

The University of Texas – Pan American

Fake Hand Illusion: Size is not important

Background

Over the last few years a small number of articles have addressed a peculiar sensory illusion in which a fake rubber hand begins to be experienced as one's own hand with repeated pairings of seeing the fake hand being touched in concordance with feeling one's own (hidden) hand being touched. Our study extends prior research investigating whether the size of the fake hand has any influence on the degree to which the illusion is perceived.

Participants sat across from the experimenter at a small table and placed both arms on the table, with palms facing down, and with their left arm on the outside of a vertical visual barrier (see Fig 1.). The fake rubber arm was placed inside the barrier, with the same orientation as their (real) left arm. Participant watched the fake hand during the procedure, which consisted of the following sequence: touching of real hand only (2 mins), simultaneous touching of real and fake hand (4 mins), touching of fake hand only (2 mins), simultaneous touch of real and fake hand (4 mins). Touching involved gentle prodding and stroking movements across the hand and fingers. At the end of the procedure, participants were asked to rate the vividness of seven perceptual experiences related to the illusion, and completed the Dissociative Experiences Scale (DES).

Method

Fifty-seven undergraduate students from the University of Texas – Pan American participated in a the study. The mean age of participants was 19.8, 81% identified themselves as Hispanic, and 75% were female.

Participants were randomly assigned to either a small hand or regular hand condition. The procedure for both conditions was identical, the only difference between groups was the size of the fake hand used to produce the illusion. The hand in the small hand group was approximately 2 inches long, whereas the hand in the regular hand group was ~ 8 inches long.

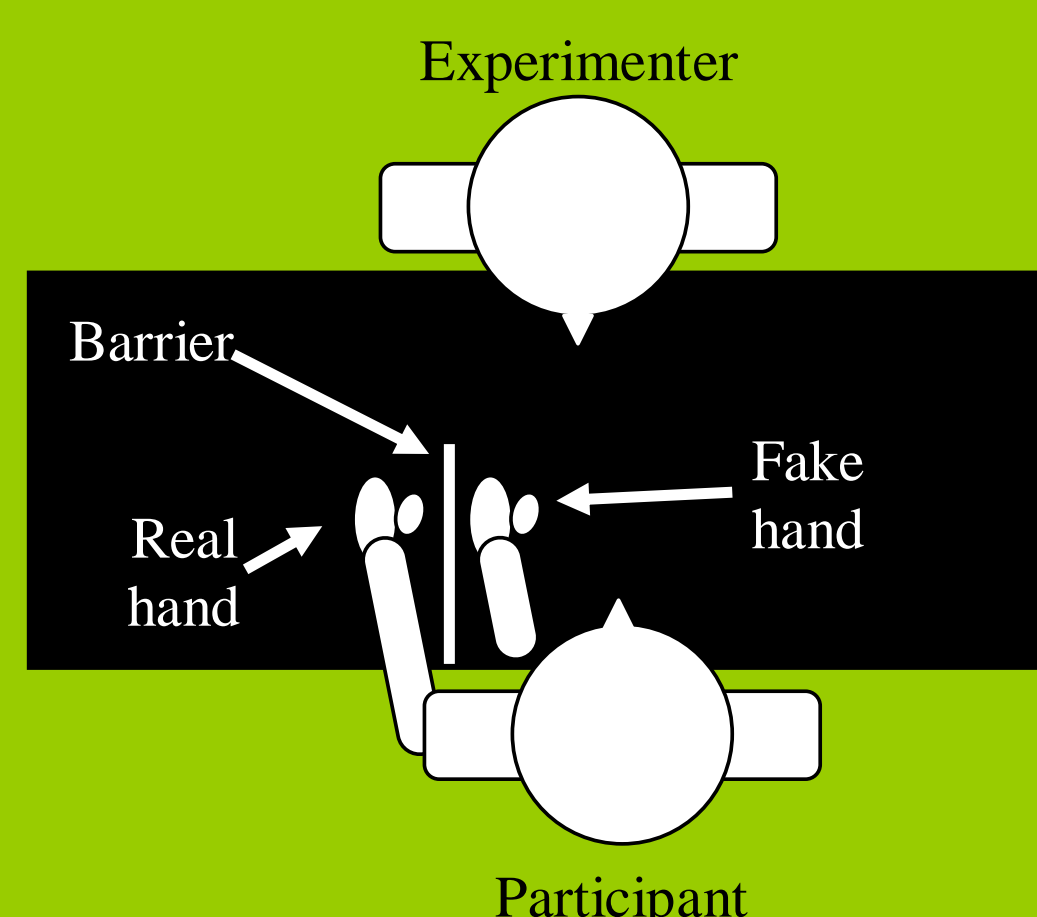
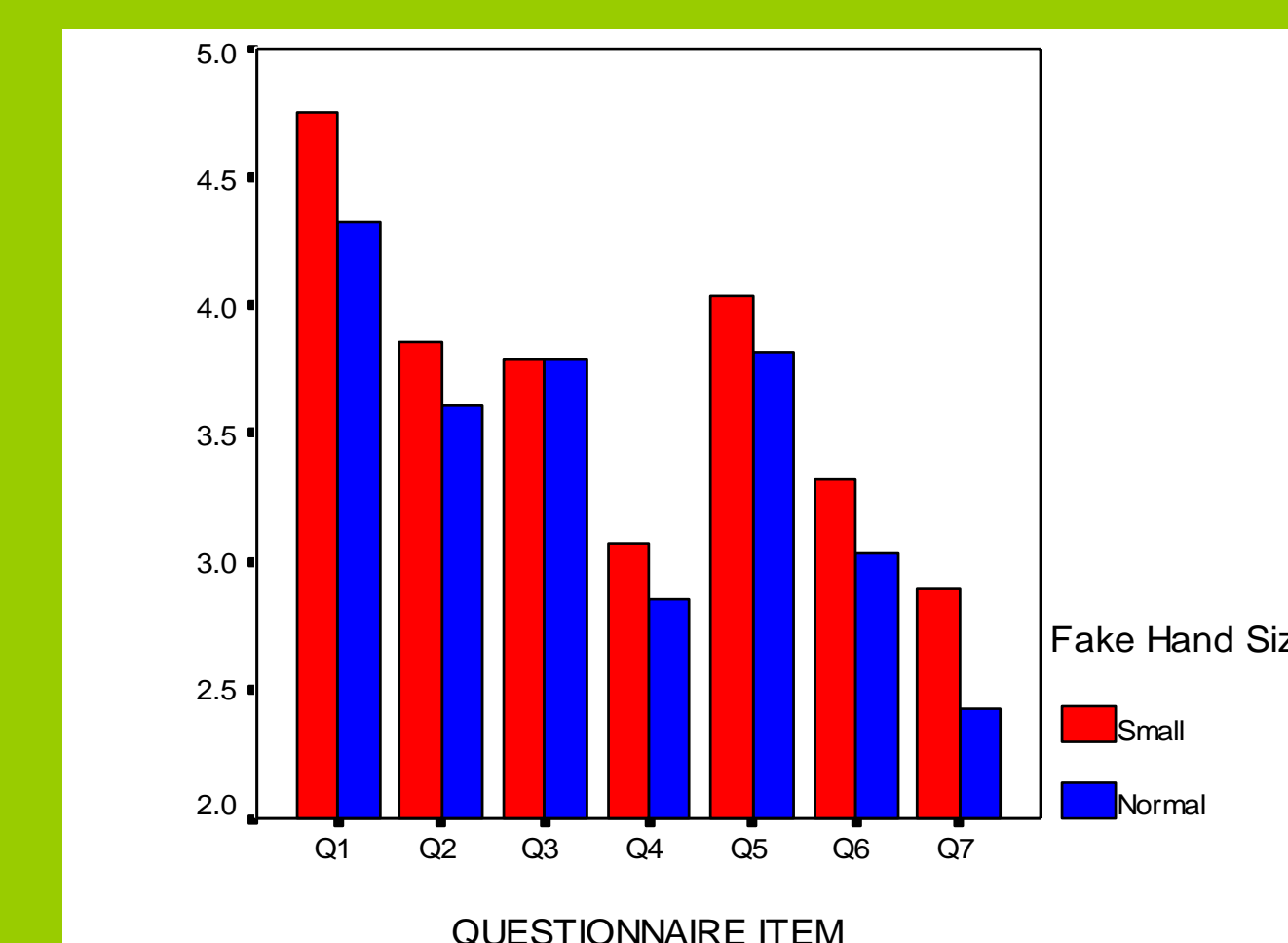


Fig. 1
Fake arm arrangement



Results

Over 67% of participants agreed or strongly agreed with the statement “It seemed as though the touch that I felt was caused by the researcher’s finger touching the fake hand.” Over 67% of the participants agreed or strongly agreed with the statement “I felt as if the fake hand were my hand.” For these, and all other experiential ratings, there were no significant differences between individuals who were presented with the small versus regular sized hand. Exploratory analysis revealed significant correlations between certain perceptual illusions and scores on the dissociative experiences scale.



1. It seemed as if I were feeling the touch of the researcher's finger in the location where I saw the fake hand being touched.
2. It seemed as though the touch that I felt was caused by the researcher's finger touching the fake hand.
3. I felt as if the fake hand were my hand.
4. It felt as if my hand were turning rubbery.
5. It felt as if my hand were numb.
6. It felt as if I would not be able to move my hand, even if I had tried.
7. It felt as if my hand had decreased in size.

Conclusions

Results suggest that the fake hand perceptual illusion is powerful even under conditions in which the fake hand is unrealistically sized. Additionally, certain perceptions related to the fake hand phenomenon may be associated with dissociative experiences as measured by the DES.