

Q. Evaluate the study by Fagen et al. (elephant learning) in terms of **two** strengths and **two** weaknesses. At least **one** of your evaluation points must be about **ecological validity**.

Ans. One strength of the Fagen et al. study was that it was highly ethical. This is evident in the use of positive reinforcement techniques, such as rewards like chopped bananas, to encourage desired behaviours rather than punishment being given to the elephants by beating them with bamboo sticks. Moreover, the gradual introduction of aversive stimuli like the syringe, through desensitisation and counterconditioning, showed researchers' sensitivity to the elephants' comfort and emotional well-being. This was a strength because by ensuring that the elephants were not subjected to unnecessary stress or discomfort, the study upheld ethical standards in animal research. However, even though positive reinforcement methods were used in this study, there could still be ethical concerns regarding the well-being and autonomy of the elephants. While the use of chopped banana as a reward may seem considerate, it's important to consider whether the elephants truly have a choice in participating in the training sessions or if they are being forced to do so by their handlers.

Another strength of the study was that it showed a high level of reliability. This is evidenced by the structured procedure which included controlled observations with a behavioural checklist, consistent training sessions with specific time durations and rigorous measurement of variables such as training duration, number of cues, and success rates for behaviours and sequences. For example, the use of clear success criteria, such as an 80% success rate for passing training, added to the reliability of the study's findings. Also, testing elephants after every fifth session and grading their performance further ensured the consistency of the results. However, while the study demonstrated strong reliability in its methodology and evaluation process, limitations could come from subjective judgments made by trainers or assistants assessing elephant behaviour. These judgments may lack standardisation and could be influenced by individual trainer perceptions or preferences.

One weakness of the study was its lack of ecological validity. The study was conducted within the controlled environment of the stable where the elephants lived, rather than in their natural habitat. This artificial setting may not accurately represent the challenges elephants face in the wild, such as different social dynamics, landscapes, and natural predators. Therefore, the findings may not be representative of how elephants would behave and respond to training in their natural environment. However, the controlled environment allowed for precise measurement and manipulation of variables, increasing internal validity and enabling systematic training and observation of the elephants' trunk-washing behaviors.

Another weakness of the study was its lack of generalisability. The study's sample consisted of only five female elephants, four juveniles aged 5–7 years and one adult aged at least 50 years old, all born in captivity and tame who were selected for their suitability and the willingness of their handlers to participate. This limited sample size and specific selection criteria may not accurately represent the wider population of elephants, particularly those in different environments or with different temperaments. However, by focusing on captive elephants with similar characteristics, the researchers created a controlled environment where variables like previous training experiences and individual elephant personalities were more consistent, increasing reliability of results.

Now let us consider how this answer meets level 5 criteria for marking in the paper. First, let's take a look at the marking criteria-

Level	Description	Mark
5	<ul style="list-style-type: none"> • Very good evaluation including the named issue. • Thoroughly addresses both strengths and both weaknesses in detail. • Selection of evidence is very thorough and effective. 	9-10
4	<ul style="list-style-type: none"> • Good evaluation including the named issue. • Addresses strengths and weaknesses but may include three or four points. The majority of the points are in depth. • Selection of evidence is thorough and effective. 	7-8
3	<ul style="list-style-type: none"> • Mostly appropriate evaluation but may not include the named issue. • Addresses either two strengths or two weaknesses in detail 	5-6
	<ul style="list-style-type: none"> • or one of each in detail or all four briefly. • Selection of evidence is mostly effective. 	
2	<ul style="list-style-type: none"> • Weak evaluation and may not include the named issue. • Addresses either a strength or a weakness. Evaluation points are brief. • Some points may have no context. • Selection of evidence is sometimes appropriate. 	3-4
1	<ul style="list-style-type: none"> • Little or no evaluation. • Discussion of strengths and weaknesses is absent or superficial. • Selection of evidence is limited. 	1-2
0	No creditable response.	

The above answer meets these criteria as follows-

- **very good evaluation** - a range of methodological and ethical strengths and weaknesses are covered, including the named issue of ecological validity. every point made includes contextualised analysis of points and counterpoints showing thorough critical thinking;
- **addressal of both strengths and weaknesses in detail** - the answer avoid two common mistakes - sacrificing depth for breadth; and unequal weightage to different evaluation points. Every point made is analysed in detail and every point is given the exact same coverage;
- **thorough and effective selection of evidence** - specific examples drawn straight from the study are used to illustrate every single point made. This avoids the common pitfall of giving generic responses.

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