



# House and Medical Diagnosis

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*Gregory House marked a before and after within the genre of medical series. The concept of an anti-hero as hero did not merely transfer with remarkable success onto the cable TV networks, but furthermore it managed to earn the interest and respect of many health professionals. After eight seasons on the FOX network (2004–2012), 177 episodes and numerous awards, among them two Golden Globes for Hugh Laurie as Best Actor, House continues to be studied in the university sphere and in prestigious medical journals such as The Lancet.*

The doctor turns his piercing blue eyes to the strangely discolored middle-aged man seated before him. Peering over his long, thin nose, the physician had the look of a predator examining prey. “Unfortunately,” he informs the man coolly, “you have a deeper problem. Your wife is having an affair.”

“What?!?” the man exclaims, astonished by this strange and unsought diagnosis. The doctor casually twirls his cane as he considers his patient, who had come to see him with skin the color of a carrot, but complained only about a pain in his back following a vigorous golf game. “You’re orange, you moron,” he explains irritably. “It’s one thing for you not to notice, but if your wife hasn’t picked up on the fact that her husband has changed color, she’s just not paying attention.”

This is the first exchange between Dr. Gregory House and a patient who’s come to him for help in the first episode of the Fox Television program, House MD. And right from the start we are tipped off to the link between House and his inspiration, the most famous consulting detective of all time, Sherlock Holmes.

From our initial encounter with the character, House establishes himself as an observant, intelligent, arrogant man. Prickly, even rude at times, he is nevertheless a master of deduction, equipped with a ruthless flair for the dramatic revelation. Those familiar with the Canon will hear echoed

in this meeting the reader’s first encounter with the detective in *A Study in Scarlet*. Within minutes of his introduction to future amanuensis, Dr. John Watson, Holmes announces, “You have been in Afghanistan, I perceive.” He does not reveal his route to this deduction for several weeks and nearly a dozen pages. When Watson begs for an explanation, Holmes traces the observations and thought process which makes this, like all deductions, seem so simple, at least in retrospect.

“Here is a gentleman of a medical type,” he tells the eager Watson, “but with the air of a military man. Clearly an army doctor, then. He has just come from the tropics, for his face is dark, and that is not the natural tint of his skin, for his wrists are fair. He has undergone hardship and sickness as his haggard face says clearly. His left arm has been injured. He holds it in a stiff and unnatural manner. Where in the tropics could an English army doctor have seen much hardship and got his arm wounded? Clearly in Afghanistan.”

Arrogant, observant, intelligent; a little testy, perhaps, but a master of deduction, who clearly has a flair for dramatic revelation –though perhaps a little less ruthless. The parallel between the two was not accidental. Show co-creator, and executive producer David Shore, acknowledged the intentional homage from the start: “Anytime one says ‘puzzle’ and ‘brilliant deduction’ in the same sentence, one can’t help but

think of the great fictional detective Sherlock Holmes and his trusty sidekick, Dr. Watson. And indeed, Holmes –and the real-life physician that inspired him, Dr. Joseph Bell– were very much inspirations for House.”

Echoes of the Canon are frequent within the show. The lead character’s last name, House, is a synonym of Holmes (a near homophone to homes). House has only one friend, James Wilson, a parallel to Dr. John Watson. House plays the piano, the guitar, the harmonica; Holmes distracts himself with the violin. House takes Vicodin, Holmes, cocaine and both occasionally inject morphine or a derivative. Holmes was killed –at least temporarily– by Professor James Moriarty; House was shot and nearly killed by Jack Moriarty. Irene Adler was, to Holmes, The Woman. The first patient we see House save is named after her –Rebecca Adler. House pretends to have cancer to achieve one of his aims, a clear reference to the story *The Adventure of the Dying Detective* where Holmes pretends to have a deadly infection to catch his man.

Holmes and Watson refer to everyone by their last names. So too do House and Wilson. Holmes and House also share an unconventional personality and, a certain brusqueness of manner, particularly when deep into an interesting case. Even in their spare time similarities can be seen. Actor Hugh Laurie once likened House’s obsession with television, video games, and popular music to Holmes’ habit of listening to classical music or reading dull monographs for hours on end in order to relax his mind while pondering a case.

### **A doctor inspires a detective who inspires a doctor who inspires a show**

House MD ran on Fox Television from 2004 to 2012. It was one of the most popular television shows of the decade. Indeed in 2009, it was the most watched television show on the planet with a reported 51 million viewers. Along the way the show garnered three Emmys (Best Script, Best Directing, Best Make up), four Golden Globes (Best Actor and Best Dramatic Series, twice each) and a Peabody. Plus awards from the Screen Ac-

tors’ Guild, the Writer’s Guild and many People’s Choice Awards.

It is said that success has many fathers, and here I will make my bid for at least a small piece of that paternity, alongside Sherlock Holmes. Since 2002 I have written a monthly column for the *New York Times Magazine* about medical mysteries. In my column, called *Diagnosis*, I tell the story of a patient with mysterious symptoms who seeks a doctor to discover their cause. I take readers into the diagnostic process and reveal the clues and deductions that lead the doctor/detective to discover the pathological processes causing the patient’s illness, and point the way to treatment or even cure.

It’s hard to remember, but at the beginning of this century –before House was a household name– diagnosis was not a topic of popular discussion. Indeed, if you look at what was in the media and entertainment world as an indicator of what was popularly or widely known, a diagnosis wasn’t a Holmesian process but a simple answer to the complex question presented by the patient. In these shows diagnosis was merely a springboard to the rest of the story. In programs from Dr. Kildare (1961–1966), to Marcus Welby (1969–1976) to ER (1994–2009), you may have a patient who comes to the doctor or hospital with some type of symptoms but the focus of the drama occurs before or after the cause is revealed. The diagnosis itself is a one-liner that gets you from one scene to the next.

For example, in ER, one of the longest running medical series, one of the ER doctors tells a patient, “I have the results from your blood exams. They show you have leukemia.” No fuss, no muss. Blood is taken, a test is performed, the answer, leukemia, is revealed, and the story returns to what it’s really about. In these shows diagnosis is like math. Fatigue and abnormalities found on blood tests equal leukemia. In fact, the diagnosis of this type of cancer is usually far more complex than that. Were there clues in the physical exam: a certain pallor in the face and eyes? An enlarged spleen? Perhaps there was some weight loss? None of it is important or even particularly mysterious when the diagnosis is just one small component of a different human drama.



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Actually, I think doctors liked to portray their profession that way. The crisp precision of the science of illness and the certainty of diagnosis is a counterweight to the art of dealing with the complexities of human behavior and emotion. The simplicity of this fictional representation of the process disguises the uncertainty that surrounds all but the most basic diagnoses. To acknowledge this intrinsic lack of precision seems to make doctors uncomfortable.

The first two years of medical school do nothing to contradict the impression that I—and many of my fellow students—had about medicine. That there is a science to it; a precision and accuracy that puts it in the same class with all that we learned on the way to med school and in those first two years: chemistry, biology, anatomy, physiology. That it is well defined, well understood—in short, a science.

That impression falls apart in the third year of medical school when students are taken out of the classroom and put into the clinic and hospital where real medicine is practiced and the mystery of diagnosis is revealed and indeed, quietly celebrated.

On my first day in my medicine clerkship I went to the daily meeting that everyone in that specialty attends, called Resident Report. The meeting room was dominated by a large table. The doctor-trainees sat around the table. Students sat in the back with the wiser and more experienced doctor-teachers. One resident, as such trainees are called, describes a patient who came to the hospital, sick and in need of a diagnosis and care. The case is laid out before the audience of trainees as it revealed itself to the physician at the time: who the patient was; what he or she told the doctors; what the examination revealed; what the preliminary tests showed. And then the residents are challenged to figure out the diagnosis. They examine the data presented before them, ask additional questions, and try to reason backward, from effect (symptoms) to cause (disease).

In that first meeting, I watched in amazement as diagnosis revealed itself to be, not a math problem but a detective story. A Sherlock Holmes story set in its original setting—not in

the sitting room at 221B Baker Street but in the exam room that inspired it. In this modern version that I witnessed, the residents play the role of the young Conan Doyle—physicians working hard to learn the basics of deduction and diagnosis, guided and corrected by the master—Joseph Bell, here played by the senior doctors who correct and guide and amaze when the pupils go astray.

Indeed, one might well say that House is the doctor Holmes might have been had Conan Doyle lived in the 21st century. It would have been impossible for Holmes to be a physician at the end of the 19th century when first penned by Conan Doyle. Joseph Bell, the doctor Conan Doyle modeled his character after, was admired for his remarkable skills as an observer, his mastery of the ephemera of his time—the local geology, regional accents, etc.—his powerful deductive reasoning and his flair for the dramatic. Despite his mastery of these fundamentals of diagnosis, they were virtually useless at that time. What good were these skills at the end of the 19th century? The science of medicine then was rudimentary. Although many diseases had been described, few were understood. There were no tests to confirm a suspected diagnosis. Moreover, even if those basics had been available, there were almost no effective treatments for anything.

In contrast, the end of the 19th century saw the first blossoming of the science of forensics. The most basic tools of the detective were coming into wide use. The first ballistics test was developed in 1835. Fingerprints were used in a criminal investigation for the first time in 1892. Mug shots were first used as a means of identifying those brought before the police in the 1870s in Paris. The widespread use of the telegraph allowed 19th century detectives to communicate quickly with police in other districts, near and far. The ultimately unsolved case of Jack the Ripper was perhaps the most famous application of the burgeoning forensic sciences at that time. In this investigation, teams of policemen conducted house to house inquiries throughout Whitechapel, the area where the murders were committed and forensic material was collected and examined, suspects were identified, fingerprint-

ed, photographed and interrogated and featured on front pages almost everywhere.

One can almost sense Conan Doyle's frustration with his own profession. Even given the remarkable skills picked up from his years of observing Bell, there was virtually nothing you could do to help anyone medically. So his fascination with the process of observation and deduction and the accumulation of arcane knowledge—the fundamental tools of diagnosis—were easily translated into this new science. The science of crime and detection. Sherlock Holmes traded his newly invented stethoscope for a deerstalker cap and magnifying glass and the detective story was invented.

### Back to his roots

If Holmes was a detective inspired by a doctor, I consider myself a doctor inspired by a detective. Indeed unravelling the diagnostic mystery has been my obsession since that first Resident Report. In my practice, and in my column in the *New York Times Magazine*. So, when I got a call from a Hollywood producer named Paul Attanasio who told me he was producing a show based on my column, I was intrigued. Would this legacy go full circle? It was an exciting possibility. Attanasio described his new show as a Law and Order type 'procedural', where in each episode the 'criminal' would be an unusual disease, to be tracked down and brought to justice not by police but by a special team of doctors.

The show had initially been titled Chasing Zebras, a reference to the medical truism that when doctors hear hoofbeats, they should normally think horses—common diseases. In this show the hoofbeats would be made by zebras—the rarities. The idea was immediately picked up by Fox television and funding for a pilot was "greenlighted". However, Attansio and his team—partners Katie Jacobs and David Shore—soon realized that by focusing exclusively on the diseases, they were losing a key component of the drama—the human complexity. Said Shore, "When you are dealing with a procedural police drama, you've got all these motives. You've got all these people hiding things. Germs don't do

that obviously. You don't have one germ framing another germ because he was sleeping with the first germ's wife."

Although what Fox wanted, and paid for, was a reliable procedural—the case-of-the-week kind of crime show, like CSI, like Law and Order, known and loved by the other networks—it soon became clear to co-creators Attanasio and Shore, that they weren't going to get one. Instead, the show was becoming more of a serial drama, a program that relies on story arcs spanning multiple episodes and relying heavily on the development of the core characters. These are less profitable for the producing companies because they are less flexible in reruns. And yet, it was clear to Shore that the doctor as detective structure required more of just about everything to make up for the lack of a bad guy. And that the doctor himself needed to embody the complexity normally spread out over an entire cast. "The more I worked on it," Shore explained, "the less able I was able to make it work as a procedural [and] the more the character started to come alive for me." That character became the guy we now know as Gregory House.

Once the pilot was shot there was some concern that the executives at Fox would be angry that the show wasn't the case of the week type show they'd bought and paid for. "We pulled a bit of a bait-and-switch," Shore acknowledged. The team debated how to handle this when the time came to show the pilot to the Fox executives who would be making the decision about whether the show would live or die. Attanasio suggested that they not tell Fox and let the show speak for itself. And speak it did. The show was put in the schedule for the following season.

That's when I got the call from Attanasio. Would I work with the show to come up with the medical stories that would be at the heart of each program? Wow! I thought. My column—in Hollywood. I could hardly speak.

"Tell me more", I asked, trying to sound casual—as if calls from studio executives came as often as those from nurses. It was about, Attanasio paused briefly, then continued carefully, a doctor who specialized in making difficult diagnoses. A doctor who was, and Attanasio paused again,



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“irritable, arrogant, and drug-addled. A physician who hated patients, but loved diagnosis.”

The description triggered a brief war in my brain. That’s not how I wanted my magnificent obsession to be shown –as the product of some jerk, some badly behaved monster. On the other hand, showing diagnosis as a mystery to be unraveled, as detective story, and to the world well beyond the reach of my column, had tremendous appeal.

Of course, based on this description, I figured the show would be a flop. Normally I’m in the William Goldman school of thought about Hollywood –that nobody knows nothin’. But not that day. Hearing about a show centered on someone that seemed impossible to like (remember, this was before *Breaking Bad*) I figured it would last a season, maybe.

Drowning the cacophony in my head, I said, as casually as I could, “why yes, I’d love to work with the show”. Once I saw the pilot, though, I realized that I had been wrong. The show was brilliant. The actor they’d chosen to play House, a Brit named Hugh Laurie –who had previously been known for playing the dimmer partner in a duo with comic actor Stephen Fry– was mesmerizing as the unlikely hero in this medical dramedy. On the surface, House was the horror Attanasio described –arrogant, irritable, rude; in short, utterly intolerable. And yet, somehow, when you, the viewer, looked into the eyes of actor Hugh Laurie, there was a sense that there was another House, a better House –a sensitive and damaged being lurking within that crusty outer layer. And the two of them were riveting.

### Adventures in Hollywood

After I signed the contract, Paul arranged for me to come to LA and meet the writers and actors. Driving my rental car down West Pico Boulevard I tried to picture who I’d meet, how this would go. My heart raced as I drove up to the guard house at the entrance to the studio grounds and reported my arrival to a handsome middle-aged man (a failed actor?). I was given a map and pointed toward the building where I was to meet writers, producers and actors.

A tall well-built young man greeted me as I wandered into a low-slung building that looked like an old warehouse. The carpets were industrial and well worn. The walls were marked and a little dingy. But Dustin (as the young man identified himself) was cheerful and lively as he led me past a dozen or so small offices (“This is where the writers work.”) into a large room that, though dominated by a large table, had the casual, well-used look of a college dorm rec room. Paul greeted me and introduced me to the writers –Tommy Moran, Peter Blake, Larry Kaplow, Sara Cooper–, to the executive producer, David Shore, and medical consultant, Harvard-trained internist, David Foster.

We all sat down around the oversized table and just started talking. Several episodes of that first season came from that conversation. In particular, I recall a discussion of how patients’ wishes have to be obeyed, even if you think they are wrong. And that if you treat someone who does not wish to be treated you can be charged with assault. That discussion was brought to life in Episode 9 called *DNR* –about a jazz musician who, believing himself to have a terminal degenerative illness, asks that he not be resuscitated should his heart stop beating. House believes he has been misdiagnosed and so, when the man’s heart stops, brings him back from the dead. Of course House is found right –eventually– and the musician lives. But not without first pressing charges.

I met Hugh for the first time during that visit. We chatted briefly and I told him that being a doctor was my midlife crisis, after a successful stint in television news. Hugh told me that his father had also become a physician as a second career. His first career was in the military and only when he retired, did he consider going to medical school. Was he channeling his father in any way in this role, I asked –too starstruck to even hear what that implied about his father. Laurie smiled kindly and said his father was a very different kind of doctor. A general practitioner, he saw much more bread-and-butter medicine than House ever would. And, he added, it was odd to think that in one season of this show he would be making more than his father would make in a year. Strange, isn’t it? he added, thoughtfully.

## Bicoastal production

Over the 8 years' run of House MD I tried to go to Hollywood to visit the set at least once a year –but that was mostly because it was fun. Most of my job as technical advisor was done through email and phone calls. Writers would call with the character and overlying story and I (and eventually two other doctor-consultants) would try to come up with a disease and a story to fit.

The other part of my job was to identify inaccuracies in the script. It wasn't quite as much fun as coming up with the stories themselves, but I recognized that how medicine is seen by the public depends at least in part, on how it is shown on TV. Very early on in season 1, one of the writers had House's team put something in the mouth of a young man having a grand mal seizure to keep him from having his airways blocked by his tongue. That never happens in medicine. We are taught from our earliest days in med school that putting anything into the mouth of someone who is seizing will do more harm than good. While the intention may be to prevent the patient from "swallowing his tongue" as I was told as a kid in highschool, a spoon in the mouth can block the patient's airway and cause the patient to become hypoxic. When I pointed this out, the writer immediately changed the scene. As a result, House was one of the few programs that correctly represented the medical response to this very common type of seizure.

Of course, not all my advice was taken. In the second season, I got a script that contained an error that I felt needed to be corrected. Writer/producer Tommy Moran wanted to indicate some (umm, insert embarrassed cough here) oral-genital contact between two characters, so he had the young man contract an infection that could only be transmitted that way. House diagnosed the young man with bacterial vaginosis. As a dramatic tool, the diagnosis got the job done. However, it would be an unlikely diagnosis for a man. As with so many of the names of the diseases in medicine, the location of the infection is contained in the name –it is bacterial vaginosis (vagina + osis, meaning a state of disease.) This infection cannot move to the mouth; it's not the

right environment for the bacteria. However, even if it could, the infection would certainly not be called bacterial vaginosis but something like bacterial buccalosis (buccal –of or pertaining to the inner walls of the cheeks). In medicine the name of a disease usually does not reflect where the infection came from but where it ends up.

So, I wrote a lengthy email to Tommy explaining this issue and suggesting several other possibilities. I got back a one-line reply from Tommy: "Yeah. My way is funnier." And so it was.

## The Holmes-ian roots of House

I recently called some of the writers from House to ask them how they worked Sherlock Holmes into the character of House. Peter Blake, Liz Friedman, Sara Hess, Eli Attie were some of the best and most productive writers for the show. Most were involved from the start of the show until the very last days. And their answers were identical. They were never told that House was based on Sherlock Holmes. Never. Indeed both Blake and Friedman said that until they went to work on the show *Elementary*, a series based on the premise that Sherlock Holmes is alive and working as a consulting detective in contemporary New York City, they were unaware of how closely House paralleled Sherlock Holmes. Only when they re-read the Canon did they see the links between the two characters.

Still, somehow Holmes is present in the stories and in the character of House throughout all eight seasons. How? Clearly it didn't originate with the writers. Then who? It was Eli Attie who provided the clue to help me solve this mystery. Attie came to House in the show's fourth season, after a long run at the NBC hit *West Wing*. Attie was the writer who came up with the story line that ended the series. In this 8th season's long story arc, House's best friend Wilson has metastatic thyroid cancer and is dying. And House is about to go to prison for driving his car into his old boss/girlfriend's house –through the living room wall.

It seemed so unlikely –so un-House-like– that Wilson would just go quietly off to die as his friend sat in prison. So how were they to shape this set



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of events into an ending, a good solid House-ian ending? The challenge went out to the writers. Who can come up with the exact right story to end the season and the show?

Attie had an ingenious twist. House disappears just days before he is to go to prison. There is speculation that he has run away. Instead, House has apparently been on something of a bender –he doesn't remember clearly but wakes up to find himself in an abandoned building in a bad part of town, alone with a junkie who may have overdosed. Oh yeah and the building is on fire. As House starts to pull himself together he is visited by a woman who died a couple of seasons earlier. She serves as the ghost of Christmas past and present –confronting him with deeds and misdeeds from the past several years. In between bouts of what is probably a drug induced delirium House becomes aware enough to realize that if he doesn't get out of the burning building he will die. And he has to figure out how to get the other guy –the overdosing junkie– out as well. House is able to get out, but by then the other guy has died from his OD. House leaves his ID next to the guy and escapes the building just before it collapses into a fiery heap. Then he goes into hiding. When the body and ID are found, it is assumed to be House, giving him the chance to live on but with a new identity.

Attie was thrilled when David Shore chose his story to end the series. It wasn't until after the show was shot and aired and the season finally put to bed that Shore told him why he chose his ending. That story arc paralleled the final chapter in the life of Sherlock Holmes. In *The Adventure of the Lion's Mane*, Holmes describes his life at that moment. The story occurred "after my withdrawal to my little Sussex home, when I had given myself up entirely to that soothing life of Nature for which I had so often yearned during the long years spent amid the gloom of London." Holmes has put away his deerstalker and retired to the country where he takes regular walks through the countryside, writes his learned monographs on cigar ash and other aspects of

detection and, between the occasional mystery, tends his bees.

Like Holmes, House will retire from his old familiar world. Since he has allowed himself to be thought dead, he'll have to come up with a new identity, a new profession. But first he and Wilson will ride their motorcycles through the country, finding fun and adventures as they may, until Wilson finally meets his maker and House will start life anew. Who knows –maybe he'll even take up beekeeping.

Hearing Eli's story, I finally understood that Holmes was embedded into House through the snark and sensibility of David Shore. Shore was channeling Sherlock Holmes, embedding his distilled essence into Gregory House. I asked Shore about this. He was modest in his reply. He'd always been a huge fan of Sherlock Holmes and felt strangely in tune with him. Shore, who was a lawyer before he abandoned that profession to become a producer in Hollywood told me that when he was representing someone he was more interested in seeking what he thought was the just outcome than in the people he actually represented and what they wanted. "It was a problem in the law. But that was what Holmes did, really. He pursued his own ideas of justice. He had his own very deep moral compass. Works a lot better on the page or the small screen than in a court room."

"Are you then the medium by which Sherlock Holmes was channeled into the heart and mind of Gregory House?" I asked.

"Well, I'm not Holmes; I'm not House. But those words that come out of Hugh (Laurie)'s mouth –I almost always agree with them. I'm writing them because I believe them. They are my thoughts and my philosophy."

In an interview Shore expounded on that philosophy –and for those who love Holmes, it has a familiar feel to it: "House could care less what people feel about what he's doing, good or bad. He could care less about whether people tried their best. The only thing that matters to him is the result. Surprisingly, that makes him a bit of a rebel in our society."