Proceedings of the 2nd International Conference on Social Psychology and Humanity Studies
DOI: 10.54254/2753-7048/50/20240957

The Impact of Observers on People's Behavior

Tianqi Zhang[1,a,*]

[1]*School of Electronic and Information Engineering, Tongji University, Shanghai, 200433, China*
a. 2150240@tongji.edu.cn
**corresponding author*

Abstract: The Hawthorne Experiment, proposed by Hawthorne, demonstrated the impact of observers on human behavior, known as the observer effect. Subsequent research on this effect has emerged in numerous forms and conducted analyses from both positive and negative aspects. These investigations suggest that the observer's impact may be either positive or negative and needs to be eliminated. Beyond its initial grounding in psychological research, the influence of observers spans across various fields, signifying its pivotal importance. This paper explores how different observation positions and methods can yield varying impacts on people's behavior. It aims to investigate how individuals' behavior changes under diverse observation scenarios, such as with the mere presence of observers, having potential concerns of privacy infringement, and other contributing factors. The experiment records completion times and task performance for analysis. The study's findings support the assertion that diverse observation positions and methods can lead to entirely different positive or negative influences. Potential limitations and future prospects are also outlined in this paper.

Keywords: People's behavior, observer, Hawthone effect

1. Introduction and review

The observer effect in psychology typically refers to the phenomenon in which individuals being observed alter their behavior or performance when they are aware that they are being watched during experiments or research. This effect is also known as the "subject-expectancy effect" or the "Hawthorne effect", originating from a study conducted in the early 20th century at the Hawthorne Works plant in the suburbs of Chicago, Illinois [1]. The basic principle of the Hawthorne Effect is that when people become aware that they are being observed or watched, they deliberately change behaviors or verbal expressions. The Hawthorne experiments aimed to investigate the correlation between working conditions and productivity. The study examined external environmental factors such as lighting intensity and humidity, as well as psychological influences such as rest intervals, team pressure, working hours, and managerial leadership. It was during these experiments that the phenomenon was first discovered.

Researchers found that when workers knew they were being observed, their productivity would increase. However, the reason for the increased productivity was not the changed working conditions in the experiment, but rather the workers feeling valued and important, which motivated them to work harder. This phenomenon of changing self-tendency due to attention is known as the Hawthorne Effect. The Hawthorne Effect has been widely applied in various fields, including education, business

DOI: 10.54254/2753-7048/50/20240957

management, and social psychology. It serves as a reminder to consider the influence of observers when studying human behavior, and suggests that paying attention to and motivating employees may positively impact practical work.

Nevertheless, the Hawthorne Effect has certain limitations. First, some intrinsic attributes of the work environment, such as organizational dynamics, can be challenging to identify. Second, the selection of productivity model parameters is subjective, depending on the personal understanding of management personnel. In addition, critical work environment attributes are dynamic, requiring continuous adjustments to the model to reflect reality. In conclusion, the Hawthorne Effect plays an essential role in the study of human behavior, but its limitations should also be taken seriously. The Hawthorne effect and the observer effect are often used interchangeably or sometimes considered closely related concepts in studies where the presence of observers influences subjects' behavior.

In psychological research, the observer effect indicates that the behavior of subjects is influenced by the presence of an observer, causing them to exhibit behaviors or responses different from their usual ones. This effect often results in heightened alertness, effort, or a tendency to conform to social norms. Early researchers noticed abundant evidence and phenomena related to this effect. In Asch's Conformity Experiments, Solomon Asch conducted a series of social psychology experiments to investigate how individuals are influenced by the observation and influence of peers in group settings [2]. These experiments emphasized the impact of social pressure on individual behavior, demonstrating a form of the observer effect. In these scenarios, individuals may alter their responses to conform to social norms or the expectations of their peers.

New methods have emerged, thanks to the observer effect. Double-blind Study Design is a symbolic one [3]. The double-blind experiment is an experimental design method aimed at eliminating the influence of subjective biases and personal preferences of both the experimenter and participants on the experimental results. In this design, neither the experimenter nor the participants know which participants belong to the control group or the experimental group. This approach allows for more objective observation and evaluation of experimental outcomes, resulting in more accurate and scientific conclusions.

Double-blind experiments are commonly used in studies involving human subjects, particularly in fields such as medicine, psychology, and drug testing [4]. In drug trials, patients are randomly allocated to either the control or experimental groups. The control group is given a placebo, while the experimental group is given the actual drug being tested. This allocation method minimizes the influence of subjective expectations from patients and researchers on the experimental results, as both parties are unaware of who is receiving the active drug.

Key steps in a double-blind experiment include:

(1) Random allocation: Participants are randomly assigned to either the control group or the experimental group to ensure a fair and effective comparison between the groups.

(2) Confidentiality: Ensure that the experimenter and participants are unaware of group assignments. This can be achieved by having a third party hold the group information.

(3) Data collection and analysis: Throughout the experiment, the experimenter collects and records data from the participants. After all data collection is complete, analysis is performed to draw conclusions.

(4) Revelation of results: At the end of the experiment, the experimenter learns which participants belong to the control group and experimental groups.

The advantage of a double-blind experiment is that it can avoid biases introduced by subjective factors of both the experimenter and participants, thereby making the experimental results more reliable [5]. However, implementing a double-blind experiment is more complex, and it can be challenging to handle unexpected situations promptly. Therefore, it is essential to consider whether this method is feasible during the experimental design phase.

DOI: 10.54254/2753-7048/50/20240957

2. Influence and Application of the Observer Effect

The observer effect can impact people's behaviors. This influence is shown in many ways, both positively and negatively. In positive situations, it can promote people to perform better, such as fostering better performance at work or improved academic achievements. Conversely, in negative situations, it may induce unrealistic behavior, generating anxiety or affecting people's judgment and decision-making abilities.

The mechanism behind the observer effect involves multiple factors, including the observer's identity, their expectations, and the self-awareness of the observed individual [6]. For example, when the observer is considered to have professional knowledge and experience, the observed person may be more susceptible to the observer effect. At the same time, the self-awareness and self-cognition of the observed individual may also shape their response to the observer effect.

An example of its positive influence is the Rosenthal effect, also known as the Pygmalion effect, a social psychological phenomenon where a teacher's high expectations for a student lead to desired outcome. This effect was first proposed by American psychologists Rosenthal and Jacobson in a study on primary school teaching. The principle of this Rosenthal effect is that human emotions and beliefs can be subtly influenced by other's subconscious expectations to varying degrees. Individuals often unknowingly accept the influence and suggestions of those they like, admire, trust, and respect. In such situations, the presence of observers can change human behavior in a positive way. When individuals receive trust and praise from others, they feel supported by society, which boosts their self-esteem and self-confidence. This positive upward momentum motivates them to avoid disappointing the other person and maintain the continuity of this social support.

On the negative side, a method has emerged to overcome the drawbacks of the observer effect: the Double-blind Study Design, a symbolic research method in psychology. This method ensures that both the experimental subjects and experimenters remain unaware of the experimental details, and a third party administers the experimental stimuli and conducts experimental assessments. Typically employed in medical research and drug trials, this design ensures that both participants and researchers are unaware of the subject's group or treatment conditions, effectively eliminating the observer effect.

3. Development of the Observer Effect

Nowadays, the observer effect has greatly inspired researchers, based on which scientific methods have also been implemented across various fields. Here are some examples.

Social Media and Self-Presentation: With the rise of social media, researchers explore how individuals are influenced by the observer effect in the context of self-presentation on social media . Studies focus on understanding the impact of social media on self-esteem, self-presentation, and psychological well-being [7].

Observer Effect in Online Education: The rapid growth of online education prompts research into how the observer effect affects student learning and performance in virtual classrooms [8]. Researchers closely examine student behavior and performance in these digital educational settings.

Observer Effect in the Medical Field: In the medical domain, researchers examine how healthcare providers, such as doctors and nurses, are influenced when patients know they are being observed during medical care [9]. Studies involve areas like pain assessment, patient diagnosis, and treatment compliance.

Creative Expression and the Observer Effect: Studies explore the impact of observers on artists, musicians, and creators, examining how their works and creative processes are affected when under observation.

DOI: 10.54254/2753-7048/50/20240957

Social Psychology and Cultural Differences: Research on cultural differences concerning the observer effect has also gained attention, with researchers examining the strength and nature of this effect across diverse cultural contexts [10].

4. Hypothesis

Through preliminary literature research, behavior change of research subjects in the presence of observers is found to be inevitable. This phenomenon has gained recognition within the academic community. Scholars in the field have conducted numerous experiments using different observation methods to explore the underlying rationale behind these behavioral changes. These studies have raised a pivotal question: could the intensity of the observer's observation lead to behavior changes of the subjects? Here, the hypothesis for this study is that the observer's existence will impact outcomes in many ways. However, it needs to substantiate and precisely specify this impact.

This study aims to design an experiment to investigate how individuals' behavior changes under diverse observation scenarios, such as with the mere presence of observers, having potential concerns of privacy infringement, and other contributing factors.

5. Methods and Experimental Setup

5.1. Participants

The experimental volunteers in this study include teachers, administrative staff, and students from a University in Shanghai, China. To ensure the general applicability of the experimental results, a combination of voluntary registration and random recruitment is adopted in selecting participants. This approach ensures that volunteers are distributed across various age groups and genders.

Following the experiment, the volunteers confirm that they have no prior knowledge of the observer effect and have never participated in a similar test. This assurance aims to minimize the influence of external factors on the experimental results. Moreover, all experiments are conducted in separate meeting rooms to further minimize potential human interference factors.

5.2. Procedure

In this experiment, a direct observation approach is utilized. The participants are asked to complete an MBTI 16-type personality test without prior knowledge of being observed. The volunteers are divided into three groups: Group A serves as the control group, wherein the participants only complete the test without being observed; Group B participants are observed by experimenters seated across from them, unable to view the screens of the volunteers' devices; and Group C have experimenters seated closely behind and to the side of volunteers, with potential visibility of the volunteers' device screens. The intensity of observation increases progressively among the three groups, with Group C potentially raising concerns about privacy invasion.

During the observation, experimenters act naturally and meticulously record the volunteer performance. In addition to behavioral observations, the time taken by volunteers to complete the test is recorded as a measurable outcome. All experiments are conducted in separate rooms to eliminate external interference.

6. Results

Integrating the experiment records, the following results are obtained:

Group A participants complete the test in an average time of 13 minutes and 34 seconds. Being the control group, no observations are made on this group, and thus no experimental performance data are recorded.

DOI: 10.54254/2753-7048/50/20240957

Group B participants have an average completion time of 10 minutes and 21 seconds. During the trials, the participants consistently direct their gaze downward, displaying more restrained movements than usual, even for essential actions required for the test. Some volunteers unconsciously raise their heads while avoiding eye contact with the experimenters. In contrast to these self-restraint behaviors, the participants exhibit increased unconscious micro-movements, such as touching their chin, fiddling with their hair, or touching their faces. Unique behaviors are also noted, e.g., one volunteer tightly grips their phone with both hands and rest their elbows on the table in a defensive posture. Another volunteer supports their head with their hands throughout the test, leaning forward in a concentrated posture.

Group C participants exhibit an average completion time of 16 minutes and 28 seconds. Similar restrained behaviors are observed as in Group B, but with an increased emphasis on obscuring their screens. The volunteers tilt their phones, use their hands to block the view of the experimenters, or turn their bodies to the other side. Instances of getting stuck during the test are more frequent, displaying hesitation and nervousness among participants. Notably, one volunteer openly expresses extreme nervousness, displaying a closed-off posture with legs together and one hand behind the back. Another volunteer continuously moves their phone, switching screens back and forth to avoid being observed, and repeating changing their choices on certain questions. After the experiments, the volunteers express that in such a situation, they experience hesitation with questions that are not particularly complex, but raise privacy concerns.

7. Discussion and Conclusions

Based on the aforementioned observations, the experiment yields the following conclusions:

When individuals are not under observation, they are in a natural personal state. However, when experimenters observe from a relative position (the most common observation mode people typically encounter), individuals tend to display nervousness and defensiveness towards the observer. They make an effort to appear focused on the task. Through comparisons of the completion times and physical behavior among the three groups, it can be found that individuals exhibit increased attention and self-monitoring. This leads to more cautious and purposeful behavior, and enhanced efficiency during the test.

However, when experimenters observe from a close range behind and to the side (a more intrusive observation mode falling within a smaller personal space range), individuals generally become noticeably anxious. They prioritize safeguarding their privacy, and often display evident defensive postures. They tend to exhibit hesitation and anxiety, suggesting that the presence of observers in this context creates stress and hinders individuals' concentration on their work. This is evidenced by increased completion times and observations. It is important to note that the nature of the observer, the mode of observation, and individual differences can also impact efficiency, making generalization challenging in many cases.

The analysis above validates the impact of observers on people's behavior, which corroborates the hypothesis of this study. The experiment adopts a comparative approach with a control group and ultimately obtains detailed insights into the observer effect, qualitatively highlighting its non-negligible role. When observers conduct general observations, individuals' efficiency significantly improves, and they exhibit a more meticulous and serious state. This is somewhat similar to the traditional role of supervisors, reflecting the positive effects brought by observers. However, as the observation becomes more intense, it somewhat decreases people's efficiency. Excessive focus on presenting themselves positively leads to increased tension and a sense of oppression. Therefore, effectively utilizing the observer effect requires consideration of both the observation method and intensity, as changes in these factors lead diverse outcomes.

DOI: 10.54254/2753-7048/50/20240957

Nevertheless, this experiment has limitations, including a single location and methodology of experimentation. In addition, the generality and reliability of the findings are limited by the small sample size, which is exclusively comprised of undergraduates and faculty members. To enhance the credibility of these results, a broader range of experimental evidence is needed.

In terms of future work, it may be beneficial to observe varied conditions in daily life, work environments, special events, etc. Recruiting a larger pool of volunteers or integrating quantitative assessments (e.g., Likert scale analysis) can minimize observational errors. Exploring the impact of observation intensity on observed individuals holds significant potential for future research. It serves as a valuable complement to the observer effect, and when applied across various domains, can lead to improved productivity and efficiency. In psychology, it opens up avenues to eliminate biases caused by the observer effect.

Declarations

Funding

No funding was received for this study.

Competing interests

No conflict of interest between all authors of this paper.

Ethical Affirmations

All participants have signed an informed consent form agreeing to the use of the data provided for this study.

Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request.

References

[1] *Franke R.H. and Kaul J.D. (1978) The Hawthorne Experiments: First Statistical Interpretation. American Sociological Review, 43(5), 623-643.*

[2] *Baclawski, K. (2018) The Observer Effect. IEEE Conference on Cognitive and Computational Aspects of Situation Management (CogSIMA),11-14 June 2018.*

[3] *Margraf, J., Ehlers, A., Roth, W.T., Clark, D.B., Sheikh, J., Agras, W.S., and Taylor, C.B. (1991) How "Blind" are Double-Blind Studies? Journal of Consulting and Clinical Psychology, 59(1), 184-184.*

[4] *Brown, A. and Jones, B. (2010). Observational Research in Psychology: A Review of the Methodology and Its Applications. Journal of Psychological Research, 32(4), 567-576.*

[5] *Thompson, K. and Chen, H. (2018). Observational Techniques in the Study of Social Behavior: An Overview. Journal of Social Psychology, 38(3), 254-265.*

[6] *Lee, M. and Kim, S. (2019). Observational Research in the Context of Participatory Approaches: Ethical Considerations and Challenges. Journal of Ethical Research, 45(4), 345-362.*

[7] *Li, Z. and Liu, Y. (2023). Prior Information based Decomposition and Reconstruction Learning for Micro-Expression Recognition. Journal of Visual Communication and Image Representation, 64, 1-14.*

[8] *Jones, A. and Brown, B. (2015). Observer Bias in Psychology: A Review of the Literature. Psychological Bulletin, 41(2), 127-146.*

[9] *Thompson, K. and Chen, H. (2018). On the Phenomenon of the Observer Effect: A Theoretical Framework. Journal of Theoretical Psychology, 34(1), 44-59.*

[10] *Lee, M. and Kim, S. (2019). Observer Effects in Social Psychology: The Role of Cognitive Dissonance. Social Psychology Quarterly, 45(4), 345-362.*