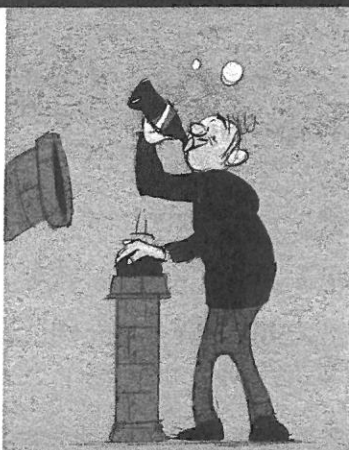
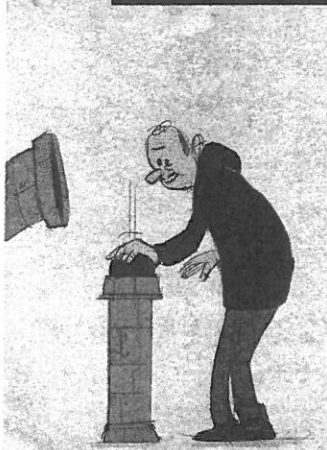


# 2. OPERANT CONDITIONING

THE SIMPLEST PRINCIPLE IN OPERANT CONDITIONING IS  
**THE LAW OF EFFECT.**

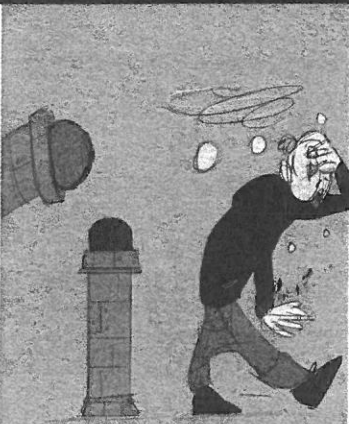
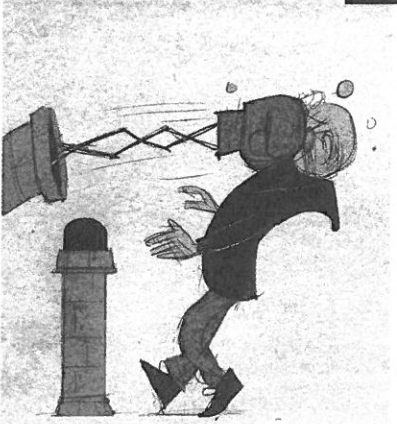
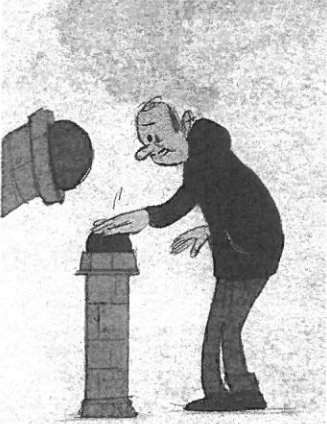
IF A BEHAVIOR LEADS TO A **POSITIVE OUTCOME...**

...WE'RE **LIKELY TO DO IT AGAIN.**



IF A BEHAVIOR LEADS TO A **NEGATIVE OUTCOME...**

...WE'RE **UNLIKELY TO DO IT AGAIN.**



THAT MIGHT SEEM TOTALLY **OBVIOUS...**

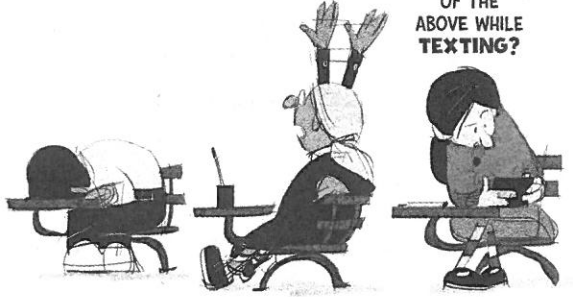
...BUT IN PRACTICE IT CAN GET **VERY COMPLICATED.**



IF AN ORGANISM DOES WHAT'S **BAD** FOR IT, IT'LL **GO EXTINCT.**

THEN HOW DO YOU EXPLAIN **SMOKING, AND DRINKING, AND DRUGS, AND SKYDIVING, AND HOMEWORK,** AND...

...AND ALL OF THE ABOVE WHILE **TEXTING?**



FOR EXAMPLE, SOMETIMES WE MISINTERPRET WHICH BEHAVIOR CAUSED AN OUTCOME.

LAST WEEK,  
HE FORGOT TO  
WASH HIS  
SOCKS...

...THEN HE  
HIT A HOME  
RUN.

HE HASN'T  
WASHED HIS  
SOCKS SINCE.



OTHER TIMES WE REPEAT ACTIVITIES THAT HAVE SHORT TERM REWARDS,  
BUT LONG TERM NEGATIVE OUTCOMES...



...OR GET BAMBOOZLED BY CONFOUNDING PRECONDITIONS.

YOU GET 30 BONUS MINUTES EVERY  
OTHER THURSDAY BETWEEN 2PM AND 4PM  
PROVIDED YOU ALREADY USED ALL YOUR  
FREE DATA AND YOU'VE CALLED YOUR  
MOTHER IN THE PAST WEEK AND HAVEN'T  
MADE ANY INTERNATIONAL CALLS DURING  
NON-PEAK HOURS OR...

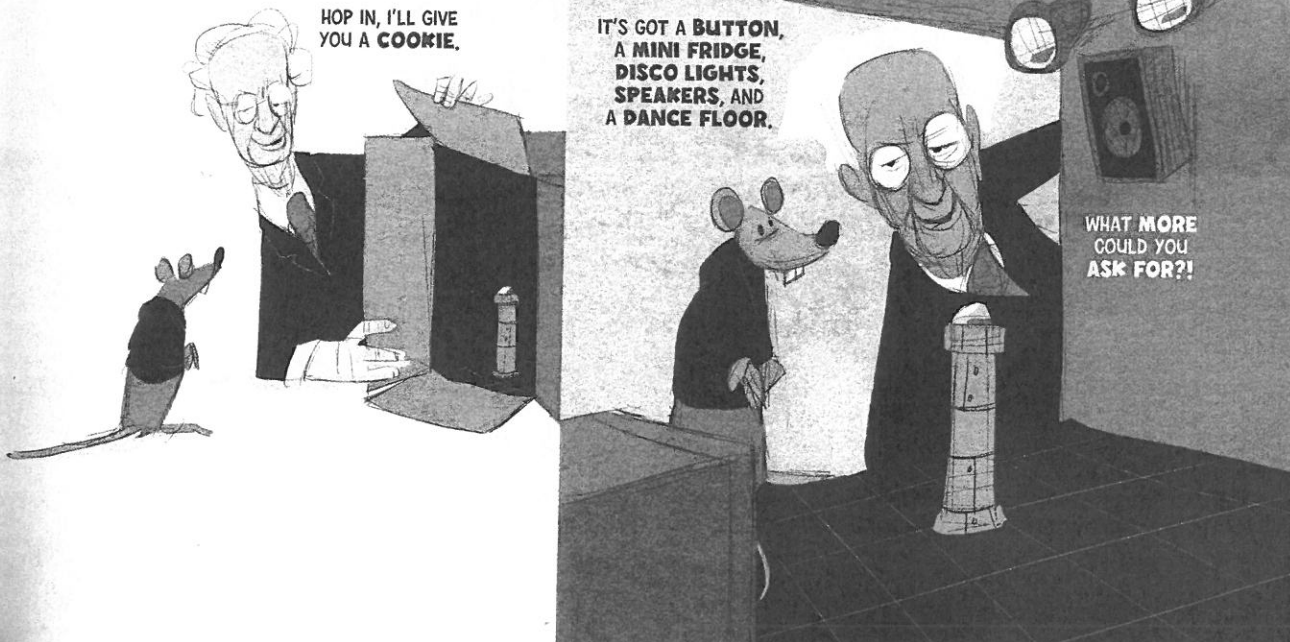


YEAH, WHATEVER,  
JUST SIGN ME  
UP.

TO STUDY THESE COMPLEXITIES, IN THE 1930'S THE BEHAVIORAL PSYCHOLOGIST  
**B.F. SKINNER** INVENTED A SPECIAL KIND OF BOX.

HOP IN, I'LL GIVE  
YOU A COOKIE.

IT'S GOT A BUTTON,  
A MINI FRIDGE,  
DISCO LIGHTS,  
SPEAKERS, AND  
A DANCE FLOOR.



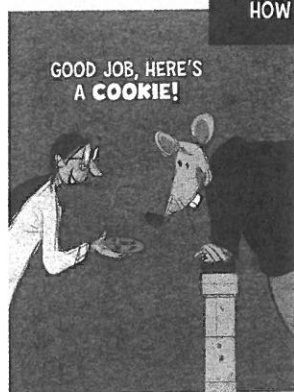
WHAT MORE  
COULD YOU  
ASK FOR?!

**SKINNER BOXES** ARE TINY LABORATORIES DESIGNED TO STUDY **HOW CRITTERS LEARN TO DO THINGS...**

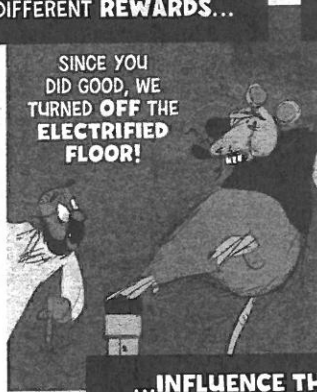
WHEN THE MUSIC STARTS, PRESS THAT BUTTON.

...AND, IN PARTICULAR, HOW DIFFERENT **REWARDS...**

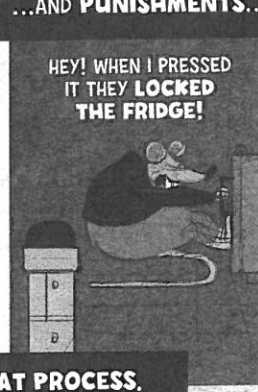
...AND **PUNISHMENTS...**



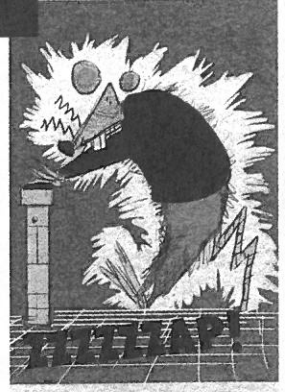
GOOD JOB, HERE'S A **COOKIE!**



SINCE YOU DID GOOD, WE TURNED **OFF** THE ELECTRIFIED FLOOR!



HEY! WHEN I PRESSED IT THEY **LOCKED** THE FRIDGE!



...INFLUENCE THAT PROCESS.



THE MUSIC STARTED, WANNA PRESS IT AGAIN?



YES, PLEASE.



NAH, THEY MIGHT TAKE SOMETHING ELSE AWAY.



**NO!**

BECAUSE THESE REWARDS AND PUNISHMENTS CAN BE DOLED OUT FOR **PARTIAL ACTIONS** OR EVEN **RANDOM MOVEMENTS...**

...THEY'VE BEEN USED TO TEACH ANIMALS ALL SORTS OF **SILLY TRICKS...**

**PUT YOUR LEFT FOOT IN** AND I'LL GIVE YOU A **COOKIE!**

**SHAKE IT ALL ABOUT,** OR I'LL TURN THE FLOOR UP TO **11!**

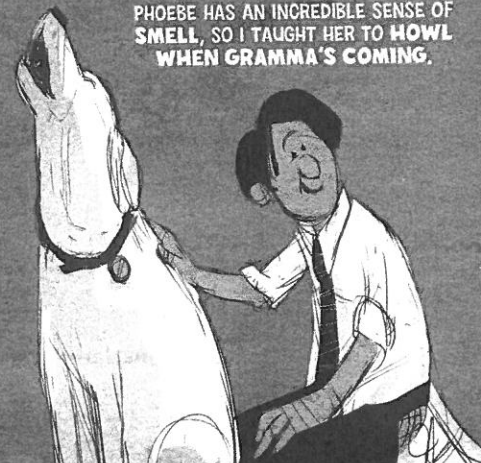
...NOW DO THE **HOKEY POKEY...**



**PIGEONS** HAVE ACUTE **COLOR VISION,** AND IF WE REWARD THEM FOR **PECKING TOWARD CERTAIN COLORS** THEY CAN HELP US **FIND PEOPLE LOST AT SEA.**

...ALONG WITH SOME **VERY USEFUL SKILLS.**

**PHOEBE** HAS AN INCREDIBLE SENSE OF **SMELL,** SO I TAUGHT HER TO **HOWL** WHEN **GRAMMA'S** COMING.



AGAINST SKINNER'S OWN INCLINATIONS,  
THESE EXPERIMENTERS HAVE BEEN MOSTLY  
**LIMITED TO ANIMALS...**

...BUT THE INSIGHTS GAINED FROM OPERANT CONDITIONING  
**CLEARLY APPLY TO PEOPLE TOO.**

WE SHOULD PUT  
A **BABY** IN THERE  
WITH THE **RAT!**

**GOOD  
IDEA!**

I'M SICK OF  
THE **RAT RACE.**

**TELL ME  
ABOUT IT.**

FOR EXAMPLE, AS WE LEARN MORE DETAILS ABOUT **HOW OUR OWN REWARD SYSTEMS FUNCTION...**

**DOPAMINE IS FLOODING  
YOUR NUCLEUS  
ACCUMBENS.**

...WE DEEPEN OUR UNDERSTANDING ABOUT  
**ECONOMIC INCENTIVES...**

...AND ABOUT OUR OWN **RELATIONSHIPS...**

FOR ONLY  
**49 CENTS**  
EVERYONE  
WANTS TO GET  
**SUPERSIZED!**

WHAT WOULD  
HAPPEN IF THEY  
CHARGED A  
**DOLLAR?**

SHE'LL PUT HER UNDERWEAR  
IN THE **LAUNDRY** INSTEAD  
OF ON THE **FLOOR...**

...BUT ONLY  
IF I **COOK  
DINNER  
ONCE A  
WEEK.**

...AND ABOUT WHY **SOCIAL PROBLEMS INVOLVING ADDICTION** ARE SO WIDESPREAD.

WHICH BRINGS US TO OUR **NEXT TOPIC.**