

# You Can't Reinforce Yourself!

(and if you try to don't do it in public)

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# On Terms...

- Yes, yes, it should be reinforce your own Behavior!
- We reinforce Johnny's behavior not "Johnny"
- H.S. Pennypacker has made this abundantly clear...



# Overview

- We will look at the notion of reinforcing one's own behavior and why it may not be the most accurate way to describe what has come to be a component of some self-management programs
- We will run through the arguments in Catania's 1975 Article on The Myth of Self-Reinforcement



# Overview

- We will take a look at a couple of subsequent studies that focused on the concept of self-reinforcement
- We will discuss some of the lesser known “self” procedures such as self-negative reinforcement, self-punishment, and self-extinction



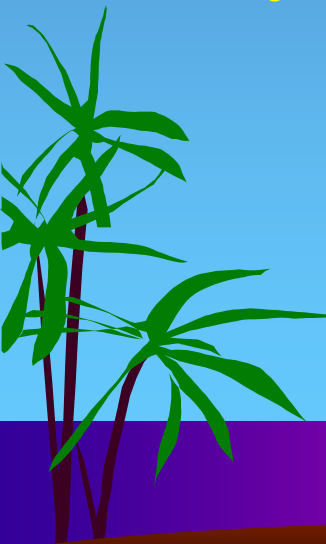
# Overview

- Some suggestions will be offered of more conceptually consistent ways of talking about “self-reinforcement”
- Some distinctions will be made between self-reinforcement and self-management



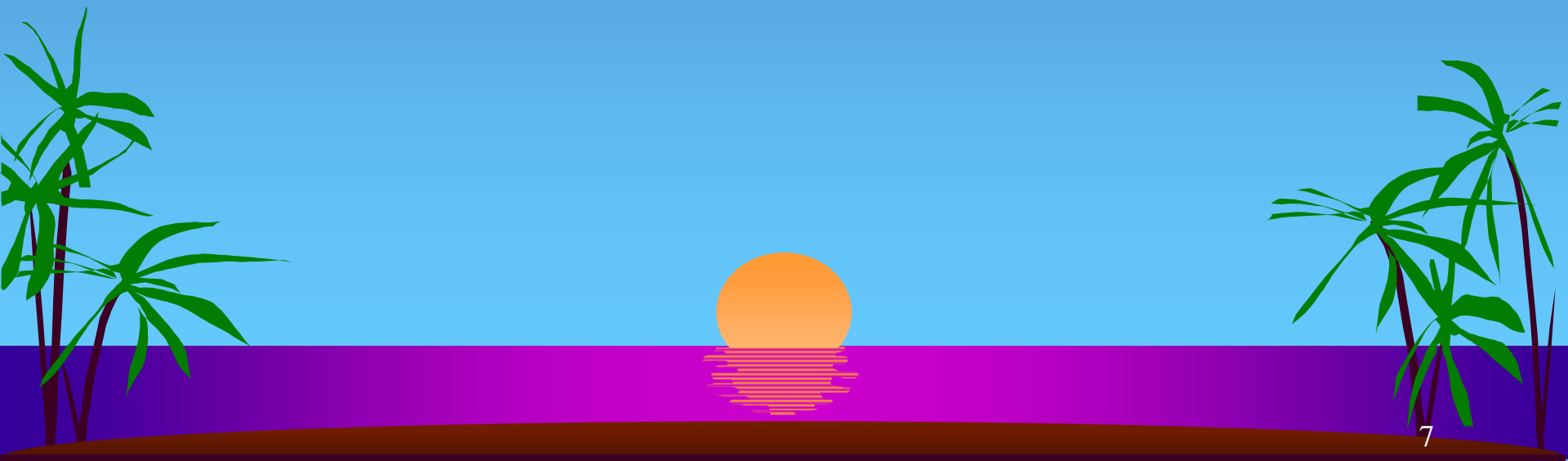
# Overview

- We will talk about what self-management is, and the utility of using the term “self” for any behavioral procedure
- We will brainstorm on some behaviors that we can emit that others might classify as self-management



# Overview

- Finally we will answer the question of why Merrill will take 96 slides to explain something that really only takes 5 minutes...



# What was the MO for this talk?

- A presentation on self-management at FABA 2005 that used the concept of self-reinforcement applied to study behavior
- A general need for cleaning up terminology such as “I found that movie so reinforcing!” or “Pizza is a huge reinforcer for me!”
- But mostly it was the FAMILY GUY episode on self-reinforcement!





# The Notion of Contingency

- One key to understanding self-reinforcement is the concept of the contingency
- In a contingency, one event is completely **DEPENDENT** on another event for its occurrence
- This is why “Non-contingent Reinforcement” (NCR) is the *premier* behavioral oxymoron



# The Notion of Contingency

- For an event to function as a reinforcer it must be both contiguous with (touching in time) and contingent on the response that precedes it
- Therefore Non-contingent reinforcement (NCR) is not reinforcement at all

# The Notion of Contingency

- NCR is actually “The non-contingent delivery of a stimulus that has been demonstrated to function as a reinforcer for certain behaviors under certain conditions”
- Ok, lets just stick with NCR



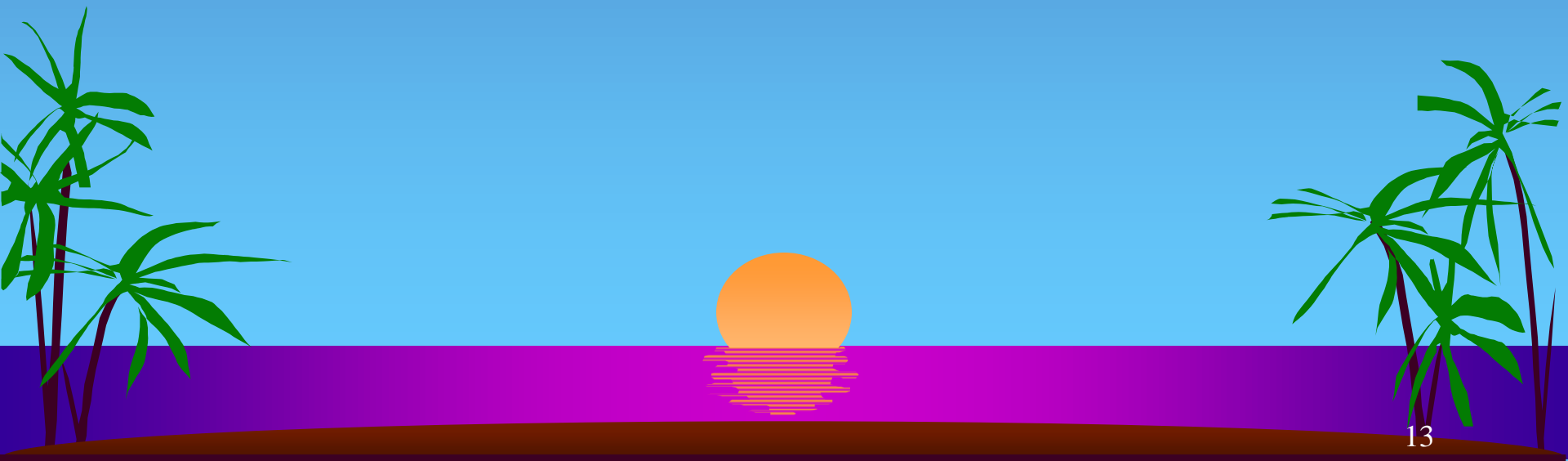
# The Notion of Contingency

- In the case of programmed reinforcement, for a contingency to hold true, the organism who arranges the delivery of the stimulus (sometimes called the agent) is a different organism than the one that provides the response



# The Notion of Contingency

- Catania knew in 1975 what every actor in Hollywood already knows...
- **YOU CAN'T BE YOUR OWN AGENT!**



# Catania's 1975 Article

- A quote from Charles Catania at the 2006 ABA conference
- “Who the hell are you, and what are you doing in my hotel room at 2:00 a.m.?”
- It is not the procedure of self-reinforcement that we should be focusing on, but the circumstances [contingencies] that give rise to the initiation of a self-reinforcement procedure (paraphrased....badly)

# Catania's 1975 Article

- The original article is from Behaviorism, 1975, 3, 192-199.
- “extensions from laboratory to non-laboratory environments can go astray, especially if the phenomena on which the extensions are based are ill-defined.”



# Catania's 1975 Article

- In this case, the phenomenon in question is reinforcement
- Like our friend Stewie mentioned, reinforcement can be talked about as either a **procedure** or as a **process** of behavior change that occurs over time as the procedure is repeated





# Catania's 1975 Article

- The procedure is delivery of an alleged reinforcing stimulus contingent on a chosen response
- The process is the subsequent increase in the future probability of that response (that is not attributable to other variables)



# Catania's 1975 Article

- It is this very confusion between procedures and processes that lead to statements like...
- “I reinforced the behavior, but he wouldn't do it again for me! Reinforcement doesn't work with Johnny!”



# Catania's 1975 Article

- The other thing that leads to such statements is that the magnitude of the reinforcer can be so great that satiation takes place almost instantly, effectively killing the motivation to engage in subsequent behavior.



# Catania's 1975 Article

- Peter Harzem “If marriage is such a huge reinforcer as people claim, why don't we go out immediately and get married again?”

Polygamist Warren Jeffs proved Harzem wrong!



# Catania's 1975 Article

- It appears as though reinforcement as a **procedure** is occurring in the self-reinforcement paradigm, but the **process** is questionable.



# Catania's 1975 Article

- Catania gave the example of the student trying to reinforce their own study behavior by “rewarding themselves” with a movie afterwards.
- The movie however, is always available to the person at any time.
- Studying does not “have to” occur to get the movie in the sense that a jet “has to” have fuel in order to take off.



# Catania's 1975 Article

- Catania explains that “self-reinforcement” as a procedure requires not one, but two responses.
- The completion of the response that is the criterion for reinforcement, and the “delivery” of the reinforcer by the same organism.



# Catania's 1975 Article

- Catania also made a note that *masturbation* (and other “self-stim”) does not count as self-reinforcement.
- There is no separate “delivery” of the reinforcer (presumably the orgasm) that is distinct from the behavior that produces it....





# Catania's 1975 Article

- In a less embarrassing example, let's say that when you perform a karate kick properly, that is sufficiently fast, you hear the “pop” of the uniform.
- It is possible that the popping sound may reinforce one class of kicks and that other less effective kicks drop out of the repertoire



# Catania's 1975 Article

- This Is also not “self-reinforcement” as the person doing the kicking cannot deliver the “popping noise” independently of attaining the level of skill necessary to produce the noise in the first place.



# Catania's 1975 Article

- Catania even brings into question the utility of “self-stimulatory” behavior.
- Why do some *children labeled as Autistic* engage in a lot of “vocal self-stim,” but we like to sing in the shower?
- What does the prefix “self” add to our understanding?



# Catania's 1975 Article

- If “non-contingent reinforcement” is the premier behavioral oxymoron, then “stimulatory behavior” (self or otherwise) is the premier behavioral redundancy!
- Which behaviors DO NOT produce stimuli (kinesthetic, visual, audible, tactile)?



# Catania's 1975 Article

- Mahoney and Bandura (1974) attempted to create the equivalent of a self-reinforcement procedure using pigeons.
- Forget for a moment that for an organism to expend energy to obtain energy (food) that it already has ....flies in the face of natural selection....



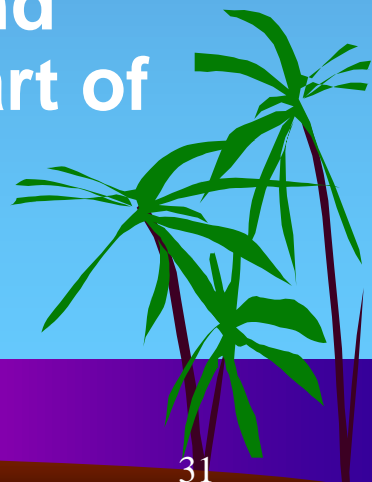
# Mahoney and Bandura Procedures



(Courtesy Twentieth Century Fox)

# Mahoney and Bandura Procedures

- A Pigeon ate from a continuously available hopper of food, only after it pecked.
- First key-pecks were shaped by contingent presentation of food.
- After establishing pecking, food was presented independently of pecks and moved closer in time towards the start of the trial until it was always present.



# Mahoney and Bandura Procedures

- IF THE PIGEON MOVED TOWARD THE FOOD BEFORE PECKING, THE FOOD WAS REMOVED IMMEDIATELY!
- This procedure became the new standard for researchers who found it necessary to really piss-off pigeons





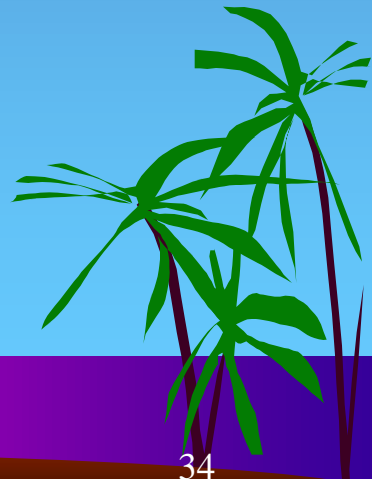
# Mahoney and Bandura Procedures

- Without this critical aversive element (contingent reinforcer removal) you don't get the “self-reinforcement”



# Winston and Winston (2006)

- Winston and Winston (in press) replicated this experiment with hooded rats ( $n=1$ ) using a slightly different aversive yet they derived similar results. ([see video](#))



# Mahoney and Bandura

- The pigeon didn't really “deliver” its own reinforcer in this case.
- Catania's contention was that this was not deserving of membership in a “special class of behavioral processes.”
- In this situation, walking toward the food hopper (without first pecking) establishes that behavior as an S-



# Mahoney and Bandura

- Walking to the hopper AFTER key pecks becomes an Sd for putting head into the hopper.
- The cool thing is that hopper approach comes under discriminative control of prior behavior (conditional discrimination)



# Mahoney and Bandura

- If this experiment demonstrates “self” anything it is “self-control” or “self-awareness.”
- Notice that “self-control” relies on some sort of aversive conditioning history.
- According to Mahoney and Bandura, the pigeon continued to peck first, even after the hopper-removal contingency was lifted.



# Mahoney and Bandura

- Eventually, after some time without the hopper removal contingency, the pigeon begins to eat without first pecking.
- Further Experimental Questions.....
- Does the Pigeon feel **guilty**???
- Will the Pigeon benefit from “talk therapy?”



# Mahoney and Bandura

- Perhaps a better way to conceptualize what is happening with the pigeon is NOT **positive** reinforcement of key pecking with food, but the **negative** reinforcement of key pecking which prevents food withdrawal.



# Real World Analogy

- Making our monthly car payment is not “self-reinforced” by then getting in our car that we already have and driving away.
- It is a response we make to keep from losing the car....





# Hayes 1985

- Hayes, Rosenfarb, Wulfert, Munt, Korn and Zettle 1985 JABA (the journal, not the Hutt).
- He looked at social standard settings. Interested in differences between goal setting that was public or private. Two studies were conducted



# Hayes 1985

- The first study looked at public vs. private goal setting.
- Population: College Students
- Target response was number of reading passages answered correctly
- Reinforcers were M&Ms, peanuts and raisins???



# Hayes 1985

(Merrill you should have 40 minutes left...)

- Students given edibles to keep, told that they could eat them when they wanted....
- There were public and private-goals with no self-consequation
- Public and private goals with self-consequation



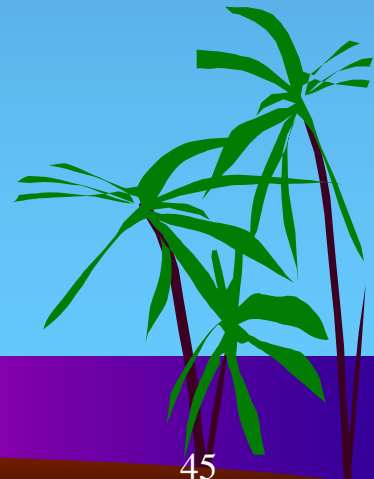
# Hayes 1985

- They were told to eat a pre-determined amount of food only if they met their goal.
- They were not to tell the experimenter how much of their edible they ate??
- **WTF???** (no Corey Robertson it's not What's the function?...)



# Hayes 1985

- A one-way analysis of variance (ANOVA) revealed no significant group differences.
- A two-way analysis of variance revealed no significant group differences.
- A three-way analysis of variance is known as an “Anov-A-Trois” and is every experimenter’s fantasy....



# Hayes 1985

- Experiment 2 compared public vs. private goal setting w/out self-reinforcement
- Those with public goals generally saw higher scores on their comprehension tests (announcing goals was enough of an MO to improve study)
- Concluded that self-reinforcement probably a “misnomer” and it is a special arrangement of “external” reinforcement



# Hayes 1985

- Best quotes from this study...
- “In external reinforcement, a consequence not earned is a consequence lost.”
- “In self-reinforcement, usually at best a consequence not earned is a consequence delayed, because the subject owns the consequence to begin with.”



# Kaplan 1996

- The Psych Record, Winter 1996
- Kaplan, Hemmes, Motz and Rodriguez
- Kaplan found numerous problems with the Hayes study
- Too bad he missed the numerous problems of his own study!





# Kaplan 1996

- Criticisms of Hayes study:
- Hayes forgot to mention the tax break for owning your own consequence!
- There is no proof that the “public/private” rules the experimenters used actually worked



# Kaplan 1996

- No attempt to ensure the reliability of the independent variable (SR+) (they didn't tell experimenter how much they ate)
- It was unknown if the reinforcers were consumed contiguously and in proportion with the target behavior
- Experiment was not “powerful” enough to determine subtle differences if they exist

# Kaplan 1996

- Subjects were 7 Adult males with a developmental disability all functioning in the moderate range
- They used a pillbox countdown timer to hold 8 “reinforcers”
- The primary dependent measure was the percentage of observations during which the subject was observed to be on task



# Kaplan 1996

- Subjects were given a series of picture-prompts to remind them of what tasks they should be performing for their jobs
- First, subjects were taught to self-monitor, that is, learn to identify whether or not they had done a certain job



# Kaplan 1996

- After learning to self-monitor, subjects were taught how to “self-reinforce”
- They started the experiment using steel washers as reinforcers and then later this was changed to actual money



# Kaplan 1996

- Subjects were supposed to take a washer when the timer went off **ONLY** if they were on-task immediately prior to the timer going off
- If they were not on task they were not supposed to take a washer



# Kaplan 1996

- Then an “accuracy contingency” was added
- I call it the “reason for not cheating contingency”
- At the end of each work day, If the subject’s rating of “on-task” differed only slightly from the supervisor, (they scored 7 out of 8 intervals the same) the earned 50 cents.



# Kaplan 1996

- There was a self-monitoring-only phase, a self-monitoring with self-reinforcement phase (nickels instead of washers), and a maintenance phase with no accuracy-contingency in place





# Kaplan 1996

- It was found that there were improvements in on-task behavior due to picture cues and self-management. It was further noted that the changes persisted even after the “accuracy contingency” was lifted.



# Kaplan 1996

- Kaplan contends that self-reinforcement operates in a manner similar to operant reinforcement.
- Catania feels that there needn't be a distinction, that it is just (negative) reinforcement of a conditional discrimination.



# Kaplan 1996

- Some problems with Kaplan's conclusions:
- There may be some conceptual problems in thinking that self-reinforcement, as conducted in his study, a procedure, is the process that strengthened the behavior (as opposed to an avoidance paradigm).

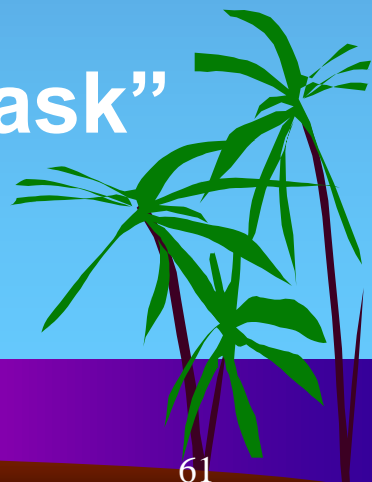


# Kaplan 1996

- The subjects gave themselves “reinforcers” they already had
- They took a nickel from a pillbox timer on their belt and put the nickel in their pocket...This procedure shouldn't even be called “reinforcement.” This procedure should be called....
- **MOVING NICKELS!!!**
- The experimenter set up elaborate measures to correctly obtain what procedurally looks like reinforcement

# Kaplan 1996

- In the methods section, during training of the subjects on how to “reinforce their own behavior,” look at the verbiage in the article...
- “The subject was trained to use the timer”
- “The subject was to determine whether or not he had been on task”

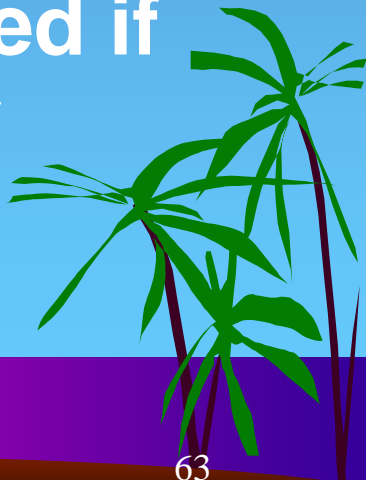


# Kaplan 1996

- “If he had been on task he was to take a washer from the timer and place it into his pocket”
- “No washer was to be taken if he was off task”
- THERE IS ABSOLUTELY NO INDICATION OF EXACTLY WHAT WAS SAID TO THE SUBJECT OR *HOW IT WAS SAID...*

# Kaplan 1996

- It was never said WHY washers were used when the subjects were learning not to take them before they should
- Why do you think they used washers?
- The experiment would have failed if there were yummy Cheetos® or Skittles® (taste the rainbow)



# Kaplan 1996

- What role did the accuracy contingency play?
- In the “washer” phase, if you don’t take something--that you already have--that you don’t want anyway-- you get something you do want.
- In the money phase, you get twice as much money for taking nickels only when you deserve them. That is, you get less money if you take nickels when you shouldn’t



# Kaplan 1996

- Kaplan said, in the discussion:  
“What Catania (and Goldiamond) states is that what defines a self-reinforcement procedure is not WHO delivers the reinforcer, but who **DETERMINES** when the response contingency is met.”

# Kaplan 1996

- Catania did not say that.
- Catania pointed to the overwhelming importance of the conditions that give rise to the behaviors of an individual setting up a “self-reinforcement” contingency



# Kaplan 1996

- Kaplan tried to define “self-reinforcement” (which is a losing battle) in terms of *who* determines if the terms of the contingency were met.
- What is actually THE most important component is WHO ENFORCES THE RULES OF THE CONTINGENCY WHEN IT IS NOT MET??

# Kaplan 1996

- In other words, If I have money that I am not supposed to give myself until I lose 5 lbs, and I know that I have only lost 3 lbs, I might use the money anyhow **EVEN THOUGH I KNOW THAT THE CONTINGENCY WAS NOT MET**
- Taking my own money did not occur because I “didn’t know” whether or not I lost the correct amount of weight, but because the relevant motivational variables overpowered any rule following.

# Kaplan 1996

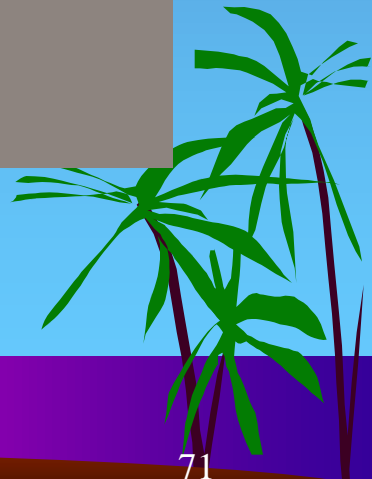
- In this study, if the nickels were effective reinforcers, it is not because they were delivered from the left hand to the right pocket of the same person contingent on doing work.
- It was because (like the pigeon) taking washers without first working met with loss of reinforcement and (possibly) other verbal aversives. Two behaviors were shaped up as a unit...Work-then open the pill box.



# Kaplan 1996

- Again, the real issue is not the illusory contingency of giving one's self nickels for a job well done, but the overriding historical variables (it's not nice to cheat) and current contingencies (praise from supervisor for taking money only when you earned it)





If you can do self-reinforcement, then what about “self” other principles?

- If you can give yourself reinforcement then you should also be able to control:
- Self-Negative Reinforcement
- Self-Extinction
- Self-Punishment (AKA Graduate School)
- Let's look!





# Okay, so maybe there's no self-reinforcement, but what about self-Management?

- If by self-management, we mean that we are **engaging in behavior that may increase or decrease the probability of our own future behavior**, then yes we can most certainly “self-manage.”
- Of course we engage in self-management behaviors because of a variety of other motivational variables



# Self-Management

- What is the function of giving one's own self chocolate after running?
- It may eliminate the aversive component of eating the chocolate (a.k.a. guilt)
- The activity (running) may acquire conditioned reinforcing properties because of its temporal relation to chocolate consumption



# Self-Management

- What kinds of behaviors can we engage in that will modify the probability of future behavior?
- Arrange a “socially-mediated contingency enforcement”
- Brooks and Wilder (1975) demonstrated the power of socially mediated contingency enforcement



# Self-Management

- Socially-mediated enforcement must be done by individuals who cannot be coaxed, cajoled, pleaded with, reasoned with, etc..
- Attorneys
- Major Professors
- Ex-wives and Ex-husbands



# Self-Management

- Non-socially mediated manipulations
- These can include a variety of behaviors that may alter the future probability of subsequent behaviors



# Self-Management

- Environments can also be arranged not just to prompt behaviors we forget to do, but those we remember but are reluctant to do
- Put the treadmill in front of the TV
- Turn the air down before a workout
- Position the treadmill so you can easily see into your hot neighbor's window



# Self-Management

- Arranging aspects of the environment to prompt “forgetful behaviors”
- Skinner-put umbrella on door handle
- Sticky notes



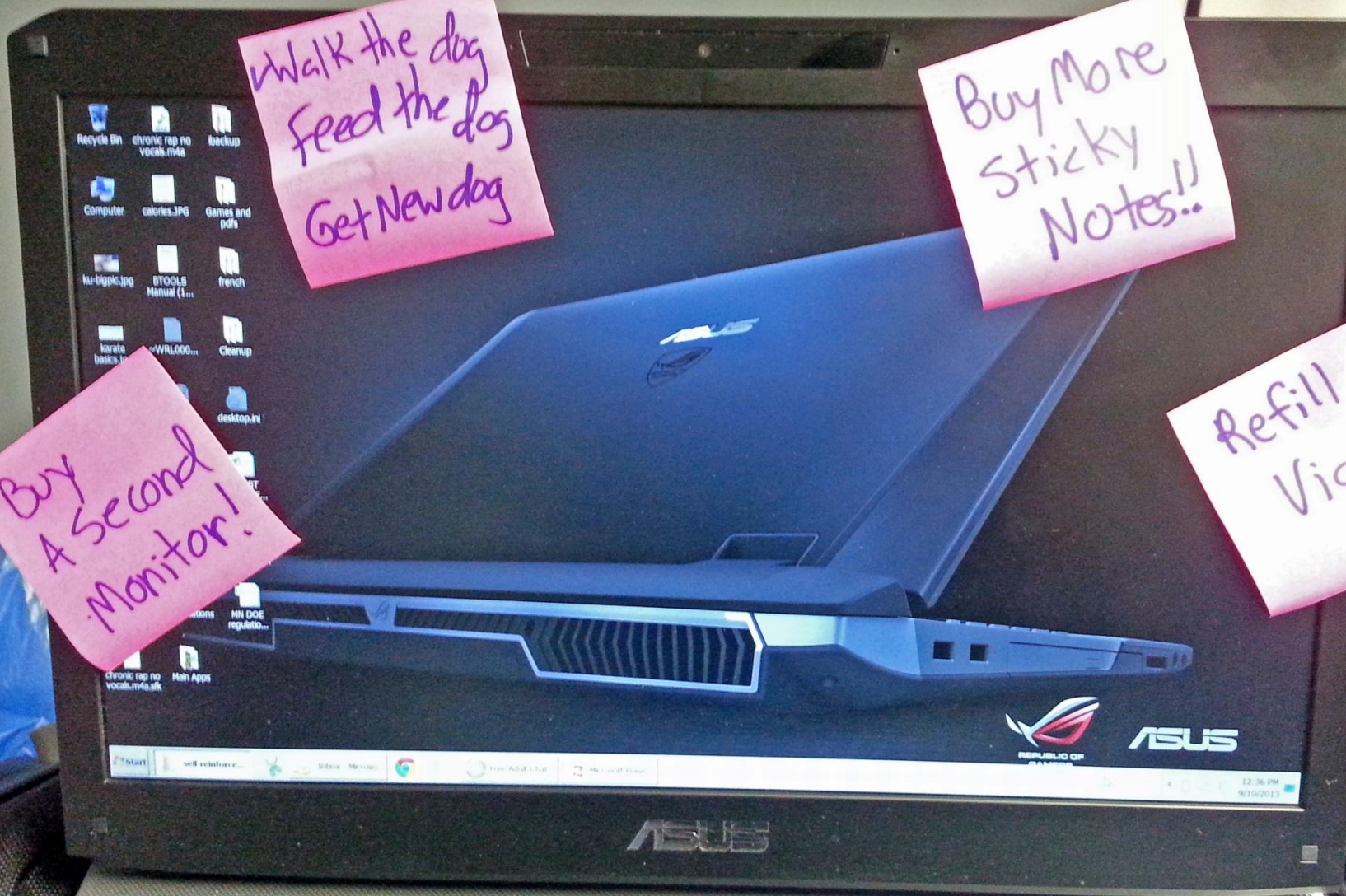


Walk the dog  
Feed the dog  
Get New dog

Buy More  
Sticky  
Notes!!

Refill  
Viagra!

Buy  
A Second  
Monitor!





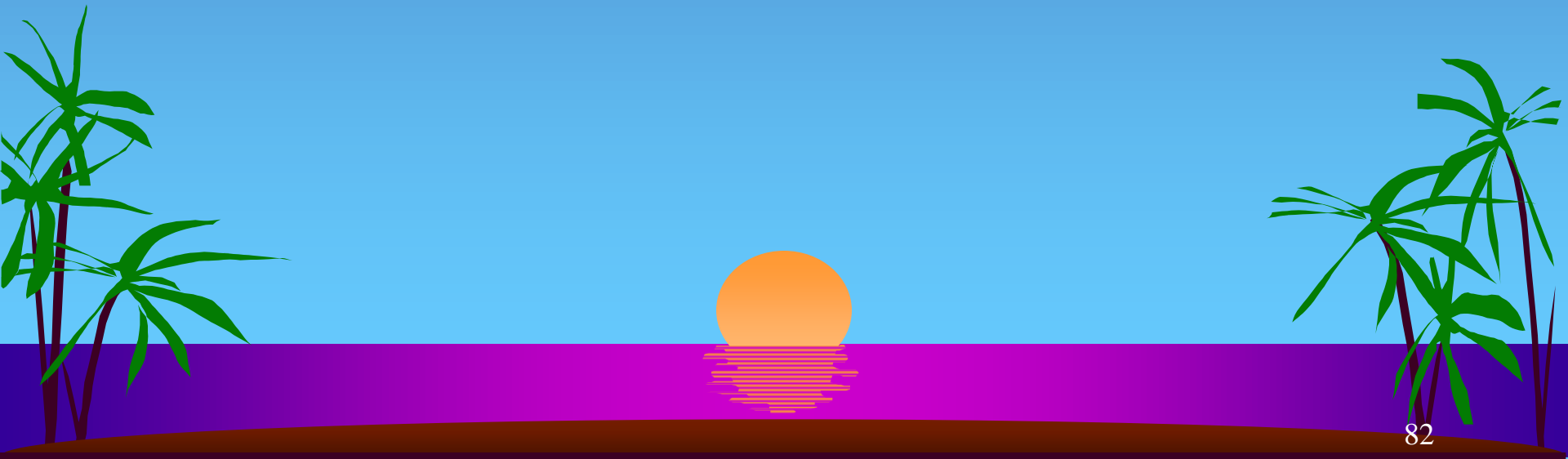
# Self-Management

- Schedule events according to the times that make the most sense regarding energy levels
- Engage in behavior that increases the response cost for undesirable behavior and decreases it for desirable behavior...



# Self-Management

- ...Keep your Chocolate in the attic
- Keep low-cal, healthy foods in the sofa cushions, next to the remote and your loose change



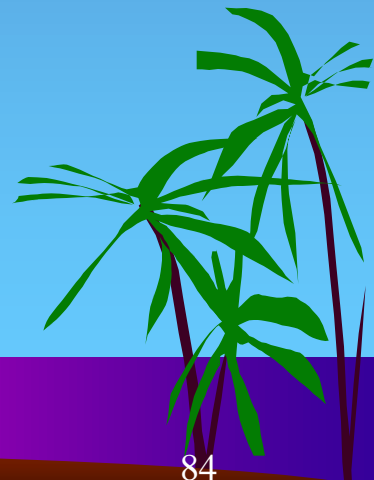
# Self-Management

- Look at the aversive components of what you don't like to do and take steps to eliminate or minimize them
- Exercise
  - Heat
  - Soreness
  - Boredom
  - Time loss



# Self-Management

- Try to arrange goals or events that yield strong social reinforcers and may act as an MO for the desired behaviors
- High School Reunion
- Wedding
- Marathon



# Question?

- Can you reinforce your own beer drinking behavior by buying yourself a beer every time you finish one?
- Probably not, but it couldn't hurt to try....
- Thank-you! Now go give yourselves some CEUs!

