The Big Bang Theory and Asperger's Syndrome

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It is a mass phenomenon. Since its launch in 2007, this CBS comedy has not stopped winning fans and is now first among the most-viewed television fictions in the US, having nearly 20 million viewers in its eighth season. This sitcom starring two Caltech (California Institute of Technology) physicists, which makes constant references to physics' most complex theories and principles, has garnered extraordinary success, thanks above all to its lead role. The character of Sheldon Cooper, who displays many of the characteristics associated with Asperger's syndrome, has earned the actor Jim Parsons no less than four Emmy Awards

In the field of scientific progress it is not unusual to find cases where two or more researchers make the same discovery independently and almost simultaneously, sometimes without either knowing about the other's work. Among the best-known cases are those of Charles Darwin and Alfred Russel Wallace (biological evolution by natural selection), Isaac Newton and Gottfried Wilhelm Leibniz (infinitesimal calculus), and Elisha Gray and Alexander Graham Bell (the telephone). This fact shows that any great leap in the progress of science is due not just to a lucid mind and great dedication, but also to the prior advances of many people who create a cultural environment that fosters the development of new ideas. Even a figure as renowned as Newton, citing twelfth-century French philosopher Bernardo de Chartres, recognized that "If I have seen further, it is by standing on the shoulders of giants".

One such concurrent breakthrough occurred in the early 1940s. Its protagonists were the psychiatrist Leo Kanner and the pediatrician Hans Asperger. Though both men were born in what was then the Austro-Hungarian Empire (Asperger, in Vienna in 1906, and Kanner in Klekotow, now Klekotiv, a village that belonged to Poland, but is currently in the Ukraine, in 1894), their lives led them on destinies far removed from each other. At thirty years old, Kanner emigrated to the United States, and a few years later was commissioned to create the first children's psychiatric service in the world at the Johns Hopkins Hospital, in Baltimore.[1] Among the many children he treated there, several captured his attention. They displayed common symptoms differing from any other disorder identified to date, and had been classed as mental or schizophrenic weaknesses. They all displayed an incapacity to relate to people in a normal manner, a preference for objects, a language having no communicative purpose, an excellent mechanical memory, monotonous and repetitive behavior, rejection of external intrusions or loud or sudden noises, and fear of change.

Kanner decided to call this syndrome "early infantile autism" because its fundamental or pathognomonic characteristic is the child's isolation in his own inner world. He borrowed the term "autism" from Swiss psychiatrist Eugen Bleuler, who had coined it in 1911 to define the behavior of schizophrenic adults, withdrawn

[1] Here and below, I use a male gender to refer to both boys and girls. Nevertheless, Asperger's syndrome is around five times more common in males than in females.

and closed in upon themselves. In 1943, Kanner presented his conclusions, along with a detailed description of eleven case studies, in an article called "Autistic Disturbances of Affective Contact", which became a classic of clinical psychology.

While Kanner was treating and studying his patients in the US, Asperger was doing the same in his native Vienna, at whose university he gained a doctorate in medicine and specialized in pediatrics. In 1932, he took over the special education section at the university children's clinic, through which hundreds of children were treated. During the Second World War, he was a medical officer and created a school that was destroyed by shelling, in which he lost a large part of his earlier work. In 1944, he obtained the chair of pediatrics at the University of Vienna, and two years later he was also named director of the children's hospital at the same university, both positions he would occupy until 1977.

For his qualification thesis to the chair, Asperger focused on a syndrome he had observed in his consulting room in the clinic, one which had grabbed his attention. The children who displayed this syndrome he called "the little teachers" since they were highly knowledgeable on a particular topic, on which they could speak for hours. Despite this, their continuous, exclusive concentration on the subject of their attraction, and their lack of interest in contact with other people made their integration into society and into the standard education system difficult. Even so, Asperger considered that "in some cases, these problems are compensated by a high degree of original thought and experience, which often led them to achieve exceptional successes in adult life", and was "convinced that autistic people had their place in the organization of social community".

Asperger presented his work in an article entitled *Die Autistischen Psychopathen im Kindesalter* (Autistic Psychopathy in Childhood), published in Switzerland in 1944, a year after Kanner's article. The coincidence in the naming of autism –as "infantile autism" by Kanner and as "autistic psychopathy" by Asperger– is curious, given that as far as we know, neither knew of the other's studies.* The characteristics described were also similar, even if Asperger emphasized the positive aspects these children displayed, whom he protected in the Aktion T4 program, which aimed to exterminate the *Lebensunwertes Leben* ("life unworthy of being lived", according to the term used in Nazi rhetoric).

Precisely because of the geopolitical circumstances of the time, Kanner's and Asperger's articles suffered contrasting fortunes. While the former's was rapidly disseminated, Asperger's remained unknown outside of certain limited, German-speaking circles. So the name Asperger's syndrome did not appear in English until 1970, with the translation of a book by Gerhard Bosch originally written in 1962 *(Infantile Autism: A Clinical and Phenomenological-Anthropological Investigation Taking Language as the Guide)*. Yet true international recognition would not arrive until 1981, thanks to British psychiatrist Lorna Wing.

As a result of the birth in 1956 of her daughter Susie, who had autism, Wing focused on studying this disorder, and founded the National Society for Autistic Children in 1962. Her husband, John Wing, likewise a psychiatrist, discovered one of Hans Asperger's studies from 1946 and translated it for his wife, who became interested in the syndrome, considering it a subcategory of autism. As a result of her research, in 1981, she published the article *Asperger Syndrome: A Clinical Account,* which in the words of Wing herself "opened the Pandora's box" to the point where over the next two decades 900 articles were published on this disorder which until then was practically unknown.

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* Later, in his book *Neurotribes: the Legacy of Autism and the Future of Neurodiversity*, Steve Silberman documented the history of autism. He says that Kanner knew of Asperger's work because one of Asperger's assistants, Georg Frankl, had emigrated to the US and was working with Kanner. In fact, the observation and study of the first child that Kanner diagnosed with autism (Donald Triplett, who is still alive) was done by Frankl, so it is inevitable that Kanner knew of Asperger's studies.

Two different disorders?

In Wing's aforementioned article, the author emphasized the common characteristics of the disorders described by Kanner and Asperger, to the extent where she asserted one should ask "whether they are varieties of the same underlying abnormality or are separate entities". Ten years later, in 1991, Wing came down clearly on the side of the former, proposing the existence of a continuum from Kanner's autism to Asperger's syndrome, as clinical cases showed, in which "the same individual was typically autistic in his early years, but made progress and as a teenager showed all characteristics of Asperger's syndrome".[2]

Currently it is thought that this continuum –or spectrum– is even broader, encompassing at one end the most intense cases of autism, Asperger's in the middle and from there a gradual evolution toward normalcy –otherwise termed "neurotypical"– in which people display certain characteristics on the spectrum to such a slight degree as to be considered simple facets of their personality. In this sense, Wing considers that autistic features are present to a greater or lesser degree in all people.

Official recognition

The standard criteria for the diagnosis of mental disorders are established and updated in two publications: DSM (*Diagnostic and Statistical Manual of Mental Disorders,* published by the American Psychiatric Association, currently in its 2013 DSM-5 edition) and the ICD (*International Statistical Classification of Diseases and Related Health Problems,* maintained by the World Health Organization, whose latest edition, ICD-10, came out in 1992). They agree in general, though with certain differences. So, for example, the Asperger's disorder defined in DSM-IV receives the name Asperger's syndrome in ICD-10.

Autism –or as it was then called, "infantile autism"– was not considered a specific category until 1978, in ICD-9, and 1980, in DSM-III (respectively 35 and 37 years after Kanner's original article). Up until that moment it was considered a subgroup of schizophrenia. Fourteen years later, the new editions of both classifications divided autism into different categories (eight in ICD-10 in 1992, and five in DSM-IV in 1994), one of which was Asperger's syndrome (according to the ICD) or disorder (according to the DSM). It would thereby acquire official recognition for the first time, approximately half a century after publication of Asperger's original article. This status was maintained for two decades, until in May 2013, after intense polemic, a new edition of the DSM (DSM-5) consolidated the autism group into a single category, autism spectrum disorder, with three levels of seriousness according to the support required. With this decision, Asperger's no longer has its own identity in the DSM, being subsumed into autism spectrum disorder according to the corresponding level in each case. We must now wait and see what happens with ICD-11, publication of which is scheduled for 2017.

There are five diagnostic criteria listed in DSM-5: A) persistent deficits in social communication and social interaction; B) restricted, repetitive patterns of behavior, interests, or activities; C) symptoms must be present during early childhood development; D) the symptoms cause clinically significant deficiencies in social and occupational areas, or others that are important for current functioning; and E) such alterations are not better explained by an intellectual disability or a retardation in overall development. However, in almost all cases these symptoms are accompanied by other varied manifestations that seem to indicate that the autism spectrum disorder is not confined to a cognitive module, but that it is found in the brain's general architecture.

Given the widespread use of the DSM for psychiatric diagnosis, the new criteria of DSM-5

[2] "The relationship between Asperger's syndrome and Kanner's autism", in the book *Autism and Asperger Syndrome,* edited by Uta Frith. The same book includes the first translation into English of Asperger's original 1944 article, undertaken by Uta Frith.

means that patients who until then had been diagnosed with Asperger's syndrome now have a specific degree of Autism Spectrum Disorder (ASD), or in some cases, no longer fall under diagnosis. Some associations, family members and patients are averse to this change, both for the loss of specificity it implies and the fear that this will signify a decrease in support received, and for the negative connotations the term "autism" bears and loss of a certain mystique surrounding Asperger's.

Increasing knowledge of the autism spectrum, and improvements in diagnosis, have meant that the numbers of people diagnosed has increased progressively in recent decades. While in 1974, a prevalence of one in every 2500 (0.04%) was estimated, the most recent report from the US Centers for Disease Control and Prevention raises this ratio to one in every 68 (1.5%), 37 times higher.[3]

Asperger's in society

Historically, mental disorders bore a social stigma that has waned in recent years, albeit slowly. The Nobel Prizewinner for Economics in 2002, Vernon L. Smith, who has Asperger's, expresses it thus: "We've lost a lot of the barriers that have to do with skin color and with various other characteristics. But there's still not sufficient recognition of mental diversities. And we don't all have to think alike to be communal and to live in a productive and satisfying world".[4]

The traditional view on mental disorders is that they form an integral part of the person, a *totum revolutum* that completely disables the person. However, in most cases this is not so. Many great figures in history, art or science have been so, despite –and occasionally thanks to– having problems in some dimension of their mind. The autism spectrum disorder is one of those that most frequently presents significant disparities between one aspect or another of an individual's mental faculties. So, you might have the case of an individual who is incapable of understanding the *double entendre* in an expression and yet can construct complex scientific theories. Or one who may not remember a person's face, but can memorize thousands of digits of the number Pi. In general, people with Asperger's operate better in logical and methodical activities, and have difficulties with the ambiguities of social life (such as interpreting ironies and double meaning, intuition of implicit, unspoken social norms, etc.). Or, as the father of one child with Asperger's commented: "To put it more simply, our son learns social skills with the same difficulty most people learn math, and he learns math with the ease that most people learn social skills".[5]

The progressive recognition of the compartmentalizing of mental capacities, manifested, for example, in interest in the "multiple intelligences" proposed by Howard Gardner in 1983, has spurred curiosity in the phenomenon of savant syndrome in society –people who combine deficits in diverse cognitive areas with a capacity far above the normal in a specific field. This curiosity was picked up and emphasized by literature and film, which highlighted the extreme aspects of their natures to give them greater cinematographic charisma, at the cost of distancing such characters from the more common reality.

The first important milestone came in 1988 with the film *Rain Man,* winner of four Oscars, in which Dustin Hoffman interpreted an autistic *savant*. The character is partially inspired by Kim Peek, a person with an exceptional memory, who could remember the contents of 8000 books and a huge amount of data on the most diverse subjects (from a year and a half old he remembered all the books his parents had read to him, and later he was able to read and memorize every

[3] *Community Report on Autism 2014,* available at: http://www.cdc.gov/ncbddd/autism/states/comm_report_autism_2014.pdf

[4] Interview on CNBC News Channel, February 2005, available at: http://www.nbcnews.com/id/70307 31/ns/business/t/mild-autism-has-selective-advantages/

[5] From an article by Brian G. R. Hughes on the Massachusetts Institute of Technology Alumni Association blog, available at: https://alum.mit.edu/news/WhatMatters/Archive/200308

page in around ten seconds). In reality, Peek was not autistic, but born with several brain defects, principally an absence of the *corpus callosum* (the band of white matter connecting the two hemispheres in the brain).

In 2001, another film also won four Oscars. *A Beautiful Mind*, based on the 1998 book of the same name, narrates the struggle against paranoid schizophrenia of mathematician John F. Nash Jr., who was awarded the Nobel Prize for Economic Sciences in 1994 for his work on non-cooperative game theory. In real life, Nash was interned five different times –from five to eight months each time– in psychiatric clinics. Even so, using the time between these involuntary commitments he managed to develop important research. Gradually, Nash was able to learn to reject his delirium intellectually, until he reached a level that he himself considered acceptable at about 55 years old. Nevertheless, he regretted that this return to normalcy caused him to lose part of himself. So, in his autobiography for the Nobel Foundation, he wrote: "So at the present time I seem to be thinking rationally again in the style that is characteristic of scientists. However this is not entirely a matter of joy as if someone returned from physical disability to good physical health. One aspect of this is that rationality of thought imposes a limit on a person's concept of his relation to the cosmos. For example, a non-Zoroastrian could think of Zarathustra as simply a madman who led millions of naive followers to adopt a cult of ritual fire worship. But without his 'madness' Zarathustra would necessarily have been only another of the millions or billions of human individuals who have lived and then been forgotten".

In current society, film has far more media impact than literature. So it is worth highlighting the relative success of the novel *The Curious Incident of the Dog in the Night-Time,* by Mark Haddon, published in 2003. Its protagonist is Christopher Boone, a fifteen-year-old who investigates the death of his neighbor's dog. Boone has vast mathematical knowledge, but also difficulties in relating socially. Though the blurb of early editions of the book stated that he had Asperger's syndrome, the author himself regretted this fact and confessed he knew very little on the subject. His intention was not, he says, to write a book about Asperger's, but "a novel about difference, about being an outsider, about seeing the world in a surprising and revealing way".[6] Among communities linked to the disorder, the book received highly varied criticism, from those who consider it an adequate description of Asperger's to those who believe it offers a false and stereotyped image. It is from that date, both in film and literature, that works began appearing that depict protagonists who are specifically identified with Asperger's. So in film, we have *Mozart and the Whale* (2005), *Adam* (2009), *Mary and Max* (2009) and *My Name Is Khan* (2010), while in literature, *The Curious Incident*'s success was dwarfed by Stieg Larsson's *Millennium*[7] trilogy, which has sold more than 70 million books and been made into films. Its co-star, Lisbeth Salander, is a talented IT expert with eidetic memory and social difficulties, characteristics that the other lead, journalist Mikael Blomkvist, associates with Asperger's.

And series made their entrance

During the last quarter-century, TV series have gone from a minor product (second-class film) to overtaking film in the viewer interest they generate. Clearly, the decisive nature of this change is due to a growing presence in the TV sphere of talented directors, scriptwriters and actors, but also because the medium's characteristics adapt better to the dynamism and connectivity of today's society. Add to the mix that the advances made by 'series-phile' culture coincide time-wise with the recognition and public dissemination of awareness of Asperger's, then the time is ripe for the growing appearance of series with charac-

[6] As published on his website in July 2009: http://www.markhaddon.com/aspergers-and-autism

[7] *The Girl with the Dragon Tattoo* (*Män som hatar kvinnor,* 2005), *The Girl Who Played with Fire* (*Flickan som lekte med elden,* 2006), and *The Girl Who Kicked the Hornets' Nest* (*Luftslottet som sprängdes,* 2007).

ters having characteristics more or less resembling the disorder, or who adopt certain of its traits.

In real life, there are many cases of people who are difficult to diagnose with certainty, since the border between a mild disorder and a singular personality is blurred. Such a diagnosis is much tougher –generally impossible– in fiction, except for those few productions in which this point is explicitly stated in the script. So it becomes impossible to draw up a definitive list of series with characters having Asperger's. Those I list in Table 1 are characters from recent series who best fit, fully or in some way, with the definition of the disorder.

The treatment given to the topic of Asperger's in each of these series varies greatly, and in reality, the focus in many is not even suggested, since the only thing they aim for is not to present a character that fits a certain diagnostic, but one that is interesting, or funny, or encourages some kind of empathy or curiosity in viewers. Currently, the most popular character with most audience success displaying traits of Asperger's syndrome is Sheldon Cooper, the theoretical physicist in the series The Big Bang Theory. Below, I will analyze this character along with examples of different approaches adopted in other successful series by comparing several characters with Sheldon.

Table 1. Recent series with characters displaying characteristics related to Asperger's syndrome.

Series	Character
Alphas	Gary Bell
Bones	Bones
Boston Legal	Jerry Espenson
Bron/Broen	Saga Norén
Community	Abed Nadir
Criminal Minds	Spencer Reid
CSI	Gil Grissom
Eureka	Kevin Blake
Fringe	Astrid (Alternate Universe)
Glee	Sugar Motta
Grey's Anatomy	Virginia Dixon
Hannibal	Will Graham
House	Adam
House	Dr. Gregory House
Law and Order: Criminal Intent	Wally Stevens
Mr. Robot	Elliot Anderson
Orange Is the New Black	Crazy Eyes
Parenthood	Max Braverman
ReGenesis	Bob Melnikov
Rose Red	Annie Wheaton
Sherlock	Sherlock Holmes
Skins	"JJ" Jones
Temple Grandin	Temple Grandin

Sheldon Cooper and Asperger's

The Big Bang Theory is a sitcom that plays on the contrasting perspectives of a group of friends (Sheldon and Leonard, physicists; Howard, a space engineer; and Raj, an astrophysicist) and their partners (Penny, a waitress and later a sales agent; Amy, a neuroscientist; and Bernadette, a microbiologist). The series began airing in 2007 and to date (February 2015) is in its eighth season, after more than 170 episodes. The show's central figure is Sheldon Cooper, a theoretical physicist at the California Institute of Technology, with two doctorates (the first obtained at 16) and a master's, with an IQ of 187, who at the age of five was already writing scientific articles on his notepad. This towering scientific intellect contrasts with many other traits commonly associated with Asperger's syndrome.

Sheldon always performs every action identically, which tends to be peculiar. For example, whenever he calls at Penny's door, he does so using a sequence of: three knocks, "Penny!", three knocks, "Penny!", three knocks, "Penny!".

Sheldon cannot cope with change, or having anyone interrupt his routines. Every week, he strictly follows the same program of meals and activities (according to him, "change is never

good"). He always sits in the same spot on the sofa (not his *favorite* spot, simply *his* spot). When, in the first episode, Penny sits in Sheldon's spot, he complains: "Um, Penny, that's where I sit." Penny says: "So, sit beside me." "No, I sit there." "What's the difference?" Sheldon is clear on that: "What's the difference? In the winter that seat is close enough to the radiator to remain warm, and yet not so close as to cause perspiration. In the summer it's directly in the path of a cross breeze created by open windows there, and there. It faces the television at an angle that is neither direct, thus discouraging conversation, nor so far wide as to create a parallax distortion. I could go on, but I think I've made my point."

Sheldon interprets what is said literally, without capturing the underlying sense in the other speaker's words. So when he knocks on Penny's door in the early hours of the morning, and she, annoyed, spits out: "Do you know what time it is?", Sheldon replies calmly: "Of course I do. My watch is synchronized with the Boulder atomic clock, in Colorado. It's accurate to a tenth of a second."

Sheldon does not understand the implicit rules governing social relations, and he tries to study them using rational logic. In episode thirteen of the second season, "The Friendship Algorithm", he wants to become friends with a colleague and visits a bookshop for a book to show him so as to make friends. The only one he finds is one for kids, about a cockatoo that has just arrived in the zoo. From the information obtained, Sheldon draws a flow chart for a "friendship algorithm" that is detailed, logical and yet totally useless in real life, since, as Sheldon himself recognizes, "parts of the human experience escape me".

Society values honesty highly. So we teach our children they must tell the truth. However, children soon learn intuitively that this is not always the best idea. All children? No, not Sheldon. He is honest, rudely and brutally so. When Leonard, who is worried about his relationship with Penny, comments: "Penny thinks I'm too smart for her. That's ridiculous!", Sheldon has no problem answering: "You're right. Most of your work is worthless." Or when Leonard is worried that "girls like Penny don't end up with guys who build time machines", Sheldon disagrees: "I don't agree. Your lack of attractiveness predates your work on the time machine, so your failure with Penny is due to other reasons." And for Sheldon it is clear: "Why should I say sorry? I didn't say anything that wasn't true."

Sheldon needs to have everything regulated, stipulated. He has a Roommate Agreement with his roommate that includes every last detail, and when he starts a relationship with Amy he establishes a Relationship Agreement that specifies factors such as the frequency and type of meeting, and the extent of physical contact.

Sheldon is probably the most popular character of all those displaying traits typical of Asperger's. However, the viewpoint taken by The Big Bang Theory on this theme is one motivated purely by humor. In fact, the series co-creator, Bill Prady, claims that Sheldon's personality is not based on this disorder (which was not as well-known when he created the character), but on computer programmers Prady used to work with. Furthermore, he believes it is better not to assign the label of Asperger's to Sheldon because, on one hand, this would limit the series' creative possibilities, and on the other, run the risk of other characters' wisecracks about Sheldon being taken as wisecracks about someone with the disorder. However, whether voluntarily or not, Sheldon is a caricature of Asperger's syndrome.

Was it a coincidence that the programmers who Prady was inspired by when defining Sheldon had such a similar personality to a person with Asperger's? Or rather, is there some relation between IT and this syndrome? Before tackling this question, let us look at a series prior to The Big Bang Theory, whose star is in fact a computer programmer often credited with having Asperger's syndrome (though in the series this is never explicitly stated). This is The IT Crowd, a British series that ran for four seasons (with a total of 24 episodes), broadcast from 2006 to 2010 (plus a final episode in 2013), which follows the ups and downs of a company's IT department. As in The Big Bang Theory, this is a situation comedy that plays on the contrast between two very different personality types, embodied by two IT support

technicians (Roy and Moss) and the department head (Jen), who has no idea about computers.

To say that Moss is intelligent would only be partially true. Moss has huge logical and mathematical intelligence, which makes him suited to IT work, but his interpersonal intelligence is practically nil. He can communicate perfectly with the computer, but not with the people around him. Within the department, the work that would be best suited to him would be programming instead of users' technical support. He also lacks common sense and the capacity to improvise suitable solutions in unforeseen situations. In a famous sketch, his office catches alight. After some moments of doubt, Moss looks for the fire extinguisher, places it carefully on the table and starts to read the instructions: "Stand vertically." Moss interprets this to mean he must stand straight, but when he does so, finds that the extinguisher is no longer in his field of vision. "Oh, no! Now I can't read it." Faced with this difficulty, he decides to go back to what he knows and write an email to emergency services.

Moss, like Sheldon, is a character whose behavior has been adapted to the needs of the fiction. Even so, what they share with Dr. Asperger's "little teachers", and with the 107 million people who fall within the Autism Spectrum[8], is a certain way of being and interacting with the world surrounding them, which is displayed through widely differing characteristics. One specific difficulty in studying autism is finding the core of the disorder –that which constitutes its essence and *raison d'être*. What does it really consist of? When Eugen Bleuler coined the term "autism", which Kanner and Asperger later used to define this disorder, he took the Greek term αυτος to indicate that the individual was shut into themselves, because that was the trend he observed in the most seriously affected cases. But even in the cases where this occurs, the social isolation is no more than a manifestation of something deeper underlying the person's cognitive architecture.

The variety of symptoms observed on the autism spectrum has a common denominator: cerebral functioning that makes the brain better suited to understanding and interacting with objects than people. Objects follow specific physical rules and are, therefore, predictable. On the contrary, people act according to their own will, guided by interests and objectives that are hidden from the outside and so are unpredictable.

The human brain is a complex computational mechanism that combines logical capabilities (reasoning, algorithmic method, conscious attention, mono-task processes, which are accurate but slow) and heuristic processes (intuition, imagination, automatic, multi-task processes that are fast but prone to error). In fact, in recent decades, some authors have suggested the existence of two different cognitive systems in the human brain.[9] The relative level of each of these two systems varies in each individual; we all know people who are more intuitive and others who tend to be more methodical.

So the characteristics observed in the autism spectrum correspond to a brain in which a significant imbalance exists in favor of the former of these two systems, the one we could call logical, in detriment of the latter, the heuristic system. For this reason, patients with Asperger's are more skilled in subjects governed by clearly determined rules, and in methodical tasks or ones with careful attention to detail, such as information technology. This would explain their more populous presence in this field.

Sherlock, Max, Hank and Saga

Below, I will look at other examples of television characters related with Asperger's. The earliest example would be Sherlock Holmes, who was initially a literary character based on the real-life

[8] The statistic comes from current world population numbers, around 7250 million people, and from the aforementioned report which detects a prevalence of autism of 1.47%.

[9] See, for example, the article *Dual-Processing Accounts of Reasoning, Judgment, and Social Cognition,* by Jonathan St. B. T. Evans, or the works of Shelly Chaiken, Seymour Epstein, Daniel Kahneman and Steven Sloman.

figure of Dr. Joseph Bell (1837–1911), an eminent Scottish surgeon. He was the author of several medical books (including *A Manual of the Operations of Surgery*), as well as being a pioneer in forensic science. He believed that every doctor should base their diagnosis on painstaking attention to detail, and he made every effort to encourage this trait in his students. So, it is said that in one of his classes he showed his students a vial containing a foul-smelling liquid into which he dipped his finger before licking it. He then indicated that the students should do likewise. Once they had finished, Bell repeated the operation, showing them that he had, in fact, dipped one finger and licked another. Through this, he aimed to teach them the need to focus on accurate observation of the facts. Bell himself was extraordinarily gifted in this capacity and in drawing conclusions from the smallest details. So his help was often required by the police in their investigations. (Some claim that he even assisted in the case of "Jack the Ripper", but there is no evidence of this.)

One of Bell's students in 1877, and later his assistant, was Arthur Conan Doyle, then a medical student at Edinburgh University, from where he would graduate four years later. Already, during his studies, Doyle had begun to write works of fiction, but those that made him universally famous were the stories starring the detective, Sherlock Holmes. Doyle admitted to Bell himself that he had created the character based on Bell's personality, a combination of his acute concentration when at work, his passion for detail and his capacity for logical reasoning. And it may be supposed that, although he did not include them in the list, other of Holmes's less praiseworthy characteristics, such as his lack of empathy, a certain arrogance, and the anxiety he attempted to counter with his addiction, also originated with Bell. All this encourages speculation on whether Holmes's character, and consequently Bell's, corresponds to the profile of Asperger's syndrome. If so, Doyle was describing a case almost 60 years prior to Hans Asperger publishing his article.

Among the many adaptations of the character for the screen (both the wide and the small), the BBC series Sherlock, with three brief seasons of three episodes each in 2010, 2012 and 2014, with a fourth scheduled for 2016, present the famous detective in the modern world, adding new technologies to his arsenal of investigative resources. The image they present of Holmes reinforces his character within the autism spectrum. Right at the start of the first episode, a morgue worker paints her lips and suggests a date: "Listen, I was wondering… maybe later, when you're finished… I was wondering if you'd like to have coffee?" But Sherlock does not capture the insinuation and responds coolly: "Black, two sugars, please. I'll be upstairs." Later, when she returns, disappointed at his response, without the lipstick, he asks her: "What happened to your lipstick?". "It wasn't working for me." "Really? I thought it was a big improvement. Mouth's too small now."

Though this type of behavior is repeated throughout the series, the only time when such a diagnosis is explicitly proposed is in the second episode of the second season, when Inspector Lestrade, annoyed at Sherlock's behavior, complains to Watson that it "must be due to his character…", and Watson confirms: "His Asperger's?"

The series in which Asperger's is explicitly dealt with is Parenthood, in which two characters have the disorder. The action is set with the following scene: While eating in a restaurant, Adam receives a call from his wife Kristina, who in a worried voice asks him to meet her. When he arrives, Adam sees the concern on her face. "What's going on?". "Um, I heard from the educational therapist. And she said that she has some concerns about Max. She feels that Max has some learning differences." Well, that isn't so serious, thinks Adam. They are both concerned about their son's strange behavior, but if it is just an educational problem, it can be solved. "Okay, listen, I've given this some thought, I wanna contact the school, get Max a tutor to help him through this rough period." But Kristina knows it is more than this. "Honey, she wasn't just talking about... academics. ... Honey, she thinks that he may have..." Her voice fails her. "She thinks that he may have Asperger's." Adam is surprised and incredulous. "Asperger's? Like autism? ... I've seen autistic kids. ... The Lessings' kid with the hand flapping..." However, after the interview,

Kristina is better informed. "It's high-functioning autism. A lot of people with Asperger's ... live very productive lives, Adam. ... [The therapist] said that if we get him the right tools to learn…"

Parenthood is a series by the channel NBC which narrates the difficulties of three generations of the Braverman family: Zeek and Camille are the grandparents, who have four kids, Adam, Sarah, Crosby and Julia, some of whom have partners, and kids. The fragment described, focusing on Adam and his wife Kristina, is in the series' first episode, but could come from the real life of any of the many families who have undergone similar situations when they discover their child suffers from a disorder that they may never have heard about. Parenthood is the series that describes Asperger's syndrome most explicitly and rigorously. The scripts are assessed by experts on the subject, and every two episodes the director, executive producer and the actor playing Max meet with an Asperger's specialist to ensure that the performance mirrors the disorder. A singular feature of Parenthood that reveals its involvement with the disorder is that the series runs a blog[10] called *The experts speak,* where doctors and researchers comment on episodes and offer families advice.

Max presents the social deficits and adherence to routines that are the diagnostic clues to Asperger's. He is also hypersensitive (to sound and touch), is unable to understand facial expressions or implicit social rules, and suffers nervous crises or tantrums when anything alters his plans. However, one should not think that all children with Asperger's are like Max, since each case can be manifested in differentiated aspects and to varying degrees. The way in which each person reacts to their difficulties is also different. In reality, two people with Asperger's can be as different to each other as two neurotypical people might be, though this does not stop an expert professional from detecting the disorder after observing a child's behavior for a while.

The highly realistic treatment of Asperger's in Parenthood is because the series creator, Jason Katims, has a son with this disorder, which led him to research the subject thoroughly and to try to represent it on-screen in the most exacting and direct way possible. Virtually none of the series I included in Table 1 specify that the character's characteristics are due to Asperger's syndrome, or at most, this is indirectly insinuated at some point. Yet in Parenthood, the term "Asperger's" is pronounced 125 times (in addition to "autism" or "autistic" 23 times, and "spectrum" another eight times, used in the sense of autism spectrum).[11] In fact, after the second episode of the first season was aired, a curious event occurred. Though the initial episode had mentioned Asperger's (in the fragment I copied above), the second episode emphasized it with greater intensity (13 times), so it seems to have lodged more firmly in viewers' perception. Curiosity concerning a medical concept that people had not heard of meant that the morning after the broadcast, the most searched-for expression on Google was "Asperger's disease".

The most idiosyncratic characteristics of Asperger's –as well as its repercussions for the individuals themselves and those around them (family, social network)– were being projected from the very first episodes. Just two minutes into the start of the series we saw the grandfather (Zeek) expressing his concern to Max's father (Adam) because the child refused to play on the baseball team, preferring to stay home and play alone. Adam, who knows that Max dislikes baseball (because of his lack of skill at sports and because he feels uncomfortable in groups), tries to justify this, saying that the grandfather's insistence on this score makes Max "a little nervous", adding: "Max is a sensitive kid, that's all." Zeek's abrupt answer expresses an entire viewpoint –unfortunately, one that is pervasive– of dealing with human diversity: "Well, you were sensitive too. I cured you." These few words allow us to reflect on certain therapeutic methods that aim more to adjust children's behavior to the social standard than to help them develop their specific

[10] http://www.nbc.com/parenthood/blog/the-experts-speak

[11] Not counting the final episode, which had not been aired at the time of writing this paragraph.

capacities and live fulfilling lives.[12] And in case the idea, given its briefness, goes unnoticed by viewers, the next scene shows Max's mother (Kristina) and sister (Haddie) wondering why baseball is so important. Kristina's answer is clear: "Well, because men feel the need to express their love through hitting balls, slapping butts, and discussing meaningless statistics. And I think your father thinks that if Max doesn't do these things he's gonna grow up to be sad and alone." Haddie concludes: "Well, that's absurd."

After the therapist indicates to them that Max may have Asperger's, Adam and Kristina begin to do research and get in contact with the parents of another kid with Asperger's, who recommends they follow a gluten-free diet: "No wheat. No sugar. No chemicals. Casein-free too." Kristina asks: "What's casein?" A quick comeback: "I don't know." And immediately: "We have a nutritionist that you are gonna love." (This is a nod at the "cures" that are sometimes proposed in certain circles, arising from the impotence that some parents feel at not finding a solution to their child's problem.) However, the next piece of advice is useful: "You're going to need a behavioral therapist. They say Dr. Pelikan is the best. ... [but] no one gets in to see Pelikan. He's an elusive ass. He's like the Bob Dylan of autism."

Luckily, a chance situation gets them an early appointment with the doctor. After the visit, Pelikan tells them his diagnosis: "Max is very high functioning. But I do find that Max's behaviors are consistent with an Asperger's diagnosis." The confirmation falls like a piano on the parents, who were hoping it might be something temporary: "So how long is this going to take then?" The reality is quite different: "Unfortunately, there is no cure for Asperger's." It is a syndrome that he will always have. Kristina: "What... what are we supposed to do for him?" Then the series, through Dr. Pelikan, gives advice to viewers who may find themselves in this situation: "You will help to uncover Max's gifts. You figure out how he learns. You get as much support for Max as possible. Quite honestly, the research clearly shows the greatest barometer of success for children with Asperger's is their parents' involvement."

One aspect that concerns parents when they receive such a diagnosis about their child and still do not know much about Asperger's is the fact that it is not temporary, but a characteristic that will accompany their child all his life. Adam expresses it like that when they return home after their visit to Dr. Pelikan: "I can deal with anything. I... I can deal with disease, with illness, with a broken bone. Give me something I can fix. But I just... I don't know how to deal with this. This is for life." True, autism spectrum disorder is for life, but that does not mean that it always affects the person in the same way as it does during the early years of development –at least not in most cases, especially if help is given early. Even without this help, many people who were children when the disorder was still unknown are now adults leading apparently normal lives.

Children with Asperger's –without abandoning the essence of what makes them like that and constitutes the way they are and see the world– can learn to integrate and relate with their environment, and to become capable of contributing their special personal capabilities toward society's progress (as many of them have done). Parenthood reflected this throughout the series, showing Max's progressive evolution in self-control, his social relations and, in the sixth and last season, his first romantic crush on Dylan, a classmate suffering from attention deficit hyperactivity disorder.

Yet furthermore, to complete the life perspective of the person with Asperger's, from the fourth

[12] "It's important to value our children as individuals, even if they are not the children we expected them to be. The tragedy of our society is the rush to services that are geared specifically at inculcating conformity as opposed to helping the child develop into the unique adult they will eventually become. We easily forget that the goal isn't a well-behaved child but a happy, successful and independent adult. An intervention is deemed 'successful' when the child appears to behave just like all of the other kids, but little attention is paid to the long term goal or the ramifications of forcing square pegs into round holes." Corin Barsily Goodwin and Mika Gustavson, 2011. Available at: http://www.thinkingautismguide.com/2011/02/asd-and-giftedness-twice-exceptionality.html

season onward, the series incorporated an adult character: Hank, a man with few social skills. He is a professional photographer who has a studio where Max's family goes to get a group portrait done. Hank is looking for an assistant, and Sarah, who is Adam's sister and Max's aunt, applies for the job. Initially, Hank rejects her because of her lack of technical knowledge, but he soon realizes that Sarah has the skills for dealing with customers that he lacks and he hires her: "Turns out the people at the shoot, they liked you. They, um, made a big stink about it. So it turns out you're good at the schmooze. And I hate talking to clients. Truly, I hate it. I get a little sick in my stomach sometimes. Yeah, so that's why I was gonna call you. You're not as awful as I originally thought."

The relationship between Hank and Sarah, initially a professional one and later romantic, puts Hank and Max in contact, who, because they share similar character traits, become friends. One day Max gets angry at Hank because he had promised to help him with some photos and, due to work reasons, Hank could not. Max throws a tantrum, yells at Hank that he is a liar, and runs home to shut himself in his room. A few days later, Max's father appears at Hank's studio to apologize for this behavior. He explains that Max has a disorder called Asperger's syndrome and leaves him a book on the subject so that he can understand what happened.

Minutes later we see Hank at night, reading the book with growing excitement, turning pages nervously and highlighting sections. He runs to Sarah's house. Seeing him so troubled, she asks: "What's this book? What's up?" Hank answers excitedly: "I was reading this book for Max. And then all of a sudden, I'm not reading about the kid anymore. I'm reading about me! This book is describing me. I'm seeing my life. My life. I can see everything, absolutely everything. That is why stuff happens to me. I'm like him. I'm like Max." How many adults in recent years have experienced that moment! Some, when their children have been diagnosed. Others, like Hank, when reading a book by chance. For them all, the moment means finding the explanation for their past and perhaps being able to make peace with themselves.

Parenthood is the series that deals with Asperger's syndrome in the most explicit manner, closest to the situation of many families who have similar experiences. I will end this review with another quite different series. This one never even names the disorder, but I consider it highly instructive, since both through its plot idea and in the relationship it establishes between the two leading characters, and even symbolically through the setting in which it takes place, and the series name itself, it sends a message that is valid not just for the case of Asperger's syndrome, but for human diversity of any kind.

Bron/Broen is a series co-produced by Swedish and Danish public television along with the German channel ZDF. To date, two seasons have been produced, with a total of 20 episodes.[13] The bilingual title means "bridge" (*Bron* in Swedish, *Broen* in Danish) and refers to Öresund (or Øresund) Bridge, an eight-kilometer-long architectural marvel that, along with a four-kilometer tunnel, links Sweden and Denmark. The bridge has a constant presence in the series, since it is on its central point, just on the line marking the border between both countries, that a body appears. The death must be investigated jointly by the police of Sweden and Denmark, countries separated by a certain social and cultural distance. From that moment onward, the characters are constantly forced to cross the bridge, both in a real sense, to pursue their investigation, and figuratively, by learning to understand and accept their differences.

In charge of the Danish side of the investigation is detective Martin Rohde, a man whose apparently calm and ample figure brings to mind a polar bear. Yet he pursues his work with a passion, to the extreme of taking justice into his own hands. In contrast, on the Swedish side, we have detective Saga Norén: a meticulous person, hard, cold and humorless, who follows the rules scrupulously, is incapable of lying, and brilliant in her

[13] Until August 2015. There has also been a US remake, The Bridge, that takes place on the border between the US and Mexico, and another Franco-British version, The Tunnel, centered on the Eurotunnel.

work, but with no skill at social niceties. No doubt the scriptwriters were guided by Asperger's syndrome when defining her character, though at no time during the series is explicit reference made to it.[14]

To a certain extent, Saga and Martin are the antithesis of each other, and so their initial contact causes mutual perplexity, incomprehension and some rejection. Nevertheless, little by little, they establish a bond, a form of male-female friendship unrelated to sex or even external shows of affection. I would venture to say it is such a relationship as might exist between an understanding father and a daughter who is experiencing certain difficulties. Martin manages to accept Saga's way of being, and becomes her confidante and assessor in social questions, as through her he acquires a previously unknown view of the world. For her part, Saga learns to see Martin as the closest she has ever had to a friend, something she confesses at the end of the last episode aired, when she discovers he has committed a punishable offense: "I have analyzed your motives and I have concluded… you are my only friend."

No doubt it is the lesson we should take away from the series: acceptance of human diversity in all its variety, and collaboration to overcome any differences (mental, nationality, culture, etc.) so that we can all build a better world.

[14] I would note the coincidence (or not) that means that in the sample of characters displaying Asperger's I have chosen, there are five males (Max, Hank, Sheldon, Moss and Sherlock) and one woman (Saga). In other words, the same ratio as in real life, according to the aforementioned CDC report.