

Mere Exposure: The Implicit Route to Attitude Change

Ishika Paul¹, Kaustav Manna^{2*}

ABSTRACT

Attitudes are acquired views towards issues, ideas, objects, a specific behavior or entire social groups. The influence of mere stimulus exposures has demonstrated that attitudes can be formed without an accompanying awareness of the attitude formation process. The effects of mere exposure on attitudes are stronger when the stimuli are presented subliminally compared to when they are consciously perceived. The present study attempted to examine the effect of repeated exposure to positively primed subliminal messages on attitude towards homosexuality amongst young adults. A pre-post quasi-experimental research design has been used to explore the aim of the study. A group of 30 participants (M=15, and F=15) between the age range of 18 to 25 years were selected. The participants were selected as they scored below the cutoff score of 64 in the Homosexuality Attitude Scale (HAS). Their score indicated a negative attitude towards homosexuality. The participants were then repeatedly exposed to videos masked with positive messages. After that the HAS was administered as a post test measure. The results indicated a significant effect of repeated exposure to positively primed subliminal messages on attitude towards homosexuality.

Keywords: *Mere exposure, subliminal perception, Homosexuality, Attitude Change*

Human beings acquire new information, form behavior or attitudes from other people through a process called social learning (Rosenthal & Zimmerman, 2014). The human organism is remarkably tuned into its social world. This close tuning of people to others is also revealed in just how powerful an influence others have on our thoughts, feelings and behavior. Just the hint of the presence of another individual is enough to significantly alter people's behavior. People's evaluation of virtually any aspect of their social world is termed as attitudes. Attitudes as such are acquired views towards issues, ideas, objects, a specific behavior or entire social groups (Vogel & Wanke, 2016).

The way in which a person interprets, analyses, remembers and uses information about the social world is called social cognition (Augoustinos et al., 2014). The basic component of social thought is schema. Schemas are mental frameworks centering on a specific theme that helps us to organize social information (Augoustinos et al., 2014). Schema influences three basic processes: attention, encoding, and retrieval. Attention is the process through which incoming information is selected and further processed. Through encoding, the selected information is registered in the short-term memory and then stored in long-term memory.

¹Student, Department of Psychology, Maharani Kasiswari College

²Faculty, Department of Psychology, Maharani Kasiswari College

*Corresponding Author

Received: July 05, 2024; Revision Received: July 17, 2024; Accepted: July 20, 2024

Mere Exposure: The Implicit Route to Attitude Change

Retrieval refers to the process through which we recover information from memory, to use it in some manner – making judgments about other people. The stronger and more organized schemas are, the more likely they are to influence our thinking and especially our memory for social information (Ostrom et al., 1981). Schemas can be temporarily activated by priming – transitory increase in the case in which specific schemas can be activated by experiences relevant to the stimulus (Sparrow & Wegner, 2006). In other words, recent experiences make some schemas more active than they would otherwise be and as a result, they exert stronger effects on current thinking.

Research on the influence of mere stimulus exposures have demonstrated that attitudes can be formed without an accompanying awareness of the attitude formation process (Bornstein, 1989). The mere exposure paradigm makes a stimulus accessible to the individual's sensory registers. It does not require the individual to engage in any sort of behavior, nor is the individual offered any reinforcement. Unreinforced mere exposure is sufficient to enhance attitude towards a stimulus (Zajonc, 1968), implying that awareness of stimulus content is not required for the production of mere exposure effects. The exposures are so degraded, that the individual is not aware of the occurrence but develop a preference for the stimulus and a sense of familiarity. The effects are measured by resulting changes in preferences or attitudes towards the object. The effects of mere exposure on attitudes are stronger when the stimuli are presented subliminally compared to when they are consciously perceived (Bornstein & D'Agustine, 1992).

Homosexuality is the inclination of an individual to engage in sexual acts with a person of their own sex. Despite major changes in law both globally and in India a strong prejudice still persists against homosexuality in India (Kole, 2007). The American Psychiatric Association in 1973 (Drescher, 2015) and the Indian Psychiatric Society in 2018 removed homosexuality from their list of mental disorders. Although Sec 377 which criminalized homosexual acts in India was also read down in 2018 many still continue to view it in a negative light. The objective of the current experiment is to find out the effect of mere exposure on attitude change towards homosexuality.

METHOD

Sample

A total of 60 participants were screened on Homosexuality Attitude Scale (HAS). Participants scoring below cut off score of 64 were selected. Finally, a group of 30 participants (m = 15, f = 15) between the age range of 18 – 25 years, Bengalee, and residing in Kolkata were retained for the experiment. The participants had a minimum educational qualification of being a graduate.

Study Design

A pre-post quasi-experimental research design has been used.

Instruments

1. Homosexuality Attitude Scale (Kite, & Deaux, 1986): The Homosexuality Attitude Scale (HAS) is a Likert scale that assesses people's stereotypes, misconceptions, and anxieties about homosexuals. The measure contains a unidimensional factor representing a favourable or unfavourable evaluation of homosexuals. The scale's internal consistency ranges between alphas $>.92$. The test-retest reliability of the scale is $r = .71$. The scale has moderate convergent validity. It correlates moderately ($r_s = .50$) with the FEM Scale and the Attitude Toward Women Scale.

Mere Exposure: The Implicit Route to Attitude Change

Setting up of Visual Stimuli

A video of neutral valence was selected for the experimental purpose. The video was first masked with positive messages regarding homosexuality at a subliminal level. Then, the video was masked separately with negative messages regarding homosexuality at a subliminal level. Thus, there were two videos, one masked with positive messages and the other with negative messages.

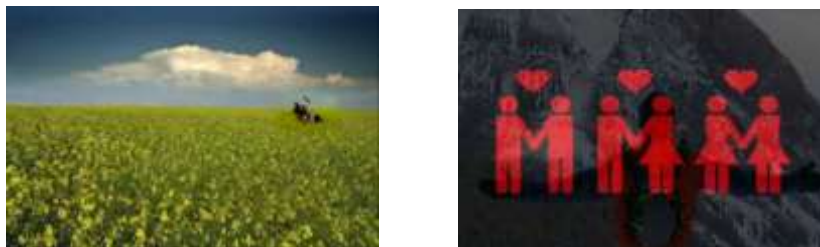


Figure 1: Visual stimuli masked with positive messages

Procedure

Participants were selected using the purposive sampling technique. The Homosexuality Attitude Scale (Kite, & Deaux, 1986) was administered on the participants, and they were instructed to read each item and rate the statements on a five-point scale. The obtained data was scored following which a total score was acquired. The total score indicates a participant's attitude, favourable or unfavourable, towards homosexuality. The computed median was 64. Any participants' score below 64 indicated unfavourable attitude towards homosexuality. A total of 30 participants (15 male and 15 female) were selected with a HAS score below 64, indicating unfavourable attitude towards homosexuality. The participants were then exposed to a video masked with positive messages. After the presentation of the video, the participants were asked to rate the video on a five-point scale indicating their perceived valence of the video. Following which the HAS was administered as a post test measure.

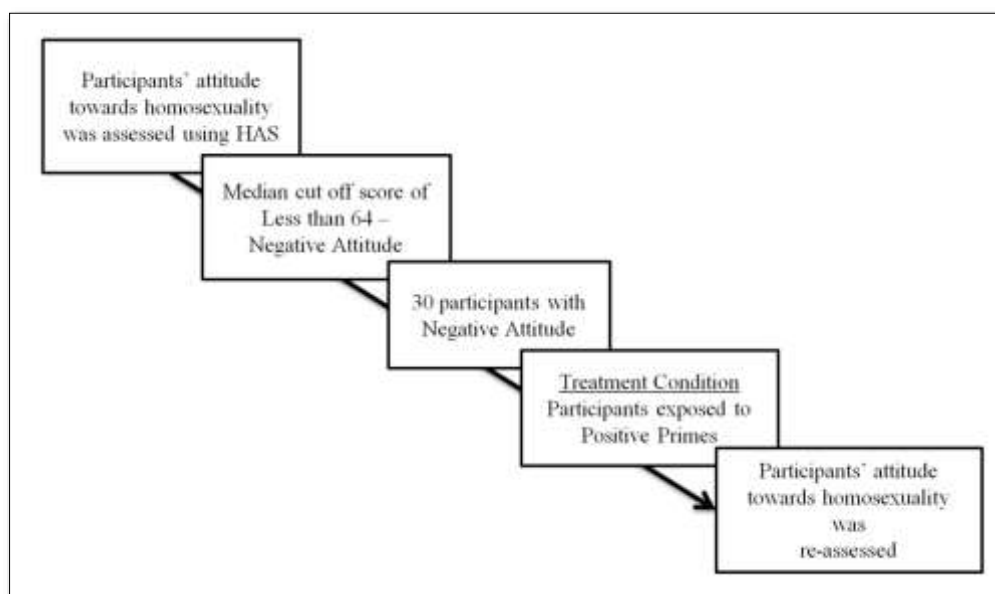


Figure 2: Diagrammatic representation of the pre-post study design

Mere Exposure: The Implicit Route to Attitude Change

Statistical Analysis

Necessary statistical analysis was carried out using R version 4.4.0 (Ritz & Streibig, 2005). The Shapiro-Wilks test of normality was carried out to guide further statistical decision-making.

RESULTS

Table 1: Shapiro-Wilks Test of Normality

D	W	p-value
Before-After	0.97372	0.6452

**Significant at 0.05 Level of Significance, ** Significant at 0.01 Level of Significance*

Since, the study design follows a single group pre-post study design, the difference (D) between each of the paired value were tested for normality. The r function shapiro.test() runs the Shapiro-Wilks Test of Normality. The test yielded a p-value of 0.6452 which is greater than the 0.05 level of significance. Hence, it can be concluded that the data points assume a normal distribution.

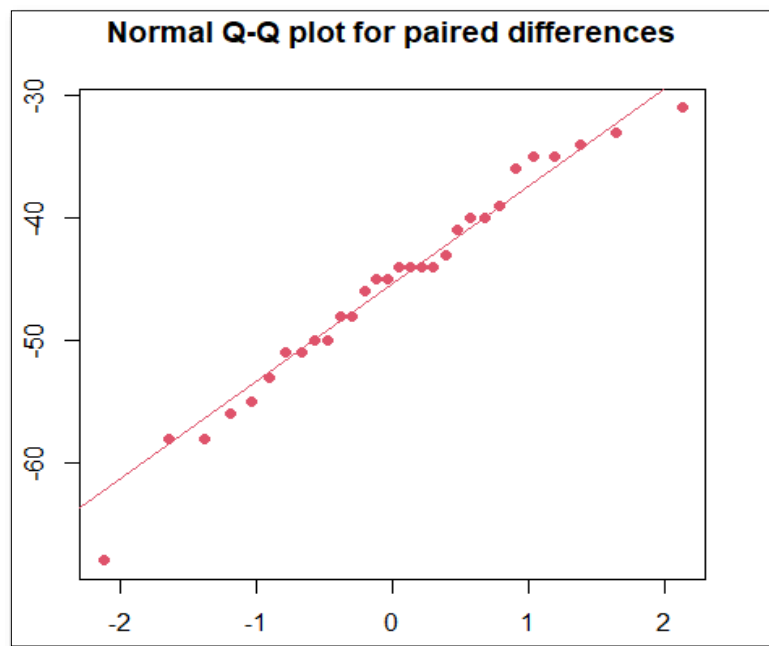


Figure 3: Q-Q Plot of the paired differences

Q-Q Plot allows for visualizing the data distribution. The r function qqnorm() compares the current data points with a theoretical normal distribution. The r function qqline() represents the perfect quantile distribution. Since the data points are normally distributed, majority of the data points lie along the red line (figure 3a). On further examining the Q-Q plot it can be observed that a small number of data points in the highest and lowest quantiles are deviated from the normal distribution. It implies that there is a possibility of fluctuation at the extreme ends.

Table 2: Descriptive Statistics

Condition	Mean	SD
Before	27.1	7.40
After	72.6	5.96

Mere Exposure: The Implicit Route to Attitude Change

The r functions mean() and sd() calculates the average and standard deviation. The obtained mean attitude score towards homosexuality before the subliminal exposure is 27.1 with a standard deviation of 7.40. Conversely, the obtained mean attitude score towards homosexuality after the subliminal exposure is 72.6 with a standard deviation of 5.96.

Plotting of paired data

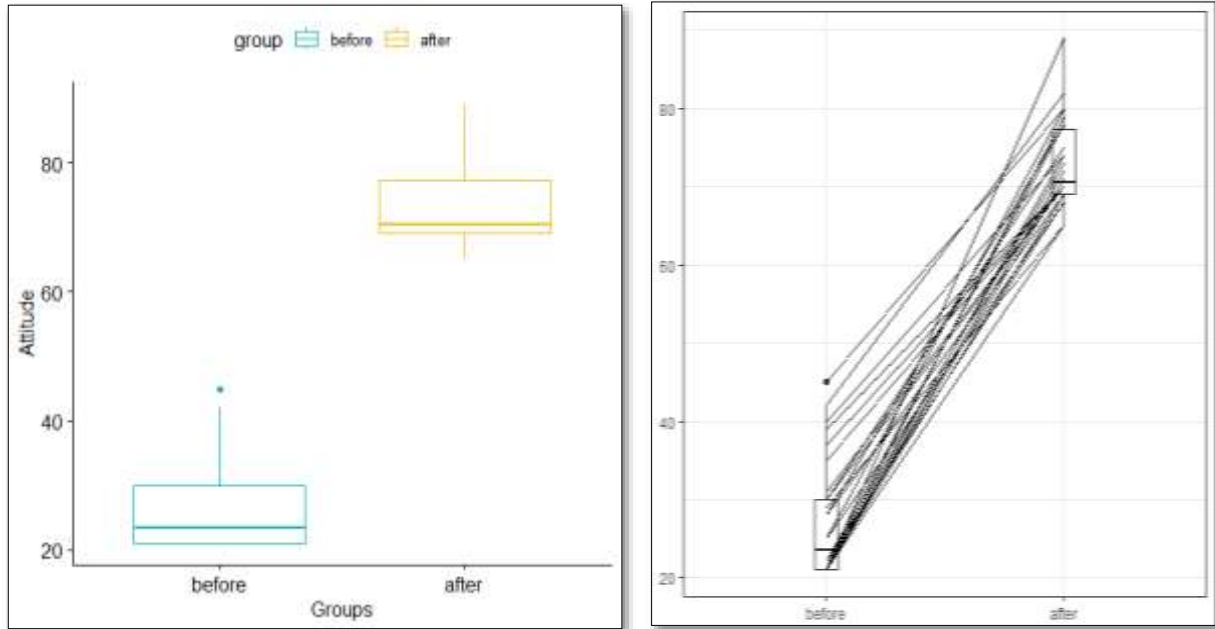


Figure 4a-4b: Boxplot and Paired Boxplot representing attitude score before and after the subliminal exposure

The r function boxplot() generates a boxplot of the data sets. It can be observed that the participants' scores increased after the subliminal exposure (figure 4a). It indicates that the participant's showed a positive attitude towards homosexuality post exposure. Since, boxplot losses the paired information, a paired boxplot was generated (figure 4b). The paired boxplot allows for tracking each individual progress across the treatment conditions.

Table 3: Paired Sample t-test

Condition	df	paired t	p-value
Before-After	29	-29.028	<0.01**

**Significant at 0.05 Level of Significance, ** Significant at 0.01 Level of Significance*

A paired samples t-test was performed to evaluate whether there was a difference between the attitude scores before and after a positively primed subliminal exposure towards homosexuality. The r function t.test(x, paired) calculates the paired t test. The results indicated that there was a significant difference between the before (M=27.1, SD=7.40.) and after (M=72.6, SD=5.96) a positively primed subliminal exposure towards homosexuality, $t(29) = 29.028, p < 0.01$.

DISCUSSION

Attitude is not innate rather a learned evaluative response that determines the appraisal of favorability or unfavorability of various stimulus. Thus, one's attitudinal evaluation ranges from positive to negative (Cacioppo & Berntson, 1994). A positive attitude may yield a high

Mere Exposure: The Implicit Route to Attitude Change

positive reaction and low negative reaction, whereas a negative attitude will yield a low positive reaction and high negative reaction (Priester & Petty, 1996). However, an indifferent attitude produces a low positive and low negative reaction and ambivalent attitude produces a high positive and negative reaction (Conner & Sparks, 2002). People form attitude through experiences, social comparison, classical and instrumental conditioning or simply being influenced by others.

Since, attitude is learned, attitudes are subject to change; this change can be brought usually through - compliance, identification, internalization, and by means of persuasion or by exposure to different situations (Wood, 2000). The intervention to change one's attitude is usually contingent on the conscious effort of the individual. Persuasion, a well established method of attitude change is dependent on a few factors such as the source, the message and the audience and the audiences' ability to accurately decode the message (Wood, 2000).

However, the mere exposure effect offers an alternative approach to attitude change. This technique does not require for the individual to engage in any conscious sensory registration nor is the participant provided any positive or negative reinforcement for their contemporary attitude. Even a stimulus presented subliminally that remains at the sub-threshold level of one's consciousness, can result in attitude change through mere exposure effect (Zajonc, 1968).

The participants' HAS score indicated their negative view towards homosexuality. The reason of such attitude might be several factors including early negative experiences which create negative schematic formation. This schematic formation could be a result of learning, or other socio-developmental factors. The participants were then exposed to video subliminally primed with positive message. The paired samples t test was conducted to compare the pre and post intervention condition. The results indicated a significant difference in HAS score in pre and post exposure to subliminally primed video with positive message (Table 3). Further, it can be observed that the mean HAS score of the pre-condition was 27.1 and in the post-condition after exposure to the positively primed video the median score changed to be 72.6. It indicates a positive change in attitude.

Thus, by employing a repeated exposure paradigm of attitude change the participants were neither consciously persuaded nor were they suggested to explicitly producing 'liking' towards homosexuality. Hence, the change in attitude can be attributed to the repeated exposure of the stimuli that made the stimuli more familiar to the participant, and thus developing a feeling of liking towards the stimuli (here, positive message towards homosexuality). This change in attitude through mere exposure occurs below one's consciousness. Zajonc (2001) argues that mere-repeated exposure paradigm only makes the stimulus accessible to the individual's sensory receptors without having the individual to exactly engage in any form of behaviour nor are they offered any reinforcement. Since, the encoded message of attitude change towards homosexuality was presented subliminally but repeatedly, the message was sufficient to impinge an impression on the receptors. Since the participants were not aware of this persuasive message of attitude change they could not remember 'being suggested' to produce positive attitudes which in turn generated the feeling of familiarity and led to the interpretation of 'liking' the stimulus.

CONCLUSION

The societal acceptance of homosexuality still remains sharply differentiated by country, region and economic growth. Research has shown that people of Asia-Pacific region express

a mixed opinion with an increasing trend towards accepting homosexuality (Author, 2013). Over a period of 17 years the acceptance rate of homosexuality in India rose from 15% to 37% (Author, 2013). The results of the present study indicate a significant effect of repeated exposure to positively primed subliminal messages on attitude change towards homosexuality. It implies that visibility leads to familiarity which in turn leads to favourability.

REFERENCES

- Augoustinos, M., Walker, I., & Donaghue, N. (2014). *Social Cognition: An integrated introduction*. SAGE.
- Author, N. (2013, June 4). *The global divide on homosexuality*. Pew Research Center. <https://www.pewresearch.org/global/2013/06/04/the-global-divide-on-homosexuality/#:~:text=In%20the%20Asia%2FPacific%20region,%3B%2054%25%20in%20Japan%20agree.>
- Bornstein, R. F. (1989). Exposure and affect: Overview and meta-analysis of research, 1968-1987. *Psychological Bulletin*, *106*(2), 265–289. <https://doi.org/10.1037//0033-2909.106.2.265>
- Bornstein, R. F., & D'Agostino, P. R. (1992). Stimulus recognition and the mere exposure effect. *Journal of Personality and Social Psychology*, *63*(4), 545–552. <https://doi.org/10.1037/0022-3514.63.4.545>
- Cacioppo, J. T., & Berntson, G. G. (1994). Relationship between attitudes and evaluative space: A critical review, with emphasis on the separability of positive and negative substrates. *Psychological Bulletin*, *115*(3), 401–423. <https://doi.org/10.1037/0033-2909.115.3.401>
- Conner, M., & Sparks, P. (2002). Ambivalence and attitudes. *European Review of Social Psychology*, *12*(1), 37–70. <https://doi.org/10.1080/14792772143000012>
- Drescher, J. (2015). Out of DSM: Depathologizing homosexuality. *Behavioral Sciences*, *5*(4), 565–575. <https://doi.org/10.3390/bs5040565>
- IPS position statement regarding LGBTQ*. Indian Psychiatric Society. (n.d.). <https://indianpsychiatricsociety.org/ips-position-statement-regarding-lgbtq/>
- Kite, M. E., & Deaux, D. (1986). Attitudes toward homosexuality: Assessment and behavioral consequences. *Basic and Applied Social Psychology*, *7*(2), 137–162. https://doi.org/10.1207/s15324834basp0702_4
- Kole, S. K. (2007). Globalizing queer? AIDS, homophobia and the politics of sexual identity in India. *Globalization and Health*, *3*(1), 8. <https://doi.org/10.1186/1744-8603-3-8>
- Ostrom, T. M., Pryor, J. B., & Simpson, D. D. (1981). The Organization of Social Information. In *Social Cognition: The Ontario Symposium* (1st ed., Vol. 1). essay, Routledge.
- Priester, J. R., & Petty, R. E. (1996). The gradual threshold model of ambivalence: Relating the positive and negative bases of attitudes to subjective ambivalence. *Journal of Personality and Social Psychology*, *71*(3), 431–449. <https://doi.org/10.1037//0022-3514.71.3.431>
- Ritz, C., & Streibig, J. C. (2005). Bioassay analysis using *r*. *Journal of Statistical Software*, *12*(5). <https://doi.org/10.18637/jss.v012.i05>
- Rosenthal, T. L., & Zimmerman, B. J. (2014). *Social Learning and cognition*. Elsevier Science.
- Sparrow, B., & Wegner, D. M. (2006). Unpriming: The deactivation of thoughts through expression. *Journal of Personality and Social Psychology*, *91*(6), 1009–1019. <https://doi.org/10.1037/0022-3514.91.6.1009>

Mere Exposure: The Implicit Route to Attitude Change

- Vogel, T., & Wanke, M. (2016). *Attitudes and attitude change*. Routledge, Taylor and Francis.
- Wood, W. (2000). Attitude change: Persuasion and social influence. *Annual Review of Psychology*, 51(1), 539–570. <https://doi.org/10.1146/annurev.psych.51.1.539>
- Zajonc, R.B. (2001). Mere exposure: A gateway to the subliminal. *Current Directions in Psychological Science*, 10(6), 224–228. <https://doi.org/10.1111/1467-8721.00154>
- Zajonc, Robert B. (1968). Attitudinal effects of mere exposure. *Journal of Personality and Social Psychology*, 9(2, Pt.2), 1–27. <https://doi.org/10.1037/h0025848>

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Paul, I. & Manna, K. (2024). Mere Exposure: The Implicit Route to Attitude Change. *International Journal of Indian Psychology*, 12(3), 237-244. DIP:18.01.022.20241203, DOI:10.25215/1203.022