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## The Ethical Commercialization of Outer Space

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### *Abstract*

As the twenty-first century progresses, more and more people will be working somewhere other than on Earth, be it in low Earth orbit or on a lunar or Mars colony. The technical advances that will enable businesses to operate from a space-based location are not nearly as important as the ethical standards we will both want and require those businesses to follow. Now, as ambitious new space industries are in the planning stages, we have a chance to formulate a blueprint of moral and ethical behavior for corporations in a new and expanding marketplace. In this presentation we will consider why such requirements are important, if not essential, and how we can start the process of developing moral and ethical models for space commercialization.

### *Introduction*

In the late twentieth century, businesses are highly competitive, often to the exclusion of basic human needs and a reasonable distribution of resources. Consumers are often at odds with corporations who, though acting fully within the law, do not value their moral and ethical responsibilities to the public. Examples include the liability lawsuits against tobacco companies, complaints against HMOs for limiting healthcare, and parents' concern over the gratuitous violence in movies. Do we want to export these worst case examples to outer space? Will we allow the frontier of space to turn into another Wild West where large corporations and a few enterprising individuals take all? Or, to stretch our minds to another extreme, should we draw from the type of utopian model practiced by, say, the Star Trek federation?

The business practices initially projected from Earth will set important long-term precedents. Regardless of who or how they will be decided, now is the time to begin the debate. As space activists, we are among the first to envision the implications. Our conscious participation, or benign neglect, in influencing ethical standards for the commercialization of space may shape the character of space commerce and those living in space for a long time to come.

### *An Initial Problem*

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One of the difficulties in considering ethical standards for the commercialization of space is deciding who's ethical standards we accept? For example, do we adopt the ethical standards provided us by American politician's, governments (including those other than US), world leaders, religions, corporate leaders, academics , ethics professors and ethicists, authors and writers, Hollywood, family members, a good friend, or simply a mentor? This is a complex decision to make, especially given the globalization that exists in commercializing space. When the globalization factor is added to the equation, the above question is broadened significantly to include the fact that value and ethical system vary greatly based on culture and custom, not just within countries, but even more so across national and international boundaries. And of course, one must not forget that a decision maker or group of decision makers need to be determined so the issue of how that process unwinds even further complicates the initial stages of the problem.

Even with these above complications to the issue of ethically commercializing outer space, it is likely a given that as a people more than as any particular nation, we are going into outer space in the coming years in ways quite different from our previous space history. Former astronaut Alan Beal clearly expressed this human drive when he said, "I would have to say that humankind is going out into space whether any individual or any country likes it or not. If we glance back through history, we find that humans have always seemed to go any place they can once they're able to."<sup>1</sup>

### *The Free-Enterprise System*

Because of its overwhelming success and dominance in today's markets, the free-enterprise system will most likely be applied to outer-space commerce. Despite the abuses that are inherent in any economic system, the power of free enterprise should not be underestimated or discounted, nor should it be seen as overbearing, dark, or evil. The positive benefits that flow to economic systems and societies that have encouraged and supported the development and evolution of free-enterprise systems have usually outweighed the abuses and problems. The challenge always remains how to properly balance the interests of societies and governments with the interests of business. Left to its own, the free-enterprise system will move toward its maximum potential and probable abuses. Also left to their own, the regulators and regulating systems will wield destructive power that can stifle the free-enterprise system.

Fundamental to the commercialization of space, especially in free-enterprise systems, are questions concerning what humankind's voyage into space look like and what will our space commerce look like? While sensitive social issues are concerned with the ultimate answer to these questions, initially our voyage to space and the first phases of our expanded space commerce will resemble the business and management models that are exported from Earth. And since the free-enterprise systems have the economic power or muscle to export businesses and management operations to Low Earth Orbit, what will show up in LEO is likely to be a reflection of what we have in place on Earth in the terrestrial economy at the time our commerce expands off this planet.

The power of the free-enterprise system has been felt at both extremes. Cecil John Rhodes is a good example of the potential abuse that can befall us all when the free-enterprise system is carried too far. Known for his success in diamond mining and his efforts to expand the British Empire throughout Africa, Rhodes reflected on the commercial opportunities in space at the turn of the century, just before he died: "The world is nearly all parceled out, and what there is left of it is being divided up, conquered, and colonized. To think of these stars that you see overhead at night, these vast worlds which we can never reach. I would annex the planets if I could; I often think of that. It makes me sad to see them so clear and yet so far."<sup>2</sup> It is this very idea of continued expansion and development, rooted in the consciousness and spirit of successful business development, that when taken to the extreme, gives rise to ethical concerns that have the potential to impact all of us on this globe in ways we can't even completely imagine, especially if we are able begin to spread our peoples into the universe.

### *Ethical Warnings*

Many people who are generally supportive of space commerce and colonization are speaking out about the potential risks awaiting us in unchecked and unsupervised space development. One of the more persuasive individuals expressing concern early on about human development and settlement in space was Paul L. Csonka, who at one time was the Director of the Institute of Theoretical Sciences at the University of Oregon. In early 1977, when space commercialization referred only to satellites and the technology for colonizing space was still on the drawing board, he wrote about the social and political concerns of colonizing space in a paper entitled "Space Colonization—Yes, But Not Now": "If space colonization were to be undertaken today at the maximum rate permitted by technology, it is likely that instead of increasing the chances of human survival, it would drastically reduce it. Preliminary studies ought to be undertaken, but large scale colonization should be postponed until such a time when (and if) social and political conditions reach the prerequisite state of sophistication."<sup>3</sup>

Now, twenty-two years later, we have a healthy private sector and the will and technology to create viable space businesses. Governments are no longer the sole players in space development. Who then will determine the laws that govern our behavior and activities in space? How will we interact with one another and with our bosses in outer space?

In his new book, *The Overview Effect: Space Exploration and Human Evolution*, Frank White considers how the permanent presence of humans in space will affect many of our institutions, including those having to do with economics, science, politics, religion, social relations, and psychology. He addresses possible space-colony rebellions, making it clear that man is responsible for his own fate. White would like to see a space program that is genuinely committed to peacefully exploring the space frontier without playing to the dictates of national interests. He recognizes "that space exploration is a

major step in a long evolutionary journey, which we humans will be making not only for ourselves, but for the evolution of the universe itself.<sup>4</sup>

On May 19, 1999, PBS aired *Voyage to the Milky Way*. This two-hour program discussed various aspects of the space program and commercial space development, with interviews of experts in the field. One of those consulted, Keay Davidson, the science writer for the San Francisco Examiner, offered the following insights:

I think one problem with a lot of the people who are promoting space settlement is that they have no social conscious. No rules, every man or woman for him or herself, and I don't think you can settle space in a responsible way. We've got this lunar ice for example that's just been discovered by the lunar prospector space probe. Now there's a lot of lunar ice apparently there, but there's not an infinite amount. What if someone goes there and stakes claim to the lunar ice and enforces that claim at gun point? That's the kind of problem we are going to be facing in space -where you'll have economic issues and possibly even military issues arise, and I think we need to plan the exploration of space first so that we don't just repeat the same old ugly sagas that we've seen in terrestrial history.<sup>5</sup>

Harlan Ellison, the noted science-fiction author, was also interviewed on the same PBS special. He also warned of the dangers of unrestricted exploration of space:

We use space the same way we are using any other open field. Those who are the fleetest and most rapacious are going to get there first and are going to do what they want with it. That's the threat of space travel. That those who get there first will not be the ones we want to carry the banner. The ones with the great dreams, they will simply be the people who want to strip mine Venus for its pitch blend.<sup>6</sup>

### *Business Examples That Raise Concerns*

Some high profile large industries of today readily serve as examples of why there are ethical concerns about exporting the business models of the late twentieth century from Earth to space. A few of these industries are the medical insurance companies, tobacco companies, the film and motion picture industry, and the automobile companies. It is our past negative experiences with companies in these industries that give rise to our concerns and doubts about our ethical business behavior at the corporate level. For example, it is difficult to accept corporate decisions, though they may be designed to enhance the bottom line of the corporation which is what they are supposed to do, which harm and in some cases kill people because to do otherwise would have cost the corporation more in expenses or reduced its profits from the activity in question. It is even more difficult to accept these decisions when corporate executive pay and benefits are continually increased as a reward for driving the company to a continually improving financial status when the executives know and approve of the decisions that do harm to people, even people that are the loyal customers of the company.

The above examples are mentioned because they serve to remind us that without an ethical orientation to the conduct of one's business, people can be made to suffer extreme harm as business decisions often have the power to touch most people's lives. However, not all ethical concerns about businesses in space are derived from type of examples just cited. Ethical issues can also arise as a result of the conduct of the business or the management, or just "worries" about such potential conduct. In this latter category, the founder and CEO of SpaceDev, Inc. of San Diego, Jim Benson, an individual who is deservedly at the forefront of launching new commercial space businesses, can serve as an example. Mr. Benson is an important and capable leader in commercializing outer space, but some of his statements describing what the early period of the new commercial space industrialization will look like foster concern for the ethical issues. Perhaps the best example of this comes from an interview with Benson in the Oct. 26-Nov. 2, 1998 issue of *The New Yorker* magazine regarding space commercialization as discussed at Space98, an international space conference held in Albuquerque, New Mexico in April 1998. Benson, who was both an important speaker and participant at Space98, said in reference to a question about the establishment of space colonies that "these colonies are going to grow like boom towns. There is going to be no planning. It will be an economic workhouse. You're going to wind up with prostitutes in space and blue-collar workers and office workers, and people are going to die, they are going to be killed, and we are going to find places to squeeze people into some tuna cans up there."

Benson was also featured in the PBS special, *Voyage to the Milky Way*. Addressing both his business plans for landing on an asteroid and his important drive for private property rights in space, Benson again was thought provoking when he said:

We are going to say that this was a private company and it was privately financed. And we landed on that little planetary body and we are going to claim that we own that body. I think it is extremely important to create a precedent for private property rights in space. If we make that claim, we will have some justification or some standing because we took the risk, we paid the money, we flew our spacecraft, and we analyzed the content and the value of that asteroid. We landed on it. It's ours.<sup>7</sup>

Regardless of whether statements such as these turn out to be nothing more than harmless rhetoric once businesses start operating in space, the key issue still to be resolved for these emerging commercial space businesses is whether they will be compatible with an eventually acceptable definition and standard for high ethical and moral business conduct. Answering this question will not be easy as we have already pointed out. Disproving the premise of the 1981 movie, *Outland*, that "Even in space, the ultimate enemy is man!" may

yet be the primary challenge we face as we transition to an extraterrestrial species, starting with our off-world businesses.

## *A Different Perception and Consciousness*

Most astronauts claim to view Earth differently after having been in space. Often their commentaries show a world that is united in space, but unfortunately absent on Earth. When the Saudi-Arabian Prince Sultan Bin Salman al-Saud went into orbit in June 1985 he said, "I think the minute I saw the view for the first time was really one of the most memorable moments in my entire life."<sup>8</sup> When asked by the interviewer how it changed his understanding of God, the Sultan said, "It really strengthens your convictions. To me, it's an opportunity to prove that there is no conflict being a Muslim, or any other religion. Looking at it from here, the troubles all over the world, and not just the Middle East, look very strange as you see the boundaries and border lines disappearing."<sup>9</sup>

U.S. Congressman Bill Nelson, who went to space in January 1986, said upon his return: "If the superpower leaders could be given the opportunity to see the Earth from the perspective from which I saw it—perhaps at a summit meeting in space in the context of the next century—they might realize that we're all in this with a common denominator. It would have a positive effect on their future decisions concerning war and peace."<sup>10</sup> Such space-based perspectives and their spillover effects on those of us unable to experience space firsthand may ultimately have a greater influence on our commercial space business practices than anything we do or say on Earth.

Robert Bigelow of Bigelow Aerospace of Las Vegas was recently interviewed about his announcement to invest \$500 million of his own money over the next several years to build a space cruise liner for Earth to moon tourism. Bigelow understands the limitations of our perceptions and the way we do things, especially since we have technology that enables us to do so much. When asked during his interview if his cruise liner would have defenses onboard in case of a meeting with a hostile ET, Bigelow replied:

I'm not so sure exactly who the Klingons are. I think the jury is still out on whether or not it's the human race. I think we have a huge divergence between our paths of improvement on spiritual maturity, while at the same time this century we compare that against the path of our technological advancements. You have to have some harmony. I think in order to be a member of a species that is a space-faring species that other species shouldn't fear, I think you have some type of meeting where your technological maturity is met to some degree with spiritual maturity.<sup>11</sup>

## *More Questions Than Solutions*

Unlike other new territories that were open to exploration, outer space is completely void of an imprint of any kind. It is a blank slate. Unlike developing new worlds and frontiers on earth which were inhabited by indigenous peoples, space is not inhabited as we know it. As humans begin working, living, and establishing trade routes and businesses in space, space will for all time have the impressions humans place on its

blank pages. Humanity has yet to face a challenge, opportunity, and responsibility of this magnitude.

There are suggestions, however, for ensuring that space is not commercialized for the powerful and the rich to the exclusion of others and that the commercialization of space does not breed a new generation of pirates and robber barons. These suggestions include activities of private and international organizations, controls or regulations for commercial space businesses, legal challenges to what are thought to be abuses or transgressions by businesses operating in space, and government regulating or controlling the access to space. Longer term solutions involve education and ensuring that those wanting to conduct business in space have a “space experience.”

In the recent hit movie *Contact*, there was an esteemed international panel which was to select the “right” person to travel in the machine to Vega. In the *Contact* model, a belief in God was the key for making the voyage to space. Is this prerequisite a realistic approach to the problem?

It is less than certain that these ideas or organizations can successfully control and regulate space commerce, or impact the character of the business practices we export from Earth. While it has not yet happened on Earth and there is inconclusive evidence to believe that these same organizations and their plans can make it happen with space commerce, they and the rest of us can and should continue to strongly advocate the ethical commercialization of space. The most likely scenario is that, at least in the short run, businesses will begin operating in space and there will be numerous legal challenges to their plans. Eventually, through court actions, a set of rules will be established. Ethical issues, though, are seldom equated with legal issues and will most likely not be addressed in a legal forum.

As for education, we may proactively expand our perspectives on living and working in outer space by teaching our children about ethical considerations and mandating space flights for all those interested in outer-space commerce. The children of today will probably be the first generation to live and work off this planet. If we work with them now, at all grade levels, they can be directed to look for different solutions to the colonization of space. They will have the ability to change the very context in which we imagine space commerce. Similarly, those who actually view Earth from outer space, will probably see the Earth, our humanity, and their business venture in a context different from what is typically seen from an executive office on Earth. If the transformative effects of space travel on Bin Salman al-Saud and Bill Nelson are any indication, making space travel compulsory for businessmen and women interested in outer-space commerce may be our best safeguard yet for promoting virtuous business practices there, especially when considering that the spillover effect has the potential to bring about wide-spread positive changes and influences in both our commerce and society.

While ethical issues and questions are being pondered, it is possible to establish a set of ethical guidelines that can help us today in assuring ourselves that our space



commercialization process is both as productive and benign as possible. Dr. Margaret McLean, Director of the Markkula Center for Applied Ethics at Santa Clara University in Santa Clara, California, has proposed three achievable guidelines for space commercialization.

Space preservation is the first guideline and means

Space conservation is her second guideline. This suggests

The last guideline, space stewardship means that

### *Conclusion*

J        Joseph Campbell spoke about commercial space development and what he said is applicable to us today as we begin this new phase of economic development. He said "it is fashionable now to demand some economic payoff from space, some reward to prove it was all worthwhile. Those who say this resemble the apelike creatures in '2001.' They are fighting for food among themselves, while one separates himself from them and moves to the slab, motivated by awe. That is the point they are missing. He is the one who evolves into a human being; he is the one who understands the future."<sup>12</sup>

Our future generations will be in space, on the Moon, Mars, and even beyond. The initial space residents and pioneers will be from Earth, but as future generations are born in space and expand outward, their own identity will evolve over time. What springs forth from the seeds that we plant is something that we should all be concerned with today. We must come to understand that we do not own space and we are not guaranteed it. It is not ours for the taking just because we can take it. In "Travelogue for Exiles," a poem by Karl Jay Shapiro, the relationship with space is explained in a way that is most appropriate.

Look and remember. Look upon this sky;  
Look deep and deep in the sea-clean air,  
The unconfined, the terminus of prayer.  
Speak now and speak into the hallowed dome.  
What do you hear? What does the sky reply?  
The heavens are taken; this is not your home.<sup>13</sup>

We can use space and prosper from it, but as the poem says, the heavens are already taken and they are not our home. Capturing space without regard to ethical considerations will surely breed significant problems, some of which may be with us for centuries. With sufficient forethought, we can make living and working in space beneficial for all concerned. When we do this, we will find the heavens inviting us in as treasured and most welcomed guests, and perhaps over time, we will have earned the right to call the heavens our home.

"It seems clear that the farther out human beings look, the further inward we see."

*The Overview Effect: Space Exploration and Human Evolution*, 2nd edition, 1998, by Frank White, p. 63

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<sup>1</sup> Statement by Astronaut Alan Bean, July 26, 1988 in an interview for *The Overview Effect: Space Exploration and Human Evolution*, 2nd edition, 1998, by Frank White, p. 197.

<sup>2</sup> Cecil John Rhodes, *Last Will and Testament* (1902), quoted in Carl Sagan, *Contact* (New York: Pocket Books, 1985), 175.

<sup>3</sup> Paul L. Csonka, "Space Colonization—Yes, But Not Now" from papers presented to the House Science and Technology Committee of the U. S. Congress, 13 January 1978.

<sup>4</sup> Frank White, *The Overview Effect: Space Exploration and Human Evolution*, 2<sup>nd</sup> ed. (Reston, Va.: American Institute of Aeronautics and Astronautics, 2nd edition, 1998), 10.

<sup>5</sup> *Voyage to Milky Way*, television show, PBS, 19 May 1999.

<sup>6</sup> Ibid.

<sup>7</sup> Ibid.

<sup>8</sup> White, 256-257.

<sup>9</sup> Ibid., 45, 256-257, 259,

<sup>10</sup> Ibid., 265

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<sup>11</sup> Robert Bigelow, interview by Art Bell, *Coast to Coast Radio Show*, Premier Talk Radio Network, 27 July 1999.

<sup>12</sup> Joseph Campbell,; *The Overview Effect: Space Exploration and Human Evolution*, by Frank White, 2nd edition, 1998, p. 168.

<sup>13</sup> Karl Jay Shapiro, *New & Selected Poems, 1940-1986* (Chicago: University of Chicago Press, 1987).

Other References:

Landesman, Peter. "Annals of Space Starship Private Enterprise." *The New Yorker* (26 October & 2 November 1998): 178-185.

McLean, Margaret. "Who Owns the Moon?" *Issues in Ethics*, vol. 10., no. 1. [journal on-line] (Santa Clara: The Markkula Center for Applied Ethics at the University of Santa Clara, 1998, accessed 30 July 1999); available from <http://www.scu.edu/SCU/Centers/Ethics/publications/ie/v10n1/moon.shtml>; Internet.

Association of Roman Catholics for the Promotion of Space Exploration and Colonization (ARCSEC). "Our Goal;" available from <http://home.ici.net/~panther/ARCSEC/home.html>; Internet.