

Instructions: For each scenario, identify the most serious threat to internal validity or state that the study's conclusions are valid. Explain your answer. Note that multiple threats are always possible, but your task is to identify the strongest most obvious threat. Each scenario already contains the necessary relevant information to help you do this. Do not "invent" things that aren't there.

1. Waitpersons at two affiliated restaurants with poor sales figures had asked for raises in hourly pay that the owners could not afford. The owners wondered if there could be an alternative mutually beneficial arrangement, and requested help from researchers in the field of organizational behaviour management. For the next 4 pay periods, the researchers recorded the mean dollar earned per hour (wages), and sales per labour hour (productivity). Then, during a staff meeting at each restaurant, the waitpersons were told that each of them would be paid 7% of their gross sales rather than a fixed amount per hour. This pay change was scheduled to start concurrently with a new "two-for-one special" promotion in local newspapers. Data continued to be recorded for 4 more pay periods. The researchers discovered, much to the owners' delight, that productivity rose by 15% at Restaurant A and 12% at Restaurant B (and much to the waitpersons' delight, wages increased by 30% at Restaurant A and 20% at Restaurant B). We can conclude that the new performance contingent pay system improved the waitpersons' productivity, and the effect was replicated across the two restaurants.
2. Randy was a graduate psychology student interested in learned helplessness. Before testing his own theories, he wanted to replicate the basic experiment demonstrating the existence of this phenomenon. His subjects were 20 rats housed in a group cage. He took the rats from that cage, one at a time, and exposed them to their respective conditions. The first ten rats were assigned to the Experimental Group, and the last ten rats were assigned to the Control Group. In Phase 1, each rat was placed in a chamber where periodic electrical shocks were delivered. Control Group rats could terminate the shocks by pressing a lever; Experimental Group rats could not escape the shocks. Then, in Phase 2, each rat was placed in another chamber; here, a 10 second tone preceded each shock, and if the rat pulled a chain during this warning stimulus the shock could be prevented. Consistent with previous research, Randy found that Control Group rats learned to pull the chain in Phase 2, while Experimental Group rats were much less likely to learn to do so. We can conclude that the history of inescapable shock impeded acquisition of the avoidance behaviour (chain pulling).
3. The goal in this study was to teach children, upon being enticed by stranger, to say "No, I have to go ask my teacher" and then to quickly run away. The experimenter wanted to evaluate the effectiveness of a 20-minute interactive videotape program. In the Experimental condition, children viewed the interactive video. In the Control condition, children viewed a cartoon of equal duration having nothing to do with child abduction. A Generalization Probe tested what each child would do in a potential abduction situation. For purposes of data analysis:

- A score of 0 was given if a child went with the abductor
- A score of 1 if the child stayed nearby with no refusal
- A score of 2 if the child stayed nearby but verbally refused
- A score of 3 if the child ran away with no refusal
- A score of 4 if the child ran away and verbally refused.

Identifying the strongest threat to validity in each of the following cases.

Case 1

It so happened that there were an equal number of boys and girls in the classes, so for convenience the boys were assigned to the Control Group and the girls to the Experimental Group. One day at school, the boys were told to go to one room and the girls to another room, where they were exposed to their respective conditions. Two days later, the Generalization Probe was conducted. The mean score for children in the Control Group was 1.2 and the mean score for children in the Experimental Group was 3.4. What is the problem?

Case 2

Due to time constraints, the experiment was run over four consecutive days. On Day 1, children viewed the 20-minute cartoon (Control condition). On Day 2, the Generalization Probe was conducted. On Day 3, the children were exposed to the 20-minute interactive video (Experimental condition). Finally, on Day 4, a second Generalization Probe was conducted. The mean score for children on the first Generalization Probe was 1.2 and their mean score on the second Generalization Probe was 3.4. We conclude that the 20-minute interactive video improved the children's self-protection skills in a potential abduction situation. What is the problem?

Case 3

The name of each child was written on a separate slip of paper; all the slips were put in a bowl and mixed up thoroughly. Students were assigned to the Experimental Group and to the Control Group alternately as their names were pulled out of the bowl one at a time. One day at school, the children in the Control Group were told to go to one room and the children in the Experimental Group to another room, where they were exposed to their respective conditions. Immediately afterwards, while walking back to their regular classroom, all the children in the Control Group saw a man laughing and joking with their school principal. Two days later, the Generalization Probe was conducted, during which many of the Control Group children recognized the stranger as the man who made their principal laugh. The mean score for children in the Control Group was 1.2 and the mean score for children in the Experimental Group was 3.4. We conclude that the 20-minute interactive video improved the children's self-protection skills in a potential abduction situation. What is the problem?

Case 4

The name of each child was written on a separate slip of paper. All the slips were put in a bowl and mixed up thoroughly. Students were assigned to the Experimental Group and to the Control Group alternately as their names were pulled out of the bowl one at a time. One day at school, the children in the Control Group were told to go to one room and

children in the Experimental Group to another room, where they were exposed to their respective conditions. Two days later, the Generalization Probe was conducted. For ease of record keeping, all Control Group children were tested first, then all the Experimental Group children. The student teacher scored children's responses to the confederate's lures. In the beginning, he hid indoors and strained to see and hear through an open window; later on, he discovered he could see and hear better by hiding outside and peeking around a corner. The mean score for children in the Control Group was 1.2 and the mean score for children in the Experimental Group was 3.4. We conclude that the 20-minute interactive video improved the children's self-protection skills in a potential abduction situation. What is the problem?

Case 5

During a class early in the school year, the children viewed the 20-minute cartoon (Control condition). Two days later, the Generalization Probe was conducted. The experimenter fell ill soon afterwards, and so it wasn't until a class late in the school year that the children viewed the 20-minute interactive video (Experimental condition). Two days after that, a second Generalization Probe was conducted. The mean score for the children on the first Generalization Probe was 1.2 and their mean score on the second Generalization Probe was 3.4. We conclude that the 20-minute interactive video improved the children's self-protection skills in a potential abduction situation. What is the problem?

Case 6

One day at school, the children viewed the 20-minute cartoon (Control condition). Two days later, the Generalization Probe was conducted. Then, in a class the following week, the children viewed the 20-minute interactive video (Experimental condition). The plan was to administer a second Generalization Probe two days after that. However, at this point, the experimenter realized that she had insufficient funding to complete the study and would only be able to retest ten children. She selected the ten poorest performing children on the first Generalization Probe, the mean score of which was 0.1. Their mean score on the second Generalization Probe was 2.5. We conclude that the 20-minute interactive video improved the children's self-protection skills in a potential abduction situation. What is the problem?

Case 7

The name of each child in the classes was written on a separate slip of paper. All the slips were put in a bowl and mixed up thoroughly. Students were assigned to the Experimental Group and to the Control Group alternately as their names were pulled out of the bowl one at a time. One day at school, the children in the Control Group were told to go to one room and children in the Experimental Group to another room, where they were exposed to their respective conditions. Some of the children in the Experimental Group appeared bored by the interactive video, became disruptive, and were removed from the room. Two days later, the Generalization Probe was conducted. The mean score for children in the Control Group was 1.2 and the mean score for the remaining children in the Experimental Group was 3.4. We conclude that the 20-minute interactive video improved the children's self protection skills in a potential abduction situation. What is the problem?