Face Masks Improve Detection of Real and Fake Smiles

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Introduction

Real smiles are characterized by a smiling mouth, lifted cheeks, and wrinkles around the eyes (Frank et al., 1993).

Real Smile   **Fake Smile**

Americans tend to weigh the mouth more than other facial regions when judging emotions (Yuki et al., 2007).

Those who *say* they use the eyes (vs. mouth) to distinguish real & fake smiles are more accurate (Mai et al., 2011).

Research Question

Are people better at distinguishing between real & fake smiles when a person's face is covered with a mask (and attention is directed to the eyes)?

Predictions

When will people be more accurate at judging smiles?

H1: Mask Condition > No Mask Condition

When will people think they will be more accurate at judging smiles?

H2: Mask Condition < No Mask Condition

Method

Participants

No Mask Condition

- 600 Amazon Mechanical Turk workers (99.2% American, 46.8% female)
- They ranged in age (18-74, $M = 37.44$) and were relatively diverse in race (71.8% white)

Design

- Independent Variable: Target Face Covering (Mask Vs. No Mask)
- Dependent Variable: D' (Smile Detection Accuracy)

General Procedure

1. Participants watched videos displaying real ($n = 10$) & fake smiles ($n = 10$)
2. Target people in the videos either wore face masks or no masks.
3. Participants had to indicate if the smiles were real or fake.
4. Participants had to predict whether they thought they would be more accurate judging smiles in future if the targets wore masks or no masks.

Mask Condition

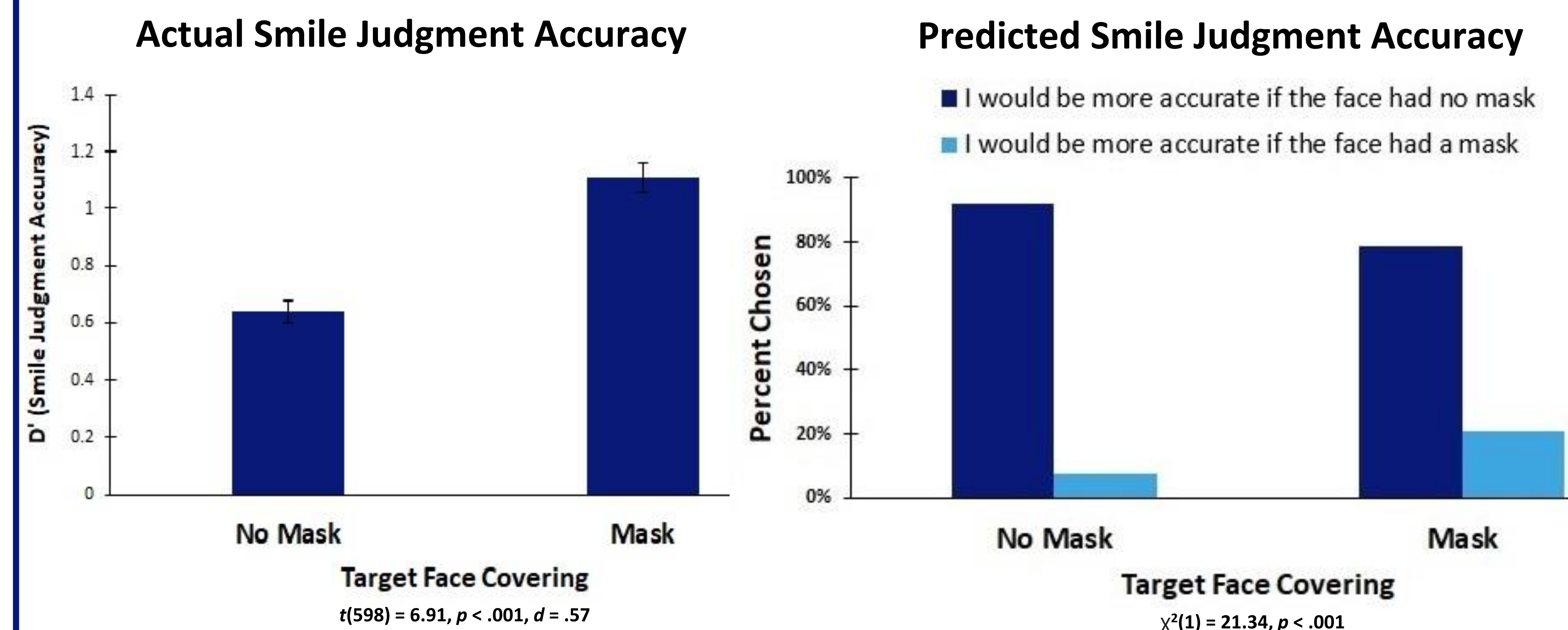*Note.* Methods based on Mai et al. (2011). Videos courtesy of BBC (ND).

Results

Actual Smile Judgment Accuracy

D' (Smile Judgment Accuracy) vs Target Face Covering (No Mask, Mask)

$t(598) = 6.91, p < .001, d = .57$

Predicted Smile Judgment Accuracy

- I would be more accurate if the face had no mask
- I would be more accurate if the face had a mask

Percent Chosen vs Target Face Covering (No Mask, Mask)

$\chi^2(1) = 21.34, p < .001$

Additional Findings

- Within the no mask condition (vs. mask condition), people who said the eyes (vs. mouth) were most helpful in judging the smiles were most accurate, $t(156) = 2.25, p = .03$.
- In both conditions, the more frequently people reported interacting with others wearing masks, the more accurate they performed on the smile task, $r(598) = .18, p < .001$.

Key Takeaways

H1: As hypothesized, participants were more accurate at judging smiles if the targets wore a mask (vs. no mask).

✓ *Directing attention to the eyes improves smile detection performance! Masks help!*

H2: As hypothesized, participants thought they would do worse at judging smiles if a target was wearing a mask (vs. not wearing a mask).

✓ *People may mistakenly think that masks impair judging smiles/emotions!*

Discussion

Future Directions

- Replicate study in other cultures
- Examine other facial expressions/emotions
- Share these results with public!

Implications

- Participants who reported interacting more often with masks-wearers were more accurate at judging smiles, suggesting that masks may help train people to focus on the eye regions!

References

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