

PHYLOGENY RECAPITULATES ONTOGENY

“Grampa, can you hear me?” the boy whispers in his grandfather’s ear.

“Grampa can’t talk to us right now, J.J. He knows you’re here though. Do you want to tell him what you did in Kindergarten yesterday? He knows all about monkeys.”

The boy’s eye widen with anticipation as he turns back to tell his grandfather. “We drew monkeys! I used the brown crayon to color them, ‘cept for the face and the hands, I used the peach crayon since it looks like skin. The teacher says we used to be monkeys. Some of the kids thought that’s funny, but I know she wasn’t funny. Daddy showed me a picture of you with a monkey. There were trees and you were in a jungle and then I ‘membered what you said. You said human beans’ are like talking monkeys.” The boy looks back to his father proudly.

“That was nice, J.J. Let me help you down now. Daddy wants to talk to Grampa, okay?” John lowers his son to the floor then asks his wife, “Karen, would you mind taking J.J. for a snack? My sister will be here soon, and I’d like to speak to Dad alone for a bit.”

After the hospital room door closes, John looks back at his father’s sallow face. He searches for some sign of life behind the stoic mask, wondering what lies beneath, if there is anything left of the man who was once his father. John still hasn’t gotten used to these one-sided conversations. Unable to look at his father’s blank stare, he drops his gaze to his lap, where he rubs his hands together uneasily. There is silence. The comatose man conveys nothing to his expectant son - no thought, no judgment – finally, no judgment.

“Hi, Dad.”

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“Dad? Did you hear me?” John asked.

“Huh? No, I’m sorry. What did you say, Johnny,” Jack replied.

“I said you’re not looking so well. Do you feel alright?”

“Yeah, I’m fine but my glasses are giving me trouble again.”

“I thought you just got new glasses last month.”

“I did but these are blurry,” he replied, annoyed. “Ask your mother? She knows my prescription.”

John’s face showed both concern and fatigue, but the latter won out. He left his father to his show. Jack was watching a special on the evolution of primates and hominids that he’d recorded over a decade ago. It was one of the few remnants he’d kept from his old library after having to move in with his son. He focused on the program again after wiping clean his already spotless lenses.

... The remains of Neanderthals have been found as far south as Palestine. This evidence suggests they may have shared cave-dwellings with early Homo sapiens. But so far no DNA has been found from that far back to substantiate whether any interbreeding occurred between the two species...

Jack’s mind wandered as the narrator repeated the same dialogue he’d heard spoken a dozen times before. He tried to stay sharp and current with his science, but his mental edge had dulled. He found some reassurance in re-reading books and watching documentaries he’d already seen, but even those included logical nuances, which escaped him. It was all very frustrating, very humbling. His own published ideas could be presented to him and he’d struggle with the syllogisms. Eventually, he’d recognize the work as his own, a realization that only humiliated him more. Though his theories had been generally accepted, they’d also been very controversial. In the transient moments of clarity that Jack’s mind granted him, he would question if his life’s work had not been a compendium of specious, unfounded conjecture. But once lucidity faded,

only an echo of the question would linger and he would be left to wonder what these words even meant and whose they were.

In his reverie, he'd missed the last few minutes of the narrator's dialogue, so he looked for the remote control to rewind. As he stood to retrieve it, he noticed an odd feeling; his right leg felt queerly absent. As his other leg propelled him forward, the sleeping one failed to do its part in the sequenced task and his momentum carried him forward until his knee collided with the floor and inexorably his head followed with a hollow thud. His mind had already disconnected from his body and the outside world – he felt no pain.

“Dad, are you all right?” John called from the other room.

“Dad?” John ran into the room to find his father whose crumpled body lay still between paroxysmal shudders.

“Karen! Call 911. Quick! Something's the matter with Dad.”

The pre-recorded narrator droned on with disregard for the emergency unraveling in front of the one-way window.

An explosive expansion of modern Homo sapiens from North Africa resulted in a rapid replacement of Homo Neandertalensis and other archaic populations. This was arguably due to some biologically adaptive advantage, as well as cultural adaptations.

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“Dad?” John called. “Dinner's ready.” As John entered the den he saw his father watching a program. “Aren't you recording that?”

“Shh, just a minute. I want to hear this,” Jack reproached.

This was arguably due to some biologically adaptive advantage, as well as cultural adaptations. Less sophisticated social adaptations can be observed in Pan Troglodytes, or

chimpanzees as they are commonly known. This is reflected in their complex social system of changing roles and group composition. A fission-fusion society of as many as 50 individuals can have up to four basic social groupings...

“Oh, for Christ’s sake. You broadcast these ideas so capriciously. This pop-science is unbearable,” the old man vituperated the TV narrator. “There are no grounds for making such a behavioral link between our two species. Even if DNA hybridization *does* show that Pan Troglodytes and Homo Sapiens share enough base pairs to be from the same genus, that lineage bifurcated six million years ago. Even if it were true that ontogeny recapitulates phylogeny, that’s two million years before any bipedal hominids. You can be damn sure the most primitive hominid culture is more complex than any chimp band.”

John ignored his father’s words, having long ago given up on trying to understand his work, “Dad, would you please join us for dinner? We’re only in town for one week out of the year. Can’t you tear yourself away from your work long enough to sit down and have a meal with us.”

Without taking his gaze from the television, Jack replied, “Son, this isn’t work. This is leisure. If this were work, I would have told you to get the *hell* out already.”

John left the room without a word.

John’s mother, Alice had passed three years earlier. With his wife gone, Jack worked with greater fervor than ever. His work was everything now. Early on she harried him about over-working, but she recognized how important it was to him. From Jack’s view they had spent plenty of time together, their marriage had been fulfilling. She seemed to accept his drive and allowed him the freedom to work, conduct field studies, and go to conferences. She listened attentively when he talked about his progress. It was his passion, so she let him pursue it. It was

rough at times. After the birth of their first child John and becoming a mother, Alice had withdrawn from Jack a little. Jack's surmised that parenthood changed women more than men, a hypothesis that he felt his research supported. Maternal instinct and nurturance contributed to the survival of the mammalian species. The extremely long dependence human infants have on their mother is critical in the development of linguistic abilities unique to human evolution. Alice had been there for the kids throughout that period. She had done just fine raising the kids. They both turned out all right. Although his son couldn't have strayed further from his own path. It was probably best that he went into something less intellectual. Besides real estate paid much better than Jack's work ever did. On the other hand, his daughter, Sara, was making quite a name for herself in the sciences doing seminal work in the aviary in Costa Rica's rain forest. He never understood why she had chosen ornithology, but he still looked forward to congratulating her on her recent publication in *Nature*.

"Don't let your food get cold on my account," he called to his son, having already re-engaged the program. He remembered the last time he'd heard these ideas presented by the author at a conference right here in St. Louis.

...the fourth social grouping revolves around a single dominant male; the alpha male. The grouping of females and young remain separate from their alpha, who ascends to dominance by physically beating out challenging males. Challenges come not only from adult, male social-isolates but also from within his own band. Once a male reaches maturity, either he remains subservient to the alpha, limiting his access to females for mating, or he challenges the alpha. Oftentimes, this challenge is not initiated by the younger male, but by the alpha. The alpha's tolerance for other males cheating with the females in his band must be met with swift retribution or his dominance becomes suspect. The responsibility of the alpha to respond to all

challenges to his dominance goes beyond simple retaliation against those males he actually catches copulating with his females. He can also lose advantage if he is unaware of the infidelity. Thus, the percipience of the alpha is as much an advantage as physical prowess...

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Dr. Founder expounded another 25 minutes. Once he'd finished his talk, the crowd applauded. He'd been promulgating these ideas for decades, having added almost nothing new over that time. Founder accepted questions from the audience seeming to ignore Jack's raised hand until it was the only one left. Once acknowledged, Jack stood and introduced himself.

"Jack Stimme, Wash. U."

"Yes, Professor Stimme. We all know who you are."

Undeterred Jack continued, "It's unclear to me how the presence of sophisticated social behavior necessitates that any deeper awareness be present in the individual. We can still explain these complex behaviors without imputing a self-conscious state of mind. The behaviors can be based on the presence of non-verbal cues that the individual is either attuned to or not. A selective advantage still results in differential reproduction whether it is conscious behavior, operant conditioning, or simple instinct."

"What I'm proposing is sophisticated social behavior as the foundation of self-awareness," Dr. Founder countered, "It's pre-verbal behavior that requires second degree awareness. The alpha must first have awareness of his own responsibilities as the dominant male. Secondly, he must have awareness of the responsibilities and intentions of the other members of his band. This cognitive expertise would co-evolve in all members of the socially integrated group because they all must have similar abilities. Deception is used routinely among primates to garner food, avoid punishment, and gain sexual access."

In his 15 years of attending conferences, Jack had seen only a few Q&A's turn hostile. Founder's response was far from satisfying, but he preferred to make his rebuttals through peer-reviewed science journals. The rhetoric in face-to-face debate tended to obfuscate the relevant issues, whereas writing enabled purity of truth and logic without posturing. Jack didn't have a problem with the spectacle of public humiliation, but here he chose to acquiesce. He'd begin his written critique tonight immediately following the talks. He hurried out of the auditorium to use the payphone in the hall to call Alice to cancel their dinner plans. He dropped a dime in the slot and dialed home.

"Hello, dear. I just got out of Founder's talk. He's still pushing his same myopic ideas. His views on consciousness arising in response to social pressures completely ignore the influence of language on its origin."

"Did you bring that up in discussion?" his wife asked with interest. She kept abreast of his work, at least conversationally, if only to keep some form of communication open between them. But scientific communion didn't afford much intimacy. Alice had told Jack early on when he was courting her that it was his quiet, unassuming manner and intellectual curiosity that attracted her to him so much. Years later now Jack had been conditioned to pursue his scholarly endeavors as much for its own sake as to make sure she was never disappointed in him. Some behavior was hard to extinguish.

"Yes, that's why I'm calling. I want to get started on a written rebuttal while his arguments are still fresh in my head. I'll be working pretty late, so you needn't wait up."

"Before you go, I wanted to let you know that Johnny was sent to the principal's office today. He was caught cheating on his test."

“Where did I go wrong with that boy?” Without pause he asked, “How did Sara do on her science test?”

“Quite well. A 92%, I think. But about Johnny, they’d like us to come down to the high school for a parent-teacher meeting. Can you find time to squeeze it in? I think it might be good if we were both there,” she suggested without pressuring.

“I’ll see if I can fit it in. Ask Sara how she missed 8 points? That’s disappointing.”

“Okay. I’ll see you in the morning, sweetheart.”

Though he generally liked to travel to the out-of-town conferences, he didn’t mind the one’s that were local. He could more easily take refuge in his office and reference his own books between symposia as well as avoid all the pretentious hobnobbing at the post-talk wine and cheese gatherings.

Back in his office he perused his bookshelves for references on animal communication, linguistic capabilities, and theories of mind. Finding a recent book on the evolution of consciousness, he thumbed through the table of contents until a section titled *Infantile Amnesia* caught his attention. Theories on early memories had recently been dissociated from the miasma of Freudian psychology by establishing themselves via valid scientific method. Jack had very little recollection of his own childhood before the age of five, but his son seemed to think he remembered quite a bit from then. Of course, much of it was confabulation. At four, Johnny once said he remembered a puppy named Samson who used to lick his face and play with him. Of course, he also said he saw Alice kissing the owner, but both the owner and his dog moved away years earlier when Johnny was barely crawling around in diapers. He was clearly confusing Samson with a similar looking dog from across the street, who got run over before Johnny was three.

Jack opened the book to the section on infant memory.

One's earliest reports of childhood memories generally start sometime after two years. Recent experimental techniques have begun to effectively explore infant memory. The evidence suggests infants do in fact have good long-term memory, but consolidation of these memories as conscious experience is still suspect... Experiments using delayed modeling indicate children as young as 11-months can reproduce a task learned during a training session, then without exposure to this task again, they can perform it successfully at 20-months. The control group of infants who received no training was unable to perform the task at 20-months. So pre-verbal infants younger than a year old do show evidence of long-term memory, but these results are not indicative of any conscious awareness of these prior events... Documented reports supporting this are numerous, e.g. a year-and-a-half old toddler admitted to an emergency room while in hysterics after a dog bite. Six months later after the child began to talk, he had no recollection of the incident or the hospital visit, but was able to recognize a picture of the nurse who treated him (though he didn't know why) and he continued to have a passionate fear of dogs. Other emergency room referrals show that for children between the ages of 20-24 months, only those who were already verbal were found to have conscious memory of the emergency visit 6-months later. These findings suggest language is a precursor to having conscious experiences and forming conscious memories.

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Jack put the book down, removed his glasses and rubbed his eyes. He looked around to readjust his strained eyes. There were only a few people in the library at this hour. He'd been studying for his comprehensive exams for six hours. He'd told Alice he'd be home before ten,

but he realized now he'd need much more time. He went to the lobby phone booth, deposited a nickel in the slot, and dialed.

Ring, ring...

Ring, ring...

No answer.

Alice must have stepped out for one of her late-night strolls or gone to a picture show. He'd been working a lot of late hours now as he neared the end of his second year of graduate school. He'd often climb into bed well after midnight and get up before sunrise to get back to his studies, sometimes not speaking to Alice face-to-face all week. But she knew these few years were going to be rough. He'd quit his job to go back to school. It was a financial strain but soon it was going to get worse; Alice told him only two weeks ago she was pregnant. Sometimes it was unavoidable, but she seemed even more distressed by the news than he was. Their first child would come a few years earlier than they'd hoped.

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Ring, ring...

Ring, ring...

"Hello?"

"Uh, yes, hi, is this the Stabler residence? I'm calling for Ms. Alice Stabler."

"Who may I ask is calling?" the man asked with measured restraint.

"Oh, uh, Jack. Jack Stimme."

"Hold for a moment... Alice, there's a telephone call for you." The voices on the other end became muffled, but Jack could still make out the words. "Please, tell Mr. Stimme that if he wants to call on you he should do so in person."

“Okay, Father.” The line was clear again. “Hello.”

“Hi, uh, is this Alice Stabler?”

“Yes.”

“I’m, uh, sorry to bother you,” he stammered, “but I found your book sitting on the counter at the ice cream parlor. Your name was on a writing assignment folded inside the book.”

“I was wondering where that was. I thought I’d lost it. I have to turn that paper in on Friday.”

“It seems very fascinating.”

“Oh dear, you didn’t read it. It’s horrible.”

“Really? I found it very interesting. I know Darwin’s theory of evolution, but I only ever read a little bit of it for biology class in grade school. This book on The Expression of the Emotions in Man and Animals,” he read the title verbatim, “really puts human behavior in an intriguing light.”

“So, you didn’t find my paper fascinating?” Alice teased.

“Oh, I didn’t read it. I didn’t want to pry. I guess I shouldn’t have taken the liberty of going through your book. I just don’t get to read anything like it in my accounting classes.”

“You’re studying to be an accountant?”

“Yes, I’m in my first year of college. My father insisted on accounting. Something that would guarantee I can pay him back for 18 years of freeloading, as he refers to my childhood.”

Jack could hear Alice’s father in the background telling her she’d spent enough time on the phone.

“I’m sorry, Jack, I have to go. Will you be at the soda parlor tomorrow? I need my assignment back. You’re welcome to borrow the book for a while longer.”

“Oh, uh, sure, I’ll be there. I’ll keep my eye out for you. I know which one you are, I mean, I think I remember which one you are.”

“Then I’ll see you tomorrow. Thank you for going through all this trouble. It’s very kind of you.”

As she hung up, Jack wiped perspiration from his brow.

Back in his dormitory room, he seemed to notice how empty his room felt for the first time. He had no roommate, so its emptiness was exaggerated by a room he was unable to fill with his poverty of possessions. He had only his required textbooks on the shelf over his desk. His small writing lamp was alone on his desk. His clothes only filled half of his closet and dresser space, and a box full of sci-fi and pulp-fiction were in the foot of his closet next to an empty space where he stowed his shoes at night.

As he crossed the room to his desk, his footsteps echoed on the hardwood floor. He sat down in his rigid, wooden chair to begin his accounting homework, but after reading the first paragraph three times, he realized he was distracted. It was different from the distractions of his youth, when he would read for hours in his bedroom taken away by adventures to past times and alien places. This was not a flight of fancy. Every few minutes his mind wandered from his problem sets, paused briefly on thoughts of Alice, then his eyes would wander over to her book lying on his desk. He reached over and picked up where he’d left off earlier.

The sexes of many animals incessantly call for each other during the breeding-season; and in not a few cases, the male endeavors thus to charm or excite the female. This, indeed, seems to have been the primeval use and means of development of the voice, as I have attempted to show in my ‘Descent of Man.’ Thus the use of the vocal organs will have become associated with the strongest pleasure which animals are capable of feeling. Animals which live in society

often call to each other when separated, and evidently feel much joy at meeting...Rage leads to violent exertion of all the muscles, including those of the voice; and some animals, when enraged, endeavor to strike terror into their enemies by its power and harshness...Rival males try to excel and challenge each other by their voices, and this leads to deadly contests...

...

Jack looked up from the corner of his bedroom where he huddled as he read, sitting on a pillow with two walls hugging him. It was better than reading in bed where he always seemed to fall asleep. His mind was distracted and the reading assignment from some dead scientist named Darwin made no sense to him. He was bored with biology homework and wanted to get back to his magazine *Astounding Science Fiction*. Another story by his favorite author was in it. Even the title was good – “Common Sense”. He got up from the floor and walked over to look under his bed where he kept all his books and magazines. As he passed his bedroom window, he saw some boys playing stickball in the street. One was arguing with another over who should get the last player. He was glad he wasn’t down there. They’d probably be arguing about him, if he were. Finally, one boy shoved the other and a fight ensued. Jack didn’t watch. He still remembered being beaten up many times in elementary school not so many years ago.

“Jackie, are you up there?” his mother called for him.

Jack went to his bedroom door and opened it to reply, “Yes, ma’am.”

“What are you doing? It’s beautiful outside. Why don’t you go play?”

“I have homework to do, Mother.”

“You should do it later? Go out and play with the other boys.”

“I’m behind in biology. I have extra homework and have to catch-up.”

“Okay, dear. Dinner will be ready in a few hours. Your father won’t make it. He has to work an extra shift.”

Good. That meant he could stay up and read without getting in trouble. He lay down in bed with his magazine and flipped to his bookmark. Robert Heinlein would no doubt have something interesting to say about bullies. He read a few paragraphs but dozed off in mid-sentence.

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Jackie was woken by the loud voice of his father.

“What do you mean, you don’t have any dinner prepared? I slave all day at the factory and you can’t have a warm meal ready for me when I get home? How much time does it take to tend to a five-year old mute? He’s not a cripple. He’s just dumb and the doctors say there’s no reason for it. If the boy would simply open his mouth and say what’s the matter with him, someone could fix him, and we could all get back to a normal life. But the boy won’t talk, won’t leave his bedroom, won’t play with other kids. No wonder he’s sick.”

“Bill, please, keep your voice down. He’ll hear you. What will he think?”

“Who knows what the boy is thinking, if anything. He can’t talk, Joyce.”

Jackie listened from his bed. He hoped his father wouldn’t get too mad. He didn’t want to make his father mad at him. He really didn’t want him to be mad at his mother anymore. He clinched his eyes closed and hoped that it would stop. He could feel the lump in his throat. It was hard to swallow and he held back the urge to cry. His father roared louder, and Jackie stifled his whimpers, as he listened to the panic in his mother’s pleas.

“No, Bill! Don’t go up there.”

Whack. Thud.

“Bill, stop! Please!” she wailed.

...

“Please, Bill.” The tears formed in her eyes. “Look at him. He’s perfect. He’ll be fine. I just know it,” she implored.

The baby gazed at her face with an empty stare.

“You heard what the doctor said, Joyce. He may be brain damaged from when you fell down the stairs.” She looked at him to see if there was any recollection in his eyes. How much did he remember during his fits of rage?

“It’s hard enough raising a kid, but add to it that he’s mentally retarded. If the doctor can’t be certain, then we need to consider other options, like an institution or adoption.”

The doctor entered soberly. “Mr. and Mrs. Stimme, I’ve just conferred with a pediatrician. Unfortunately, there’s no way of telling what the extent of the damage may be to his motor or cognitive skills until those abilities begin to develop. But in cases of generalized brain damage in an infant, the brain can sometimes compensate during development so that deficiencies are minimized.”

“So what does that mean? When will know if he’ll be normal?” the father asked annoyed by the doctor’s jargon.

“The first indicator will be when he starts to move and crawl around. But the best sign that everything is functioning fine is when he starts to talk. We can conduct a battery of cognitive tests on him then to see if he’s developing normally.”

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“Thank you, doctor.” Sara replies earnestly.

“So what do you think? What did all that mean?” John asks his sister.

“Well, the last stroke was the biggest, but he’d already suffered a number of prior mini-strokes. There was extensive damage to the left side of his brain, so he’ll likely never speak again. His motor areas were also severely damaged, so PT may not help.”

“So he’s basically a vegetable. He’ll just lay there forever. Saying nothing, with an empty stare and an empty head.”

Sara’s attention drifts as her brother responds.

“So what should we do?” he asks her.

She seems to not hear him.

“Sara?”

After a long silence, she speaks transfixed on her father, “I studied cuckoos in Kenya years ago. I saw one lay an egg in the nest of a Marico sunbird. Cuckoos are brood parasites, so they lay their eggs in others’ nests and let their children be raised by surrogates. The sunbirds simply accepted the extra egg as if it were their own. While the female stayed behind to incubate the eggs, the male foraged for food. Whenever he would fly off he’d sing a slow melancholy song as if saying farewell. Birdsong is like a language, mostly only used by males to impress the opposite sex. He’d sing an upbeat, almost cheerful song, upon returning to the nest, and the mostly silent female would enthusiastically greet by him fluttering her wings.” She pauses for a moment as if lost in thought, never looking away from her father.

“That’s interesting, Sara. Anything to add that might be relevant to Dad?” her brother asks impatiently.

She continues as though she hasn’t heard him. “Once the eggs started to hatch, both parents often had to leave the nest to gather enough food for all the nestlings. They didn’t know cuckoo’s are siblicidal though. When left alone, it pushed the rest of eggs out of the nest and

killed off the one's that had already hatched. This removed the competition so the survivor got all the care and resources from the host parents. I watched the parents return to find all their brood dead except for the cuckoo who sat there with mouth wide-open, screaming for food. As the mother sat silently looking over her dead offspring, the father began to sing that same sad valediction that he usually only sang when he was departing. It sounded even more despondent than before. He must have sung for over an hour, but I lost track of time. The song seemed filled with so much pain.”

John looks at his sister who seems hypnotized as she stares at their father. Her desultory response only reminds him why he has never been close to her.

“What I couldn't help wondering as I watched was what must the mother be thinking,” she adds.

Her father seems as unaware of her as she is of her brother. Finally John asks, “Sara, I don't know what cuckolds have to do with Dad, but we need to decide whether to leave him on life-support.”

“No, we don't,” she replies wearily. “It's still his decision.”

THE END