FROM THE EDITOR

What existential palliative care can learn from Carl Sagan

"The universe is a pretty big place. If it's just us, seems like an awful waste of space."

(Carl Sagan, Contact, 1985)

I've been thinking lately about Carl Sagan the astrophysicist and biologist who is best known for his work on extraterrestrial life and his best-selling book for the public on astrophysics entitled "Cosmos," which was made into a 1980 Public Television series estimated to have been seen by between 500 million and 1 billion people worldwide. Why I have been thinking about Carl Sagan lately was a bit of a puzzle over the last weeks, but this weekend it all came together for me, as I will explain later, and so this editorial is inspired by Dr Sagan's life and work.

Carl Sagan grew up in Brooklyn, New York, and raised by Eastern European immigrant Jewish parents. Born in 1934, he was in New York when members of his extended family in Eastern Europe died during the Holocaust. His immigrant parents could not achieve their personal career dreams, and so it was left to Carl to "fulfill the un-fulfilled dreams of his parents." I grew up in a similar post-Holocaust Jewish home, and was fully aware of the burden I accepted to not only fulfill the unachieved dreams of my parents, but also justify my parents' survival (survivor guilt — "why did we live and so many others died?") by impacting the world in a profound and significant way — particularly in the area of easing human suffering. I identified with Carl Sagan's background and early life's experience.

I also admired him greatly both as a scientists and a writer for the public. His public writings and lectures did not merely focus on the science of astronomy and astrophysics, but also dealt with existential and spiritual issues from a scientific perspective. It was Sagan who taught me the simplest definition of spirituality when he wrote (Sagan, 2006) that "any human being contemplating his place in the universe, was engaging in a quintessentially spiritual endeavor." I remember the 1980 Pubic television

series "Cosmos," but didn't pay attention to it. I suppose I was too busy with medical school.

In 2006, Ann Druyan, Sagan's widow, edited and posthumously published Sagan's Gifford Lectures on natural theology as a book entitled "The Varieties of Scientific Experience: A Personal View of the Search for God" in which he expressed his views on the existence of God in the natural world. This edited volume of lectures is a must read for any of us interested in the integration of science and spirituality. Carl Sagan died at the age of 62, after three bone marrow transplantations for myelodysplastic syndrome. Certainly he had contemplated his mortality, his spirituality, his place in the universe. And more than most of us, he had a rather extensive knowledge of the nature of the universe, its vastness, its origins, and the laws of nature and physics that guide natural phenomena. One can catch a glimpse of his insights into these big questions through his work, both for the scientific academy as well as for the public.

Ann Druyan writes, in the Editor's Introduction for "The Varieties of Scientific Experience" that "As a child growing up in Brooklyn, Carl would recite the Hebrew V'Ahavta prayer from Deuteronomy at Temple Services: And you shall love the Lord your God with all your heart, with all your soul, with all your might." He knew the prayer by heart, and it may have been the inspiration for him to first ask, What is love without understanding? What allows us to live in the universe if not love?" The prayer V'Ahavta literally means "and Love."

While Carl Sagan may not be the only cosmologist and astrophysicist to achieve both scientific recognition from his peers, as well as becoming a popular translator of cosmology and science for the public (e.g., Neil deGrasse Tyson, Steven Hawking, and Lawrence Krauss), he is, I believe the only astrophysicist to have written a fiction novel, as well as the screenplay for the adaptation of that novel into a major Hollywood motion picture. *Contact* is a science fiction novel written by Carl Sagan and published in

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1985. It deals with the theme of contact between humanity and a more technologically advanced, extraterrestrial life form. It ranked No. 7 on the 1985 U.S. bestseller list. The novel originated as a screenplay in 1979. When development of the film stalled, Sagan decided to convert the stalled film into a novel. The film concept was subsequently revived and eventually released in 1997 as the film *Contact* starring Jodie Foster.

This weekend, I awoke quite early on a Saturday morning, perhaps 6 am, and turned on the television to find that the film "Contact" (1997) was just about to start. I was terribly excited to see it again. I had seen it once or twice in the past, and was just amazed that Carl Sagan had written the film. On the surface, the film was about a young woman scientist's often challenging search for extraterrestrial life in our vast universe. She and her team of scientists use radiofrequency satellite telescopes listening for sounds of life from the far reaches of the universe. The subplot is a romance between her (a staunch empirical scientist who requires extraordinary evidence for extraordinary claims — and takes nothing on faith), and a young theologian who develops faith in God because of an inexplicable personal revelatory experience. This difference between the two leads to their break-up. Well naturally, "Contact" is made with earthlings by highly intelligent life forms from a far distant part of the galaxy. The story unfolds. The aliens send blueprints for the manufacture of a spacecraft to bring a human to them. Our female scientist is the Astronaut selected. She travels through wormholes in this craft and meets a representative of this alien species. The alien, in the form of her deceased father meets with her and tells her about the beauty of the universe. The female scientist, astronaut returns abruptly to earth. She has had a 48 hour experience, yet she is told that there was some terrible malfunction and her space capsule in fact just fell through the centrifuge like space craft, taking barely a few seconds. No video or audio evidence confirming anything she experienced. In Congressional hearings aimed toward shaping the entire debacle into some form of hoax, our female scientist heroine is forced to say (I am paraphrasing), "I admit there is no single shred of evidence to prove what I experienced, but I did experience it. And it was life changing, but I cannot prove it. I suppose I am asking you to take what I am saying as a matter of faith!"

The first few times I saw Contact, I was moved and entertained by the issues of faith versus science, and the truth of science versus the truth of experience. But this time I saw a different layer and aspect of Carl Sagan's message, a message I had come to cherish doing the work I do with the dying. Specifically the problem of existential isolation and the concept of transcendence. Existential isolation is a primary existential concern, a fear, of mortal humans. The idea that we are born alone, die alone, perhaps ultimately really only live alone our entire lives. Alone, Isolated, disconnected. In the film Contact, Sagan is referring not only to Contact between two life forms in this vast universe, he is talking about basic human contact with each other. Connection, connectedness, the essence of transcendence (transcending our limitations our existential isolation that disconnects us from each other). In the film, the alien tells our female scientist: "You're an interesting species, you humans. You're capable of such beautiful dreams, and such horrible nightmares. You feel so lost, so cut off, so alone, only you're not. See, in all our searching, the only thing we've found that makes the emptiness bearable, is each other (*Contact* 1997)."

In November of 2014, Carl Sagan would have turned 80. What he taught us about the nature of the universe was profound. What he taught us about the importance of love, connection, human contact was transformative.

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WILLIAM BREITBART, M.D. Editor-in-Chief