Psychological Counseling for First-time Teletransport Users[1]

Teletransportation –safe, fast, economical travel for today's solar system-wide economy:

Today teletransportation accounts for the majority of travel between Earth and Mars, making up over 70%. In the year 2152 alone over two hundred thousand people successfully teletransported between Earth and Mars, and another fifty thousand teletransported to, from, and between the colonies of the moon, asteroid belt, and the outer solar system. Teletransportation is now far safer than travel by rocket which, despite evermore burdensome and expensive safety regulations, has a 1% fatality rate. By contrast, teletransportation's fatality rate is today less than 0.01%.

What to expect during your first teletransport:

When you arrive at one of Earth's main teletransport stations you should proceed directly to the ticketing counter. There you can purchase a teletransport ticket if you have not already done so. Ticket costs vary only slightly among the major carriers and are typically in the range of 30,000 Earth dollars per person –a significant cost but less than half the price of rocket travel to Mars and 10% the cost of rocket travel to the outer solar system. Dropping off your luggage at the ticket counter, you will be directed to one of the large teletransport booths. Inserting your ticket into a booth's reader will cause its large secure door to open. Entering you will take a seat in the transport chair and the console's welcome screen will direct you through a series of legal questions. Once you have agreed to these you will be prompted to verify that you are ready to proceed with the teletransport. Note that once you have pressed the 'start' button there will be no refunds possible and the door to the chamber will lock you securely inside. A slightly sweet smelling gas (KO gas) will now enter the chamber causing you to relax and quickly become unconscious. After this the teletransport booth's advanced MRI++ scanning technology will go to work, noninvasively mapping your body and brain at the molecular level. This procedure is 100% safe, noninvasive, and (unlike teletransport prior to 2114) does not involve ionizing radiation. The full procedure takes approximately six hours. Be assured that you will feel nothing during its operation as you will be unconscious throughout this time.

The results of this detailed scan are transmitted continuously by LaserLink to Mars (or another destination) throughout the procedure so that the destination teletransport booth can begin assembling your new body on Mars concurrently. You will awaken in the destination teletransport booth on Mars and be escorted out by an assistant that will reunite you with your teletransported luggage.

Addendum following the United Earth Supreme Court (UESC) decision Smith v. TeleTrans Corp. of 2138:

As of 2138 all teletransport carriers are required to make provisions for the source-passenger to awaken and converse (via videophone) with the destination-passenger prior to completion of teletransport so that the source-passenger can verify that the teletransport has completed successfully. Since solar system destinations are quite distant even for light speed communications (Mars: 5 to 21 minutes round-trip communications delays, Jovian colonies: up to 52 minutes, Lunar colonies only seconds) this can represent a significant increase in overall teletransport time. Further, the UESC

[1] Written by Kenneth Hayworth (July 2017). Story expands on original teletransportation thought experiment from Derek Parfit's book *Reasons and Persons* (1984).

decision mandated that the source-passenger's button press decision (signaling an acceptance/rejection of transport) be delayed (after awakening) until 3x the light speed delay time has elapsed (or 30 minutes, whichever is greater). The videophone link must be continuously open between the source and destination booths during this period. This can represent a full hour delay for an Earth to Mars teletransport. We recognize that this extra 'booth time' can be annoying and, for some, unsettling, but all carriers must comply with this UESC requirement. To minimize discomfort most carriers have added a range of amenities and entertainment options in their booths including a variety of two-player games you can play with yourself via the video link (especially entertaining for Earth-to-Moon teletransports which have minimal communications delays).

Of course, due to the UE 'No Duplicates Directive', the carriers can only allow either your source-self or your destination-self to leave their respective booths, the other being rendered unconscious again and then euthanized. After the delay the source-passenger is presented with two clearly marked buttons [release destination-self / destroy source-self] and [release source-self / destroy destination-self]. The source-passenger is required to make this decision within 15 minutes and if no button is pressed by that time the [release source-self/ destroy destination-self] option is initiated by default as per the UESC mandate.

IMPORTANT: There can be no refunds once the teletransport procedure has been initiated. If your source-self does not press the [release destination-self/ destroy source-self] button within the allotted time you will have forfeited the full ticket cost.

For minors and other passengers with legal guardians, the acceptance/rejection of transport decision must be made by a legal guardian present in one of the teletransport booths (locked in the booth with the passenger but provided with an oxygen mask). According to UE mandate the legal guardian, source-passenger, and destination-passenger must all three be able to converse via videophone for the designated delay time prior to the guardian's final acceptance/rejection of transport decision.

<u>Addendum following the UESC decision, Mrs. Jones v. Mr. Jones of 2144:</u>

Because of the ill-conceived and currently contested UESC decision of 2144, all teletransport carriers are also required to make arrangements for a spouse in the destination booth. Example: A husband teletransporting to Mars to meet his wife that arrived earlier by rocket may allow that his wife be present in the destination booth to provide 'real-time quality assurance'. The acceptance/rejection of transport decision still rests with the source-passenger who, again, gets to witness the spouse's real-time quality assurance tests via videophone.

<u>We understand that these court decisions have resulted in unnecessary delays and anxiety:</u>

Travel by teletransport has been safe and reliable since at least 2114. There has always been a small percentage of the population (~30%) that in polls say they would personally never travel by teletransportation due to (unfounded) philosophical reservations they have about the destination-passenger being only a 'copy' of the original. Such people simply do not choose to travel by teletransport, instead they rely on painfully slow rockets to travel to solar system destinations or they stay within the local Earth-Moon system. Even first-time users of teletransportation, prior to 2138, rarely exhibited significant anxiety during the procedure –a slight rush of anxiety was common before

pressing the start button but that was all since the rest of the 'trip' was spent unconscious. Regular users of teletransportation simply treated the experience as casually as a taxi ride that you sleep through.

But after the decisions of 2138 and 2144 a significant rise in anxiety has been reported, especially in first-time teletransporter users. We view the 2138 and 2144 decisions as completely unnecessary. All carriers were already required to triple check the freshly-constructed destination-passenger with MRI++ technology at the molecular level prior to euthanizing the unconscious source-passenger. Such molecular-level quality assurance is obviously infinitely superior to any videophone evaluation or an hour of 'real-time quality assurance' by a spouse. Unfortunately a succession of UE presidents (many of their campaigns generously supported by the rocket industry) have packed the court with justices sympathetic to the 'just-a-copy' minority. Their ill-conceived solution to a nonexistent problem has resulted in travel delays and a significant increase in passenger anxiety. We have prepared this pamphlet to help alleviate anxiety that you may experience during the teletransport procedure resulting from these new rules.

Tips for a safe, stress-free teletransport

Tip#1: Don't overthink:

Our first tip is to not 'overthink' the teletransport procedure. Of course teletransportation is incredibly complex technologically but so is travel by driverless car, airplane, quadcopter, hyperloop, orbital ring, and, of course, rocket. Obsessing on the myriad things that could go wrong with any of these common travel methods can drive a person to extreme anxiety. Fixating on the remote possibility of your hyperloop pod losing levitation and crashing at supersonic speeds will ruin the otherwise peaceful hyperloop experience. Similarly, when relaxing in a driverless car speeding along in a convoy at 200 kilometers per hour, one should not fixate on how little we understand the workings of the deep recurrent neural networks that are navigating the car. It makes little sense to ruin that otherwise stress-free experience by worrying about the philosophy of whether your car's neural network might become conscious and homicidal. Normal, well-adjusted UE citizens simply do not obsess over such things because we know that billions of fellow citizens travel by these methods every day, and, with the exception of travel by rocket, the risk of personally experiencing an accident has become vanishingly small. The same is true for travel by teletransport, which is, in fact, much safer than all of these other travel methods when considered on a per kilometer basis. Millions of your fellow UE citizens have teletransported, and many do so on a regular basis commuting among solar system destinations.

Tip#2: Understand the evolutionary psychology behind your anxiety:

While reclining in an airplane cruising at an altitude of 10 kilometers one can easily forget the sheer terror such an idea would have engendered in our pre-flight ancestors. All humans have an innate instinct to fear falling from a great height. The evolutionary advantage of having such a fear hardwired into our tree-climbing primate ancestors from birth should be obvious. So how have we become so nonchalant about air travel today? The answer is not that we have lost this innate fear of heights. Anyone stepping onto one of the glass bridges spanning the Grand Canyon, or preparing to bungee jump or skydive can attest that the instinct is still very strong. It is also not the case that our intellectual mind

can simply override our innate fear of heights. Instead the answer is that airplanes are specifically designed so that they do not trigger our innate fear. We are comfortably enclosed in a pressurized cabin, insulated from the wind and cold outside, with our feet firmly planted on an opaque floor. The parts of our brain that are in charge of higher cognition do, of course, realize that we are 10 kilometers up and that the only thing that is preventing us from dropping like a rock is the continued functioning of the incredibly complicated jet engines and flight control systems. But it is the lower, evolutionary-older parts of our brain that mediate our innate fear of heights, and they are quite effectively fooled by the opaque floor. As long as you don't obsessively imagine the plane's floor ripping away beneath your feet and you falling to your death, these lower parts of your brain remain blissfully ignorant of your true situation. Only amusement park rides, designed specifically to activate our fear circuits, are designed to have chairs hung from above while the rider's feet freely dangle over the abyss. In contrast, airplanes are specifically designed *not* to activate our innate survival instincts.

The same could be said about teletransportation prior to the 2138 decision. You simply walked into the booth, pressed the start button, and walked out at your destination. As long as one didn't obsessively visualize the euthanizing procedure performed in the source booth there was nothing in the procedure that provoked innate survival instincts. Unfortunately the changes mandated by the 2138 decision have produced a situation unprecedented in our evolutionary history. We are now mandated to talk to our destination-self prior to pressing a button labeled [release destination-self/ destroy source-self]. In effect we are being given the chance to talk to a future version of ourself, one that has already been successfully teletransported to our destination, *before* we fully commit to the teletransport euthanizing procedure. A significant fraction of first-time teletransport users find this experience very unsettling, causing them to obsessively fixate on what will happen in the source booth once the [release destination-self/ destroy source-self] button has been pressed. Such obsessive visualizing can drive the innate survival circuits to a point where a person is simply unable to cognitively override them, leading to a forfeiting of the full ticket cost. (Not coincidentally, many bungee jump customers are similarly unable to jump once atop the platform and looking down.) Worse yet, in the teletransport situation the destination-self will similarly obsess on what will happen if the [release destination-self/ destroy source-self] button is *not* pressed. As has been widely reported in the media, this has sometimes led to intense exchanges between source and destination selves, psychological breakdowns, hostage situations, and, in one tragic case, a month-long manhunt necessary to enforce the UE government's No Duplicates Directive.

How can you personally avoid such anxiety during teletransportation? The answer is simple. Say you were prone to fear of heights but had to fly in an airplane with a transparent floor (thankfully not yet mandated by the UE government). You would simply choose not to look down right? Once you understand your own innate instincts, and how they can sometimes irrationally spiral out of control, you can intelligently decide to nip the process in the bud. To avoid problems, if you think you might be at all prone to teletransporter anxiety, we recommend that you simply decide beforehand not to talk to yourself via the booth's videophone system. All carriers provide a range of entertainment options during the mandated delay period. We recommend that you think of the delay period as you would waiting in line at a hyperloop stop, utilizing these entertainment options to pass the time. Then you can simply imagine the [release destination-self/ destroy source-self] button as the true 'start' button.

It is true that many regular teletransport customers enjoy the unique experience offered by being able to actually talk to yourself via videophone. Some regular Earth-to-Moon travelers have even

argued that it is a most effective form of psychotherapy and have lobbied to *extend* the delay period. Many others claim they actually look forward to the rush one gets when pushing the [release destination-self/ destroy source-self] button, but of course this experience is not recorded in memory, it is only relayed from source-self to destination-self via videophone. Once you have experienced the teletransport process a few time you too might want to explore such experiences, but we recommend that first-time teletransport users simply follow our advice and "don't look down" (i.e. don't talk to yourself via the video phone).

Of course one of our most fundamental instincts is jealously. Our evolutionary history has hardwired us to become jealous and enraged if we see our spouse being intimate with another person. Because of the ill-conceived 2144 decision, teletransporters can now subject themselves to just such an experience albeit one where the 'other person' is actually just a future version of themselves. In our experience it is *never* a good idea to allow a spouse in the destination booth. Of course cognitively you can understand that you are just witnessing your spouse being intimate with you –like watching your own couple's sex tape. But again the lower parts of your brain may not understand this and the situation has the potential to spiral out of control. Again, such incidents have been widely reported in the media and have led to hostage situations. Our strong advice is to just say no to a spouse that demands access to the destination booth. The totally baseless claims of teletransport causing a loss of libido (that were the basis of the contested 2144 decision) have now been completely debunked in three separate peer-reviewed studies. There is absolutely no reason to allow a spouse in the destination booth. Our strong advice: just don't do it.

Tip#3: How best to think about your destination-self:

The best way to think about your destination-self is to understand that he/she is simply *you* approximately an hour in the future. This future you has all of your memories except the ones you experience while in the source booth during the delay period. Most scientists consider time travel, in the sense of communication with the past, impossible. But we can nonetheless imagine hypothetical time travel situations. Let's say you were about to undergo a potentially lethal surgical procedure, and you were given a chance to peek into the future a few hours to see if you survive. Seeing, and even conversing with your future self should bring you comfort since you can now be sure that you will survive the procedure. Similarly, if you time traveled an hour into the future and found yourself being intimate with your spouse it would be illogical to get jealous, it would instead be cause for celebration. The opportunity to see yourself on videophone during the teletransport procedure should be viewed the same way. When you see yourself in the videophone you should think "Great, it looks like I am going to make it to my destination without problem *in the future*". This knowledge should give you comfort as you press the [release destination-self/ destroy source-self] button to "start" the procedure.

Some people that have never experienced teletransportation personally express concern about a 'lack of continuity of personal experience' across the teletransport process (especially since the 2138 decision). They argue that the destination-self cannot truly be your future self because of the discontinuity in memory –none of your experiences in the source booth during the delay period are remembered by your destination-self.

Of course it is true that you will not remember the experiences you have in the source booth during the delay period, but such a short memory gap should not be cause for alarm. Many people have experienced similar 'memory blackout' periods before in other situations. For example, surveys have

shown that over 30% of people have experienced 'memory blackouts' due to rapid ingestion of alcohol[2]. These persons are wide awake and behaving (semi-)intelligently during such blackout periods, but the brain systems required for encoding short-term memories into long-term have been shut down by the alcohol. People report having no memory of engaging in lengthy, highly-significant events, for example manual operation of automobiles, acts of vandalism, and intercourse. Those involved have absolutely no memory of the events that are nonetheless corroborated by others to have occurred.

In a more controlled setting, many of the drugs given to patients prior to surgery have been proven to produce an amnesic effect (anterograde amnesia) that prevents long-term memory formation. The patient can be still awake and communicative for up to an hour before finally being put under general anesthesia, but all experiences during this period of time are forgotten after the surgery when the drug wears off[3]. In effect, as soon as the patient takes these amnesic drugs they are committing to experiencing a short time period that will be forever disconnected from the rest of their life[4].

The main point is that no one finds such a brief, drug-induced gap in their 'continuity of personal experience' philosophically troubling. No one argues that the person injected with the drug has suddenly 'ceased to exist' after the drug's effect has worn off, despite the fact that there can be a significant, hour-long discontinuity of experience lost between the two. If such a memory and experience gap were to stretch months or years (as has been seen in some cases of brain damage-related amnesia) then it *would* be cause for anxiety and even cause for philosophical questions regarding whether the brain damaged patient is still 'the same person' as they were before the injury. But such concern is completely unwarranted when the memory and experience gap is only an hour long like that experienced in teletransportation.

These more common examples of a 'discontinuity of personal experience' should help alleviate any concern about the short gap experienced during teletransportation. Its memory blackout period is really no different from ones that you might have already experienced.

In summary, remember:

1.) Seeing and talking to your destination-self is like talking to yourself one hour in the future.
2.) The short memory gap and discontinuity of personal experience resulting from teletransportation should be thought of simply as a brief 'memory blackout' episode like the kind experienced during pre-surgical setups.

Tip#4: Go through a mock teletransport prior to actual travel:

We highly recommend that first-time teletransport customers participate in a mock teletransport simulation prior to actual travel. All carriers have agreed to make these freely available to all ticketed customers, and simulation facilities are available at all of Earth's teletransport stations. This

[2] (White 2003) "What happened? Alcohol, Memory Blackouts, and the Brain"
[3] (Forster, Gardaz, Suter, and Gemperle 1980) "I.V. Midazolam as an Induction Agent for Anaesthesia: A Study in Volunteers"
[4] (Malamed, Nikchevich, and Block 1988) "Anterograde Amnesia as a Possible Postoperative Complication of Midazolam as an Agent for Intravenous Conscious Sedation" –Dramatic example of complete lack of recall of significant, consciously experienced events after intravenous injection of the drug midazolam.

simulated experience has been shown to dramatically reduce anxiety among first-time teletransport users.

First you will be asked to prepare a list of questions that you might want to ask your destination-self during actual transport. Following the creation of this list you will be seated in a mock 'source' teletransport booth and will proceed to ask these questions aloud while looking into the videophone console. These questions will be recorded for later.

You will then be given an injection of a drug that will induce a period of memory blackout. You will remain conscious, aware, and will likely not notice any cognitive effects from this injection, but realize that it will have temporarily shut down your brain's ability to encode short-term memories into long-term memories.

Under the drug's effects, you will be escorted into a mock 'destination' teletransport booth and on the videophone console you will be presented with an edited version of your previously recorded questions. There you will be required to respond to each of the questions while your responses are recorded. You will also be prompted (by an attendant via intercom) to provide a set of spontaneous responses to a few other questions.

If your spouse plans to be in the destination booth then he/she should also be present during this memory blackout session, and should plan on performing any 'real time quality assurance' tests that the two of you have agreed will be performed during the real teletransport. Note this will also be video recorded.

After several hours (needed to ensure the drug's effects have worn off and that all traces of the mock destination session have been forgotten), you will be escorted into the mock 'source' teletransport booth again. The inside of this mock booth has been set up to be as similar to a real teletransporter as possible so that you can fully familiarize yourself with the experience. Note that this includes locking of the booth door as you press the 'start' button, and introduction of the sweet smelling KO gas that will render you unconscious. The only differences will be the many notices in the legal questions and start menu that clearly state this is only a simulated teletransport. Also there will be a clearly marked 'emergency stop' button which, if pressed, will stop the simulation and open the door immediately. Such a button is not present in real teletransport booths.

You will quickly awaken from the KO gas still locked in the mock teletransport booth, and you will be presented with a (mock) videophone session with yourself. This will be an edited version of the video recording you made while under the influence of the memory blocker drug. Of course by this time you will have no memory of having recorded these responses. The video will be presented in an interactive way to simulate both the communication delay of your destination and to simulate responses to your questions. For proper effect it is best to stick to asking questions from your prepared list.

This mock videophone session will continue for the full delay period and then the console will display two buttons [release destination-self/ destroy source-self] and [release source-self/ destroy destination-self], and will begin a 15 minute countdown. Once you press the [release destination-self/ destroy source-self] button the KO gas will be reintroduced and you will again become unconscious. Shortly after you will regain consciousness and an attendant will escort you to a post simulation

question and answer session with a certified teletransport psychological counselor who will be able to answer any further questions you might have.

You can see that this mock teletransport simulation has been carefully designed to familiarize travelers with the experience of seeing and talking with their future self, with the experience of having a short period of memory blackout, and with the experience of pressing the [release destination-self/ destroy source-self] button. Again we highly recommend that all first-time travelers attend a simulation prior to actual travel.

The solar system is yours to explore:

Following these four tips will help make your first teletransport experience a stress-free and enjoyable one. Teletransportation has made the once unimaginable, routine: same-day travel to the Moon, Mars, asteroids, and outer solar system. All of these destinations are now within your reach. Enjoy!