

The Implicit Association Between Homosexuality and Negative Words

Experiment Overview

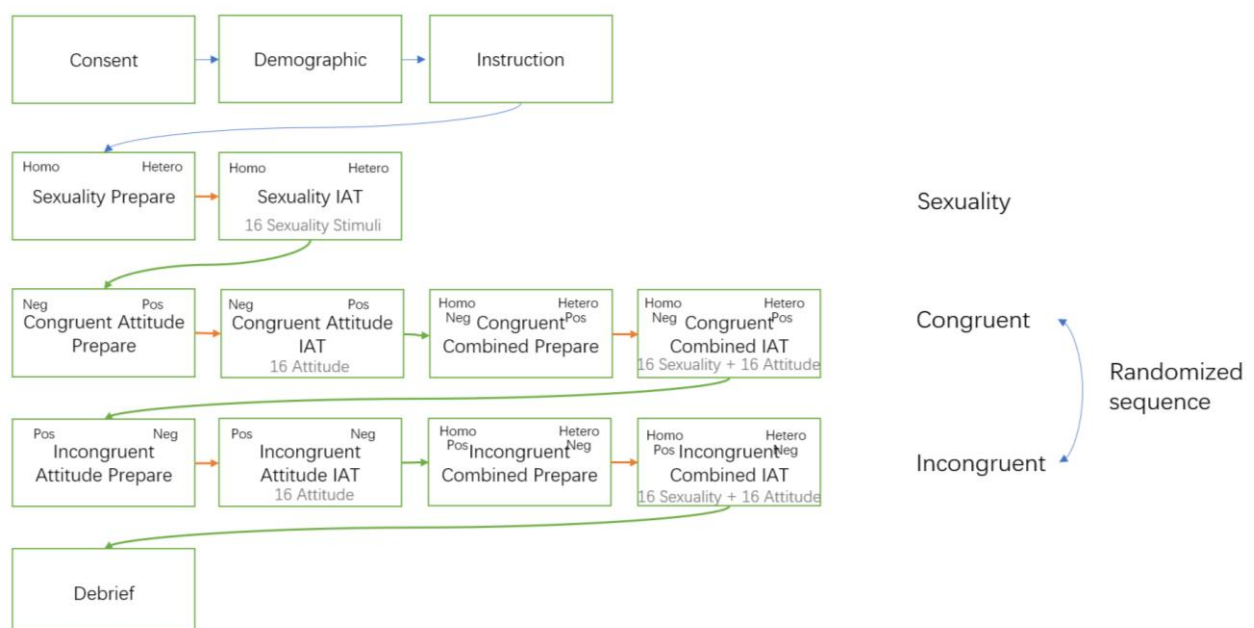
As many people still holds sexual prejudice against homosexuality, it's essential to discover people's attitude towards them. Although many research has been conducted in this area, previous research has shown discrepancy on the implicit association between sexuality and negativity. Here we investigated people's implicit association between sexual orientation and negative words using Implicit Associate Test (IATs; Greenwald, McGhee, & Schwarz, 1998).

The Implicit Association Test has been one of the most widely used implicit measure of sexual attitude. IAT is a categorization test in which participants need to categorize stimuli into one of two categories by pressing response key as quickly and accurately as possible. In particular, participants would have to classify stimuli under either Homosexuality, Heterosexuality, Negative, or Positive. Participants' correct reaction time when two different sexualities are paired with the two attribution is recorded to indicate any preference for heterosexuality over homosexuality.

Procedure

Following the collection of consent and demographic information, the participants were given instructions. In this experiment, participants needed to categorize the words that appeared on the center of the screen into their superordinate categories. Participants need to press 'e' in response to the word belonging to the left category, and they need to press 'i' if the word belongs to the right category. Participants were asked to respond as quickly as possible as long as they can get the answer right, and were also recommended to use both hands during categorizing. If they categorize the word wrong, a red cross will appear on the center of the screen. A fixation cross appeared on the screen for 1000ms between each word. There were prepare page before the start of each section, which informed participants of the following stimuli and the responses they should make. Every participant had to undergo sexuality practice block first, and were randomly assigned to either congruent-first or incongruent-first trial, so that the effect brought up by order could be counterbalanced. The procedure is shown in Figure 1 and Figure 3.

Figure 1. The procedure of the experiment. Note that for demonstration reason, the categories are abbreviated.



Experimenter's Manual

main.py: The overall structure is set here, where pages are connected together. Category labels and stimuli are also listed here. The logic of this file corresponds with the experiment procedure.

keyboard.py: Here, the signals emitted by pressing 'e' or 'i' is created, so that we know when participants have pressed something.

iat.py: This file includes functions that are related to the mechanism of IAT, including but not limited to identifying the correct categorization, randomly present the stimuli, recording reaction.

basicSettings.py: This is a file that includes basic settings about this experiment: (1) consent page setting (e.g., throw error if didn't consent); (2) demographic page setting (e.g., throw error if information incomplete, record demographic information).

Input and Output

If you're interested in changing the stimuli or category for this experiment, go to *main.py*. You can change the label and stimuli there, and also the stimuli and source list in *iat.py* accordingly. If you have any picture stimuli, remember to drag them into the folder.

The output of the results are 2 csv files: *results.csv* and *demographic.csv*. The demographic information and reaction time were separately recorded because each participants have many reaction times and IAT phases, which could be difficult to analyze when combined with their demographics.

results.csv: The reaction time from when the stimulus is presented to participants categorizing them correctly are recorded for every IAT phase. As shown in Figure 2. The first column shows you the left category of that phase, so that you know which phase it was (e.g., "Homosexuality" indicates sexuality IAT phase). If reaction time is longer in incongruent phase (homosexuality + positive) than congruent phase (homosexuality + negative), it indicates implicit association between homosexuality and negativity. The reaction times for other phases are also recorded for further analysis.

demographic.csv: Participants' age, gender, and education are recorded.

Program highlights

Use of `keyReleaseEvent`, and prevent participants from accidentally holding/pressing the key frequently to result in emitting multiple signals. (see *keyboard.py*)

Recorded participants' reaction time (see *iat.py*).

Use of object-oriented programming to make many IAT blocks (see *iat.py*)

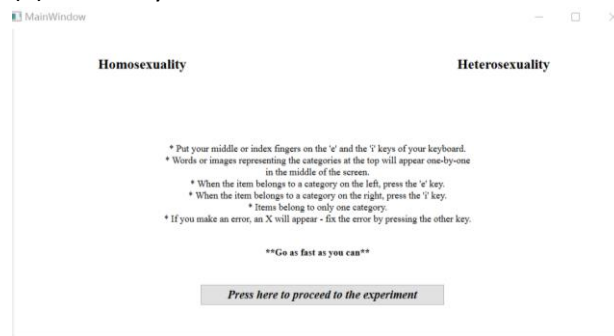
Figure 2. The reaction time (in seconds) recorded in *results.csv*.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	Homosexuality	1.299883	0.778856	1.03558	0.763444	0.636261	1.110548	0.675508	1.547291	1.687313	1.486356	1.874983	0.699377	1.511096	1.088678	1.25067	1.3
2	Negative	1.413311	0.720702	0.837942	0.850309	1.174306	0.6991	0.862276	1.161272	0.87466	0.861195	0.887063	4.400709	1.998751	0.637374	0.661614	0.6
3	Homosexuality Negative	1.433457	0.98685	1.599171	0.91263	0.68631	1.485481	1.336818	0.699444	1.750033	1.462988	1.124649	0.634129	1.20034	1.861709	0.935998	0.6
4	Positive	2.12645	0.68688	1.014186	1.209564	0.963446	0.833993	0.650375	1.339495	1.409311	1.088374	1.021427	0.875475	1.01136	1.148864	1.923719	0.6
5	Homosexuality Positive	1.150919	1.423879	0.724558	0.698267	0.951445	1.700113	0.73506	1.638187	1.085942	0.726981	0.721994	1.399315	0.974667	1.68789	0.625577	0.6
6	Homosexuality	1.108073	0.637348	0.847732	1.113874	0.75034	0.89776	0.986227	0.664079	1.000282	0.849105	0.659287	0.574846	1.524513	1.187193	0.623801	0.6
7	Negative	0.90094	0.545057	1.05075	1.123402	0.761609	0.686323	0.961057	1.5617	1.798737	1.238432	0.88629	0.67353	0.676556	1.223668	0.612128	0.6
8	Homosexuality Negative	1.523813	1.637591	1.698149	1.049342	1.011978	1.360245	1.062566	0.703301	0.598394	0.972866	0.86259	0.611489	1.361883	1.573602	1.013003	1.1
9	Positive	3.375506	3.871463	1.189252	1.323359	0.886184	0.799161	1.010832	0.900304	0.862727	0.784962	1.250135	0.999577	3.200104	0.672773	0.964191	0.6
10	Homosexuality Positive	1.574471	1.237153	1.11253	1.084424	1.687298	0.824337	0.699254	0.826226	0.823861	0.687489	0.963472	1.571994	0.872809	1.637414	0.700204	1.1
11	Homosexuality	1.028778	0.608964	0.608679	1.261636	0.737963	1.662995	0.697196	0.937781	0.775525	1.39688	0.937362	0.588545	0.621635	0.927764	0.736117	1.1
12	Positive	1.321973	0.761337	0.675619	0.587645	0.82216	1.424816	0.685591	1.425983	1.197693	0.575104	0.674334	0.999632	0.973306	1.123803	0.639913	1.1
13	Homosexuality Positive	1.049368	1.199235	1.599748	1.319748	1.225154	1.610986	0.73826	0.787891	1.348361	1.027109	0.934353	1.362217	0.523798	0.622976	0.688961	0.6
14	Negative	0.951159	0.749307	0.588845	0.845053	0.63574	1.123524	1.349197	1.836779	1.224144	0.589473	0.721593	2.975932	0.736912	2.024228	0.853081	1.1
15	Homosexuality Negative	0.773727	1.447417	1.415701	0.423516	1.024638	0.737823	1.259873	1.110633	1.173354	0.824948	0.974741	0.575639	1.060922	0.710424	1.086815	0.6
16	Homosexuality	1.152351	0.686714	0.836316	0.78758	0.786667	0.686862	0.874418	0.598412	0.636329	1.47557	0.711799	0.701213	0.659667	0.83785	0.822756	0.6
17																	
18																	
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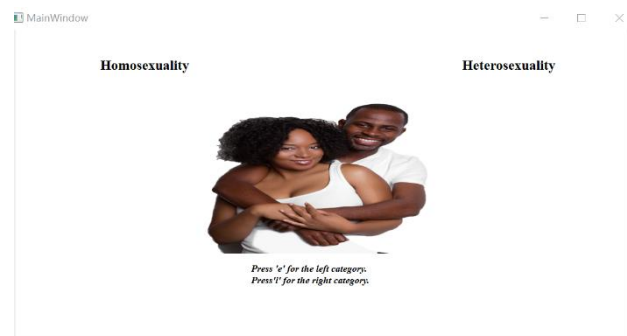
Note. The results doesn't always follow a normal experiment sequence in the present *results.csv*, because I've been testing the experiment without completing all phases.

Figure 3. More specific procedure.

(1) Sexuality Blocks



Sexuality Prepare



Sexuality IAT

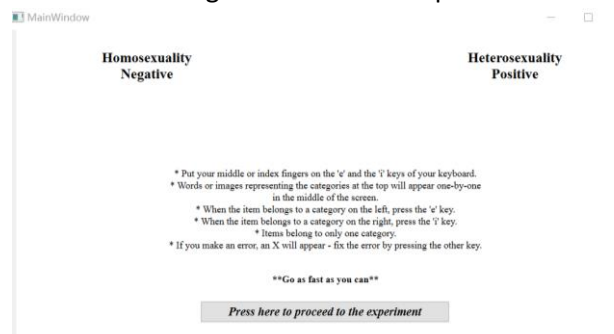
(2) Congruent Phase



Congruent Attitude Prepare



Congruent Attitude IAT



Congruent Combined Prepare

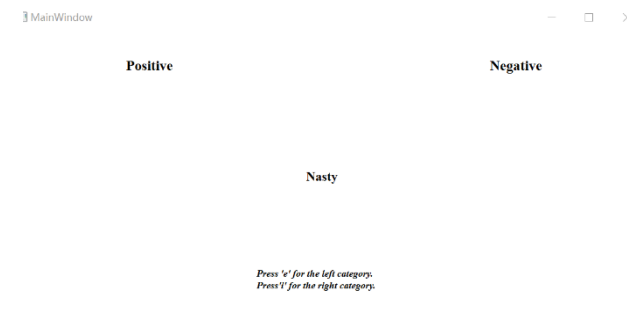


Combined Congruent IAT

(3) Incongruent Phase



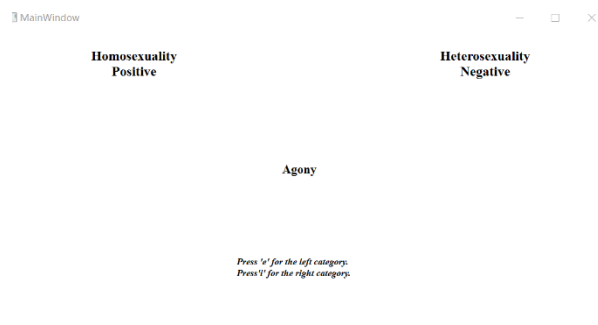
Incongruent Attitude Prepare



Incongruent Attitude IAT



Incongruent Combined Prepare



Incongruent Combined IAT