

Impact of Cell Phone Disruptions on  
Perceptions and Impressions

Austin Che

Introduction to Social Psychology

Term Paper

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### **Abstract**

People constantly make judgments about others, both consciously and unconsciously. We propose a study to investigate how cell phone disruptions during a cooperative task affect the perception of the disruptive person. Ratings of socially related traits are predicted to be impacted by a cell phone disruption while ratings of other traits would not be impacted. These effects would only occur if a disruption can be attributable to the person being rated and would occur even if the disruption is not consciously recalled. In addition, in group situations, people would attribute more blame for failure to a person whose cell phone disrupted the group task.

# 1 Introduction

With the widespread use of cellular phones, pagers, and other forms of technology, people can now be contacted at any time, potentially creating problems if the use of these devices causes social disruptions. When a cell phone rings during a movie at a theater, the disruption can be as socially unacceptable as someone physically walking into the theater while talking. How do people consciously and unconsciously react to these sorts of disruptions? We will investigate cell phone disruptions, in particular, because we believe these disruptions to be very socially intrusive and an increasingly common occurrence. However, we believe that the methods and ideas presented with regard to cell phone disruptions could also be applied towards other types of disruptions.

## 1.1 Person Perception

*Person perception* research focuses on how people perceive others in various situations, with the *perceiver* making judgments and inferences about others based on observed behavior and events (Schneider, Hastorf, & Ellsworth, 1979). Every interaction includes many inferences and judgments made by perceivers in the hope of understanding others. These judgments usually need to be made based on limited and ambiguous data, including nonverbal cues. Three widely studied nonverbal behaviors are looking, approaching, and touching (Schneider et al., 1979). A cell phone disruption is also a nonverbal cue and ambiguous. We are interested in how a perceiver will judge a target person whose cell phone disrupts a cooperative task.

When faced with interpreting some event, the perceiver has three tasks (Ross, 1977). The first task is attribution, making causal judgments in determining the cause behind the event. Second is to form social inferences about the dispositions of the people involved or about the situational factors involved. A third task involves prediction of future behavior and events.

## 1.2 Attribution

*Attribution* is the process of determining the cause behind an observed event. Given only the effects, a person may need to make judgments about the causes. In the causal schema model, a person takes into account all possible causes of an event (Kelley, 1973). To facilitate attribution, we will introduce unexpected events and frustrate the participant, as unexpected events and frustration due to the non-attainment of a goal have been shown to lead to increased attributional search (Wong & Weiner, 1981). The cell phone disruption is an unexpected event and we further frustrate the participant by evaluating their performance negatively. We expect these manipulations will lead to greater attribution and a larger effect on the inferences made.

### 1.2.1 Dispositional vs Situational

Attribution greatly determines how a person interprets an event and determines how to respond. If one is walking with a friend and is suddenly slapped by the friend, many attributions are possible depending on the perceived intent. Whether one's friend is drunk, whether the friend often hits people jokingly, or whether the friend is angry all can influence the attribution process.

An event or behavior, such as a slap, can be broadly attributed to either dispositional or situational factors. When attributing a behavior to a person's disposition, the individual's personality traits are seen as the root causes of an event. In the above situation, attributing the slap to personality factors indicates the friend often slaps people. Besides dispositional factors, situational factors also provides important information for the perceiver to interpret. If one's friend is drunk, one is likely to attribute the slap to the situation and not to the friend's disposition. Assigning the responsibility for an event to a person, the situation, or some other factor determines how one perceives or makes judgments about the event.

Will people attribute the disruption of a cell phone call to the person or the situation? The ringing of the phone directly implies another party on the other end, perhaps more responsible for the disruption. However, the fundamental attribution error affecting perceivers is in underestimating the impact of situational factors and overestimating the impact of dispositional factors (Ross, 1977). Thus, in this experiment, we hypothesize that people will not take into consideration these situational factors and will instead attribute the disruption to the person with the phone.

### **1.3 Social Inference**

After appropriate attribution, a perceiver needs to make inferences to explain the observed event. Different traits can be inferred about the friend who slaps you depending on whether the slap is attributed to dispositional or situational factors. People use a variety of strategies to make judgments of others. One strategy is to categorize people, relying on stereotypes and prejudices. Another strategy uses the specific characteristics of the situation to form an impression. These two strategies are at the ends of a continuum, with many possible hybrid strategies using stereotypical and specific attributes (Fiske & Neuberg, 1990). Various factors such as attention and motivation can contribute to where on the continuum a perceiver stands in forming an impression. Other factors influencing perception include the recency of the behavior, the novelty of the behavior, and the mood of the perceiver (Schneider et al., 1979).

#### **1.3.1 Stereotypes**

Immediate inferences about a person based on immediately accessible physical features can be called snap judgments (Schneider et al., 1979). For example, thin lips, low foreheads, or protruding eyes can all connote certain traits. These quick judgments can be considered stereotypes. Stereotyped judgments greatly

simplify reality, saving time and cognitive resources. Stereotypes are efficient when they are sufficient for a given situation. It takes less time to form an impression based on stereotypes than to process all available data in forming an impression (Fiske & Neuberg, 1990). In addition, exposure to stereotyped information can differentially influence later judgments (Banaji, Hardin, & Rothman, 1993). These later judgments are often made without conscious knowledge that the original information was a source of influence. These effects of implicit stereotyping only occur if the initial information is applicable to the later judgment.

Many factors could influence how a perceiver judges a cell phone disruption. The perceiver could activate stereotypes about people who own cell phones and have these phones ringing at inappropriate times. Or the perceiver could try to take into account the situational factors that may have influenced why the phone would have rung at the time it did. However, we predict higher attribution to dispositional factors, leading to the activation and use of stereotypes, especially when we distract the perceiver with another task. During the cognitively demanding task, the perceiver has no time and no choice other than to make a quick stereotyped judgment. Thus, we expect to see inferences made based on this activated stereotype.

### **1.3.2 PEAT**

The PEAT model, is a probability, expectancy, attribution theory that attempts to formalize how we make attributions and inferences (Medcof, 1990). The model assumes people maintain unconditional probabilities for events. When a perceiver sees an event associated with an actor, if the observed probability is not equal to the unconditional probability, then the actor is said to have a disposition in one direction to another. For example, if the probability of someone skipping class is 25% and Al skips class 5% of the time and Bob skips class 40% of the time, an observer infers that Al is a good student and Bob is

not a good student. These labels are all based on a relative comparison to an average. If the unconditional probability were greater than 40% then both Al and Bob would be labeled as good students.

Extreme behavior or behavior that is more rare is given more weight and attracts more attention (Fiske, 1980). In the PEAT model, the lower the probability that one would expect to see a behavior, the higher weight the behavior is given when it is actually observed. Socially undesirable acts that are relatively infrequent can be more informative and have larger impacts on judgments. Also, unexpected behaviors are more often recalled and socially unacceptable actions bring greater attributional processing (Hastie, 1984).

The base rate probability that a cell phone will ring in the middle of the experiment is assumed to be low. There is also an expectancy that cell phones will not disrupt the experiment. We also force the attribution of the cell phone disruption to the target person being rated. Thus, when a cell phone disruption does occur, we expect a relatively large impact on the inferences a perceiver makes about the target person.

## 1.4 Behavior Prediction

Once a perceiver has made an attribution to either dispositional or situational factors and then made inferences based on this attribution, perceivers make inferences about future behavior to predict and to guide future decisions. Attributions and inferences about a person can affect the future interactions with that person. One study showed that students believing a lecturer was warm interacted more during the discussion than students believing the lecturer was cold (Kelley, 1950).

Other interaction effects due to person perceptions can also be seen. In one study, females were told they were having a conversation with another female who they either believed was a cold and distant woman or a warm and outgoing

woman (Bond, 1972). The woman labeled as cold or warm, who did not know what the other person believed about her, interacted differently in the cold and warm groups. The surprising effect was that the woman behaved more warmly when her partner were initially led to believe that she was cold. Apparently, women who believed they were interacting with a cold women tried harder to engage their partners, thus eliciting warmer behaviors.

We are interested in how a cell phone disruption would affect the desirability for future interactions and whether a disruption would influence the performance on a task. We predict that a cell phone disruption should decrease the desirability for future interactions and have little effect on the performance. Frustration should increase the amount of prejudice, according to the scapegoat theory (Myers, 1999). By putting people in a negative mood, we can induce people to act more negatively and to assert their prejudices more, with the expected effect of less cooperation with the disruptive person.

## 1.5 Asch Paradigm

To experimentally explore person perception, Asch performed a classic series of experiments where he gave participants a list of personality traits about a hypothetical person (Asch, 1946). The participant then wrote a paragraph with their impressions of the person. The participants also had to select from pairs of opposing traits that they thought would best describe the person. The initial traits were called stimulus traits and the later traits were called response traits. Therefore, it is possible to study how someone infers from a stimulus trait like “warm” that the person is also “generous.” Asch proposed that whether any given trait was important for determining the impression formed depended on the other stimulus traits, or the context. Even with meager information, an impression is formed for the entire person and extended to become a complete representation.

Although many previous experiments in person perception have relied on the method Asch used, by giving descriptions of hypothetical people to participants and studying the inferences people make, these procedures all have an artificiality to them, as real life situations do not present us with traits and tell us to form an impression. In addition, the perceiver is not actively involved in the situation. Rather than giving a description of a person whose cell phone rings inappropriately, this experiment puts the perceiver in a plausible real life situation and examines the effects of a cell phone disruption. However, we can take some of the results learned from experiments using the Asch paradigm and apply them to this experiment.

### **1.5.1 Related Traits**

In the Asch paradigm, stimulus traits have more effect on related response traits. One experiment on attribution found an effect of exposure to personality trait terms on subsequent judgments of an unrelated person, provided the initial trait terms were applicable to the person (Higgins, Rholes, & Jones, 1977). This experiment showed that attributions do not depend only on behavioral, dispositional, or situational information, but also on the applicability of prior information. In addition, introducing a delay between the initial trait exposure and final judgment, caused increased polarization in people's judgments of traits.

Traits can be grouped into clusters that vary together (Rosenberg & Sedlak, 1972). A five factor model has been proposed to classify personality traits (Norman, 1963). Traits can also be classified on dimensions such as socially desirability and intellectual desirability (Zanna & Hamilton, 1972). Intellectual desirable traits are viewed as desirable on a task-related activity. Socially desirable traits are viewed as desirable in interpersonal activities. The experiment found that manipulating a stimulus trait in one dimension did not affect trait inferences in the other dimension. Because a cell phone disruption can be seen as a socially undesirable trait, it is hypothesized that cell phone disruptions

should only affect traits on the socially desirable dimension and have no effect for traits on the intellectually desirable dimension.

## **1.6 Hypothesis**

In summary, we propose an experiment to test the effects of a cell phone disruption that occurs while the participant is focused on a cognitively demanding task. We hypothesize that the disruption will activate stereotypes and the participant will use these stereotypes to rate personality traits. Only traits related to a cell phone disruption in the socially desirable dimension will be affected. With the disruption and their induced frustration on the task, people will become more prejudiced and less likely to seek future interactions with the disruptive person. Also, people often do not know what affected them or why they made the judgments that they did (Nisbett & Wilson, 1977). We hypothesize that participants will not be consciously aware of the effect that the cell phone disruption had, yet will nonetheless be affected on their judgments.

## **2 Method**

### **2.1 Participants**

One hundred undergraduate students (50 women and 50 men) will be recruited from Stanford University and paid for their involvement. They will be randomly assigned to the experimental groups.

### **2.2 Materials**

60 general knowledge multiple-choice questions, such as “What is the second tallest mountain in the world?” will be put together in a computerized form. The experimental room will contain two computers located on opposite sides of

a barrier, such that two people sitting in front of the computer on either side would have no visual contact with each other.

## 2.3 Design

Each experimental trial will consist of three persons: the experimenter, the *disrupter* who is a confederate whose cell phone rings in the critical condition of the experiment, and the *perceiver* who is the real participant making judgments about the disrupter.

The variable being manipulated is the type of cell phone disruption. We will have 4 experimental groups. The control group, the no-ring condition, hears no disruption. The disrupter-ring condition hears the phone ringing from the direction of the disrupter (confederate). The next two experimental groups are to control for any effects due to a disruption itself, because we would like to isolate the effects appearing only when a disruption is attributed to the disrupter. The experimenter-ring condition has the ringing phone coming from the experimenter. The last condition, the distant-ring condition, has a cell phone outside the room ring during the experiment. The rings in all conditions sound identical, with the phone ringing two and a half times before stopping.

## 2.4 Procedures

The participant will be told that the study concerns how well people do in answering general knowledge questions in various situations. The participant will come into the experiment with another person who, unknown to the participant, is really a confederate of the experimenter. To reduce the impact of differing judgments based on extraneous factors, we will use the same person as the confederate for all trials, always wearing the same clothing and accessories. As the effects we are trying to measure may be subtle, we want to reduce the possibility of judgments based on variables not being studied in the experiment.

In addition, visual and verbal contact between the confederate and participant will be minimized as much as possible. When the participant enters, the experimenter will immediately lead both the participant and the confederate into the room, seating them in front of the computers to limit their pre-experiment interaction. The experimenter will sit within view of both the participant and the confederate. However, the two people will not be able to see each other due to the barrier between them, eliminating any possible unconscious cues, and ensuring that judgments made later will come solely from the task at hand. The experimenter also tells them to not say anything to each other during the experiment.

The experimenter would then describe how the game will work. The game is a cooperative task requiring them to answer general knowledge questions. On each question, one person will read the question first and the other person will see nothing. This person will have up to 10 seconds to mark an answer. Once the first person selects an answer choice, the question is shown on the screen of the other person. The second person will be able to examine the answer choice that the first person made, and has 10 seconds to decide to either accept the choice made by the other person or to make another choice. Time pressure is introduced to increase the sense of focus and commitment required to play the game. The disruption should have a larger effect than if unlimited time is allowed. The choice the second person makes is the final choice for the team and used to grade the test. The choice the first person makes is only advisory and is not counted. Both people observe the final choice made and whether the final answer is correct.

After each question, the roles of the two people will reverse. Thus, the participant thinks he is making the final choice on half the questions and only giving hints to the other “subject”, the confederate, on the other half. The experimenter re-emphasizes that no other forms of communication is allowed between the two during the game. The barrier separating the two, explains

alert	ambitious	argumentative	confident	conscientious
cooperative	dominant	educated	focused	friendly
happy	helpful	honest	important	intelligent
knowledgeable	polite	popular	quick	reliable
self-centered	sociable	stubborn	thoughtful	useful

Table 1: Traits used to measure perception of disrupter in experiment

the experimenter, is to prevent unintentional signals being communicated. The study will begin with a couple sample questions for the participants to familiarize themselves with the game.

Of course, although participants think they are in a group task, actually the confederate is doing nothing. All responses from the confederate will be pre-programmed into the computer and only the participant will have any control. In the middle of the test, the experimental manipulation will occur, with either no disruption, or a cell phone going off in the area of the disrupter, the experimenter, or outside the room. The ringing will stop by itself without the phone being answered, as we want to study the effects of the disruptive ring itself and minimize the impact of extraneous factors.

Once all the questions are answered, the computer will calculate the number of questions answered correctly and will display on the screen that the team scored at the 35th percentile of everyone who has previously taken the test. The experimenter at this point will tell the participant and confederate to answer some questions about the other person. They are told to rate the other person as best as they can on a list of traits, using a 1-7 scale where 1 = “does not describe well” and 7 = “describes very well.” Table 1 shows the list of traits used in this study.

Once the above judgments are made, the experimenter will tell the participants that for the next round, they can either play by themselves or with the

other person again. Measuring whether the participant would like to play the game again with the same partner measures how much the participant attributes the failure to the partner and is prejudiced against playing again with the same partner. After the participant makes a choice of playing the next game alone or with the same partner again, the experimenter would end the experiment and debrief the participant.

### 3 Results

The dependent measures will be how many questions the participant answers correctly, including the questions on which he has reason to believe that he is only giving hints, the judgments he makes about the traits of the other person, and also whether he would play again with the other person.

No significant differences are expected to be found in the number of correct responses given to the questions in any of the conditions. In addition, no significant differences are expected between ratings of the disrupter in the control, no-ring condition, and the experimenter-ring condition or the distant-ring condition. The only significant differences on ratings will be between the disrupter-ring and the no-ring condition on the traits seen in Table 2. In the disrupter-ring condition, ratings of the disrupter for the traits “popular” and “sociable” will be higher than the control condition while the ratings for the traits “friendly” and “polite” will be lower than control.

Table 3 shows the projected results for the final question asking whether the participant would like to play the next game alone or with the same partner. The only condition showing a significant difference from control is the disrupter-ring condition, when the disruption can be attributed to the participant’s partner.

	no-ring	disrupter-ring
friendly	5.1	4.5
polite	5.7	3.6
popular	4.2	5.4
sociable	4.6	5.8

Table 2: Ratings of the disrupter on a 1(low)-7(high) scale

no-ring	distant-ring	experimenter-ring	disrupter-ring
80%	82% (ns)	75% (ns)	65% ( $p < .001$ )

Table 3: Desire to play game again with disrupter

## 4 Discussion

We expect the results to confirm the hypothesis that a cell phone disruption only affects traits along the social dimension. It would have no effect on traits in the intellectually desirable dimension such as “intelligent” or “educated.” Ratings for the disrupter on traits such as “popular” are predicted to be higher when a cell phone disruption occurs, because the disruption implies that someone wants to talk with the disrupter. Ratings of other traits like “polite” would be lower, showing that people consider cell phone disruptions to be rude and impolite.

It is also not the phone’s ringing that will cause differing judgments. The experimenter-ring condition and distant-ring condition are expected to be almost indistinguishable from the control condition with no ring at all. When the phone rings outside the room or in the hands of the experimenter, the participant cannot attribute the disruption to the other person, and the ratings of the disrupter will not change. The association between the disruption and the disrupter is the primary cause of the differing ratings and not the disruption itself.

During the debriefing, participants will be asked if there were any distractions during the experiment. Very few are expected to mention the cell phone ring right away, but most are expected to say they had heard the ring on further prodding. The ring of the cell phone may be almost immediately forgotten from the conscious, but still have an impact on unconscious judgments. When asked about the basis for their ratings, participants will refer to the type of questions their partners had been able to answer. Thus, the perceiver is expected to be unconsciously influenced by the cell phone disruption during the task.

#### **4.1 Further Work**

We can extend the basic experiment here in many ways. One possible enhancement for the current study is to subtly make the participant aware that the disrupter has a cell phone. The knowledge that the disrupter owns a cell phone can give the perceiver extra information, perhaps invoking stereotypes about those who own cell phones. In the current no disruption condition, the perceiver is not aware the disrupter even owns a cell phone. Follow up experiments should control for this extra knowledge, to ensure that the effect is due primarily to the actual disruption.

Another variable that could influence the results is how the disrupter initially handles the cell phone situation. The perception of trying to minimize the disruption can influence perception (Schneider et al., 1979). If someone tries to eliminate distractions beforehand by turning off the phone, ratings should change. In addition, what happens if the perceiver sees the disrupter look at the cell phone, not turn it off, and then the phone rings in the middle of the experiment? Or what if the disrupter tells the experimenter beforehand that the phone may ring in the middle of the experiment because an important call is expected? Warning the perceiver that the phone may ring and introducing the expectancy that it may ring can change the inferences made (Medcof, 1990).

When people are told they are below average, this external judgment of failure may cause a certain amount of frustration leading to a search for a cause and a way to attribute the failure (Wong & Weiner, 1981). It would be interesting to study the effect on ratings if people are not told they are below average, but instead told they are average or above average. We would expect that the differences found here between the disrupter-ring and the no ring conditions would be reduced by such manipulations.

Other variables are the number of disruptions and the disruptive effect of a single disruption. The more the phone rings, the more later judgments should be affected. Increasing the number of disruptions should increase the salience of each individual disruption. Another variable is the disruptive impact of a cell phone disruption. In the current experiment, the disruption was relatively unobtrusive, with the phone ringing a couple times and then stopping, without the disrupter saying anything. In another condition, the phone could be answered minimally with "I'll call you back." In a third condition, the disrupter could have a complete conversation, and in a last case, the disrupter could initiate a call on the cell phone. We expect the disruption to become greater as the disrupter becomes more involved with the person on the other end of the phone, and as a result, will affect judgments made on social traits like politeness. What would happen if the disrupter apologizes after the cell phone rings? On the one hand, apologizing would draw more attention to the disruption, causing it to be remembered better as a disruption at the time of judgment. On the other hand, apologizing may alleviate the social disruption by reducing the perception of being rude.

An interesting area for further experiments is to compare the disruption caused by different types of technology. For example, what difference is there between the disruption of a watch alarm, a pager buzzing, or a cell phone ringing? We predict that a watch would be least socially disruptive with no implied other party involved. The perceiver is aware that once the watch alarm

stops ringing, the social situation will be much as it was before it started ringing. A pager would be in the middle for social disruptiveness with an implied other party, but the communication with that other party can take place at a later time. The ringing cell phone should be most socially disruptive as it indicates an immediate desire of another party to join the current social situation and possibly changing the social dynamics of the group. A perceiver would view a cell phone ring as if another person had actually walked in during the experiment asking to talk with the target person.

Varying when the disruption occurs is another variable to be examined. Some have found a primacy effect such that earlier information has more influence than later information (Asch, 1946). If the disruption is at the beginning of a task, does it affect more the later performance on the task, as opposed to if the disruption occurs near the end? The timing of the disruption could also influence how well the perceiver remembers the event when it comes time to rate the other person.

Many other parts of the world, such as Western Europe and parts of Asia, have cell phones much more entrenched in their culture (Cellular Online, 2000). Differences across culture could lead to an interesting comparative study. Would it be any less of a problem for someone's cell phone to ring, when almost everyone owns a cell phone and, presumably, cell phone disruptions occur more often? Familiar attributes have less impact on the perception process (Fiske, 1980). Also, according to the PEAT model, a higher base rate probability of a cell phone disruption will affect the impact of a single observed cell phone disruption (Medcof, 1990). Maybe our culture will become used to cell phone disruptions over time, as they become more common, leading these disruptions to have less social impact.

An angle not studied here was impression management, studying how we control how others perceive us. To study impression management, a possible approach would be to force people to carry around a cell phone, maybe in the

context of another experiment. Then when the phone rings in various situations, we could examine what the person does to manage the disruption.

## **4.2 Conclusion**

Technology can cause social disruptions in subtle ways. People unconsciously associate disruptions with people and attribute responsibility for these intrusions into their social lives. Although cell phones may provide a convenience, they also can be truly an intrusive social presence. Cell phones will not disappear anytime soon, and neither will unwanted disruptions. Our society must decide whether these disruptions are acceptable, and if not, how we will deal with the problem.

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