HARRY HARLOW

BY TAYLOR KUHNEN
EARLY YEARS

• Harry Fredrick Israel was born October 31, 1905
• Small town of Fairfield, Iowa
• Parents were Alonzo ‘Lon’ Harlow Israel and Mable Rock Israel
• 2 older brothers, Robert & Delmer
• 1 younger brother, Hugh
FAMILY BUSINESS

• Lon wanted to be a doctor, but dropped out of med school to marry Mable
• Instead founded a general store in Fairfield
• Older brother Delmer was diagnosed with Potts disease (also called tuberculosis of the spine)
• Harry was 3 when they made the move to New Mexico
• Lost all money and possessions
• Moved back to Fairfield
• Harry blames mother for adolescent/adult loneliness
HIGH SCHOOL

• Didn’t like high school
• Enjoyed poetry and drawing
• Ranked 13 out of 71
• Grandfather wanted Harry to marry the valedictorian
• Graduated in 1923
• Wrote in his yearbook he wanted to “be famous” but predicted he would end up insane
• Family didn’t get along with many townspeople due to not attending church
COLLEGE

- Started at Reed College in Portland
- Wanted to go into zoology
- Hated his freshman intro course due to frog dissection
- Joined brothers Delmer and Hugh in 1924 at Stanford
- Harry would be the only one to finish his degree
- Enrolled as an English major but switched to psychology after his C+ in English
GRADUATE SCHOOL MENTORS

- Worked directly under Calvin Stone and Walter Miles
- Stone was an animal behaviorist and psychology magazine editor
- He was cold, studied rats & rabbits,
- Miles was a vision expert
- Became a “moral mentor” & helped Harry a lot
- All worked under psych department chairman Lewis Terman who developed the Stanford Binet IQ Test
170 pages on the feeding habits in baby rats
- Babies liked feeding underneath mother due to warmth
- Led to an experiment of separation
- Found that the rats wouldn’t eat until all were safely together
- Joked that by the end of education he’d had enough of rats
- Changed his name to Harry Fredrick Harlow upon publication due to Jewish prejudice at the time
FUTURE POSSIBILITIES

• Terman suggested Harlow teach at a junior college
• Harlow was too timid to speak in front of large audiences
• Didn’t have required teaching courses, so condemned to getting PhD
• Graduated in 1930
• Was offered a job at the University of Wisconsin
• Assistant professorship for $2,750 at age 24
• Promised a lab would be provided to study rats
UNIVERSITY OF WISCONSIN

- Psych department had 4 faculty members and took on 3 PhD students a year
- First day was mistaken as a student
- Taught Elementary Psychology to 400+ fresh/soph students
- Was booed his first class
- Shy and had a lisp
- Used puns and jokes to get over fear of public speaking
YOUNG LOVE

- Started dating Clara Mears
- One of his graduate students
- Born July 8, 1909 in Reno, NV
- Described as small, warm, and exuberant
- “Like a pet kitten”
- Graduated high school at age 15
- Undergrad at Mills College in San Francisco
- Started grad school in 1930 at UW when offered a research assistantship
MARRIAGE

- Harry and Clara were married in Milwaukee on May 7, 1932
- University had strict nepotism policy and didn’t allow spousal hires
- Clara’s advisor recommended she drop out because Harry would always be the school’s first choice as a hire
- Took a job as sales clerk in Madison department store
- Within 6 months promoted to dress buyer
START OF RESEARCH CAREER

• Upon arrival, lab that was promised was nowhere to be found
• Rats “hot animal” of the time
• Tried makeshift facilities, but none stuck
• Next tried studying cats in frat house basement
• Studied conditioned response like Pavlov’s dogs
• Frogs were the next subjects, but experiments failed
• Wrote that frogs were the dumbest animals and was criticized for wasting taxpayers $$
• Teased by colleagues
MONKEYING AROUND

- In frustration/desperation, visited monkeys at the Henry Villas Zoological Park in Madison
- Met orangutans Jiggs and Maggie
- Maggie was aggressive, slapped Jiggs when he displeased her, which was frequently
- Asked zoo director Fred Winkleman if they could be seperated so he could run intelligence tests on Jiggs
- Brought grad students along to administer tests such as puzzles
- Jiggs died only a year after testing started
TOMMY

- Next started working with 90 pound baboon Tommy
- Hid food under cups to test memory
- When he made a mistake, would throw a fit
- During delayed response trials, threw table and smashed it
- Developed crush on Betty, a student
- Behaved and passed tests with great style when she would run them
- Harlow compared monkeys to people
- Saw personalities and relationships
PRIMATE PROMISE

- Assigned Abraham Maslow and first official graduate assistant
- In 1932, the University offered abandoned building to use as a primate lab
- Didn’t offer any help with remodeling or construction costs
- Paul Settlage, Walter Grether, and recruited football players helped out
- Offered a place to stay in exchange if they were short on money
IMPORTED SUBJECTS

- Monkeys came from India, South America, and Asia
- In 1936, 3 capuchin monkeys came
- Capuchin, Cinnamon, and Red
- Red bullied over food, but learned how to fight back with a stick
- Used against bigger monkeys as well
- Wasn’t published until 1961 though because Harry wanted to establish a better reputation
- Psychologists didn’t believe in animal intelligence at the time
FIRST LAB EXPERIMENTS

• After one year fellowship at Colombia, returned to Madison with Clara and first child Robert (born November 16, 1939)
• Built the Wisconsin General Test Apparatus (WGTA)
• 2x2x2 cube w/sliding panel that could be raised & lowered with a rope and pulley
RHESUS MACAQUES

- Had only a few dozen healthy monkeys at the time
- Rotated 4 at a time through countless studies
- Used cheapest primate possible, rhesus macaques
EARLY TESTS

- Had to fit shaped blocks into tray where food was hidden
- Had to distinguish between 3 shapes and pick the correct one
- Started comparing monkeys with children
- Worked with child psychologist Margaret Kuenhe
- Kids (ages 2-5 with IQ of 109-151) and monkeys given same tests
- Monkeys were faster at first, but then the children caught up
Doubts

- Was criticized for using conditioning and rewarding monkeys with food
- Caught one monkey flicking the light on and off out of curiosity when alone
- Wanted to prove food was irrelevant
- Designed apparatus that had to be opened in a precise sequence
- Some rewarded with food, others not
- Shockingly, the unrewarded monkeys did better because the food was a distraction
WORK OBSESSIONS

- December 10, 1942 second child born, Richard
- Harry became obsessed with work
- Clara started making Harry bring Bobby to lab on weekends so they could spend time together
- After 14 years of marriage, Clara filed for divorce in August of 1946
- She moved to Rhode Island with her boys and lived with her brother
- Divorce made Harry tougher
- “Not unfriendly, just not friendly”
ADDICTED TO LOVE

• Hated being alone
• Quickly moved onto Margaret Kuehne, the child psychologist from before
• Married a year and a half after his divorce on February 3, 1948
• Was a secret marriage
• UW eventually found out and made Peggy step down
• She became Harry’s and the lab’s unofficial editor
• Published Harry’s papers
WORK OVER EVERYTHING

- Peggy and Harry eventually had 2 kids, Pamela in 1950 and Jonathon in 1953
- Wasn’t around much
- Considered his intellectual family his real family
- Liked to be paid well, but didn’t like spending
- Didn’t care about appearance or materials
- University finally built him a new lab 3x bigger due to “eyesore” complaints
- It was finished in the early 1950’s
SEPARATION

• Started thinking about love and attachment between mother and child
• Started breeding own monkeys due to the expense of importing them
• Separated them from their mothers early to stop spread of disease
• By the end of 1956, more than 60 monkeys had been taken from their mothers
• Looked healthy on outside, but seemed dumbfounded by loneliness
EARLY CLOTH TESTS

- Noticed baby monkeys would cling to the cloth diapers that lined their cages
- Bill Mason, a Stanford graduate, suggested a cloth vs. wire test
- Robert Zimmerman started with small wire and cloth objects
- Tested on only 2 monkeys and both preferred cloth
BUILDING A MOM

• Got idea to build surrogate mothers
• Realized they needed a face to be more realistic
• Wanted it to be ugly so they could argue against using an attractive stimulus
• Used bicycle reflectors for eyes, green and black plastic for mouth and ears
CLOTH VS. WIRE

- In four cages, cloth mom had bottle of milk
- In another four cages, wire mom had bottle of milk
- Babies stayed with cloth mom unless they needed to go to the wire mom for food
- [https://www.youtube.com/watch?v=CU9jKlNK1Qc](https://www.youtube.com/watch?v=CU9jKlNK1Qc)
- Would put little toys in the cages, but startled babies and they would cling to mom
- Harlow compared wire monkeys to the “cool, businesslike” human mothers
- The wire moms represented a style of parenting that didn’t provide a sense of safety
ABUSE REPORTS

- A New York reporter made visit to the lab
- Reported that monkeys weren’t treated well
- They clung to cages, shrieked at passing people, mauled themselves, bit own arms, and ripped out hair
- Worst of them were raised by the wire mom
- Harlow didn’t do much to fix them
FURTHER MOTHER TESTS

- Tried hot vs cold surrogates
- Tried making mother swing to show movement
- Showed a good response because the swish and swing of a parent rocking a baby induces normal development
- Tried putting two baby monkeys together
- Almost as bad as total isolation because they were immediately separated from mom and didn’t have secure attachment
STRENGTH OF FAMILY

• Designed setup like a neighborhood
• Real monkey mom, dad, and baby lived in a boxed cage but had access to a bigger area with a playground
• Another design left mom and baby alone for 6 months
• Baby grew up shy and timid
BOOBY TRAP MOTHERS

• 4 cloth moms
• One shook violently
• One was an air-blaster
• Another had an embedded steel frame
• The last had blunt spikes tucked into its chest
AWARDS AND HONORS

• In 1967, Primate lab became only NIH Primate Center in Midwest
• Added a lot of responsibility
• Same year Harry became first and only primatologist to win the National Medal of Science
ONCOMING DEPRESSION

• 1967, Peggy was diagnosed with breast cancer
• Harlow became very depressed and started traveling a lot to give speeches
• Winter of 1968, left for Mayoclinic in Rochester, MN to get treated for clinical depression
• Stayed for 2 months
• Tried drugs and electroshock therapy
• Improved a little, but not cured
• Now wanted to focus research on what takes love away, so created a model of depression in monkeys
ISOLATION EXPERIMENTS

- First experiments involved social isolation for 30 days
- Next set kept for 6 months
- Eventually went all the way up to a year
- Turned out so helpless, they had to re-isolate them
- [https://www.youtube.com/watch?v=_O60TYAlgC4](https://www.youtube.com/watch?v=_O60TYAlgC4)
- Isolated mothers who had offspring (forced into it with a “rape rack”) harmed their infants
- End of forced pregnancies
HOPELESSNESS

• Harlow learned isolation wasn’t even to cause depression
• Added hopelessness to the formula
• Healthy monkeys were supposed to climb up steep wall inside of a chamber
• After 2-3 days of trying, they gave up and became hopeless
• Reminder that even a healthy, normal childhood doesn’t protect against effects of depression
REVERSING EFFECTS

- Gave depressed monkeys reserpine, which suppresses serotonin in the brain
- Didn’t work so tried testing other medications
- Paired isolates with baby “therapists” so they could learn together
- Baby would approach the isolate until backed into a corner, then would try cuddling it until isolate showed interest instead of threat
- Didn’t completely heal monkeys, but helped
ATTACKS

• Peggy died August 11, 1971 at the age of 52
• Bruno Bettelheim, autism expert at the time, saw similarities in monkeys raised by cloths moms and kids with autism
• The early 1970’s feminists started attacking Harry’s work and he worked hard to defend it
• They didn’t like how he related cloth and wire mothers to human mothers
• He expected a lot out of his female students, but women of the time weren’t socialized yet to respond to that
• His sense of humor was offensive & he tried to get a rise out of people
REKINDLING

- After Peggy’s death, got back together with Clara
- She was in Tennessee at the time, but moved back to Madison
- They remarried in March of 1972, 8 months after Peggy’s death
- Harry started showing early signs of Parkinson’s
- Resigned from UW-Madison in 1974
- Blamed medical reasons but was sad to leave
• He started working at the University of Arizona in Tucson
• Got connected with the job through a former student
• Clara restricted his heavy drinking and forced him to exercise
• Repaired his relationship with his older son Bob
• Harry published the book *The Human Model* with Clara’s help
Late 1970's his Parkinson's got worse
Summer of 1981 his memory began to fail
Hospitalized for 10 days in July and August and 6 September
Put in a nursing home after stumbling into strangers home
Went into a coma after a stroke
Died December 6, 1981 at the age of 76
Clara published more of his works after he passed
ANIMAL CRUELTY

- Fury over animal cruelty started after Harry’s death
- His findings are often talked about in lectures
- But more so for the ethical reasons behind his experiments than anything else
- UW-Madison thinking about doing similar studies
- Taking babies away from moms and euthanize them
- Want to explore depression and anxiety
DISCUSSION QUESTIONS

• 1. Do you think any of Harlow’s experiments were unethical? If so, which one was the worst in your opinion?

• 2. Do you think that the more recent studies at UW-Madison are worse or better than Harlow’s? Why?

• 3. What kinds of similarities do you think Bettelheim saw in the isolated monkeys and autistic children? Any questions for me?