Bandura, Ross & Ross (1961) then and now

e-xtension

Dr. Julia Russell's Psychology Column

Bandura, Ross & Ross (1961) is a classic study demonstrating the acquisition of aggression through social learning. It is summarised in the box opposite. Bandura *et al.*'s research didn't explore whether the effects on aggression were lasting.

Does imitative aggression last?

Bartlett *et al.* (2009) used measures of aggressive thoughts, aggressive feelings, heart rate and the 'hot sauce' paradigm to assess aggressive behaviour. This test measures aggression by the amount of hot sauce a participant will give someone known to dislike spicy foods. They showed that the effect of violent videos lasted very little time at all. Increases in aggressive thoughts and feelings lasted less than 4 minutes and increases in heart rate and aggressive behaviour 4-9 minutes. This suggests the effects of modelling are simply mimicry so are very short-term.

Research questions:

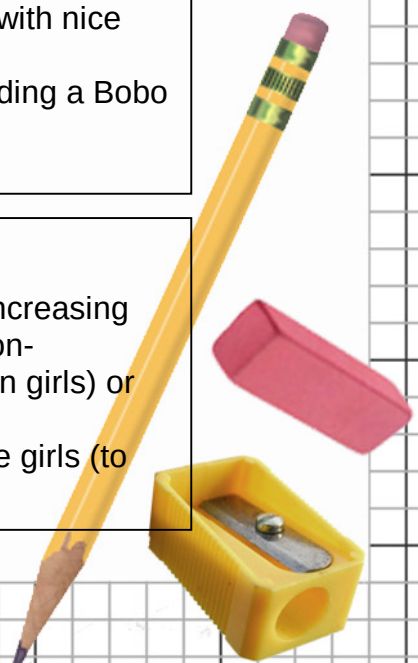
- Can children learn aggression through imitation of adult models?
- Are children more likely to imitate same-sex models?

Procedure:

- 36 boys and 36 girls aged 3-6 years were put into three groups (aggressive adult model, non-aggressive adult model or control - no model). Half of each group were male, half female and half of each of these subgroups saw a same-sex model and half an opposite-sex model.
- The non-aggressive model played with Tinker toys for 10 minutes, the aggressive model for one minute then attacked the Bobo doll (physically and verbally).
- The children were deliberately annoyed by being shown a room with nice toys then told they were for other children.
- The children were then observed in another room with toys including a Bobo doll for 20 minutes (through a one-way mirror).

Findings:

- Children observing aggressive models imitated them exactly, increasing physical and verbal aggression compared to those watching non-aggressive models (more so in boys – especially physical - than girls) or no model.
- Boys were more likely to imitate a same-sex model and so were girls (to a lesser extent).



Conclusion:
Observation of aggression without reinforcement of either the model or observer results in imitative learning (especially for same-sex models).

So what are we worrying about? Non-experimental evidence, such as correlations looking at the link between long-term exposure to television and levels of aggression, suggests there is cause for concern. For example, Eron & Heusmann (1986) followed up boys into adulthood. Those who had watched more violent TV aged 7-8 were more likely to be violent criminals as adults. Similarly, in a two-year longitudinal study of boys, Hopf et al (2008) found that previous playing of violent video games and watching violent films predicted involvement in violent crime by age 14. However, things are a little more complex than this.

Imitation or desensitisation?

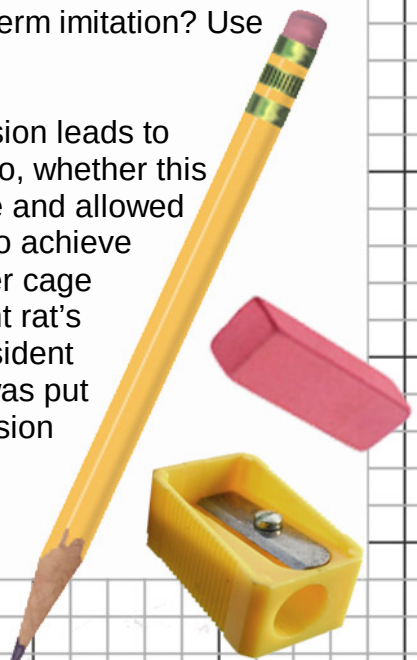
A meta-analysis of short and long-term studies of child and adult exposure to violent media (Bushman & Huesmann, 2006) suggested that short-term effects were greater for adults but long-term ones were greater for children. One reason for this difference is the extent to which **scripts** - the sets of responses to situations which lead us to behave in particular ways, such as reacting aggressively to provocation rather than ignoring it - are ready to be activated through witnessing violence. The logic here is that in adults, short-term exposure primes scripts and beliefs which they have already learned. In children, by contrast, observational learning results in the *acquisition* of aggressive scripts and beliefs.

Much research in the last decade has also suggested that increases in aggressive behaviour following exposure to aggressive models has to do with **desensitisation** rather than direct imitation. In an experimental study, Staude-Miller *et al.* (2008) primed participants with a more aggressive (or less aggressive) version of a video game. Playing the aggressive version caused participants to respond less to subsequent aggressive and unpleasant images. Their heart rates and galvanic skin responses indicated lower arousal to the images than participants who had previously played the less aggressive version. This suggests that exposure to violence may increase aggressive behaviour by making it feel less unpleasant in the short term.

A new way to test long-term effects of exposure

Although some evidence implies that imitation doesn't have long-term effects this is difficult to test. The problem is that it's almost impossible to control the extraneous variables that affect children's development aside from the modelling influences of parents and the media. And a deliberate Bandura-style experiment *intended* to produce long-term effects in children simply wouldn't be ethical. So how do we isolate the variable of long-term imitation? Use animals!

Suzuki & Lucas (2010) explored whether passive exposure to aggression leads to increased aggression in animal observers (of animal models) and, if so, whether this is due to learning rather than simple mimicry. Rats were housed alone and allowed to watch aggression for 10 minutes a day for 23 consecutive days. To achieve exposure, the learner rats were put in a small aquarium inside a bigger cage belonging to a 'resident rat'. The learner rat could see into the resident rat's cage but could not interact. Either an unfamiliar rat (with which the resident would fight) or a familiar rat (with which the resident would not fight) was put into the bigger cage with the 'resident rat'. After each observation session in the aquarium, the learner rat and pulling the opponent's skin were



scored. The procedure resulted in more aggressive behaviour being shown by learners exposed to unfamiliar (aggressive) pairs than was shown by controls (which were put in the apparatus with non-aggressive models) or groups with a single exposure. This increase in aggression lasted for 16 days so was not simple mimicry. Suzuki & Lucas concluded that the aggression was learned because only chronic exposure resulted in a long-term change in behaviour.

What are the implications?

If all this amounts to 'children learn bad things from aggressive models and the damage lasts' should parents be doing something about what their children watch on TV? A study by Miranda *et al.* (2009) explored how active parenting might help. Children who viewed a violent cartoon clip in the presence of an aggression-disapproving adult showed significantly less toy and verbal aggression than children in a control group.

Key terms

chronic – long-term

desensitisation – a reduction in emotional responses to aggression due to exposure, eg a lowering of disapproval or fear, which is indicated by experiencing a less profound increase in arousal when viewing aggression.

hot sauce paradigm – a measure of aggressive behaviour which tests the amount of hot sauce a participant will give to someone who they know dislikes spicy food

mimicry – the immediate repetition of an action observed in a model but which is not a permanent change in behavior as it ceases when the model is removed as no learning has occurred.

script – a learned set of responses to difficult social situations. These cognitions can lead us to behave in particular ways, such as using aggressive to gain control at home, which is used in similar circumstances but may also be employed in new situations, eg using aggression to gain attention.

Activities

Cloze exercise: Bandura et al (1961)

The aims were to find out whether children learn aggression by _____ adult models and if so whether they are more likely to learn from _____ models. Bandura et al tested this using _____ boys and girls aged _____ to _____. They were divided up into groups by model (_____ / _____ - aggressive / no _____). In groups seeing a model, _____ of each group were female, half were male and in each of these groups, half of the children saw a same-sex and half an opposite-sex model. The non-aggressive model played with Tinker toys for _____ minutes, the aggressive model for one minute then attacked the Bobo doll (physically and verbally). The children were then deliberately annoyed by being shown a room with _____ then told they were for other children. The children were then taken to another room with a _____. This room contained toys including a Bobo doll and they were observed for _____ minutes. Those children who saw aggressive models imitated them, showing more physical and _____ aggression than those watching non-aggressive models (more so in boys – especially for _____ aggression - than in girls). Also, boys were more likely to imitate a _____ model and girls a _____ model, though less so. Bandura et al. concluded that observing aggression without _____ results in imitative learning, especially for same-sex models.

10
3
72
6
20
aggressive
female
half
imitating
male
model
nice toys
non
one-way mirror
physical
reinforcement
same-sex
verbal

Questions: Suzuki & Lucas (2010)

1. What were the levels of the independent variable?
2. a) What was the dependent variable?
   b) How was the dependent variable scored?
3. a) Describe why this study would have raised ethical issues.
   b) Suggest **two** ways to minimize the ethical issues you have identified.
4. It was important that the learner rat could not interact with the resident rat. Why?

Stretch & Challenge

This is an interesting and accessible article: Kirsh SJ (2006) Cartoon violence and aggression in youth. *Aggression and Violent Behavior*, 11: 547–57. The free full text is available at:
http://www.geneseo.edu/~kirsh/vita/AVB360.pdf

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Staude-Muller F, Bliesener T & Luthman S (2008) Hostile and hardened? An experimental study on (de-)sensitization to violence and suffering through playing video games. *Swiss Journal of Psychology*, 67: 41–50

Suzuki, H & Lucas LR (2010) Chronic passive exposure to aggression escalates aggressiveness of rat observers. *Aggressive Behavior*, 36: 54–66.

Answers

Cloze exercise: Bandura et al (1961)

The aims were to find out whether children learn aggression by **imitating** adult models and if so whether they are more likely to learn from **same-sex** models. Bandura et al tested this using **72** boys and girls aged **3** to **6**. They were divided up into groups by model (**aggressive** / **non-**aggressive / no **model**). In groups seeing a model, **half** of each group were female, half were male and in each of these groups, half of the children saw a same-sex and half an opposite-sex model. The non-aggressive model played with Tinker toys for **10** minutes, the aggressive model for one minute then attacked the Bobo doll (physically and verbally). The children were then deliberately annoyed by being shown a room with **nice toys** then told they were for other children. The children were then taken to another room with a **one-way mirror**. This room contained toys including a Bobo doll and they were observed for **20** minutes. Those children who saw aggressive models imitated them, showing more physical and **verbal** aggression than those watching non-aggressive models (more so in boys – especially for **physical** aggression - than in girls). Also, boys were more likely to imitate a **male** model and girls a **female** model, though less so. Bandura et al. concluded that observing aggression without **reinforcement** results in imitative learning, especially for same-sex models.

Questions: Suzuki & Lucas (2010)

1- What were the levels of the independent variable? Aggressive models – chronic exposure, aggressive models – single exposure, non-aggressive models.

2-a) What was the dependent variable? Aggressive behavior (in the observer rat)

b) How was the dependent variable scored? (Content) analysis of the video of behaviour with an opponent, rating behaviours such as: leaping at the opponent, biting, holding the opponent down and pulling the opponent's skin.

3. a) Describe why this study would have raised ethical issues. The resident rats with unfamiliar intruders, the unfamiliar intruders, the aggressive learners and their opponents were all likely to suffer physical pain and distress.

b) Suggest **two** ways to minimise the ethical issues you have identified. eg: use the minimum number of rats to obtain reliable results, to minimise the time that aggressive encounters could continue for, kill animals humanely if they were suffering severe pain.

4. It was important that the learner rat could not interact with the resident rat. Why? To ensure that only observational learning could take place. If they had been able to interact, conditioning could also have occurred and affected subsequent aggressive behavior (e.g. the rats could have been punished for being aggressive by being bitten (so reducing aggression), reinforced for being aggressive by making the resident or other rat back down (so increasing aggression). Alternatively, interacting may have raised arousal and affected the likelihood of subsequent aggression.