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Double Blind Experiment

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A double blind experiment is an experimental method used to ensure impartiality, and avoid errors arising from bias.

It is very easy for a researcher, even subconsciously, to influence experimental observations, especially in behavioral science, so this method provides an extra check.

For example, imagine that a company is asking consumers for opinions about its products, using a survey.

There is a distinct danger that the interviewer may subconsciously emphasize the company's products when asking the questions. This is the major reason why market research companies generally prefer to use computers, and double blind experiments, for gathering important data.

The banner features the Explorable logo and the text "Quiz Time!". Below this are three quiz cards, each with a representative image and a title:

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The Blind Experiment

The blind experiment is the minimum standard for any test involving subjects and opinions, and failure to adhere to this principle may result in experimental flaws.

The idea is that the groups studied, including the control [1], should not be aware of the group in which they are placed. In medicine, when researchers are testing a new medicine, they

ensure that the placebo looks, and tastes, the same as the actual medicine.

There is strong evidence of a placebo effect [2] with medicine, where, if people believe that they are receiving a medicine, they show some signs of improvement in health. A blind experiment reduces the risk of bias [3] from this effect, giving an honest baseline for the research, and allowing a realistic statistical comparison.

Ideally, the subjects would not be told that a placebo was being used at all, but this is regarded as unethical.

The Double Blind Experiment

The double blind experiment [4] takes this precaution against bias one step further, by ensuring that the researcher does not know in which group a patient falls.

Whilst the vast majority of researchers are professionals, there is always a chance that the researcher might subconsciously tip off a patient about the pill they were receiving. They may even favor giving the pill to patients that they thought had the best chance of recovery, skewing the results.

Whilst nobody likes to think of scientists as dishonest, there is often pressure, from billion dollar drug companies and the fight for research grants, to generate positive results.

This always gives a chance that a scientist might manipulate results, and try to show the research in a better light. Proving that the researcher carried out a double blind experiment reduces the chance of criticism.

Other Applications

Whilst better known in medicine, double blind experiments are often used in other fields. Surveys [5], questionnaires and market research all use this technique to retain credibility.

If you wish to compare two different brands of washing powder, the samples should be in the same packaging. A consumer might have an inbuilt brand identity awareness, and preference, which will lead to favoritism and bias.

An example of the weakness of single blind techniques is in police line-ups, where a witness picks out a suspect from a group. Many legal experts are advocating that these line-ups should be unsupervised, and unprompted.

If the police are fixed on bringing a particular subject to justice, they may consciously, or subconsciously, tip off the witness. Humans are very good at understanding body language and unconscious cues, so the chance of observer's bias should be minimized.

Source URL: <https://explorable.com/double-blind-experiment?gid=1580>

Links

[1] <https://explorable.com/scientific-control-group>

[2] <https://explorable.com/placebo-effect>

[3] <https://explorable.com/research-bias>

[4] <http://en.wikipedia.org/wiki/Double-blind>

[5] <https://explorable.com/survey-research-design>