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PSYCHOLOGY BEING INVESTIGATED

INTERPERSONAL DISTANCE

Personal distance is the distance between two people, influenced by personal factors such as cultural norms and personal relationships. It can range from intimate distance for close family members to social distance for formal interactions and public distance for public figures.

EMPATHY

Empathy, a crucial trait in social relationships, involves understanding another's emotional state through cognitive and affective empathy. Research indicates that empathy affects how individuals process social cues and respond emotionally.

SOCIAL HORMONES

Oxytocin, a social hormone, influences interpersonal distance and prosocial behavior. It plays a role in bonding, childbirth, and breastfeeding. However, it can also lead to envy, risk aversion, and hostility. Studies show that administering oxytocin increases males' preferred interpersonal distance from attractive females.

BACKGROUND

AMYGDALA

Interpersonal distance is influenced by the amygdala activity, which is influenced by the hormone oxytocin and can be reduced by reducing discomfort with close interpersonal distances.

SOCIAL SALIENCE HYPOTHESES

The leading hypothesis, the social salience hypothesis, suggests that oxytocin increases attention to social cues, affecting how individuals process and respond to them. Perry et al. tested this hypothesis to determine if administering oxytocin would affect people's behaviour based on their evaluation of social situations, with comfort and threat-enhancing responses.

AIM

To investigate how OT affects PID for those with high or low empathy traits.

HYPOTHESIS

OT will have different effects on PID depending on the amount of empathy for different individuals.

METHODOLOGY

A lab experiment [to control variables that might have affected PID]

Repeated measures design [half the group did experiment 1 first and the other half did experiment 2 first]

DESIGN AND VARIABLES

IV 1: Whether participants received nasal drops of OT or a placebo [saline sol.]

IV 2: whether OT affected people with different empathy levels.

EXPERIMENT 1

DV: PID. This was measured using a computer animation. This animation tested people on their PID with different people [a stranger, an authority figure, and a friend] and an object [a ball]. This part was repeated measures as all participants indicated their preferences in all conditions.

EXPERIMENT 2

In this experiment, another computer design was used for the participants to "choose rooms" to calculate values for 2 DVs: average PID and average preferred angle between furniture in a room. They were told that the furniture plan was to design a room in which they would talk about something personal with another participant. This allowed researchers to compare the

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preferences for seating arrangements [interpersonal distance preference measure] and a table and plant [control condition]. This part of the design was repeated measures

Experiment	IV	DV
1	Empathy level OT or placebo Condition: stranger, authority, friend, object	PID measured using computerised version of CID [comfortable intrprsnl. Dist., on a scale of 0-100 (0 being both people touching and 100 being the furthest)].
2	Empathy level OT or control Condition: position of chairs [experimental] and positioning of table and plant [control]	Choosing rooms task; avg. preferred distance between two chairs [in cm] and preferred angle of the two chairs [in degrees]; same with table and plant.

SAMPLE

56 male undergraduates from the University of Haifa in Israel, between 19 and 32 years old. They were repaid with course credit/money. 5 were left-handed and none of them had pre-existing conditions and normal/corrected to normal eyesight.

PROCEDURE

OT ADMINISTRATION & EMPATHY ASSESSMENT

Participants went to the lab twice a week apart at the same time. They were randomly given either OT [24 units in 250ml saline] or the placebo [250 ml of saline]. They administered 3 droplets into each nostril themselves. The administration was double-blind; neither the researcher nor the participant knew what had been administered each week. The next week, the other solution was given. The next part of the study was independent measures design as participants could only have either high or low empathy. Empathy levels were operationalised using a 28-item online questionnaire called the "Interpersonal Reactivity Index [IRI]". This questionnaire had 4 7-item sub-sections, assessing different components of empathy. People with high empathy scored 40 or higher, and people with low empathy scored 33 and under. Then to stabilise the OT, the participants were by themselves in a room with nature magazines for 45 mins.

EXPERIMENT 1: CID

The words "friend", "authority", "stranger" or "ball" appear on the screen for 1 sec. next, the participant must focus on a fixation point on the screen for 0.5 sec. The next screen shows a circular room with a stick person [participant] and then an animation of 3 secs: another stick figure or circle/ ball [called the protagonist by Perry et al.] enters the room from one of the 8 doors before approaching the participant's stick figure. The participant must hit the spacebar when they want the protagonist to stop. There were 96 trials with 4 protagonists appearing 3 times from each of the 8 doors. Interpersonal distance was calculated as the percentage of distance between the protagonist and participant; a low score meant close proximity and a high score meant far proximity.

EXPERIMENT 2: CHOOSING ROOMS

The participants were deceived into believing the room was for a personal talk between themselves and another participant. The program showed them images of pairs of rooms where the chairs, table and plant were at slightly different angles and distances from each other. 84 pairs of rooms were shown twice [t=168 pairs]. The participants sat 60cm away from the screen and were shown the room pairs for 2 secs. They had to fixate on a point for 0.5 sec between each pair. Participants then chose one room. Only one of the DVs was manipulated in each trial.

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RESULTS

EXPERIMENT 1: CID

- OT decreased preferred avg. distance from the protagonist in the high empathy group [placebo: 26.11% vs. OT: 23.39%] and increased it in the low empathy group [placebo: 26.98% vs OT:30.2%]. The difference was very small, though.
- In the high empathy group [placebo], there were significant differences between the PID for friend and authority as well as friend and stranger [as expected]. This was not shown in the ball and other conditions. When OT was administered, participants were willing to be closer to the ball than strangers or authorities.

EXPERIMENT 2: CHOOSING ROOMS

- The high empathy group chose closer chairs in the OT condition [80.58cm] than the placebo [78.07cm], and the opposite for low empathy [OT:78.33cm vs placebo: 80.14cm]. OT only affected the preferred chair distance significantly in the high empathy group.
- OT didn't affect the preferred chair angles in either group.

CONCLUSIONS

The effect of OT on PID depends on empathy levels; high empathy: close interpersonal distance [after OT administration], low empathy: farther interpersonal distance compared to placebo. It was suggested by researchers that OT only decreases PID in highly empathetic people if the interaction isn't threatening; proved by the more evident effects of OT for the ball protagonist than stranger/authority.

ETHICAL ISSUES

DECEPTION

In experiment 2, the participants were deceived about the purpose of room planning. They were told the next week that the meeting was not happening; they could have been anxious about the meeting and the topics they would talk about. This could've caused psychological harm.

METHODOLOGICAL ISSUES

RELIABILITY

Standardisation

The usage of a computer allowed control over timing, speed and visuals to ensure they were the same for all participants. This allows the study to be replicated to check whether the effects of OT and empathy on PID are reliable.

VALIDITY

Validity paradigm

The CID involving a protagonist approaching the participant in a digital room has been previously tested on different sex and age groups through pen and paper. This method is proven to be valid in measuring PID.

Double-blind procedure

None of the administrations of either substance were known by the participants or experimenters. This prevented experimenter effects and demand characteristics.

Self-report

Empathy levels were determined by the participants' own answers, which could be biased.

OBJECTIVITY AND SUBJECTIVITY

Quantitative data was used in the study to allow for objective analysis. Exp1 recorded the % distance remaining from the door the protagonist entered to the participant. This allowed unbiased, objective comparison and statistical analysis between scores which increased validity and determination of the strengths and weaknesses of the study.

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GENERALISATION & ECOLOGICAL VALIDITY

Only male participants were used; males and females react differently to OT as suggested by previous studies. OT may promote positive social judgement and altruism in females whereas it might be the opposite in males so the results don't apply to each other.

There is a lack of ecological validity due to the computer-based tasks. This does not recreate the same feelings of discomfort people may experience in a real-life setting of their personal space being invaded. Thus, the differences between OT and control conditions may have been reduced due to the lack of genuine feelings.

ISSUES, DEBATES & LINKS TO ASSUMPTIONS

INDIVIDUAL/SITUATIONAL EXPLANATIONS

OT decreasing the PID for highly empathetic people and increasing it for the low empathy groups supports an individual explanation for behaviour; Individual differences determine the effect of OT on one's cognition and behaviour.

However, OT affected PID predictably which suggests that situations that promote OT release in the brain may affect cognition and behaviour. OT increases in situations like socialising, especially when there is eye contact and physical touch, playing with pets and extreme temperatures.

Therefore, environmental factors may affect PID, supporting a situational explanation for behaviour.

APPLICATIONS TO EVERYDAY LIFE-

IMPROVING SOCIAL BEHAVIOUR

OT may not help those with pre-existing social deficits like autism spectrum disorders. OT made men with low empathy slightly increase their PID, suggesting that OT administration may not be suitable for people with social disorders and may strengthen social biases. The study needs to be replicated with females to see if the results are the same.

LINKS TO ASSUMPTIONS

People's PID changes according to different types of people, suggesting behaviour is influenced by the presence of others.

SIMILARITIES	DIFFERENCES
Perry et al and Milgram collected quantitative data	Perry et al. used animated stooges while Milgram used a real stooge
Perry et al. and Piliavin et al. used deception	Perry et al. got informed consent, Piliavin didn't.