Extinction
Definition: Discontinuation (cessation) of reinforcement for a behavior, leading to a decrease in its frequency

Variations based on:
  Function: behavior’s maintaining contingency
  Procedure: implementation technique

Extinction of Behavior Maintained by Sr+

Do not deliver Sr+ (when it is absent)
  Example: Psychotic patient approaches and asks “Where did you put my Neptune telecommunicator?
  EXT: ?

Remove Sr+ (when it is present)
  Example: You are speaking with a patient, who mentions that she is receiving a voice transmission from her deceased grandmother
  EXT: ?

Extinction of Behavior Maintained by Sr-

Do not terminate ongoing stimulation
  Example: A child feigns sickness during an exam in school
  EXT: ?

Do not delay presentation of stimulation
  Example: A child feigns sickness at home as the school bus arrives
  EXT: ?

Note: What if EXT (Sr+) is applied to behavior maintained by Sr-?

Extinction of Behavior Maintained by Automatic Sr

Modify source of stimulation so that R does not produce it
  Example: Child continually flips light switch on and off
  EXT: ?

Modify effect of stimulation through distortion
  Example: Individual has drug (cocaine) habit
  EXT: ?

Modify some feature of R so it no longer produces Sr
  Example: Child engages in “self-stimulatory” scratching
  EXT: ?

Note: What if EXT (Sr+) or EXT (Sr-) is applied to behavior maintained by automatic reinforcement?
Results of Extinction

EXT burst: Initial and temporary increase in some dimension of R (usually frequency or intensity) during EXT

EXT induced phenomena: Initial and temporary increase in other responses during EXT (aggression, “emotional” behavior, or other behaviors that have produced similar reinforcement in the past)

Gradual decrease in R frequency

Spontaneous recovery: Temporary reappearance of R following EXT

Factors that Reduce Resistance to Extinction

Historical factors:
- Schedule of Sr (CRF facilitates EXT)
- Smaller magnitude of Sr
- Previous exposure to EXT

EXT-related variables:
- Stimulus change during EXT
- Consistency of EXT
- High response effort
- Massed distribution of EXT trials

Other procedures combined with EXT:
- Punishment for target R
- Sr for Alt R

Extinction: General Considerations

Advantage: Simplest and most direct method of R suppression

Disadvantages:
- Some reinforcers difficult to identify or eliminate
- Possibly slow acting
- Potential side effects
- Does not directly establish Alt R
France & Hudson (1990), “Behavior management of infant sleep disturbance”

General focus: To develop an effective treatment for infant night wakening

Specific aim: To evaluate the effects of extinction and stimulus control

Participants: N=7 (2F, 5M), 8-20 mo, referred by RNs

DV:
- Night wakening (parent recorded frequency and duration)
- Reliability: daily phone checks, VAR for Ss 3,4,6 (F-U only)
- Agreement: Freq. = same 15-min interval; Dur. = 5% tolerance
- “Sleep behavior scale” (child sleep patterns)

Baseline: ??

Treatment:
- Stimulus control: “Good night”
- Extinction: Parent left room and ignored night wakenings

Experimental design: Multiple baseline across subjects

Results
- Frequency of wakenings decreased for all Ss
  - EXT burst for Ss 1,3,4
- Duration of wakenings decreased for all Ss
  - EXT burst for Ss 1,2,4,6,7
- Good maintenance at 3-mo and 1-yr Follow-up
- Improvements in sleep behavior scale for all Ss
- Decreased parental attention during EXT (but see F-U)

Implications & Extensions

Major contribution:
- Relatively simple method for solving significant problem

Limitations:
- No functional analysis (attention presumed reinforcer)
- Parental data collection and phone reliability checks
- EXT bursts: When should program be implemented?

Extensions:
- Alternative treatment based on reinforcement?