

The Anosognosic's Dilemma: Something's Wrong But You'll Never Know What It Is

by Errol Morris

Part One: The Juice

Existence is elsewhere.

– *André Breton, "The Surrealist Manifesto"*

David Dunning, a Cornell professor of social psychology, was perusing the 1996 World Almanac. In a section called Offbeat News Stories he found a tantalizingly brief account of a series of bank robberies committed in Pittsburgh the previous year. From there, it was an easy matter to track the case to the Pittsburgh Post-Gazette, specifically to an article by Michael A. Fuoco:

Arrest in Bank Robbery, Suspect's TV Picture Spurs Tips

At 5 feet 6 inches and about 270 pounds, bank robbery suspect McArthur Wheeler isn't the type of person who fades into the woodwork. So it was no surprise that he was recognized by informants, who tipped detectives to his whereabouts after his picture was telecast Wednesday night during the Pittsburgh Crime Stoppers Inc. segment of the 11 o'clock news.

At 12:10 a.m. yesterday, less than an hour after the broadcast, he was arrested at 202 S. Fairmont St., Lincoln-Lemington. Wheeler, 45, of Versailles Street, McKeesport, was wanted in [connection with] bank robberies on Jan. 6 at the Fidelity Savings Bank in Brighton Heights and at the Mellon Bank in Swissvale. In both robberies, police said, Wheeler was accompanied by Clifton Earl Johnson, 43, who was arrested Jan. 12.¹

Wheeler had walked into two Pittsburgh banks and attempted to rob them in broad daylight. What made the case peculiar is that he made no visible attempt at disguise. The surveillance tapes were key to his arrest. There he is with a gun, standing in front of a teller demanding money. Yet, when arrested, Wheeler was completely disbelieving. "But I wore the juice," he said. Apparently, he was under the deeply misguided impression that rubbing one's face with lemon juice rendered it invisible to video cameras.

In a follow-up article, Fuoco spoke to several Pittsburgh police detectives who had been involved in Wheeler's arrest. Commander Ronald Freeman assured Fuoco that Wheeler had not gone into "this thing" blindly but had performed a variety of tests prior to the robbery. Sergeant Wally Long provided additional details – "although Wheeler reported the lemon juice was burning his face and his eyes, and he was having trouble (seeing) and had to squint, he had tested the theory, and it seemed to work." He had snapped a Polaroid picture of himself and wasn't anywhere to be found in the image. It was like a version of *Where's Waldo?* with no Waldo. Long tried to come up with an explanation of why there was no image on the Polaroid. He came up with three possibilities:

- a) the film was bad;
- b) Wheeler hadn't adjusted the camera correctly; or
- c) Wheeler had pointed the camera away from his face at the critical moment when he snapped the photo.²

¹ Michael A. Fuoco, "Arrest in Bank Robbery, Suspect's Picture Spurs Tips," Pittsburgh Post-Gazette, April 21, 1995.

² Michael A. Fuoco, "Trial and Error: They Had Larceny In Their Hearts, But Little In Their Heads," Pittsburgh Post-Gazette, March 21, 1996. The article also includes several other impossibly stupid crimes, e.g., the criminal-to-be who filled out an employment

As Dunning read through the article, a thought washed over him, an epiphany. If Wheeler was too stupid to be a bank robber, perhaps he was also too stupid to know that he was too stupid to be a bank robber – that is, his stupidity protected him from an awareness of his own stupidity.

Dunning wondered whether it was possible to measure one's self-assessed level of competence against something a little more objective – say, actual competence. Within weeks, he and his graduate student, Justin Kruger, had organized a program of research. Their paper, “Unskilled and Unaware of It: How Difficulties of Recognizing One's Own Incompetence Lead to Inflated Self-assessments,” was published in 1999.³

Dunning and Kruger argued in their paper, “When people are incompetent in the strategies they adopt to achieve success and satisfaction, they suffer a dual burden: Not only do they reach erroneous conclusions and make unfortunate choices, but their incompetence robs them of the ability to realize it. Instead, like Mr. Wheeler, they are left with the erroneous impression they are doing just fine.”

It became known as the Dunning-Kruger Effect – our incompetence masks our ability to recognize our incompetence. But just how prevalent is this effect? In search of more details, I called David Dunning at his offices at Cornell:

DAVID DUNNING: Well, my specialty is decision-making. How well do people make the decisions they have to make in life? And I became very interested in judgments about the self, simply because, well, people tend to say things, whether it be in everyday life or in the lab, that just couldn't possibly be true. And I became fascinated with that. Not just that people said these positive things about themselves, but they really, really believed them. Which led to my observation: if you're incompetent, you can't know you're incompetent.

ERROL MORRIS: Why not?

DAVID DUNNING: If you knew it, you'd say, “Wait a minute. The decision I just made does not make much sense. I had better go and get some independent advice.” But when you're incompetent, the skills you need to produce a right answer are exactly the skills you need to recognize what a right answer is. In logical reasoning, in parenting, in management, problem solving, the skills you use to produce the right answer are exactly the same skills you use to evaluate the answer. And so we went on to see if this could possibly be true in many other areas. And to our astonishment, it was very, very true.

ERROL MORRIS: Many other areas?

DAVID DUNNING: If you look at our 1999 article, we measured skills where we had the right answers. Grammar, logic. And our test-subjects were all college students doing college student-type things. Presumably, they also should know whether or not they're getting the right answers. And yet, we had these students who were doing badly in grammar, who didn't know they were doing badly in grammar. We believed that they should know they were doing badly, and when they didn't, that really surprised us.

ERROL MORRIS: The students that were unaware they were doing badly – in what sense? Were they truly oblivious? Were they self-deceived? Were they in denial? How would you describe it?

application at a fast-food restaurant providing his correct name, address and social security number. A couple of minutes later he decided to rob the place.

³ Justin Kruger and David Dunning, “Unskilled and Unaware of It: How Difficulties of Recognizing One's Own Incompetence Lead to Inflated Self-Assessments,” *Journal of Personality and Social Psychology*, 1999, vol. 77, no. 6, pp. 1121-1134.

DAVID DUNNING: There have been many psychological studies that tell us what we see and what we hear is shaped by our preferences, our wishes, our fears, our desires and so forth. We literally see the world the way we want to see it. But the Dunning-Kruger effect suggests that there is a problem beyond that. Even if you are just the most honest, impartial person that you could be, you would still have a problem – namely, when your knowledge or expertise is imperfect, you really don't know it. Left to your own devices, you just don't know it. We're not very good at knowing what we don't know.

ERROL MORRIS: Knowing what you don't know? Is this supposedly the hallmark of an intelligent person?

DAVID DUNNING: That's absolutely right. It's knowing that there are things you don't know that you don't know.⁴ Donald Rumsfeld gave this speech about "unknown unknowns." It goes something like this: "There are things we know we know about terrorism. There are things we know we don't know. And there are things that are unknown unknowns. We don't know that we don't know." He got a lot of grief for that. And I thought, "That's the smartest and most modest thing I've heard in a year."

Rumsfeld's famous "unknown unknowns" quote occurred in a Q&A session at the end of a NATO press conference.⁵ A reporter asked him, "Regarding terrorism and weapons of mass destruction, you said something to the effect that the real situation is worse than the facts show..." Rumsfeld replied, "Sure. All of us in this business read intelligence information. And we read it daily and we think about it, and it becomes in our minds essentially what exists. And that's wrong. It is not what exists." But what is Rumsfeld saying here? That he can be wrong? That "intelligence information" is not complete? That it has to be viewed critically? Who would argue? Rumsfeld's "known unknowns" and "unknown unknowns" seem even less auspicious. Of course, there are known unknowns. I don't know the melting point of beryllium. And I know that I don't know it. There are a zillion things I don't know. And I know that I don't know them. But what about the unknown unknowns? Are they like a scotoma, a blind spot in our field of vision that we are unaware of? I kept wondering if Rumsfeld's real problem was with the unknown unknowns; or was it instead some variant of self-deception, thinking that you know something that you don't know. A problem of hubris, not epistemology.⁶

And yet there was something in Rumsfeld's unknown unknowns that had captured Dunning's imagination. I wanted to know more, and so I e-mailed him: why are you so obsessed with Rumsfeld's "unknown unknowns?" Here is his answer:

The notion of unknown unknowns really does resonate with me, and perhaps the idea would resonate with other people if they knew that it originally came from the world of design and engineering rather than Rumsfeld.

If I were given carte blanche to write about any topic I could, it would be about how much our ignorance, in general, shapes our lives in ways we do not know about. Put simply, people tend to do what they know and fail to do that which they have no conception of. In that way, ignorance profoundly channels the course we take in life. And unknown unknowns constitute a grand swath of everybody's field of ignorance.

To me, unknown unknowns enter at two different levels. The first is at the level of risk and problem. Many tasks in life contain uncertainties that are known – so-called

⁴ David Dunning may be channeling Socrates. "The only true wisdom is to know that you know nothing." That's too bad; Socrates gives me a headache.

⁵ NATO HQ, Brussels, Press Conference by U.S. Secretary of Defense Donald Rumsfeld, June 6, 2002. The exact quote: "There are known unknowns. That is to say, there are things we now know we don't know. But there are also unknown unknowns. These are the things we do not know we don't know."

⁶ Okay, I looked it up on Wikipedia. The melting point of beryllium, the fourth element, is 1278°C.

“known unknowns.” These are potential problems for any venture, but they at least are problems that people can be vigilant about, prepare for, take insurance on, and often head off at the pass. Unknown unknown risks, on the other hand, are problems that people do not know they are vulnerable to.

Unknown unknowns also exist at the level of solutions. People often come up with answers to problems that are okay, but are not the best solutions. The reason they don't come up with those solutions is that they are simply not aware of them. Stefan Fatsis, in his book *Word Freak*, talks about this when comparing everyday Scrabble players to professional ones. As he says: “In a way, the living-room player is lucky...He has no idea how miserably he fails with almost every turn, how many possible words or optimal plays slip by unnoticed. The idea of Scrabble greatness doesn't exist for him.” (Fatsis 128)

Unknown unknown solutions haunt the mediocre without their knowledge. The average detective does not realize the clues he or she neglects. The mediocre doctor is not aware of the diagnostic possibilities or treatments never considered. The run-of-the-mill lawyer fails to recognize the winning legal argument that is out there. People fail to reach their potential as professionals, lovers, parents and people simply because they are not aware of the possible. This is one of the reasons I often urge my student advisees to find out who the smart professors are, and to get themselves in front of those professors so they can see what smart looks like.

So, yes, the idea resonates. I would write more, and there's probably a lot more to write about, but I haven't a clue what that all is.

I can readily admit that the “everyday Scrabble player” has no idea how incompetent he is, but I don't think that Scrabble provides an example of the unknown unknowns. An unknown unknown is not something like the word “ctenoid,” a difficult word by most accounts, or any other obscure, difficult word.⁷⁸ Surely, the everyday Scrabble player knows that there are words he doesn't know. Rumsfeld could have known about the gaps in his intelligence information. How are his unknown unknowns different from plain-old-vanilla unknowns? The fact that we don't know something, or don't bother to ask questions in an attempt to understand things better...does that constitute anything more than laziness on our part? A symptom of an underlying complacency rather than a confrontation with an unfathomable mystery?

I found myself still puzzled by the unknown unknowns. Finally, I came up with an explanation. Using the expressions “known unknowns” and “unknown unknowns” is just a fancy – even pretentious – way of talking about questions and answers. A “known unknown” is a known question with an unknown answer. I can ask the question: what is the melting point of beryllium? I may not know the answer, but I can look it up. I can do some research. It may even be a question which no one knows the answer to. With an “unknown unknown,” I don't even know what questions to ask, let alone how to answer those questions.

But there is the deeper question. And I believe that Dunning and Kruger's work speaks to this. Is an “unknown unknown” beyond anything I can imagine? Or am I confusing the “unknown unknowns” with the “unknowable unknowns?” Are we constituted in such a way that there are things we cannot know? Perhaps because we cannot even frame the questions we need to ask?

⁷ “Ctenoid” comes from one of my favorite books, “Jarrod's Dictionary of Difficult Words.” I challenged a member of the Mega Society [a society whose members have ultra-high I.Q.s], who claimed he could spell anything, to spell “ctenoid.” He failed. It's that silent “c” that gets them every time. “Ctenoid” means “having an edge with projections like the teeth of a comb.” It could refer to rooster combs or the scales of certain fish.

⁸ For the inner logoleptic in all of us, allow me to recommend the Web site: <http://www.kokogiak.com/logolepsy/> One of the site's recommended words is “epicaricacy.” I read somewhere that the German word “schadenfreude” has no equivalent in English. I am now greatly relieved.

DAVID DUNNING: People will often make the case, “We can’t be that stupid, or we would have been evolutionarily wiped out as a species a long time ago.” I don’t agree. I find myself saying, “Well, no. Gee, all you need to do is be far enough along to be able to get three square meals or to solve the calorie problem long enough so that you can reproduce. And then, that’s it. You don’t need a lot of smarts. You don’t have to do tensor calculus. You don’t have to do quantum physics to be able to survive to the point where you can reproduce.” One could argue that evolution suggests we’re not idiots, but I would say, “Well, no. Evolution just makes sure we’re not blithering idiots. But, we could be idiots in a lot of different ways and still make it through the day.”

ERROL MORRIS: Years ago, I made a short film (“I Dismember Mama”) about cryonics, the freezing of people for future resuscitation.⁹

DAVID DUNNING: Oh, wow.

ERROL MORRIS: And I have an interview with the president of the Alcor Life Extension Foundation, a cryonics organization, on the 6 o’clock news in Riverside, California. One of the executives of the company had frozen his mother’s head for future resuscitation. (It’s called a “neuro,” as opposed to a “full-body” freezing.) The prosecutor claimed that they may not have waited for her to die. In answer to a reporter’s question, the president of the Alcor Life Extension Foundation said, “You know, we’re not stupid...” And then corrected himself almost immediately, “We’re not that stupid that we would do something like that.”

DAVID DUNNING: That’s pretty good.

ERROL MORRIS: “Yes. We’re stupid, but we’re not that stupid.”

DAVID DUNNING: And in some sense we apply that to the human race. There’s some comfort in that. We may be stupid, but we’re not that stupid.

ERROL MORRIS: Something I have wondered about: Is there a socio-biological account of what forces in evolution selected for stupidity and why?

DAVID DUNNING: Well, there’s no way we could be evolutionarily prepared for doing physics and doing our taxes at the end of the year. These are rather new in our evolutionary history. But solving social problems, getting along with other people, is something intrinsic to our survival as a species. You’d think we would know where our inabilities lie. But if we believe our data, we’re not necessarily very good at knowing what we’re lousy at with other people.

ERROL MORRIS: Yes. Maybe it’s an effective strategy for dealing with life. Not dealing with it.

David Dunning, in his book “Self-Insight,” calls the Dunning-Kruger Effect “the anosognosia of everyday life.”¹⁰ When I first heard the word “anosognosia,” I had to look it up. Here’s Wikipedia’s definition: *Anosognosia is a condition in which a person who suffers from a disability seems unaware of or denies the existence of his or her disability.* Dunning’s juxtaposition of anosognosia with everyday life is a surprising and suggestive turn of phrase. After all, anosognosia comes originally from the world of neurology and is the name of a specific neurological disorder.

⁹ Errol Morris, “First Person: I Dismember Mama.”

¹⁰ Dunning, David, “Self-Insight: Roadblocks and Detours on the Path to Knowing Thyself (Essays in Social Psychology),” Psychology Press: 2005, p. 14-15.

DAVID DUNNING: An anosognosic patient who is paralyzed simply does not know that he is paralyzed. If you put a pencil in front of them and ask them to pick up the pencil in front of their left hand they won't do it. And you ask them why, and they'll say, "Well, I'm tired," or "I don't need a pencil." They literally aren't alerted to their own paralysis. There is some monitoring system on the right side of the brain that has been damaged, as well as the damage that's related to the paralysis on the left side. There is also something similar called "hemispatial neglect." It has to do with a kind of brain damage where people literally cannot see or they can't pay attention to one side of their environment. If they're men, they literally only shave one half of their face. And they're not aware about the other half. If you put food in front of them, they'll eat half of what's on the plate and then complain that there's too little food. You could think of the Dunning-Kruger Effect as a psychological version of this physiological problem. If you have, for lack of a better term, damage to your expertise or imperfection in your knowledge or skill, you're left literally not knowing that you have that damage. It was an analogy for us.¹¹

This brings us in this next section to Joseph Babinski (1857-1932), the neurologist who gave anosognosia its name.

Part Two: The Illness of Doubt: Everyone Poisons Himself in His Own Way

June 11th, 1914. In a brief communication presented to the Neurological Society of Paris, Joseph Babinski (1857-1932), a prominent French-Polish neurologist, former student of Charcot and contemporary of Freud, described two patients with "left severe hemiplegia" – a complete paralysis of the left side of the body – left side of the face, left side of the trunk, left leg, left foot. Plus, an extraordinary detail. These patients didn't know they were paralyzed. To describe their condition, Babinski coined the term *anosognosia* – taken from the Greek *agnosia*, lack of knowledge, and *nosos*, disease.¹²

I want to draw attention to a mental disorder that I had the opportunity to observe in cerebral hemiplegia, which consists in the fact that patients seem unaware of or ignore the existence of their paralysis...

One such patient...hit by left hemiplegia has largely maintained her intellectual and affective faculties, for many months. She remembered past events well, was willing to talk, expressed herself correctly, her ideas were sensible; she was interested in persons known to her and asked about new people...No hallucinations, delirium, confusional state, confabulation. What did contrast with the apparent preservation of intelligence of this patient was that she seemed to ignore the existence of a nearly complete hemiplegia, which she had been afraid of for many years. Never did she complain about it; never did she even allude to it. If she was asked to move her right arm, she immediately executed the command. If she was asked to move the left one, she stayed still, silent, and behaved as if the question had been put to somebody else.

¹¹ A purist would no doubt complain that anosognosia has been taken out of context, that it has been removed from the world of neurology and placed in an inappropriate and anachronistic social science setting. But something does remain in translation, the idea of an invisible deficit, the infirmity that cannot be known nor perceived. I can even imagine a cognitive and psychological version of anosodiaphoria: the idea of an infirmity that people neglect, that they do not pay any attention to.

¹² "Contribution a l' étude des troubles mentaux dans l'hémiplégie organique cérébrale (anosognosie)" ["Contribution to the study of mental disorders in organic cerebral hemiplegia (anosognosia)"], *Revue Neurologique (Paris)* 1914 (XXXVII): 845-848, quoted in Chris Code, Claus-W. Wallesch, Yves Joanette, and Andre Roch Lecours (editors), *Classic Cases in Neuropsychology II (Brain Damage, Behaviour, and Cognition)*, 2001: 177.

There were many unanswered questions in Babinski's original paper. Did the anosognosic patient have absolutely no knowledge or some limited knowledge of her left-side paralysis? Was there a blocked pathway in the brain? Was the anosognosia an organic (or somatic) disease? Or a derangement of thought? Was she in some sort of trance? Babinski also noted that many of his anosognosic patients developed odd rationalizations. When he asked them to move their left (paralyzed) arms, they would decline to do so, offering a myriad of implausible excuses. (Furthermore, not all of his patients with left-side paralysis were clueless about their condition. Some patients had knowledge of their paralysis but were oddly indifferent to it. For these patients, Babinski coined the term anosodiaphoria, or indifference to paralysis¹³.) Babinski was focused on one central question.

Do we have to admit...that anosognosia is real? I am not able to state this, and it has been impossible for me to interrogate the patients in a sufficient way to be sure about this point...¹⁴

Is it real? What is Babinski asking? Is it organic, a pathology of the brain? Is it psychological? Moreover, is it feigned?¹⁵ We have been abandoned in a hall of mirrors. The disease that calls into question our connection to reality may itself be an illusion.

The contemplation of anosognosia leads to many questions about how the brain puts together a picture of reality and a conception of "the self." It also suggests that our conception of reality is malleable; that it is possible to not-know something that should be eminently knowable.¹⁶ It may also suggest that it is possible to know and not-know something at the same time. But additionally, it puts the question of how we "know" things at the heart of a neurological diagnosis, and raises questions about how we separate the physical from the mental...

In "The Surrealist Manifesto," André Breton writes:

If in a cluster of grapes there are no two alike, why do you want me to describe this grape by the other, by all the others...? Our brains are dulled by the incurable mania of wanting to make the unknown known, classifiable...It is pointless to add that experience itself has found itself increasingly circumscribed. It paces back and forth in a cage from which it is more and more difficult to make it emerge...Forbidden is any kind of search for truth that is not in conformance with accepted practices...

Both Babinski and the Surrealists shared a common concern — an obsession with consciousness, the nature of the ineffable and "the incurable mania" of trying to classify the unknown. But in 1932, the last year of his life, Babinski wrote an intriguing letter to his friend, the Portuguese physician Egas Moniz. The letter is riddled with doubt — not just about interpreting experience, but also about the value of knowledge itself.

¹³ Babinski coined many other terms, from cerebellar catalepsy and volitional equilibrations, to hypermetry, thermal asymmetry, spondylotic pseudo-tabes, and physiopathic disorders. A cornucopia of neurological neologisms. Borges has his own parable about nomenclature and taxonomy in his story *The Analytical Language of John Wilkins*, in which he remarks "... it is clear that there is no classification of the Universe not being arbitrary and full of conjectures. The reason for this is very simple: we do not know what thing the universe is."

¹⁴ Quoted in Code et al, 178.

¹⁵ Babinski was very much concerned with this possibility. He writes, "...it is known that many patients, by coquetry, pride and vanity try to conceal the afflictions they are suffering, but in this case, the concealment would be utterly futile, since the existence of the blockade could not escape anyone's attention." Babinski, J., "Contribution to the Study of Mental Disorders in Cerebral Organic Hemiplegia," in the Proceedings of the Neurological Society of Paris meeting of June 11, 1914.

¹⁶ The question of whether anosognosics don't know they're paralyzed, cannot know it, or know it in some sense but can't admit to it is part of ongoing research on the nature of anosognosia. V. S. Ramachandran in "Phantoms in the Brain" has used his various mirror-boxes, ice-water inner-ear irrigations, etc. to tease out these distinctions. I have discussed some of these issues with Ramachandran in Part 4.

In the present circumstances, in the middle of so many tragic events, one may also wonder if science deserves to be the object of a cult. The most admirable creations of the human mind, contrary to all expectations, have had as their main effect destruction and massacre; with a bit of pessimism, one may curse advances in knowledge and fear that someday some discovery might have as a consequence the destruction of mankind...¹⁷

The letter ends on a somewhat more positive note but that need not concern us here.

Part Four: Belief is Not a Monolithic Thing

V.S. Ramachandran has written about anosognosia in a number of journal articles and in his extraordinary book with Sandra Blakeslee, “Phantoms in the Brain.” Ramachandran rarely settles for the status quo. If there is something unexplained, he pursues it, trying to provide an answer, if not the answer. He has made a number of spectacular discoveries, most famous among them his innovative use of mirror-boxes to treat phantom limb syndrome. Rather than devise complex experiments, he prefers simple intuitive questions and answers. His work on anosognosia is a perfect example.

Ramachandran was taken in by a question that haunts Babinski’s original work on anosognosia – the question of whether the anosognosic knows (on some level) about the paralysis. What is going on in an anosognosic brain? (Babinski’s original question: Is it real?) Almost any deficit can be explained as volitional. How do you know that an anosognosic patient is really in denial, or oblivious, or indifferent to his/her paralysis? How do you know that the patient is not feigning illness? This was a critical question during World War I, when neurologists had to deal with a flood of injured soldiers and had to discriminate between the truly damaged and those just malingering.

ERROL MORRIS: As I understand it, from the earliest descriptions of anosognosia, there were two things that people had fixed in their heads: one was, of course, the organic illness, the hemiplegia, the other was the lack of awareness.

V.S. RAMACHANDRAN: Hemiplegia itself is not a part of anosognosia, as you know, but the lack of awareness – the whole spectrum ranging from active denial to just indifference or just playing it down, all of those are called “anosognosia.” I’ve written about that quite extensively in my book *Phantoms in the Brain*.

ERROL MORRIS: In that book, you suggest that anosognosia is not an underlying neurological condition; it’s about our lack of knowledge of something caused by an underlying neurological condition. About our not-knowing things that we should know – not knowing that we are not making any sense, not knowing that we are paralyzed, not knowing we are missing limbs.

V.S. RAMACHANDRAN: Well, you can have anosognosia for Wernicke’s aphasia [a neurological disorder that prevents comprehension or production of speech] or you can have it for amnesia. Patients that are amnesic don’t know they are amnesic. So, it has a much wider, broader usage. Although it was originally discovered in the context of hemiplegia by Babinski and is most frequently used in that context, the word has a broader meaning. Wernicke’s aphasiacs are completely lacking in language comprehension and seem oblivious to it because [although] they smile, or they nod to whatever you say, they don’t understand a word of what you’re saying. They have anosognosia for their lack of

¹⁷ Egas Moniz, “Dr. Joseph Babinski,” *Lisboa Medica* 1932, as quoted in Jacques Philippon and Jacques Poirier, *Joseph Babinski: A Biography*, Oxford University Press, 2008. Egas Moniz won the Nobel Prize in 1942 for the development of the prefrontal lobotomy and later died from injuries inflicted by a mental patient he had operated on.

comprehension of language. It's really spooky to see them. Here's somebody producing gibberish, and they don't know they're producing gibberish.

ERROL MORRIS: But Babinski only used it in the context of hemiplegia.

V.S. RAMACHANDRAN: That is correct.

ERROL MORRIS: So when did that change?

V.S. RAMACHANDRAN: Offhand, I can't tell you when they started using the term "anosognosia" for other types of denial. I'll tell you one thing that may be of interest to you. I saw a lady, not long ago, in India, and she had complete paralysis on her left side, a very intelligent woman, but had both anosognosia and somatopara-phrenia – you know what that is, right?

ERROL MORRIS: Not really.

V.S. RAMACHANDRAN: Denial that a body part, in this instance, an arm, belongs to her. It's part of the same spectrum of disorders. So the wonderful thing about her is that she has a great sense of humor and was really articulate and intelligent. So I asked her, "Can you move your right arm?" and the usual list of questions, and she said "Yes, of course." I said, "Can you move your left arm?" She said, "Yes." "Can you touch my nose?" "Yes, I can touch your nose, sir." "Can you see it?" "Yes, it's almost there." The usual thing, okay? So far, nothing new. Her left arm is lying limp in her lap; it's not moving at all; it's on her lap, on her left side, okay? I left the room, waited for a few minutes, then I went back to the room and said, "Can you use your right arm?" She said, "Yes." Then I grabbed her left arm and raised it towards her nose and I said, "Whose arm is this?" She said, "That's my mother's arm." Again, typical, right? And I said, "Well, if that's your mother's arm, where's your mother?" And she looks around, completely perplexed, and she said, "Well, she's hiding under the table." So this sort of confabulatory thing is very common, but it's just a very striking manifestation of it. No normal person would dream of making up a story like that. But here is the best part. I said, "Please touch your nose with your left hand." She immediately takes her right hand, goes and reaches for the left hand, raising it, passively raising it, right? Using it as a tool to touch my nose or touch her nose. What does this imply? She claims her left arm is not paralyzed, right? Why does she spontaneously reach for it and grab her left arm with her right hand and take her left hand to her nose? That means she knows it is paralyzed at some level. Is that clear?¹⁸

ERROL MORRIS: Yes. Presumably, if she didn't know it was paralyzed, she wouldn't try to lift it with her right hand.

V.S. RAMACHANDRAN: And it gets even better, she's just now told me that it's not her left arm, it is her mother's arm, so why is she pulling up her mother's arm and pointing it at my nose? What we call belief is not a monolithic thing; it has many layers.

ERROL MORRIS: Like a deck of cards. But it again raises the question of whether this phenomenon is real? Isn't that Babinski's question? This is true of your work on anosognosia – the idea of trying to devise a set of experiments to determine whether someone is pretending to not-know something. Are they feigning a lack of awareness? Are

¹⁸ Oliver Sacks provides (also from "A Leg to Stand On") a particularly dramatic example of a patient trying to throw his arm out of bed. ". . . the patient at Mount Carmel who 'discovered' his long-lost brother in his bed. 'He's still attached to me!' he said indignantly. 'The cheek of it! Here's his arm!' holding up, with his right hand, his own left arm."

they truly oblivious? Or is that knowledge buried somewhere in the brain? Do we live in a cloud of belief that is separate from the reality of our circumstances?

V.S. RAMACHANDRAN: Absolutely, and overall, fortunately, it's a positive cloud in most of us. If we knew about the real facts and statistics of mortality, we'd be terrified.

ERROL MORRIS: Indeed.

V.S. RAMACHANDRAN: It may well be our brains are wired up to be slightly more optimistic than they should be.

Ramachandran has used the notion of layered belief – the idea that some part of the brain can believe something and some other part of the brain can believe the opposite (or deny that belief) – to help explain anosognosia. In a 1996 paper¹⁹, he speculated that the left and right hemispheres react differently when they are confronted with unexpected information. The left brain seeks to maintain continuity of belief, using denial, rationalization, confabulation and other tricks to keep one's mental model of the world intact; the right brain, the "anomaly detector" or "devil's advocate," picks up on inconsistencies and challenges the left brain's model in turn. When the right brain's ability to detect anomalies and challenge the left is somehow damaged or lost (e.g., from a stroke), anosognosia results.

In Ramachandran's account, then, we are treated to the spectacle of different parts of the brain – perhaps even different selves – arguing with one another.

We are overshadowed by a nimbus of ideas. There is our physical reality and then there is our conception of ourselves, our conception of self – one that is as powerful as, perhaps even more powerful than, the physical reality we inhabit. A version of self that can survive even the greatest bodily tragedies. We are creatures of our beliefs. This is at the heart of Ramachandran's ideas about anosognosia – that the preservation of our fantasy selves demands that we often must deny our physical reality. Self-deception is not enough. Something stronger is needed. Confabulation triumphs over organic disease. The hemiplegiac's anosognosia is a stark example, but we all engage in the same basic process. But what are we to make of this? Is the glass half-full or half-empty? For Dunning, anosognosia masks our incompetence; for Ramachandran, it makes existence palatable, perhaps even possible.

Part Five: Honest Feedback

In one of his first e-mails, David Dunning wrote to me about the mediocre detective who is unaware of significant clues littered all around him. A thousand unnoticed purloined letters easily within reach. Cluelessness could be just another way of expressing our relationship to the unknown unknowns. We don't know what questions to ask, let alone how to answer them. I sent an e-mail to Dunning: "If you were to make a Venn diagram of cluelessness, self-deception and denial, what would it look like?"

Shortly afterwards, Dunning responded.

I've attached a PDF with how I see it. Cluelessness is clearly the biggest circle, in that there is so much knowledge and expertise that lies outside everybody's personal cognitive event horizon. People can be clueless in a million different ways, even though they are largely trying to get things right in an honest way. Deficits in knowledge, or in information the world is giving them, just leads people toward false beliefs and holes in their expertise.

¹⁹ See V.S. Ramachandran, The evolutionary biology of self-deception, laughter, dreaming and depression: some clues from anosognosia, *Medical Hypotheses*, November 1996, 47(5):347-62. This idea of the right brain as the "devil's advocate" is further discussed in Ramachandran's *Phantoms in the Brain*. I hope to return to these fascinating ideas in a forthcoming essay.

That is not to dismiss or belittle self-deception. A caveat to begin: The traditional academic definition of “self-deception” is technical and a little stodgy. It requires that, to self-deceive, a person both know “X” and deceive himself or herself into believing “not-X.” But how can a person both believe and disbelieve “X” at the same time? This is for philosophers to argue about (and they have, for centuries) and for experimental nerds like me to try to figure out how to demonstrate decisively in the lab (so far, we haven’t).

But if we imbue self-deception with a looser definition, we have a lot to talk about. Psychologists over the past 50 years have demonstrated the sheer genius people have at convincing themselves of congenial conclusions while denying the truth of inconvenient ones. You can call it self-deception, but it also goes by the names rationalization, wishful thinking, defensive processing, self-delusion, and motivated reasoning. There is a robust catalogue of strategies people follow to believe what they want to, and we research psychologists are hardly done describing the shape or the size of that catalogue. All this rationalization can lead people toward false beliefs, or perhaps more commonly, to tenaciously hang on to false beliefs they should really reconsider.

Denial, to a psychologist, is a somewhat knuckle-headed technique in self-deception, and it is to merely deny the truth of something someone does not want to confront.



Clearly, Dunning believes that we are incarcerated in a prison of cluelessness. But is there any possibility of escape? I had some additional questions for Dunning, and so we arranged to speak again.

DAVID DUNNING: Here’s a thought. The road to self-insight really runs through other people. So it really depends on what sort of feedback you are getting. Is the world telling you good things? Is the world rewarding you in a way that you would expect a competent person to be rewarded? If you watch other people, you often find there are different ways to do things; there are better ways to do things. I’m not as good as I thought I was, but I have something to work on. Now, the sad part about that is – there’s been a replication of this with medical students – people at the bottom, if you show them what other people do, they don’t get it. They don’t realize that what those other people are doing is superior to what they’re doing. And that’s the troubling thing. So for people at the bottom, that social comparison information is a wonderful piece of information, but they may not be in a position to take advantage of it like other people.

ERROL MORRIS: But wait a second. You’re supposed to benefit from feedback. But the people that you’ve picked are dunderheads. And you lack the ability to discriminate

between dunderheads and non-dunderheads, between good advice and bad advice, between that which makes sense and that which makes no sense. So the community does you no damn good!

DAVID DUNNING: You know, I think that is an issue. Those among us who are in the 40th percentile, they're not the best, but they're not doing too badly. But people at the bottom, you're going to have to be open-minded and you're going to have some special hurdles, internal hurdles you have to get over. If people give you conflicting advice, congratulations, you don't know how to choose. Yes, it is a tricky part of the problem.

ERROL MORRIS: And aren't there some tasks where we're all incompetent, where humanity itself is in the bottom quartile, so to speak?

DAVID DUNNING: Well, that has to be true for some tasks, right? There are just some tasks that are incredibly hard. How many centuries have gone by, and we still don't have world peace? Yes, there are things that we're just bad at.

I had serious difficulty tracking down information about McArthur Wheeler, the lemon juice bandit. No one in Pittsburgh would respond to e-mails – not the people at Crime Stoppers, not the reporters at the Pittsburgh Post-Gazette. No one. I had almost given up hope and began to wonder whether the story was apocryphal – a joke told and retold not because it is true, but because it amuses people. And then I found Ron Freeman, instructor of forensics at Duquesne University, and a former Pittsburgh detective.

RON FREEMAN: Yes, it absolutely did happen. The first bank was in downtown Pittsburgh and the robbery detectives retrieved the surveillance tapes, and we went back to the office to look at them. As we looked at them, I noticed: the first thing as he walks into the bank, he looks directly at the lens of the camera. He identifies the location of the cameras, and then he looks directly at the cameras, and he smiles! Normally, people want to avoid the cameras, but he's looking at them, and we couldn't understand why. We had no idea, does this guy want to get caught, does he want to go to prison, what's the purpose of looking directly into the cameras? And so, we put the video on the news, and we got six calls immediately identifying this person. We went to the identification section, pulled his record, and his photograph, and it matched. And so we got a warrant for him and picked him up and brought him in. He was very cooperative; he admitted it right away. He said that that was him on the camera and he did rob the banks, and so I asked him, "Why? Why were you looking at the camera?" And this is where we actually felt bad for this guy. There were two guys who talked him into robbing a bank. He was reluctant because he didn't want to go to jail. He was particularly worried about the cameras – that banks have cameras that can identify you. But they told him that if you rub lemon juice on your face, the cameras can't take your photograph. So he decided to test that hypothesis, and he went out and he bought a couple of lemons, and he rubbed lemon juice on his face, and he took a Polaroid camera and took his own photograph. He held the camera at arm's length and he rotated it, and then actually took a photograph of the ceiling. But when the film came out, his face wasn't there, and so he believed that the lemon juice really worked. And that's why he went down and robbed a bank and smiled at the camera.

ERROL MORRIS: What a sad story.

RON FREEMAN: You actually have to feel sorry for the guy – to be that naïve to think that the lemon juice is gonna prevent the camera from taking your photograph.

McArthur Wheeler made a number of mistakes, errors of judgment. But was it all from stupidity? Or naïveté? He made the mistake of taking advice from people he thought he could trust. And even though he tested their hypothesis – he tried to take a Polaroid picture of himself – he basically trusted others. David Dunning suggests that if you don't know the answer to things, solicit advice. Get feedback from the community. This is clearly an instance where that strategy was less than successful. Alas, it's not enough to solicit advice; you also have to know that the solicited advice is good advice.