Notes on Psychology

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(Adapted from PSYCH 110 with Paul Bloom)
The five main branches of psychology are:
- Developmental psychology
- Neuroscience
- Cognitive psychology
- Social psychology
- Clinical psychology

Freud
The central insight of Freud is that there are desires and motivations that we don’t know about. Freud’s Id is the animal part of the unconscious. All it wants is pleasure. This is seen as the first stage of development. The ego relates to how to satisfy your pleasures or give up on them. This is seen as the origin of consciousness. The superego is the internalization of the rules of your parents and society. Freud’s stages of development were:
- Oral
- Anal. This was associated with compulsivity, cleanliness
- Phallic. This is where the Oedipus complex begins
- Latent
- Genital

Sublimation is a defense mechanism in which socially unacceptable impulses are transformed into socially acceptable ones, like aggression turned into sports.

Behaviorism
The 3 tenets of behaviorism are:
- (Almost) all behavior results from learning.
- Claims about internal mental states are unscientific.
- There are not so many important differences across species. This is one of the reasons why animal testing was used so extensively by the behaviorists.

Pavlov’s discoveries were actually highly serendipitous: he was trying to study saliva. The bell here was a conditioned stimulus (conditioned, that is, upon the association with receiving food). Spontaneous recovery is the way in which, suddenly, an agent will respond to a conditional stimulus after a while of waiting.

Behaviorism distinguishes 3 types of learning:
- Habituation
- Classical conditioning: the repeated pairing of two stimuli
- Operant conditioning: reinforce the good things, punish the bad things

Shaping is the process by which actions part of the way to a desired outcome are rewarded, allowing you to layer behaviors on top of each other to teach more complicated ones. The partial reinforcement effect is that reinforcing behaviors intermittently – that is, some of the time, but not all of the time – is the best way to encode them. The Garcia effect is a revulsion toward something, e.g. a food, as a result of an association from the time, e.g. being ill. Note that this association won’t develop for something like an electric shock, because it’s so unusual that it’s unlikely to be paired
with another stimulus. The development of phobias has very little to do with personal history: the classical conditioning explanation is almost always wrong. 40% of people are afraid of snakes but presumably almost none of them have had some kind of traumatising experience with a snake.

Piaget

Piaget viewed children as active thinkers. He studied them because he was interested in the origins of knowledge in general – genetic epistemology. His stages of development were:

- **Sensory-motor stage**: purely physical. At 6 months babies acquire object permanence. The A-not-B test involves moving an object, under a cup say, and the child up until about 9 months will still reach for the original position of the cup even though they saw it move. Adele Diamond found that children will look at B despite reaching for A.
- **Pre-operational stage**: represents the first capacity to represent the world. Kids are egocentric at this point. The 3 mountains task: a child can’t imagine how things would appear from the other side. A four or five-year-old won’t understand that a tall glass can have the same amount of water as a shallow one.
- **Concrete operations stage**: aged 7-12. This is when you can solve the conservation problem. There are limitations of logical understanding, however.
- **Scientific reasoning stage**: 12+

Development

Neurologically, myelination is the development of a fatty coating over the neurons. This doesn’t finish until young adulthood.

A popular approach used in developmental studies is gaze detection. Babies will look longer at a movie where shapes approach an agent who hindered them “climbing” a hill, indicating their surprise. Autistic children fail to appreciate that people are most interested in that which they are looking at. They also fail the false belief task for longer than other children. Around 3 or 4, most other children fail false belief tasks. About autistic children, Simon Baron Cohen said that to be male is to suffer a kind of “extremely mild form of autism”. One piece of evidence for this is that males with more testosterone tend to be less social.

The idea that development consists in pre-wired modules starting to reason about the world is associated with Chomsky and Fodor.

Language

It could be the case that language is a cultural innovation: just such a good idea that all societies independently invented it. The reason why this is almost certainly untrue is that people can quickly invent languages, like the pidgins developed by the slaves from different ethno-linguistic groups mixed together in the slave trade. When children grow up hearing a pidgin, they don’t pick it up as a pidgin, but rather create their own fully-fledged language, with grammar. This is called a creole. Many native tribes also don’t speak to their children, which creates no impairments and doesn’t slow down language acquisition. This makes somewhat of a mockery of parents who believe that their children must be taught to speak by formal instruction. Indeed, even if children did require formal instruction, it is unlikely parents would be a good source, Brown & Hanlon 1970 found that parents’ approval or disapproval of their children’s utterances are not contingent on the well-formedness of the sentence, but rather its semantic content. It was results like these that led Chomsky to conclude that learning a first language isn’t really like learning in the traditional sense at all; it’s more like growth.
Interestingly, the development of sign language is almost exactly the same as a spoken language. Children born to deaf parents who only learned sign language in adulthood creolize it, achieving a level of fluency beyond their parents, making fewer errors, and constructing their own grammar and syntax.

The most common sentence ordering is subject-object-verb.

Language is one way in which people manifest in-group preferences. Even after 4 days children prefer to hear their own language.

There are sex differences in language, with women being slightly quicker to acquire language, but only very slightly.

If you are right handed, language is probably processed in the left half of the brain. It could be either for lefties.

**Aphasia** is disorder impeding the ability of people to process language, sometimes seen after strokes and major head injuries.

**Phonology** is the structure of sounds, and **morphology** is the basic structure of words, or units of meaning. Morphology include things like prefixes & plurals.

Interestingly, children learn languages just as quick if they’re learning multiple at once

**Perception**

Marvin Minsky – who coined the phrase artificial intelligence – famously assigned the problem of visual recognition to a graduate student for a summer.

The principles of **Gestalt theory** are features like proximity, continuation which are implicit assumptions that tell us when something is a single object, as opposed to multiple similar-looking objects.

**Agnosia** is the lack of ability to recognise things

**Memory**

**Echoic memory** is the memory of recent sounds which lasts a few seconds. **Semantic memory** is of facts and **episodic memory** is autobiographical.

**Change blindness** is the obliviousness people express toward changes when there is a change in scene, like not noticing someone change underneath a painting. Daniel Simons did the famous experiments on this.

One piece of the support for the **chunking** view of memory is that architects have an almost photographic memory for floor plans, managers for football formations, chess players for chessboard layouts. It is not that these activities improve people’s general memory, but rather mental constructions are put in place which can compartmentalize the data more quickly and efficiently.

There’s a famous **depth of processing** experiment whereby people have poor memory of words if they have to remember their form (whether they contained capital vs. non-capital letters), better if they had to remember sound (whether words rhymed), and better still if they had to parse the meanings of the words.

**Recovery cues** are important: you’ll do best in an exam if you take it in the room in which you learned the content, and you remember things better while drunk or stoned if you learned them while drunk or stoned. This is also called **state-dependent memory**.

It’s possible that language reframes and restructures your memory. This might be the reason for childhood amnesia – that is, why it’s very hard to remember anything before you were about 3.

**Patient HM** is a famous case study of anterograde amnesia: hippocampal damage meant they could form no new memories, despite remembering old ones.
Sexuality
The pratfall effect is the effect whereby people like others even more when they make a mistake, if they already had some reason to like them. So, the attraction people have to those with greater degrees of competence scales non-linearly.

Misattributed arousal often occurs when you are aroused because of some stimulus and misattribute it as being attraction. One experiment observes that men view women as more attractive if they hear a louder recording of a heartbeat. This is perhaps an explanation for justifications of abuse: people believe that the reason for their anger and resentment must be attraction.

There is some evidence that syphilis causes people to have more sex by arousing them. Average faces are viewed as considerably more attractive; even babies prefer to look at them. Ovulating women prefer more stereotypically male faces but find average faces more trustworthy.

The mere exposure effect is how you come to like things more just by seeing it many times.

Evolution
Margie Profet suggested that morning sickness is adaptive, with the function of flushing out toxins. The predictions made were that illness would come at times of maximum vulnerability of the fetus and be most acute with foods that were likely to have toxins. Both of these were experimentally verified.

The famous kibbutz studies show that we have less sexual attraction to people with whom we were in close contact as children, but a recent paper in Nature found this only accounts for a minority of the effect: with most of it coming from seeing your mother take care of them.

Harlow ran the famous study of food mothers and cloth mothers. Skinner thought that people went to their mothers just because they were a source of food (the cupboard theory), which turned out to be wrong (the children fed from the food mother but went to the cloth mother for comfort).

Social Psychology
People overestimate how much other people notice their t-shirts by a factor of two. This is because of the spotlight effect; an exaggeration of self-importance. Presumably this generalizes. The illusion of transparency is the tendency to overestimate the extent to which your mental state is known by others.

The Lake Wobegon effect is the phenomenon by which people think they are above average at almost everything. One of the ways in which is manifested is in people picking out particular instances of something in which they are above average, and, even if this is unrepresentative of general skill in something, generalizing. This is an example of the broader self-serving bias. One example of this is that you will denigrate options that you didn’t choose. In one of Festinger’s classic experiment, people that are paid $1 for a task find it interesting (else, why would they have done it), and if they are paid $20, they find it boring. In When Prophecy Fails, Festinger shows that, when people are predicting the end of the world, and it doesn’t come true, they tend to justify it by saying that the world didn’t end because of their actions. The process of hazing is the torturous induction rituals used by groups like fraternities – which deepens people’s appreciation for being a member of the group, because of everything they had to go through to get there. Volunteers are frequently used for political causes because, if they’re getting paid no money, they have to justify their role in some other way. For the same reason, free therapy has almost no effectiveness.
Heider’s attribution theory introduced the fundamental attribution error. The fundamental attribution error may not be a human universal: no-one has it before the age of 8, and Eastern cultures have more of an emphasis on fate and the situation than on individuals.

In the Robbers cave experiment, peace talks were tried, as were no team sporting events, eating meals together, moves, firecrackers, brought in a religious figure, none of which worked. This was just one example of group loyalty forming around a fairly arbitrary variable. In another case it was randomly assigned (based on a bogus test) fans of Klee and Kandinsky works.

The classic confirmation bias study by Kelly involved students receiving one bio saying that a speaker was warm, the other saying that they were cold, which matched their evaluations after hearing the person speak. Rosenthal and Jackson told teachers that certain students were smart and would grow, others were said to be struggling, and this was a self-fulfilling prophecy. Tajfeld ran the minimal group study. Claud Steele ran the experiment showing ‘stereotype threat’ – that writing your own race or gender down on a test causes you to do worse if you have a negative stereotype surrounding your group.

Blacks show similar levels of white-preference to whites in the implicit association test.

Rationality

The most important Kahneman & Tversky results can be summed up as:

- Framing effect – including loss aversion
- Endowment effect
- Base rate neglect
- Availability heuristic. Just one example: the average American think 20% of Americans are Jewish (true figure ~2%).

Results in studies of rationality are sometimes criticized because of their ecological invalidity, not accounting for what humans actually needed to know in their ancestral environment. Tooby & Cosmides accounted for this by making a Wason selection task with alcohol and ages of prospective drinkers, in which success rates go way up.

Individual Differences

The Rorschach test has no predictive value whatsoever of anything. Hans Eysenck proposed that introverted and neurotic were the only personality dimensions, he subsequently added psychoticism (approximately, degree of aggression/empathy). Results since then have come to the general consensus that the most productive language in which to speak is terms of the big five personality characteristics. Two features that a good psychological test needs to have is validity (relevance to the real world) and reliability (persistence over time). $s$ is how good you are at a specific test; $g$ is your general tendency to be good at tests of intelligence.

You can’t tell monozygotic twin’s brains apart with a brain scan!

Sex

Robert Triver’s parental investment theory explains why the sex with the smaller sex cell is almost always larger and more aggressive; namely, that they invest less in the upbringing of the child, and thus compete to spread their sex cells as widely as possible.

Pornography and prostitution are human universals. In the former case, this extends beyond humans: a study at Duke found monkeys would pay for pornographic images of female monkeys.

The Coolidge effect is the preference of males of many animals to have sex with females with whom they have no relationship.
If one identical twin is gay, the other will be gay about 50% of the time. This rules out the idea that homosexuality is totally genetically determined; most (if not all) of the remaining difference is accounted for by prenatal effects, probably involving androgens (the hormones responsible for giving a fetus male traits).

**Clinical Psychology**

**Anhedonia** is the lack of ability to take pleasure in your usual activities.

**Psychomotor retardation** is a symptom of depression in which physiological responses are slowed down, resulting in decreased reaction times.

Depression is a **unipolar** disorder

Early onset depression is heritable, but later-stage depression clearly triggered by a life event isn’t. People with chronic depression see a shrinkage of the hippocampus.

Coming off drugs for depression without any other form of treatment has a very low success rate.

Interpersonal therapy (IPT) is more effective for some individuals.

MPD is a dissociative disorder that’s unrelated to schizophrenia.

The types of schizophrenics are:

- Paranoid
- Catatonic – low/no emotional responses
- Disorganized

More schizophrenics are born in the winter, and generally when there is physical stress at the time of birth. Their parents are also more likely to have owned a cat at the time they were born; probably because of toxoplasmosis.

Less industrialised countries have higher rates of recovery for schizophrenia.

OCD is surprisingly well-treated with drugs.

The most popular form of antidepressants, SSRIs, have similar effectiveness to previously available drugs, but fewer side-effects.

The effects of all medication are temporary.

**Dissociative disorders** involve the dissociation between you and some other aspects of your identity and history. Some symptoms include: not recognising one’s own reflection in the mirror, not knowing whether you have done something or only thought about it, etc. **Dissociative fugue** involves the loss of your identity – often involving some kind of amnesia. It’s shorter lasting than amnesia, however. Dissociative identity disorder is brought about by severe abuse – but it doesn’t develop in all of these cases, indicating there’s probably a genetic predisposition. Less than ¼ of psychiatrists believe that dissociative identity disorder exists.

**Happiness**

People who find money on the ground before being asked report a greater level of satisfaction with their entire lives (Kahneman & Tversky). You get the same effect when the weather is good – though interestingly, the effect disappears when you ask people beforehand what the weather is like. The explanation seems to be that when people are made explicitly aware of it, they factor out their momentary positive state from their overall judgement of the quality of their lives.

One interesting result from Gilbert’s work is that cosmetic surgery, such as breast enhancement, causes people to become permanently happier.
Miscellaneous

- Regular smiles, involving eye movement, are called Duchenne smiles, after the neurophysiologist who studied them. Only about 10% of people can fake one. The more common fake smiles are Pan Am smile.
- There is no cross-species empathy; chimpanzees shock rabbits indefinitely for food
- Agonists are drugs that increase the action of neurotransmitters. Antagonists decrease it.
- The ‘stroop test’ involves naming the colour in which the words are printed.

Reading Responses

- Give a Freudian explanation for alcoholism. Then give a behaviorist explanation. Finally, invent a behaviorist treatment to get people to stop drinking
- What do you think about the relationship between knowing syntax and being intelligent? (Do you think that learning syntax makes you smart? Or being smart makes it possible to learn syntax? Both? Neither?). Take a position and defend it with evidence from lecture and from the readings
- You want your roommate to falsely remember that you once saved his or her life. Based on the research discussed in lecture and in the readings, how would you implant this false memory?
  - Use of the definite article: things like “did you say the broken headlight”, as opposed to “a broken headlight”, as in Loftus’ famous study.
- Choose some aspect of human psychology that could plausibly be a biological adaptation. Apply “reverse engineering” to it and present a theory of why it evolved. Use your theory to make a novel prediction about its current nature.
- It is often said that people are intrinsically selfish. Everything we do -- including acts that appear to be generous or kind -- are actually done out of self-interest. Do you think this is true? In your answer be sure to discuss kin selection, reciprocal altruism, ‘selfish genes’ and the difference between ultimate and proximate explanations.
- What factor or factors determine why some people are straight, others are gay, and others are bisexual?
- Explain the Flynn Effect.
  - The Flynn effect is a function of cultural complexity. In Ireland,
- If the Milgram experiment was done for the first time right now, at Yale, with Yale undergraduates a) what do you think you would do? b) what do you think the average Yale student would do?
- Generate an interesting and testable hypothesis about either (a) dreams or (b) laughter
- What was the most interesting thing (theory, experiment, result, etc.) that you learned in this class? Please give this the subject heading “Intro Psych”, and send it to paul.bloom@yale.edu

Notes from the Readings
Stanovich, Keith. “How to Think Straight about Psychology.” In The Norton Psychology Reader
• McClosky (1983) did work on “intuitive physics” and how college students don’t understand tangential motion, the falling bullet problem, and how objects in motion stay in motion.
• There is no evidence that highly religious people are more altruistic than less religious people, and atheists
• Blind people’s hearing is not any better.
• Paul Churchland described how, just how we had an inaccurate intuitive physics, we have an inaccurate folk theory of mind. And just like the physics, it leads to systematically incorrect beliefs, like “familiarity breeds contempt”.
• Would Freud have been sympathetic to the view that comparison, control, and manipulation are required to learn truths about human psychology? Yes and no. Freud was concerned in large part with the biological mechanisms of human psychology (he was a neurologist, after all). However, I think that he probably thought that the more useful form of experimentation was not manipulation and randomised control trials, but introspection and free association. Indeed, it is not obvious that a scientific psychology would have to have gone down the methodological route of the more developed sciences.

  • At the time of Phineas Gage, there were 2 camps, one believing that different parts of the brain did not specialise, and the other believing that they did. Gage died at 38 from seizures.

Sacks, Oliver. “The Man Who Mistook His Wife for a Hat and Other Clinical Tales.” In The Norton Psychology Reader
  • This patient had a loss in proprioception.

Freud, Sigmund. “The Unconscious.” In The Norton Psychology Reader
  • Freud says that the essence of repression is not in the annihilation of an instinct, but in the prevention of it becoming conscious.
  • He discusses the rejection that many people have that there is an unconscious at all. One form of the objection is question-begging, taking mental activity to mean that which is experienced by us, and everything else is somatic. This, Freud says, runs into problems of psychical-somatic parallelism, and arbitrary discontinuities in behaviour. For instance, the occurrence of parapraxis would mean that consciousness would be psychological islands, which are interrupted by the purely physical automaticity of what we are calling the unconscious. There are data to be explained (parapraxis, dreams), and so we create the most parsimonious explanation for them, in much the same way we assume a consciousness in others.
  • In psychoanalysis, mental activity is inherently unknown to us, with consciousness shining a spotlight on it similar to how our visual perception shines a spotlight on the rest of the world.


Hoffman, Donald D. “Visual Intelligence: How We Create What We See.” In The Norton Psychology Reader.


Schacter, Daniel L. “Searching for Memory: The Brain, the Mind, and the Past.” In The Norton Psychology Reader.


- The mind is a system of “organs of computation”.
- Remember that the reason why the ear is asymetrically wrinkled is so that sounds coming from different directions are processed in different ways.
- Pinker thinks that the allergy to evolutionary explanations to things has been a barrier to progress in social and cognitive science.
- Tooby & Cosmides coined the term evolutionary psychology, drawing on lessons from the cognitive revolution in the 50s and 60s – framing mental events in terms of information and computation – and the evolutionary biology revolution of the 60s and 70s.
- Donald Symons made the distinction between the socio-biology and evolutionary biology school, in particular pointing out how not everything is adaptive or needs to be accounted for in a Darwinian way.
- We must also remember that behaviours are not what evolved, the mind is what evolved.


They fuck you up, your mum and dad.
They may not mean to, but they do.
They fill you with the faults they had
And add some extra, just for you

*Philip Larkin*

To which Harris responded:

How sharper than a serpent’s tooth
To hear your child make such a fuss.
It isn’t fair – it’s not the truth –
He’s fucked up, yes, but not by us

- It’s Harris’ view that the nurture assumption has introduced a degree of phoniness into American life: the expressions of genuine love are drowned out by the feigned obligatory ones.
- Two adopted children reared in the same house turn out no more similar than two adopted children reared in separate houses. Twins raised in the same home are no more alike than a pair raised in separate homes.
- Behavioural geneticists mostly believe in the influence of the home environment as much as everybody else, and so came up with the idea that what mattered for the purposes of shaping children were the ways in which they were treated differently. This is initially plausible, but the “optional” traits that parents may or may not choose to mould their child to have (introversion, say) have just as little of their variance explained by the “obligatory” traits (kindness, intelligence, etc.). There is, in fact, even evidence that parenting is more uniform than children themselves – with the individual variation in parents’ treatment of their children being less than the variation between siblings.
- For a century-and-a-half, there have been efforts to show effects of birth order, with no success. There are also no personality differences between only children and children with siblings.
- Harris is even sceptical of the view that the last refuge of the nurture assumption is in truly awful homes, who really do cause long-term personality differences in children (namely in impairing their development). But, a huge amount of data has been collected and in no group do individual differences in parenting account for differences in children’s personalities, so, if this idea is true, it is only true for a tiny minority of households.
- Evolutionarily (and, indeed, anthropologically), the group is the fundamental unit in which a child operates. There has always been a bond between parents and their children, but the modern intense parenting is totally unprecedented. So are the population densities required for children to primarily be socialised in same-age same-sex groups, rather than mixed-age mixed-sex groups.
- Harris suggests that the reason we think parents are more important than they actually are is the extent to which the formation and upkeep of relationships is a conscious process, as opposed to adherence with the group, which is much more unconscious.
- The Myers-Briggs test makes an assumption of binary attitudes toward things, in a way that makes it very difficult to know what a representative answer actually is. This was the gist of Walter Mischel’s criticism of personality tests.
- One of Mischel’s studies involved the interactions of children at a summer camp. Their aggression when interacting with another child didn’t predict how they would behave while being warned by an adult, praised by an adult, etc. But the aggression was similar in the same interaction across time. So we have a personality, in that there is a consistent pattern of behaviour, but it’s contingent upon environment. This is one of the major issues with the Myers-Briggs, were >50% of test takers get a different score after taking the test a second time.

- You can’t just say that hormones cause behaviours: they can “bring you to the watering hole, but they can’t make you drink”. Such a simplistic analysis would have you assume that the weekend has some mysterious periodic effect on hormones.
- Sexual activity is in no way increased during ovulation (unless the couple is trying to get pregnant).

- Trans fats account for at least 30,000 deaths in the US every year.


- It’s a known result that, by pricing their wares at a higher price, salespeople sometimes sell them quicker.
- Ellen Langer showed that people are much more likely to let someone skip theme in line if they give a reason, and are equally likely to do so even if the reason is nonsense and just restates what the person had already said.
- One car company produced just as much response by sending out misprinted coupons hat offered no savings as the correctly printed ones.

At 30, John Nash suffered his first episode of paranoid schizophrenia.


- There actually are quite effective medications for manic depression, but a serious problem is getting people to take them.

Kramer, Peter D. “Listening to Prozac: A Psychiatrist Explores Antidepressant Drugs and the Remaking of the Self.” In The Norton Psychology Reader.


- Goal setting is very important to achieving the flow state. Csikszentmihalyi says that open-ended creative pursuits are the exception that proves the rule here.


- In the 1950s, bioengineers had worked out mechanical explanations of stress – describing how chemicals were regulated in the brain in response to stimuli. Then, psychologists were called in to explain circumstances in which stress responses were context-sensitive – like someone facing the same stimulus having a totally different reaction based on whether they can be comforted by their mother.

- A study of Israelis whose sons died in the Tom Kippur war found no increase in mortality except among those who were divorced or widowed.

- Unpredictability makes stressors more stressful: rats with warnings about an electric shock develop fewer ulcers.

- I’m not sure how the claims in this book hold up given recent evidence about how stomach ulcers in humans are not caused by stress.

- The suburban population in England got more ulcers during the blitzkrieg bombings, probably because the bombing was predictable in London but sporadic in the suburbs.

- Control is also a crucial variable with respect to stress. The reason why so many more people are phobic of flying than driving is the lack of control. Rats and pigeons also prefer to press a button to control when their food is dispersed to them rather than have it dispensed freely.

- Another crucial aspect is comparison to previous conditions; a rat will be much more stressed going from 10 shocks / day to 25 than one going from 50 shocks / day to 25.

- Sapolsky observed baboons in Kenya and found that glucocorticoid levels are higher among males whose ranks are dropping, and vice versa.