

Ethical and Medical Dilemmas of Extreme Tourism

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Abstract: Originally funded and experienced by millionaires and billionaires willing to spend hundreds of thousands or even millions for an extreme adventure where previously only explorers and scientists previously dared to go, extreme environment (i.e. polar, tundra, desert, space, space analog, deep ocean, mountaineering, nuclear meltdown sites etc.) tourism is becoming more common allowing more people to be exposed to increased dangers and risks that such tourists will be exposed to. Some of those risks might be relatively minor such as possibly minor motion sickness. Other risks, however, could include serious injury, such as in the case of the Titan submarine which imploded on a tour to the Titanic in June 2023, death. The disaster, caused primarily by cost cutting measures and disregard of the danger from the company running the tour, which caused all 5 people on board to be killed instantaneously. This presentation and paper will expand on previously published work on the medical and ethical dilemmas of space tourism as well as include an additional focus on tourism to other extreme environments including the neonate industry of space analog tourism where individuals pay to participate in a space analog mission at a hefty fee while potentially contributing or disrupting the legitimate scientific research going on such missions while still exposing themselves to additional risk which they might be unsuited for. Further, this will discuss a few of the lesser known risks and concerns that have come more recently to light as well as a discussion as to not only if adults should be able to ethically, morally, and legally consent for their children during these high risk activities but whether or not, given the human brain does not fully develop until a person is in their mid-20s, how old should a person be in order to adequately understand and appropriately balance the risks and requirements of an extremely dangerous environment and be able to fully consent to the tourism venture's risks.

1. Introduction

The extreme tourism sector is fraught with high costs, high danger, and variable safety precautions. Whether it is William Shatner flying to the edge of space on Blue Origin's New Shepard, or the unfortunate implosion of Oceangate's Titan submersible, extreme tourism is finding itself more and more in the news media, whether it be for better or for worse. For example, while Shatner's flight went well, Oceangate's Titan imploded in large part because the CEO, Stockton Rush, believed "safety was a 'pure waste'" (Smith-Schoenwalder, 2023). Perhaps Mr. Rush honestly believed that those bringing up concerns that it was not safe were incorrect (or insulting as he would claim) or perhaps he believed that by increasing the hull, it would take away some of the risks and thereby making the trip less desirable, either way, he put profits ahead of people's lives leading to his death as well as four other passengers. At the time of this writing, Oceangate has yet to be accused of breaking any law regarding passenger safety. The sudden publicity allows more and more legal and ethical questions to be raised.

For those unfamiliar with extreme tourism, it is a subtype of "adventure tourism" where individuals travel to unsafe areas or do activities which have some type of risk. Adventure tourism as a whole is itself one of the fast-growing niche tourism sectors and is divided into two overall types, soft adventure and hard adventure depending on how much risk there is to the participant (Janowski et al., 2021, Zaid et al., 2023). For example, "soft adventure tourism," consists of relatively low risk to the participants, such as snorkelling, hiking, camping, while "hard adventure tourism" includes locations and activities with higher risk and usually more skills, training, and fitness are needed such as rock climbing or polar exploration. There are several subtypes of adventure tourism which might be classified as soft or hard adventure tourism depending on the requirements of the specific activity, including disaster tourism, extreme tourism, ghetto tourism, or urban exploration which is the practice of visiting long abandoned buildings.

However, despite there being an increase in adventure tourism, the ethical and legal considerations of some of the riskier activities have not yet caught up. Extreme tourism, in which individuals go to the most high-risk locations (such as jungle tourism, space tourism, deep sea tourism) or do some of the riskiest activities such as climbing Mount Everest are more likely to be mentioned in the newspapers rather being studied academically. There is very little in the literature about extreme tourism itself, much less the ethical issues although there has been some work on ethical dilemmas regarding space tourism (Marsh, 2010, Marsh, 2006). While there has been some work on the ethics of space tourism, this work needs to be expanded to other related tourism areas.

2. Medical Emergencies

Depending on the specific type of extreme tourism one is attempting as well as the amount of time one is expected to be in the dangerous environment, from minutes and hours to weeks or months, it is important to be prepared for possible medical emergencies. In high-risk remote environments, Emergency Medical Services might not be able to get to the location quickly if at all making it important for there to be medical supplies and someone medically trained to use them.

That being said there are very few regulations about what medical supplies and medical training a member of the team must have before taking clients to a dangerous location. In fact, even regulations such as “Convention for the Unification of Certain Rules Relating to International Carriage by Air” which regulates commercial air travel and “Athens Convention relating to the Carriage of Passengers and their Luggage by Sea” which regulates sea travel simply state that the company is liable if someone is injured or dies aboard their craft, however they do not specify the minimum medical equipment that must be on board (Marsh, 2006). Similarly, one of the few pieces of regulation towards any form of extreme tourism, the 2004 Commercial Space Launch Amendments Act also does not specify any medical requirements at all and simply states the operator

“must inform each space flight participant in writing about the risks of the launch and reentry, including the safety record of the launch or reentry vehicle type. An operator must present this information in a manner that can be readily understood by a space flight participant with no specialized education or training, and must disclose in writing—

(1) For each mission, each known hazard and risk that could result in a serious injury, death, disability, or total or partial loss of physical and mental function;

(2) That there are hazards that are not known; and

(3) That participation in space flight may result in death, serious injury, or total or partial loss of physical or mental function.

(b) An operator must inform each space flight participant that the United States Government has not certified the launch vehicle and any reentry vehicle as safe for carrying crew or space flight participants.

(c) An operator must inform each space flight participant of the safety record of all launch or reentry vehicles that have carried one or more persons on board, including both U.S. government and private sector vehicles. This information must include—

(1) The total number of people who have been on a suborbital or orbital space flight and the total number of people who have died or been seriously injured on these flights; and

(2) The total number of launches and reentries conducted with people on board and the number of catastrophic failures of those launches and reentries.

(d) An operator must describe the safety record of its vehicle to each space flight participant as follows:

(1) For licenses issued under part 450 of this chapter, the operator's safety record must cover any event that meets any of paragraph (1), (4), (5), or (8) of the definition of “mishap” in § 401.7 that occurred during and after vehicle verification performed in accordance with § 460.17, and include:

(i) The number of vehicle flights;

(ii) The number of events that meet any of paragraph (1), (4), (5), or (8) of the definition of “mishap” in § 401.7 of this chapter; and

(iii) Whether any corrective actions were taken to resolve these mishaps.

(2) For licenses issued under part 415, 431, or 435 of this chapter, the operator's safety record must cover launch and reentry accidents and human space flight incidents as defined by § 401.5, that occurred during and after vehicle verification performed in accordance with § 460.17, and include:

(i) The number of vehicle flights;

(ii) The number of accidents and human space flight incidents as defined by § 401.5; and

(iii) Whether any corrective actions were taken to resolve these accidents and human spaceflight incidents.

- (e) An operator must inform a space flight participant that he or she may request additional information regarding any accidents and human space flight incidents reported.
- (f) Before flight, an operator must provide each space flight participant an opportunity to ask questions orally to acquire a better understanding of the hazards and risks of the mission, and each space flight participant must then provide consent in writing to participate in a launch or reentry. The consent must—
 - (1) Identify the specific launch vehicle the consent covers;
 - (2) State that the space flight participant understands the risk, and his or her presence on board the launch vehicle is voluntary; and
 - (3) Be signed and dated by the space flight participant.” (2020, 14 CFR 460.45).

For those in other forms of extreme tourism, such as Everest tourism or Jungle tourism or even Polar tourism, there is often not even that legal requirement for informed consent, much less medical supplies or training. Many Everest expeditions, each lasting several weeks to months, often an expedition physician on the team; however, the smaller teams might not (Kamler, 2000). Having a physician present was not a legally mandated requirement of the area and the medical providers are primarily at camp rather than along the route where the medical emergencies may take place. Further, as recently as 2018, one could solo Mount Everest without a partner much less a physician and only at this point did Nepal place restrictions on who might climb, namely no more blind or double amputee climbers will be allowed to summit due to safety (Hardingham-Gill, 2018). With the need to carry one's oxygen, food, tent, and other mountaineering equipment, the mountaineers in smaller teams simply might not have the room for even a basic first aid kit for injuries on route. In such cases, there might be very little that one can do for even small injuries and for larger injuries, such as what happened to Beck Weathers in 1996, the options such as simply leaving someone for dead might seem the most logical course of action (Weathers and Michaud, 2000). Similar could be said for polar and jungle tourism depending on the size of the group and how feasible it would be.

Given the differences in each type of extreme tourism destination, technological capacity such as if telehealth is an option, activity, and even length of time in the danger zone, it might be challenging to create a set of guidelines that can easily cover many if not all these situations. However, it would seem logical to, at least, encourage first aid and basic medical training. For example, in the United States, there is wilderness training that one can obtain such as the Wilderness First Responder (WFR, or, if one already has an Emergency Medical Technician (EMT) license, they can become a Wilderness EMT. This training specifically teaches people how to work in austere, remote, and wilderness environments. While this might not be perfect for all forms of extreme tourism, this would be a good start.

3. Health Risks

Each form of extreme tourism has its own set of health risks. While hopefully proper preparation can mitigate some of those risks, a tourism agency or indeed anyone specializing in this form of tourism should, in writing, provide the risks associated with going forward simply to provide appropriate informed consent. The list of risks should be as detailed as possible and appropriate to the specific destination even if the law might not require such information in risk of exposure.

For example, a suborbital space flight lasting only a few minutes should be more appropriately concerned about things such as increased exposure to radiation (possibly increasing a risk of cancer), the possibility of becoming nauseous aka space sick, and the possibility of death seem to be most appropriate health risks to disclose of the many risks of spaceflight (Williams, 2003). For longer missions which might be days, weeks, or the eventual colonization of Mars, one needs to not only worry about radiation, nausea, and death, but also effects that only happen in longer duration missions such as loss of bone density, loss of muscle mass, decreased cardiovascular efficiency, increased kidney difficulties, and suppression of the immune system (Williams, 2003). This is to say nothing of the many possible problems if a woman were to become pregnant in the middle of a longer duration spaceflight or even what this might have on her eggs in the future (Marsh, 2006).

Another increasingly popular destination where radiation and other pollutants need to be disclosed as a health risk is Chernobyl, a nuclear reactor in Ukraine which had a meltdown in 1986 (Urbonavicius, 2021). The meltdown and dangers causing the government to create an exclusion zone of 30 km (19 miles) radius from the site where no one is permitted to live. While this area has been cleaned, it is still hazardous and it is ill-advised

to stay longer than is necessary, despite the cleanings, due to health risks. Women of childbearing age need to continue to be careful in this area. While tourists are allowed through special permission and with an official guide, many tourists have been able to cross into the exclusion zone thereby avoiding the warnings and strict safety precautions that would otherwise be required by official tourists (Yankovska and Hannam, 2014). These safety precautions would include being wary of venturing too close to abandoned buildings as well as warnings about the local wildlife.

Everest tourism, on top of the usual risks that it shares with rock climbing or any outdoor activity from blisters, to broken bones, to slipping and falling to one's death, there are additional health risks as pertain to the altitude as well as the extreme cold. High altitude pulmonary edema and cerebral edema, excessive fluid in the lungs and brain respectively, are both potentially life-threatening disorders and are not unique to Mount Everest, but possibly in any tall mountain (Sánchez et al., 2022, Xue et al., 2022). This is one reason why potential summiteers tend to spend quite some time at base camp to acclimatize, at least in part, to the altitude. Even at base camp, there is still risk of avalanches such as the 2015 avalanche which resulted in 15 deaths and 70 injuries (Moore et al., 2020). In addition, there are several different ways to die in what is called "the Death Zone" (approximately 8000 meters or 26000 feet) where there is so little oxygen that the cells will start to die. One could run out of oxygen, one could become disoriented and go in the incorrect direction, one could also be at higher risk of hypothermia. Given most people to Everest have experience in mountaineering, they are likely to already be aware of the risks. As we saw earlier, Nepal is starting to implement more safety standards and minimums to obtain permission to journey to Everest. Polar tourism shares many of the same risks, minus potentially the high-altitude illnesses depending on where one specifically is but they also have more and longer lasting snowstorms.

Submarines and submersibles are going in the opposite direction and while Everest has individuals who tend to be well trained, anyone with the money can go on a submersible. The submersibles keep their own oxygen, they maintain the appropriate pressure which minimizes other health risks. However, there are still risks. If someone suddenly becomes claustrophobic, this could be a health risk, plus of course the risk of death either from a sudden implosion like the Titan, but also the possibility of becoming stuck and being unable to get free leading to death if rescue is unsuccessful.

Something that isn't as often discussed is the developing concept of going to a space analogue, not as a crew member but as a tourist. Stardust Technologies in Ontario Canada is planning to open their new space analogue (tentatively called Serenity Station) to paying customers separate from the researchers within a few months of opening as a form of vacation retreat (Michaud, 2023). This will help fund the research being conducted and lead to expansion. There are no plans for either the researchers or the tourists to be able to pass a medical check, nor does he appear to be aware of the possible health risks within the station. Those health risks include isolation, problems caused by claustrophobia, illnesses caused by gas leaks (as this is how the lunar outpost will be drawing it's power), risks from the local wildlife attacking and breaking the lightweight portable station, snowstorms, attacks from the bees which are planning to be added, as well as any risks that might occur from the experiments being conducted. At the time of this writing, Stardust denies any possible health risk which needs to take priority given the location approximately seven hours away from a major metropolitan centre. This is to say nothing that these non-scientist extreme tourists may disrupt the scientific studies and experiments going on which could lead to progress being lost forever, not to mention needing to repeat the opportunities for grants.

4. Informed Consent Issues

Informed consent is the consent one provides to participate in an activity after knowing all the risks/benefits, sometimes it is also referred to as a release and waiver of liability. There are two generally accepted types of informed consent, expressed consent and implied consent. Expressed consent refers to obtaining the consent of an individual either orally or in writing. Generally, these are the types one would experience if one were in the hospital in order to obtain medical treatment such as scheduled surgery. Implied consent is based upon the actions of the person, for example, amusement park rides would generally rely on this as if one did not consent, they could easily leave the line. Generally, in the United States at least, it is considered preferable to obtain a written statement for things which are particularly dangerous or have long-term health risks and not everyone is able to offer informed consent, usually this is dependent on age and intellectual competence although there are often exceptions to every rule. For those unable to consent for themselves, such as in the case of most minors, a parent or legal guardian is often able to consent on their behalf when necessary.

As discussed, there are a number of health risks associated with these various forms of extreme tourism and being able to provide informed consent after knowing all of the risks and benefits is absolutely vital. Any of these types of tourism are, by their very nature, risky with health risks which could come either quickly or may be delayed which as in the case of cancer caused by radiation exposure. Some of these tourists are not only consenting for themselves, but also consenting for their minor children who are accompanying them on the trip (Marsh, 2010). Do parents have the right to provide consent for their children who might not understand the true risks involve? What about if they themselves do not understand the risks?

The answer appears to be yes, especially in wake of the Covid19 pandemic which saw a significant amount of individuals, many of which were also parents, refuse to receive the Covid19 vaccine and withheld their consent and would not allow their children, some of whom wanted the vaccine, to become vaccinated (Rawlings et al., 2022). Part of this was due to misinformation or simply misunderstanding. Was it morally correct for those parents to put their children's lives in danger by not vaccinating? Is it morally correct for parents to consent to put their children's lives in danger? This can be a matter for some debate given the differences between cultures over the rights of children.

Louis P. Pojman, an applied ethicist, came up with ten moral principles, two of which are "respect other people's freedom" and "do not cause unnecessary suffering" are of interest here and both may come into conflict (Pojman, 2005). If a minor wishes to go to an extreme tourism destination and they have the money to do so, and the parents stop them, is that not being disrespectful of the child's freedom? And what about the opposite direction, what about if the parent wants to go and the child does not?

Ayn Rand claims humans have an "inalienable right to seek our own happiness and fulfilment, regardless of its effects on others" and she defines "rights as 'moral principles which define and protect man's freedom of actions'" (Pojman, 2005). What happens if this conflicts with "do not cause unnecessary suffering?" All of these extreme tourism shots can lead to illness, injury, or death, and certainly all of which can be considered a type of suffering both to the born and to the unborn, especially in the case of excessive radiation (Marsh, 2010). Do adults have an obligation to consider the possibility of unnecessary suffering for unborn children if it interferes with their own happiness and desire? One can easily argue that it needs to be a consideration, however, this could lead to a slippery slope argument for things more common than extreme tourism.

Of course, there is also the other end of the spectrum. While originally discussing emergency reproductive health, minors have been increasingly able to make more and more medical decisions for themselves even in cases that are non-urgent (Barina and Bishop, 2013). Given Rand's statement about the freedom to pursue happiness, is it permissible to still prevent minors above a possible age to give their own consent? There is evidence that minors are able to make informed decisions at 14 or 16 at the very latest (Barina and Bishop, 2013, Sancu et al., 2004). Should this allow them to make their own decisions for this form of tourism assuming, of course, that they could afford it without their parents' approval?

And what about those who are family members of the extreme tourists? What happens to them if there is a disaster and their loved one dies or is injured? Do they have any rights to sue? Or even what about the companies which prevent their high-ranking officers to do dangerous activities? It would seem that perhaps the happiness of the individual may or may not always triumph.

5. Conclusion

Humans are seeking out more adventurous and dangerous recreational activities, some of which the legal regulations have yet to catch up to. While some forms of extreme tourism have regulations designed to help protect the health of the extreme tourists, many others do not. Companies would be well advised to consider their potential medical liabilities and do what they can to ensure their clients' safety. All tourists need to additionally be made aware of the true risky nature of the activities they are about to experience. For example, those on board the Titan submersible were likely unaware as to the true danger risk caused by the hull not being rated for the depth to which they paid the ultimate price. The ability of clients/tourists to understand what the risks and benefits and consent to them are the basics of what informed consent, regardless of what type, is built. Without accurate information, how can one rightfully consent not only for oneself, but other people.

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