http://nobelprize.org/nobel_prizes/physics/laureates/1936/, respectively.

8. Nothing about Leslie suggests she is an inept scientist; in "The Cushion Saturation," we learn that her research is worthy enough to justify a trip to the CERN Large Hadron Collider in Geneva, Switzerland. Furthermore, unlike Sheldon, Leslie seems equally comfortable in both the experimental and the theoretical realms. When she's introduced, it's said that she works in the same lab as Leonard, and in her first appearance she is trying to use a laser to heat up a cup of noodles.

9. Due to the lack of discernable experiential evidence, it is tempting to interpret the debate between Sheldon and Leslie as if they were fundamentalists of different religions. This might explain why Leslie refers to "the children"; although the analogy is a bit loaded, many parents face the difficult issue of deciding in which religion their children should be raised. Leonard suggests a nonpartisan approach of allowing the children to choose for themselves, but Leslie suggests that they need more guidance. In any event, the analogy breaks down in the sense that if experimental evidence ever firmly contradicted string theory or loop quantum gravity, one would expect Sheldon or Leslie to eventually concede the point, which isn't typically a factor in religious partisanship.

Chapter 9

THE ONE PARADIGM TO RULE THEM ALL: SCIENTISM AND THE BIG BANG THEORY

Massimo Pigliucci

Why is *The Big Bang Theory* so funny? Some fans think it's the writing; others, the acting; still others, the directing. Different aspects of the show no doubt work together on multiple levels. This chapter explores one way in which the various facets—writing, acting, directing—come together to make us laugh. The characters of Sheldon Cooper, Leonard Hofstadter, Howard Wolowitz, and Rajesh "Raj" Koothrappali are so funny (in part) due to their extremely "scientistic" worldviews, entirely framed by their practice of science. The humor manifests as their scientific approach unfolds in everyday life. They, of course, invariably fail at various mundane tasks, in sharp contrast with their nonintellectual but much more pragmatic neighbor Penny. In this way, art teaches us something about life. Through the lens of *The Big Bang Theory*, we can see how attempts to develop a thoroughgoing scientistic

worldview are bound to fail, calling for more balanced approaches to understanding the world around us.

The Data

In "The Hamburger Postulate," Leonard Hofstadter finally decides to ask his equally nerdy colleague, Leslie Winkle, to go out on a date:

> Leonard: Leslie, I would like to propose an experiment. . . . I was thinking of a bio-social exploration with a neuro-chemical overlay.
>
> Leslie: Wait, are you asking me out?
>
> Leonard: I was going to characterize it as a modification of our colleagues slash friendship paradigm with the addition of a date-like component, but we don't need to quibble over terminology.

Leslie suggests they simplify things a bit, as in any good scientific experiment, by skipping the actual date and going straight to the kissing stage. This will determine empirically what sort of neuro-chemical arousal they get from the experience and hence determine whether they wish, in fact, to begin dating. Leslie reports that Leonard's kiss produces absolutely no arousal in her, ending their experiment and Leonard's inquiry. Having agreed with the parameters, he quietly leaves the lab a bit wistful.

It's "Anything Can Happen Thursday Night" from "The Hofstadter Isotope," and the guys are—gasp—considering going out to a bar to pick up women. Leonard quickly comes back to Earth, muttering, "C'mon, Howard, the odds of us picking up girls in a bar are practically zero." Undaunted, Wolowitz replies, "Oh, really? Are you familiar with the Drake equation?" Sheldon unflinchingly recites the formula for the Drake equation, used to calculate the odds of finding an extraterrestrial civilization with whom to communicate.[1] "Yeah, that one!" Howard quickly injects and continues:

> *You can modify it to calculate our chances of having sex by changing the formula to use the number of single women in Los Angeles, the number of those who might find us attractive, and what I call the Wolowitz coefficient: Neediness, times Stress, squared. In crunching the numbers I came up with a conservative 5,812 potential sex partners within a 40 mile radius.*

Leonard muses that he must be joking. Stone-faced, Howard replies, "I'm a horny engineer, Leonard, I never joke about math or sex."

In "The Friendship Algorithm," Sheldon endeavors to develop a scientific approach to acquiring friends. He proceeds to demonstrate the power of the algorithm over the phone, trying to convince the irksome Barry Kripke to spend time with him. Sheldon, however, soon gets stuck in an infinite loop caused by the structure of his own algorithm. Howard notices this and promptly strolls over to Sheldon's whiteboard to modify the procedure, thereby helping Sheldon achieve his goal. Placing his hand over the phone, Sheldon muses, "A loop counter, and an escape to the least objectionable activity. Howard, that's brilliant. I'm surprised you saw that." Slowly making his way back to his chair, Howard rhetorically and sarcastically asks, "Gee, why can't Sheldon make friends?"

These examples illustrate the attempt to reduce complex social skills to simple matters of logic, of the kind that might be implemented in a computer program. Once we are finished chuckling at Sheldon, Howard, Leonard, or Raj, the inevitable reaction is: dating or making friends simply isn't that cut and dried. This, in turn, leads us to ask: why even try to apply scientific methodologies to complex social interactions? Why think that science holds all of the answers?

The Background

Science is indisputably the most effective way human beings have developed to understand—and even control, to a point—the natural world. It used to be a branch of philosophy, until the scientific revolution of the seventeenth century. Galileo and Newton thought of themselves as "natural philosophers," and the very term *scientist* was coined by the philosopher William Whewell as recently as 1834, in analogy with the word *artist*. The root of the term, however, is the Latin *scientia*, which means knowledge broadly construed, not only in the sense of what we today consider scientific knowledge.

Scientism is the idea that science can and should be expanded to every domain of human knowledge or interest, including the social sciences and the humanities, or alternatively the idea that the only kind of knowledge really worth having is that provided by the natural sciences. The appeal of scientism may derive from another important idea that is fundamental to the practice of science: reductionism. Reductionism is a basic and very successful approach common to the physical and biological sciences, articulated by René Descartes (1596–1650) in his *Meditations on First Philosophy*. Descartes was interested in establishing firm epistemic foundations for mathematics, philosophy, and science. To this end, he proffered four principles that he discovered on which to build a successful science. The second and third principles summarized the practice of reductionism:

> *The second, to divide each of the difficulties under examination into as many parts as possible, and as might be necessary for its adequate solution. The third, to conduct my thoughts in such order that, by commencing with objects the simplest and easiest to know, I might ascend by little and little, and, as it were, step by step, to the knowledge of the more complex; assigning in thought a certain order even to those objects which in their own nature do not stand in a relation of antecedence and sequence.*[2]

The "divide and conquer" strategy (second principle), coupled with the "building from the bottom up" (third principle) approach, are exactly how physics has been able to subsume the entire domain of chemistry, and why molecular biology has been such a successful science since the discovery of the structure of DNA as recently as 1953. It is this triumph of the Cartesian method that has made reductionism a staple of the way science is done today.

Moreover, there is an intuitive appeal to reductionism and, by extension, to scientism, because of the common acknowledgment—among both scientists and philosophers—that the world is made of the

same kind of basic stuff, be it quarks or superstrings. From this, it is tempting to conclude that a complete understanding of the world can be arrived at by simply studying the basic stuff of the universe carefully. Of course, science—particularly physics—is the discipline that studies the basic stuff of the universe. Perhaps this kind of thinking fuels the heated discussion between Leslie and Sheldon about string theory and loop quantum gravity in "The Codpiece Topology." If a complete understanding of everything depends on exploring the basic stuff of the universe, it is very important that you are studying the correct basic stuff.

The Controversy

Do real scientists actually engage in scientism, though? Well, there are some data to consider. Note physicist Steven Weinberg's notorious essay "Against Philosophy."[3] And note the more recent bold (and unfounded) declaration by another physicist, Stephen Hawking, that philosophy is dead.[4]

One of the more ambitious examples of scientism, however, has come from biologist Edward O. Wilson.[5] In the (unwittingly) ironically titled *Consilience: The Unity of Knowledge*, Wilson attempts to subsume the humanities and the social sciences under biology on the somewhat flimsy epistemological ground that anything human beings do must eventually come down to their biology.[6] In a trivial sense, of course, Wilson is correct: human beings are biological entities, and everything we do is made possible (and constrained) by our physical bodies, our senses, and our brains. It simply doesn't follow, however, that biological explanations—though perhaps a necessary part of the picture—are sufficient or even our best bet when it comes to the complexities of human culture, such as dating or making friends. Yes, we date (in part) because we want sex, and we want sex (in part) because we are programmed by our genes to reproduce. Yet if anyone seriously thinks that human courtship and relationships can be accounted for solely (or even largely) on those terms, that person deserves the kind of "haughty derision" Sheldon and the guys regularly elicit from Penny for their absurd science-dominated take on the world.

More recently, neuroscientist Sam Harris has approached scientism by challenging (and dismissing out of hand) the entire field of ethics, a classical province of philosophy.[7] He claims that moral "facts" are of the same type as scientific facts, and that science—and particularly his own field of neurobiology—is therefore better poised than philosophy (or religion) to investigate them. Harris rejects the standard distinction between facts and values that was made famous by David Hume (1711–1776) in his *Treatise of Human Nature*. For Hume, empirical facts—such as those that science deals with—were of a very different nature from ethical judgments, the stuff that moral philosophy is interested in, and one could not simply slide without argument from facts to values.

Harris will have none of it, pointing out, for instance, that brain scans show that when people accept the truth of a mathematical proposition

(as in "2 + 6 + 8 = 16"), they activate the same brain region (the medial prefrontal cortex) that is engaged when we accept the truth of a moral proposition ("it is good to let your children know that you love them"), from which Harris deduces that "the physiology of belief may be the same regardless of a proposition's content [which] also suggests that the division between facts and values does not make much sense in terms of underlying brain function."[8] That may very well be, but it has nothing whatsoever to do with the question of whether moral truths are of the same kind as scientific or mathematical truths. To convince yourself of this, simply reflect on the well-known neurobiological fact that your brain engages the same circuitry when you have sex in the real world and when you *think* of having sex. Hopefully, this will not lead you to believe that the two kinds of experience are even remotely the same, just as Howard and Raj found out at the end of "The Gothowitz Deviation," where we find them reimagining how their evening went, or at least what they intend to tell their friends about how the evening went. After their night of scamming chicks at a Goth club fails, they invent a story about group sex and hot tubs. Raj goes so far as to include the (imaginary) detail of how their female conquests smelled of jasmine. Yet it becomes immediately and painfully clear that there are all-too-important differences between imagining having had sex and actually having done the deed, which no doubt explains the plans to visit a country bar the next night.

Perhaps surprisingly, it isn't only scientists who engage in scientism; some philosophers are guilty of it, too! For instance, Paul and Patricia Churchland have endorsed a position in philosophy of mind known as eliminative materialism, the idea that talk of subjective experience should be eliminated and substituted with the more precise language of neurobiology. So, for instance, "I am in pain" *really* is just a subjective and imprecise way of saying that certain C-fibers in particular nerves of my somatic sensory system have been activated by a physical injury of a given type.[9] Pain, in this account, is nothing over and above the firing of C-fibers. The problem, of course, is that talk of pain and talk of C-fiber activation—though certainly related—are not at all interchangeable ways of referring to the same phenomenon but rather distinct aspects (the subjective experience and the neurobiological description) of that phenomenon. The Churchlands are, in a sense, making the same mistake that Harris does, treating neurobiology as a fundamental and self-contained explanation of the mental, entirely sidestepping the fact that our subjective experiences have a qualitative richness that is simply not captured by a (technically correct) scientific account.

Leonard makes a similar mistake in "The Grasshopper Experiment," when Penny is practicing to be a bartender. Quite proud of herself, Penny announces, "Okay, here we go, Leonard, one tequila sunrise." Pleased, Leonard replies, "Thank you! You know, this drink is a wonderful example of how liquids with different specific gravities interact in a cylindrical container." True, a tequila sunrise (a drink made of three parts tequila, six parts orange juice, and one part grenadine syrup) is a wonderfully colorful way to demonstrate the layering of liquids characterized by different specific gravities, but that is decidedly *not* the

reason people ask for tequila sunrises in bars, nor does that bit of information have anything interesting to tell us about the experience of drinking a tequila sunrise (try it and find out for yourself). Something like this also happens in "The Friendship Algorithm," when Sheldon realizes that climbing a rock wall has a distinctive qualitative feel to it that reading and learning about climbing a rock wall does not. Indeed, the former made Sheldon pass out, while the latter didn't.

The Ramifications

The term *scientism* is almost never used in a positive sense; rather, it is ordinarily meant as an insult, usually hurled by (some) philosophers and humanists at scientists who seem to trespass on territory that does not belong to them. True, Howard's attempt to mathematically quantify the delicate art of human dating is amusing, as is Leslie and Leonard's experiment. And Sheldon's attempt at friendship is simply comical. Yet what accounts for the animosity associated with scientism?

Consider that staunchly valuing a scientific approach to things may hamper our ability to see the "bigger picture." These days, for instance, our society seems to be in the thrall of a quantification frenzy: we wish to measure (and compare) people's intelligence or learning or happiness by using simple, linear scales that afford us a feeling of precision and scientific accuracy. The risk, of course, is that we may miss the structure (and beauty?) of the forest because we are focused on counting the individual trees, discounting the importance of anything that is not amenable to a scientific-quantifying approach (think again of Sheldon's friendship algorithm) or straitjacketing complex phenomena (such as intelligence, learning, or happiness) into easily digestible numbers that make our decisions and our entire worldview much simpler than they would otherwise be.

Even Sheldon seems to get close to understanding this point during a conversation with his sister Missy in "The Pork Chop Indeterminacy." Introducing her to the rest of the gang, he says, "She is my twin sister, she thinks she is funny, but frankly I've never been able to see it." Missy knowingly replies, "That's because you have no measurable sense of humor, Shelly." Without skipping a beat, Sheldon rhetorically asks, "How exactly would one measure a sense of humor? A humor-mometer?" The delightful play on the term *measurable* shows that Missy, and not Sheldon, has a sense of humor exactly because humor resists quantifiable analysis.

Too much emphasis on science also risks becoming a sterile end, in and of itself, as in this exchange from "The Cooper-Hofstadter Polarization," where the boys proudly show Penny a new piece of software that Howard developed, which allows people from all over the world to take control of Leonard and Sheldon's apartment's fixtures:

> Leonard: See?
>
> Penny: No.
>
> Sheldon: [impatiently] Someone in Szechuan province, China, is using his computer to turn our lights on and off.

Penny: Oh, that's . . . handy. Ahem, here is a question: why?

When the four scientists answer, in unison, "Because we can," Penny shakes her head in exasperation. The exercise is fascinating to the boys because it shows that it can be done, even though there are much better (but less "scientific") ways of accomplishing the same goal. Penny would simply have them use the light switch (or, at most, buy a universal remote from Radio Shack.)

Philosophers who criticize scientistic approaches to human problems seek to highlight the ethical issues raised by a science-based view of everything. When we attempt to reduce, or reinterpret, the humanities and our everyday experience in scientific terms, we not only are bound to miss something important, we also risk dehumanizing our own and other people's existence, possibly even becoming callous about the dangers of doing certain types of science on the ground that the latter represents in itself the highest conceivable goal. For instance, since the Large Hadron Collider (LHC), the world's highest energy particle accelerator, has gone into service near Geneva (Switzerland), there has been discussion of the possible dangers posed by some of the experiments planned for the facility. The controversy is briefly featured in "The Pork Chop Indeterminacy." Leonard informs Raj, "Some physicists are concerned that if the Supercollider actually works, it will create a black hole and swallow up the earth, ending life as we know it." Raj unsympathetically answers, "What a bunch of crybabies."

True, there doesn't seem to actually be any measurable (!) risk of a black hole suddenly materializing inside the LHC and destroying the Earth, but science does have a long history of questionable effects on human life, from the tragedy of the eugenic movement (which from 1909 through the 1960s was responsible for the forced sterilization of sixty thousand individuals deemed to be genetically "unfit" in the United States) to the invention of nuclear weapons and the development of biological warfare. So an argument can be made that we shouldn't necessarily carry out certain types of scientific research just "because we can," as the boys explained to Penny. Science needs the guidance of external disciplines—such as ethics—as well as a serious engagement with public discourse to avoid eugenics-type Frankenstein scenarios. Yet this assumes the very thing that a scientistic approach denies: that meaningful rational discourse is possible or relevant outside of science itself.

Even if scientists know best, should science be used to improve the human condition without the explicit consent of the people whose lives are affected, in order to achieve the alleged improvement? And what constitutes an "improvement" in our existence, anyway? This question is implicitly posed in "The Gothowitz Deviation," when Leonard discovers that Sheldon is using positive reinforcement (a behavioral control technique devised by B. F. Skinner) with Penny—giving her chocolate every time she does something he likes:

Leonard: You can't train my girlfriend like a lab rat.

Sheldon: Actually, it turns out I can.

Leonard: Well, you shouldn't.

Sheldon: There is just no pleasing you, is there, Leonard? You weren't happy with my previous approach in dealing with her, so I decided to employ operant conditioning techniques. . . . I'm just tweaking her personality, sanding off the rough edges, if you will.

Leonard: No, you are not sanding Penny!

Sheldon: Oh c'mon, you can't tell me that you are not intrigued by the possibility of building a better girlfriend.

The exchange is hilarious, but the underlying issue—the interplay between science at all costs and a consideration of extrascientific ethical values—has led to some horrifying outcomes, even in recent history. One of the most notorious cases is the Tuskegee syphilis experiment, conducted in Tuskegee, Alabama, between 1932 and 1972. Doctors working with the U.S. Government began a study of 399 black men affected by syphilis, as well as an additional 201 used as controls, without telling the men in question that they had the disease. More crucially, once an effective cure became available—with the development of penicillin in the mid-1940s—the researchers knowingly withdrew treatment from the subjects. The study continued for decades and was terminated only because of a leak to the press, with the resulting controversy eventually leading to federal legislation to regulate scientific research that affected human subjects, as well as to the establishment of the Office for Human Research Protections.[10]

The Analysis

So, what exactly is the problem with scientism, and what solutions are available to us? The answers to these two questions are actually among the several comedic premises that make *The Big Bang Theory* work so well as a show: respectively, the tendency of scientists to overreach, and the push back we can generate by applying some common sense (along with, perhaps, good philosophical reflection). Again, there should be no question that science is by far the best toolbox that humanity has come up with to discover how the world works. Science also needs much defending, as it has been under increasing attack recently, with large portions of Americans denying the theory of evolution, rejecting the notion of anthropogenic climate change, or believing that somehow vaccines cause autism.[11] As Carl Sagan aptly put it in his *The Demon-Haunted World*, a classic collection of essays about pseudoscience and assorted nonsense, science is like a very precious candle in the dark, which deserves our respect and requires our protection.

Yet it should be equally clear that science has a proper domain of application (however large). This implies that there are areas where science doesn't belong or it is not particularly informative or has nothing to do with what we really want. One of the benefits of *The Big Bang Theory* is its effectiveness in demonstrating this point, especially through many of the lighthearted exchanges between Penny and Sheldon.

One such exchange is particularly relevant to the debate about scientism. In "The Work Song Nanocluster," Sheldon volunteers to help Penny make her new "Penny Blossom" business enterprise become as

profitable as possible. A bit surprised, Penny asks, "And you know about that stuff?" Sheldon, slightly scoffing, answers, "Penny, I'm a physicist. I have a working knowledge of the entire universe and everything it contains." Rather annoyed, Penny asks a question to test Sheldon's hypothesis: "Who's Radiohead?" This time skipping many beats, Sheldon musters, "I have a working knowledge of the *important* things in the universe." This is a near perfect example of the fallacy of scientism: physicists may one day be successful in arriving at a theory of everything, but "everything" has a very specific and limited meaning here, referring to the basic building blocks of the universe. It does not follow, either epistemologically or ontologically, that one can then simply apply the Cartesian method to work one's way up from superstrings to the cultural significance of Radiohead.[12] Moreover, Sheldon is offering a not-so-implicit value judgment here. Yet one could reasonably ask, why is theoretical physics the only important mode of discourse? Or, more to the point, how could Sheldon prove or justify this position within science alone? Value judgments, again following David Hume, seem distinct from scientific discourse exactly because what is or can be done is no sure guide to what ought to be done.

Moreover, it is downright pernicious for science, as well as for society at large, when prominent scientists such as Stephen Hawking declare an entire field of inquiry (philosophy) dead. Hawking does so, while at the same time engaging in some (bad) philosophical reasoning throughout his book, particularly when he comments on the very nature of science—a classic domain of study for philosophy. Or consider again Sam Harris, who wrote an entire tome about how science can provide us with values, rejecting without argument one of the most fundamental distinctions made by philosophers, the one between empirical facts and values.[13] Harris does this while at the same time making a very particular (and entirely unacknowledged) set of philosophical choices right at the beginning of his book, such as taking onboard a consequentialist ethical philosophy as the basis for his ideas about human happiness.

A much more reasonable view, I think, is that natural science, social science, philosophy, literature, and art each must have a respected place at the high table of societal discourse, because they are all necessary—and none sufficient—for human flourishing. Or, as it was so beautifully put in "The Panty Piñata Polarization,"

> Sheldon: Woman, you are playing with forces beyond your ken.
>
> Penny: Yeah, well, your ken can kiss my Barbie.

Philosophically, I can see no better way to articulate the message: sometimes, science is just not the point, and it certainly isn't the only point.

NOTES

1. The actual equation looks like this: $N = R * fp * ne * fl * fi * fc * L$. Where N is the number of civilizations in our galaxy with whom communication is possible; R is the average galactic rate of star formation per year; fp is the fraction of stars with planets; ne is the

average number of potentially life-sustaining planets per star; *fl* is the fraction of planets actually developing life; *fi* is the further fraction developing intelligent life; *fc* is the fraction of civilizations developing communication technology; and *L* is the length of time these civilizations produce detectable signals. You can play with the equation yourself here: www.activemind.com/Mysterious/Topics/SETI/drake_equation.html.

2. In case you are really curious, here are the first and the fourth: "The first was never to accept anything for true which I did not clearly know to be such; that is to say, carefully to avoid precipitancy and prejudice, and to comprise nothing more in my judgment than what was presented to my mind so clearly and distinctly as to exclude all ground of doubt." And: "The last, in every case to make enumerations so complete, and reviews so general, that I might be assured that nothing was omitted."

3. See *Dreams of a Final Theory* (New York: Vintage Books, 1992), chap. 7.

4. Right at the beginning of *The Grand Design*, written with Leonard Mlodinow (New York: Random House, 2010).

5. See *Consilience: The Unity of Knowledge* (New York: Vintage Books, 1999).

6. The irony of the title comes from the fact that *consilience* is a word also invented by the above mentioned philosopher William Whewell, to indicate a type of reasoning by which one uses convergent lines of evidence to arrive at a particularly strong conclusion, as Sherlock Holmes does in his famous adventures in logic and crime detecting, and very much unlike what Wilson achieves in his book.

7. See *The Moral Landscape: How Science Can Determine Human Values* (New York: Simon and Schuster, 2010).

8. Ibid., chap. 3, "Belief."

9. C-fibers are neural structures found in the peripheral nerves of our system, and their primary function is to convey information from there to the central nervous system; they are one of two types of fibers responsible for the sensation of pain.

10. Disturbingly, however, some federal agencies can still engage in human research without consent, via a presidential executive order, presumably under the increasingly all-encompassing excuse of "national security."

11. For a fuller discussion of the relationship between science and pseudoscience, see my own *Nonsense on Stilts: How to Tell Science from Bunk* (Chicago: University of Chicago Press, 2010).

12. Epistemology is the branch of philosophy that deals with what we can know, while ontology is the branch that attends to the existence of things. In this context, reductionism may be ontologically insufficient to explain reality, if it turns out that there are truly novel ("emergent") phenomena at higher levels of complexity that cannot be directly reduced to lower levels. Even if ontologically feasible, reductionism surely does not work epistemologically, because it would make for an unwieldy account of reality above the quantum level. For instance, while engineers certainly agree that a bridge is, ultimately,

made of quarks (ontology), attempting to describe its macroscopic physical properties by developing a detailed quantum mechanical model of it (epistemology) would be sheer folly.

13. To be fair, even some philosophers, such as W. V. O. Quine, have questioned the existence of a sharp distinction between facts and values, but they have done so within strict limits and based on careful arguments. Harris, instead, simply thinks that philosophical arguments are capable only of increasing the degree of boredom in the universe and accordingly dismisses them out of hand—an exceedingly anti-intellectual attitude exhibited by a self-styled public intellectual.

Chapter 10

COOPER CONSIDERATIONS: SCIENCE, RELIGION, AND FAMILY

Adam Barkman and Dean A. Kowalski

Sometimes family members don't see eye to eye. Yet through our differences, there is almost always something to be learned. The Coopers from *The Big Bang Theory* provide rich ground for a "learning through family differences" thesis. True, precious few of us have fathers who once wrestled a bobcat for licorice. Yet many of us must navigate relationships with our siblings, even though most of us aren't as different as Sheldon and Melissa, and all of us have had to negotiate some differences with our parents. As we'll see, Sheldon and Mary Cooper can learn from their differences, and we in turn can learn from them.

Magic Maharaja Macs?

Mary Cooper obviously has loved Sheldon dearly ever since he fell out of her at the Kmart. She comforted him in the aftermath of his "ass-kickings" at the hands of the neighbor kids—before and after his