes.

Method

Study 1

Participants

- 18 Introductory Psychology students from Rhodes College

Procedure

Part 1

- Participants rated single exemplar's social status using a social ladder (See Figure 1).
- Exemplars consisted of 200 full-body images of White males and females. Based on pretesting, we used exemplars representing rungs 4, 5, and 6 on the ladder.
- On each trial, we presented an exemplar for 2 seconds, and then the participant provided their rating.

Part 2

- Using the same social ladder, participants rated ensembles of 6 exemplars on social status.
- Ensembles were created using participants' ratings from trial 1. Ensembles consisted of some combination of exemplars that were rated a 4,5, or 6 by the respondent.
- Participants rated 150 ensembles with each ensemble shown for 2 seconds.

Study 2

Participants

- 70 participants were recruited for an online study through the Prolific service.
- Of the participants, 74.3% were female, 72.9% were white, and 61.4% self-reported as middle class or higher in social class.

Procedure

- Participants completed the same two-part procedure as in Study 1.
- In Study 2, we showed participants pre-created ensembles with a set number of low-, mid-, and high-SES targets.
- Unlike in Study 1, participants were exposed to all targets instead of just a subset.

"Think of the ladder as representing where people stand in the United States in terms of education, income, and job status. At the **bottom** of the ladder are people who are the **worst off**; least money, least education, and the worst or no job. At the **top** of the ladder are people who are the **best off**; most money, best education, and the best jobs."

Figure 1

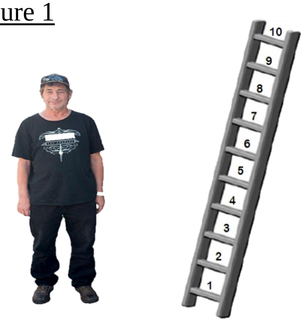


Figure 2

Results

Study 1

- We compared the ladder rating provided of each ensemble in Part 2 (Ensemble Rating) to the average rating of the 6 targets in the ensemble collected in Part 1 (Expected Average). The Ensemble Rating (M = 5.50, SD = 1.18) was significantly higher than the Expected Average (M = 5.13, SD = 0.40), t (17) = 3.911, p = .001.
- Thus, participants showed an amplification effect when rating the social status of an ensemble of exemplars as compared to the rating of individual exemplars.

Study 2

- We conducted a 3 (Ensemble SES) x 2 (Ensemble Sex) within-subjects ANOVA.
- We found that the Grand Mean (M = .207, SD = .71) significantly differed from zero, F (1, 68) = 16.517, p < .001. This replicated the amplification effect found in Study 1.
- There was significant Main Effect for Ensemble SES level, F (2.67) = 3.171, p = .045. See Table 1a.
- There was s significant Main Effect for Ensemble Sex, F (1, 68) = 11.544, p = .001. See Table 1b.

Table 1

a)

Ensemble SES Level	M (SD)
Low	.081 (.77)
Mid	.229 (.67)
High	.310 (.70)

b)

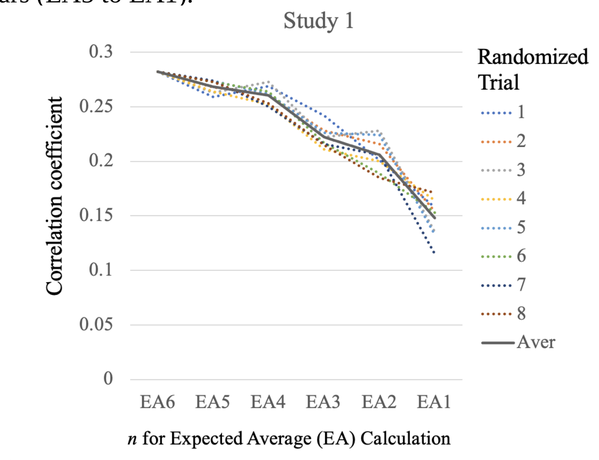
Ensemble Sex	M (SD)
Male	.117 (.67)
Female	.287 (.73)

- For both studies we found an amplification effect for the ratings of social status. Ensembles were rating higher than the Expected Average calculated from the individual targets.

Conclusion

How much information was used when making the Ensemble Rating?

- If EP involves the whole ensemble, we would expect the Ensemble Rating to correlate with an Expected Average calculated from all the information (i.e., all 6 items.
- For each ensemble, we calculated an Expected Average based on all 6 exemplars (EA6), as well as decreasing numbers of randomly selected exemplars (EA5 to EA1).



References
1.Whitney, D., & Yamanashi Leib, A. (2018). Ensemble Perception. *Annual Review Of Psychology*, *69*(1), 105-129. doi: 10.1146/annurev-psych-010416-044232
2. Kacin, M., Gauthier, I., & Cha, O. (2021). Ensemble coding of average length and average orientation are correlated. *Vision Research*, *187*, 94-101. doi: 10.1016/j.visres.2021.04.010
3. Luo, A., & Zhou, G. (2018). Ensemble perception of facial attractiveness. *Journal Of Vision*, *18*(8), 7. doi: 10.1167/18.8.7
4 Weeks, M. (2019). Social Class is Not Judged Equally: Target Race Shifts Standards in Interpersonal Judgments of Socioeconomic Status. *European Journal of Social Psychology*, *49*, 286-299