**Research Article**

# Embracing Peace: An International Organization System for Human Settlements into the Solar System

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**Abstract**
*As exemplified in various disturbed conditions on present-day Earth, anthropogenic activities can significantly accelerate the degradation of our environment and atmosphere, damaging many naturally balanced ecosystems and disrupting the overall biosphere of the Earth. Ultimately, this holds the potential for mass extinctions and threatens the human species as well. By carefully accounting for differing economic, political, cultural, and religious affiliations, innovative design proposals for long-term human settlements into the Solar System can better focus resources on improvement and/or amending of relationships between ethnic and religious groups and individual countries. The goal is to lay the groundwork for avoidance of interplanetary – and ultimately interstellar-conflicts that may spread destruction to settlements outside of Earth, causing disasters best left in our home world's troubled past and defeating the essential purposes of human space exploration and off-world colonization. This proposal focuses on the organizational design for human settlements, but it also implies pre-settlement events where the use of artificial intelligence is implemented to create a relatively safe environment and qualified living conditions for the settlers before mass migration begins. If implemented successfully, potential international, interplanetary, and interstellar tensions will stand a better chance of being restrained, avoiding the recurrence of conflicts on ever larger scales.*

**Keywords:** international, humanity, settlements, solar system

## 1. Introduction

Humans first developed and evolved on the African continent 2-6 million years ago, on a vast yet limited land that resulted in 15 to 20 species of early humans, compared to 3800 cultures worldwide today (Potts, 2022). About 50,000 – 70,000 years ago, scientists marked the first step of humans crossing the African continent to enter Asia and later Europe, lands containing drastically different climates, resources, ecosystems, and threats to survival. These differences not only altered and created new cultures, but also allowed humans to be exposed to new challenges, sparking new directions in development, and eventually leading to the Enlightenment and Industrial Revolution, dramatically advancing humanity's technological level. As time went on, humans traveled and settled in every continent on Earth, becoming a civilization that can generate, collect, and utilize a significant fraction of the energies available on Earth. Likewise, to be able to advance and develop a higher-level civilization and technology, humans must explore into the Solar System (and possibly outside of the Solar System) to utilize the available resources of each planet and of the Sun which warms them.

Despite the example of rapid advancements in space exploration for peaceful purposes, many existing studies have reached a conclusion that human technological advancement must be refined to avoid possible human annihilation (whether caused by outside forces or possibly the human species themselves) (Jiang et al. 2023). The Fermi Paradox, named after Enrico Fermi, the famous 20th century Italian-American physicist who raised questions regarding the existence and detection of extraterrestrial intelligence (Lucy 2022), led to a number of explanatory hypotheses. One such notion, the "Great Filter", outlines the evolutionary paths extraterrestrial life might take - i.e., ambient conditions afforded within the right star system, complex molecules capable of self-replication, simple to more complex single-cell life, multi-cell life, sexual reproduction, tool-using animals with large brains, and eventual colonization explosion, stating there exists a certain barrier for each stage which impedes survival ultimately leading to annihilation (Hanson 1998). Research concludes that the most

optimal long-term approach for both preserving the Earth and obtaining new resources to support the growing human species, as well as avoiding degradation of Earth's climate, is through exploration and settlements into the Solar System. Finally, such an endeavor would transform humanity into a Type II civilization - a civilization able to harness efficiently and effectively, store, consume, and employ energies not only from its own planet, but from other planets and the host star of its solar system as well. Not surprisingly, recent studies have been conducted, with further research ongoing, as to how the catastrophes of the "Great Filter" can be avoided.

Two such studies, "Avoiding the 'Great Filter': Extraterrestrial Life and Humanity's Future in the Universe" (Jiang et al. 2023) and "Avoiding the Great Filter: A Simulation of Important Factors for Human Survival" (Jiang et al. 2023), exemplified and listed several potential causes of ultimate human extinction. Findings suggest most Great Filter events can be eliminated or avoided, including through space exploration and settlements of other planets and moons within or outside the Solar System (e.g., Mars, the most researched and likely suitable world within the Solar System). As explored in these two studies, five of the most probable causes of human civilization annihilation (measured in the average number of years starting from the present until the respective event occurs) are nuclear war (60 years), climate change (193 years), asteroid impact (1,754 years), artificial intelligence (40 years), and pandemic (16 years). Of the five causes, two most concerning (climate change and asteroid impact) are survivable by a portion of humanity through robust off-Earth settlements. However, a third concerning cause of human extinction, nuclear war (or very large-scale physical conflicts in general), may still pose a threat to human survival, which could even be exacerbated as humans migrate to other worlds amid competition for new resources. Additional studies (Jiang et al. 2021), (Rosen et al. 2022) outline scientifically estimated timelines for human settlement into the solar system, concluding that our technological capability will enable such colonization to commence possibly within the next 50 years. But without sensible and enforceable regulation, colonization of different celestial bodies holds the potential to create complicated conflicts and hostile relationships between nations on Earth and, perhaps, the colonies they spawn on other worlds. Such violence and destruction can logically be proactively avoided, however, with an organization that regulates the political, economic, technological, and social aspects of space colonization. Given the plans taking shape for a lunar base and human landing on Mars within the next two decades, this is an issue of gathering urgency and will require the serious and focused attention from all stakeholders. People hailing from different political, economic, and social backgrounds are called for these groups coming together with a common purpose of establishing agreements that can best utilize the resources of the colonized worlds fairly and inclusively.

Throughout the course of human civilization's history, many attempts on building stronger trust in international relationships have been adopted for better trade and cooperation between nations worldwide. While the United Nations Organization stands as the most over-arching – and arguably successful – of these noble efforts, it must be pointed out even that world-spanning body was only brought into being after two world wars and the failure of its precursor, the League of Nations. Still less than a century in our collective past, the traumatic birth of the U.N. stands as a sobering lesson to be carried forward. International organizations have, in turn, hammered-out many treaties and other agreements to balance and police the economic and political powers of strong nations, as well as aiding nations in need of economic, social, technological, or political assistance with their support. These attempts ultimately resolved and avoided many international conflicts that may not have been otherwise successfully concluded. By extension, international organizations would serve a very important role in policing and regulating the economic, social, and political relationships between countries and colonies into the Solar System and as the human species advances to a higher technological level. To better prepare for applying such large-scale arrangements to endeavors far grander still, the study of past and existing international organizations is needed to build a foundation of optimal regulatory guidelines of what might be called the "International Organization System for Settlements into the Solar System" (IOSSSS). As shown in Figure 1, below, while some international organizations failed to achieve their goals, informative examples from 15 of those existing succeeded significantly in keeping a relatively peaceful and fair relationship between different countries and/or the environment.

**Figure 1.** 15 Most Prominent International Organization Headquarters Map

*Note: The map pins present each existing international organizations' symbols and approximate headquarter locations, where the numbers labeled on the pins corresponds to the definitions below for more specific information regarding the respective organizations:*

*1. World Wide Fund for Nature (WWF) – Gland, Switzerland:*
The WWF is an international non-governmental organization dedicated to the preservation of wildness and the reduction of human impact on the environment. It was founded in 1961. The WWF is the world's biggest conservation organization, working in over 100 countries and supporting over 3,000 conservation and environmental initiatives. It has over five million supporters worldwide.

*2. Asian Development Bank (ADB) – Manila, Philippines:* The ADB is a regional development bank based in Mandaluyong, Metro Manila, Philippines, in the Ortigas Center. It was established on December 19, 1966. Furthermore, the organization has 31 field offices across the world that work to support Asia's social and economic growth.

*3. New Development Bank (NDB/BRICS Development Bank) – Shanghai, China:* The NDB, formerly known as the BRICS Development Bank, is a worldwide development bank established by the countries of the BRICS (Brazil, Russia, India, China, and South Africa). The NDB Agreement states that "the Bank shall assist public or private projects through loans, guarantees, equity participation, and other financial instruments."

*4. Asian Infrastructure Investment Bank (AIIB) – Beijing, China:* The AIIB is a multi-billion-dollar international development bank devoted to improving Asia's economic and social circumstances. The bank now has 103 members and 21 prospective members from all around the world. The bank commenced operations on

December 25, 2015, when the agreement entered into force, with ratifications from 10 member nations accounting for 50% of the Authorized Capital Stock initial subscriptions.

*5. Organization for Economic Cooperation & Development (OECD) – Paris, France:* The OECD is a 38-member international economic organization founded in 1961 to promote economic progress and worldwide commerce. The OECD, as one of the most famous international organizations on our list, oversees trade and economic operations. It is a platform for countries that identify as supporters of democracy and the market economy. It provides a venue for members to discuss policy experiences, find answers to common problems, identify best practices, and coordinate their domestic and international policies.

*6. Association of South East Nations (ASEAN) – Jakarta, Indonesia:* ASEAN is a Southeast Asian economic union composed of ten member countries that promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration among its members and other Asian countries. ASEAN's major purpose was to accelerate economic growth and, as a result, social and cultural development.

*7. South Asian Association for Regional Cooperation (SAARC) – Kathmandu, Nepal:* The South Asian Association for Regional Cooperation is South Asia's largest intergovernmental organization and geopolitical union (SAARC). Its members are Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. As of 2019, the SAARC region accounts for 3% of global land area, 21% of global population, and 4.21 percent (US$3.67 trillion) of worldwide GDP.

*8. United Nations Education Scientific & Cultural Organization (UNESCO) – Paris, France:* UNESCO is a United Nations (UN) specialized organization tasked with advancing global peace and security through international collaboration in education,

research, and culture. It has 193 member nations, 11 associate members, and partners from the nonprofit, intergovernmental, and business sectors. UNESCO is based in Paris, France, and maintains 53 regional field offices and 199 national commissions to assist it in carrying out its worldwide mandate.

*9. World Trade Organization (WTO) – Geneva, Switzerland:* The WTO is a multinational organization that governs and promotes global trade. As a result of the 1994 Marrakesh Agreement, which superseded the 1948-established General Agreement on Tariffs and Trade (GATT), it commenced operations on January 1, 1995. The WTO is the world's biggest international economic organization, with 164 member countries representing more than 96 percent of global trade and GDP.

*10. World Bank – Washington, D.C., United States:* An international financial institution, the World Bank provides loans and grants to governments in low- and middle-income countries. It consists of the International Development Association (IDA) and the International Bank for Reconstruction and Development (IBRD). Among the World Bank Group are its subsidiaries and the World Bank itself.

*11. International Monetary Fund (IMF) – Washington, D.C., United States:* IMF is one of the most prominent international organizations. Located in Washington, it works to promote global monetary cooperation, ensure financial stability, facilitate international trade, promote high employment and sustainable economic growth, as well as reduce poverty around the world, and rely on the World Bank for resources from time to time.

*12. World Economic Forum (WEF) – Cologny, Switzerland:* Founded on January 24, 1971, the WEF is an international non-governmental organization (NGO) based in Cologny, Canton of Geneva, Switzerland. WEF is committed to influencing global, regional, and industry agendas by engaging commercial, governmental, intellectual, and other leaders of society.

*13. World Health Organization (WHO) – Geneva, Switzerland:* The World Health Organization (WHO) is a United Nations specialized organization in charge of international public health. Achieving the highest degree of health for all, according to the WHO Constitution, sets forth the agency's governance structure and goals. Geneva, Switzerland, serves as headquarters to six semi-autonomous regional offices and 150 field offices around the world.

*14. United Nations Children's Fund (UNICEF) – New York, United States:* A United Nations organization, UNICEF provides humanitarian assistance and development aid to children worldwide. Globally, the agency serves 192 countries and territories, making it one of the most well-known and well-known social welfare organizations. UNICEF promotes vaccinations, disease prevention, and HIV treatment for children and women, as well as sanitation, education, and emergency relief.

*15. United Nations Organization (UN) – New York, United States:* As a world organization that prevents wars and conflicts, the UN is one of the most popular intergovernmental institutions. In addition to promoting peace and security in the world, it promotes cordial relations among nations, fosters international cooperation, and serves as a hub for national efforts. In terms of size, prominence, representation, and power, it is the world's largest, most well-known, and most powerful intergovernmental organization.

**Figure created by Junze Zhang; data collected from Team Leverage Edu. "Discover the Top 15 International Organizations in the World," Leverage Edu, 21 Nov. 2022, https://leverageedu.com/blog/list-of-international-organizations/.*

As illustrated in the above examples, international organizations which are well-conceived in their modeling and methodical in their implementation can be effective in facilitating healthy and peaceful relationships between nations and regions. A world comprised of nearly 200 sovereign nations, keeping the peace, and aiding those less fortunate in practice proves challenging. Some developing countries, especially those in the southern continents, have claimed that the UN destabilizes the political and economic status of their country ("Social Justice in an Open World: The Role of the United Nations", 2006). Even UNICEF has been called out for creating "voluntourism", where the organization, combined with volunteers' possible corrupt motivations, only spread the region's problems on media instead on contributing actual help (Yelamali, 2021). Thus, as the necessity for humans to migrate into the Solar System becomes more evident, some form of dedicated international organization must also be negotiated into being. An obvious point from which to start would be expanding and improving precursor organizations. In so doing, humanity would better ensure the elimination of threats - Great Filters impeding our continued progress towards a Type I civilization and beyond.

In addition to the many treaties and less binding agreements targeting conflicts and other problems between different countries, there is one historical treaty from the first decade of the space age which stands out as focusing on the peaceful use of space and celestial bodies between different nations. Signed by the U.S.S.R., the United Kingdom, and the United States of America in 1967, *the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* (commonly referred to as the "Outer Space Treaty") opened the discussion for international space laws including but not limited to weapons usages, claims of land, celestial bodies, and sovereignties, responsibilities for activities, etc. With this treaty, among others, serving as foundational blueprints, an International Organization for Settlements into the Solar System explicitly including recognition of the imperative to embrace equality and inclusivity for all groups of people, can be established through careful negotiations, minimizing international conflicts in space. It is important to acknowledge that the many details contained in the design of such a literally and figuratively far-reaching agreement will take many years to successfully develop. Hence, the need to at least begin considering this proposal is a task best started now to better ensure future peaceful international relations in space.

## 2. Rationale
The danger of war, including large-scale nuclear war, threatens

human survival on Earth due to motivations rooted in racism, xenophobia, and competition for resources. However, human civilization's complex minds have also led to technological advances and exponential growth, bringing hope for space exploration and settlement. Cooperation between nations has been demonstrated in past achievements, such as the Apollo-Soyuz mission (1975), Mars Rover landing, and, most notably, the International Space Station (ISS), showcasing inclusivity and collaboration skills. The challenges of space exploration bring nations together to work toward a common goal and offer unlimited resources for profit and gains, inspiring further collaboration. Recognizing the economic necessity of cooperation, the International Organization System for Settlements into the Solar System outlines a system for peaceful cooperation and conflict resolution.

The outbreak of war poses a significant threat to human survival on Earth, particularly in the form of large-scale nuclear wars that more developed countries are technologically capable of. The root causes of war, such as racism, xenophobia, and the fight for land and resources, can be traced to the beginning of human civilization. Conflicts between countries often result in the loss of millions of lives under the guise of "justified" causes, such as imperialism, discrimination, and false accusations. To achieve a Type I civilization, humans must learn to use resources without damaging the environment. Although less intense, ethno-religious differences also contribute to regional and national disputes. The idea of "nativism" causes hostility between different cultures and religious groups, leading to conflicts when one group refuses to assimilate into society. This perception of foreignness triggers survival instincts, leading to violent clashes and few benefits for either group. To address this issue, the second part of the

International Organization System for Settlements into the Solar System emphasizes reparations and cooperation between different cultural and religious groups. This approach ensures peaceful interactions between settlements and countries as humans migrate to farther corners of the Solar System and the Universe.

Even though conflict has been present throughout human history, it is important to recognize that its extent is a function of our complex minds. Our minds have also brought about safety and comfort to billions of families and fostered the exponential growth of technology and space exploration. This exponential growth has brought about a positive outlook for the future of the human species in terms of interplanetary and interstellar settlements. As technology advances, it generates stronger waves of exponential growth in both technology and human intelligence. This has resulted in several examples in recent history that demonstrate the societal benefits of these advancements such as the dramatic reductions of poverty, illiteracy and starvation, as well as broad access to the collective human knowledgebase via the internet. Furthermore, following the human landings on the Moon, semi-autonomous rovers have been successfully deployed to Mars, showcasing the incredible capabilities of human technological advancements. The exponential growth of technology has the potential to revolutionize the way we live our lives, and it is important to recognize that this growth is a result of our complex minds. As we continue to advance technologically, we could shape the future of the human species in ways that were previously unimaginable. We can look forward to a future in which we explore the universe and create settlements across the Solar System and beyond, all while reducing the negative impacts of poverty and other global challenges.
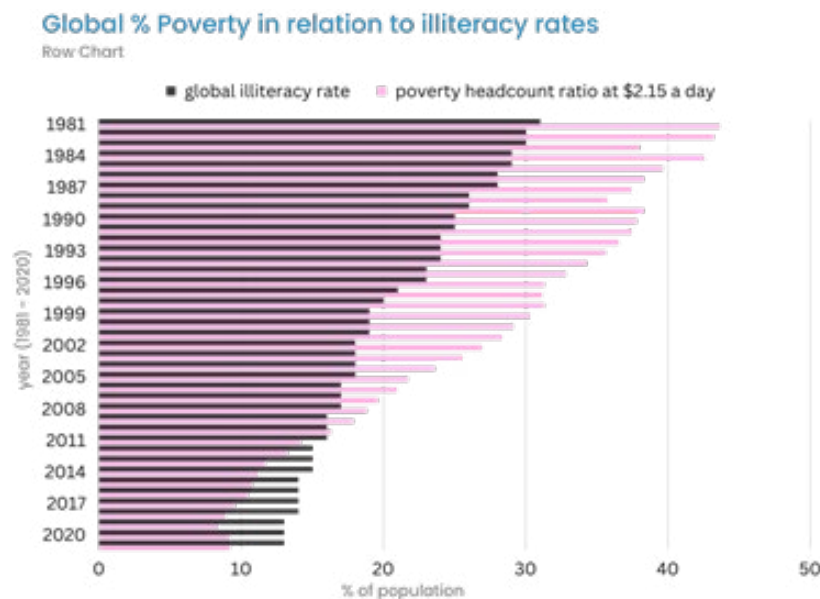


**Figure 2.** Global Percentage of Poverty in Relation to Illiteracy Rates: from year 1981 to 2020.

*Data collected from the World Bank Data: Poverty and Inequality Platform; and The World Bank: Literacy rate, adult total (% of people ages 15 and above).*

As demonstrated in Figure 2, one of the many benefits of the complexity of human intelligence is the ability to innovate which has resulted in the reduction of poverty and starvation, complemented by the growth of education, fostering exponential technological advancements. As the human species' brains' cerebral ability to process, understand, and discover new knowledge develops and becomes more acute, education is becoming more and more advanced as well, bringing in new perspectives and revisions of the knowledge taught throughout history. These changes, brought by the advancement of the increasing insight of the human mind, can breed a generation of humans with more resources to foster higher intelligence, thus continuing the cycle of the growth of human intelligence, as demonstrated by the Flynn effect. The Flynn effect is the rise in standardized intelligence test scores over time that was first identified in 1984. Found by James R. Flynn, studies regarding such effect observed that between 1932 and 1978, there was an increase of 13.8 points in IQ scores, which is equal to a yearly increase of 0.3 points or about 3 points per decade. Flynn's 2009 research confirms this finding, reporting a steady yearly increase of 0.31 in IQ scores (Trahan, 2014). The benefits of this cycle, as demonstrated in many examples, can strengthen still further efforts dedicated towards reduction of poverty, malnutrition, disease, and illiteracy in the world's population, as well as being leveraged for space exploration and settlements program. For example, a recent measure by the United Nations installed higher education requirements and inspiration in developing countries such as Cambodia, Rwanda, and Bangladesh, resulting in a dramatic increase in the respective countries' economic and political status. By facilitating development to far more than expected, near-term benefits set the stage for future generations to prosper in those developing countries, where women and men can bring themselves out of poverty and participate in political conversations (Khoo 2012). Measures to educate and motivate women's participation in society, which does not pose as an economic burden on the developed states, proved to be impressively efficient, allowing many people to rise out of poverty and malnutrition, and empowering several developing countries, such as South Africa, to emerge as potential world powers. Education, overall, can be used as a great tool to not only advance human species' cognitive skills and technological advancements, but also improve coherence of different cultures, ethnicities, and nationalities to work together toward the overarching challenges - including space exploration. Cooperation and large sums of economic spendings in space exploration programs are not exceptional. For example, the Apollo 11 flight and lunar landing exhibited our ability to work together harmoniously and achieve an accomplishment that can only be dreamt of a decade before Consider including the year (1970) in this reference. The demonstration of our combined strength, despite disagreements in other aspects of our societies, establishes the fact that when faced with challenges that raises questions far more important than international or national conflicts, the human species can set our differences aside and cooperate on the task, where all that are contributing to the result are considered as equal and are treated with respect and friendly attitudes. In a more recent event, the first successful landing of the semi-autonomous rovers on Mars was achieved in 2004, consisting of two teams of engineer control groups that monitors and controls the rover, making sure that its communication, data-collection, navigation, and other skills are operating correctly for its designed purposes (Tunstel et al.). The teams consist of many scientists from different nationalities, showcasing inclusivity of the project as well as cooperative skills between different nations. More importantly, the Apollo program's Moon landings and the semi-autonomous Mars rovers, among other space exploration initiatives, have demonstrated the benefits of leveraging human intelligence to noble scientific goals. Additional opportunities regarding space exploration lay open for consideration, literally elevating theories and ideas off the ground and implementing these ideas into testing programs and ultimately, realization.



**Figure 3.** International Collaboration Space Exploration Programs Timeline.

The ability of different nations to cooperate despite their political and technological differences is a positive sign for the future of space exploration and settlements. Figure 3 depicts major milestones in which countries with different ideologies and capabilities successfully worked together on space-related projects, such as the United States and the Soviet Union's collaboration during early missions to Venus and Mars, the Apollo-Soyuz orbital link-up in 1975, and the International Space Station (ISS). This cooperation shows that nations can put aside their differences and work together towards a common goal, which is invaluable in the context of space exploration where success depends on close collaboration and the pooling of resources. Furthermore, this cooperation could be facilitated by organizations like the International Organization System for Settlements into the Solar System, which could promote collaboration among the nearly 200 different nations of Earth towards a shared goal of advancing space exploration and settlements. By creating a framework for peaceful cooperation, this organization could proactively resolve conflicts and ensure that the vast resources available in space are utilized in a way that benefits all nations involved. Overall, the idea of international collaboration in space exploration and settlement programs is an exciting prospect that could bring nations together in a way that is mutually beneficial.

Ultimately, the mind complexity of the human species is opening doors for re-directing our efforts away from destructive ends and toward the growth of technology capability, allowing the different nations to not only help each other grow economically within the state and internationally, but also to expand into space and eventually settle into the Solar System. The challenges posed by space exploration constitute an opportunity to turn aside from the pursuit of petty grudges and rivalries to which nations have long and tragically clung. The human conquest of space holds unmatched potential to bring nations who would otherwise indulge in conflict closer to each other, working together towards goals loftier than any would find if confined to just our home world. As shown through past and current triumphs, not only are countries able to successfully work together to combat challenges where importance surpasses the nations' political, economic, or social rivalries, goals are often achieved much more efficiently and effectively. In addition, because space exploration and settlements offer unlimited resources for material profit and other gains, the possibility of countries working together toward that beneficial outcome is very high, inspiring future generations towards furthering such collaboration. Given the inherent risks and costs of space exploration, it is both a sensible and an economic necessity for countries to cooperate. Recognizing these necessities, countries will be much more amenable toward an International Organization System for Settlements into the Solar System, which outlines a framework for countries to peacefully work together and resolve conflicts without causing destruction within or outside of the Earth.

## 3. International Organization System for Settlements into the Solar System

The International Organization System for Settlements therefore should focus not only on the political aspects of human relations, where it seeks to avoid the potential conflicts between settlements and countries (ultimately avoiding cislunar, interplanetary, and interstellar conflicts), but also consider human relations in which the drivers of our spiritual and cultural identities manifest. When utilized and balanced cautiously, such motivations can be cultivated as a synergistic force that brings off-world settlers together. The alternative would all too likely witness challenging new frontiers defaulting to just another setting upon which to carry forth centuries-stale conflicts born of outdated and obsolete identities. Space provides humanity's best and, perhaps, last chance to radically improve our condition – both here on Earth as well as where we colonize off the Earth.

Shown below, in Figure 4, is an illustration of the first part of the International Organization System. This initial component focuses on averting economic and political differences by creating a revenue-generating platform aimed at ensuring settlements and countries earn respective amounts of benefits according to their physical and/or economic contributions and efforts. The system should work as a self-enhancing cycle, by which as more countries and settlements support the system, the more revenue, and resources these respective regions will generate. Thus, critical mass is achieved by providing escalating prosperity for all involved.

Figure 4 gives a simplified example of how the system may function. As labeled, the central globe-symbol represents the neutral international organization that serves as the "policeman" of the two sides, ensuring peaceful usage and trading system of resources, and the puzzle pieces represent corresponding countries/ settlements who participate.
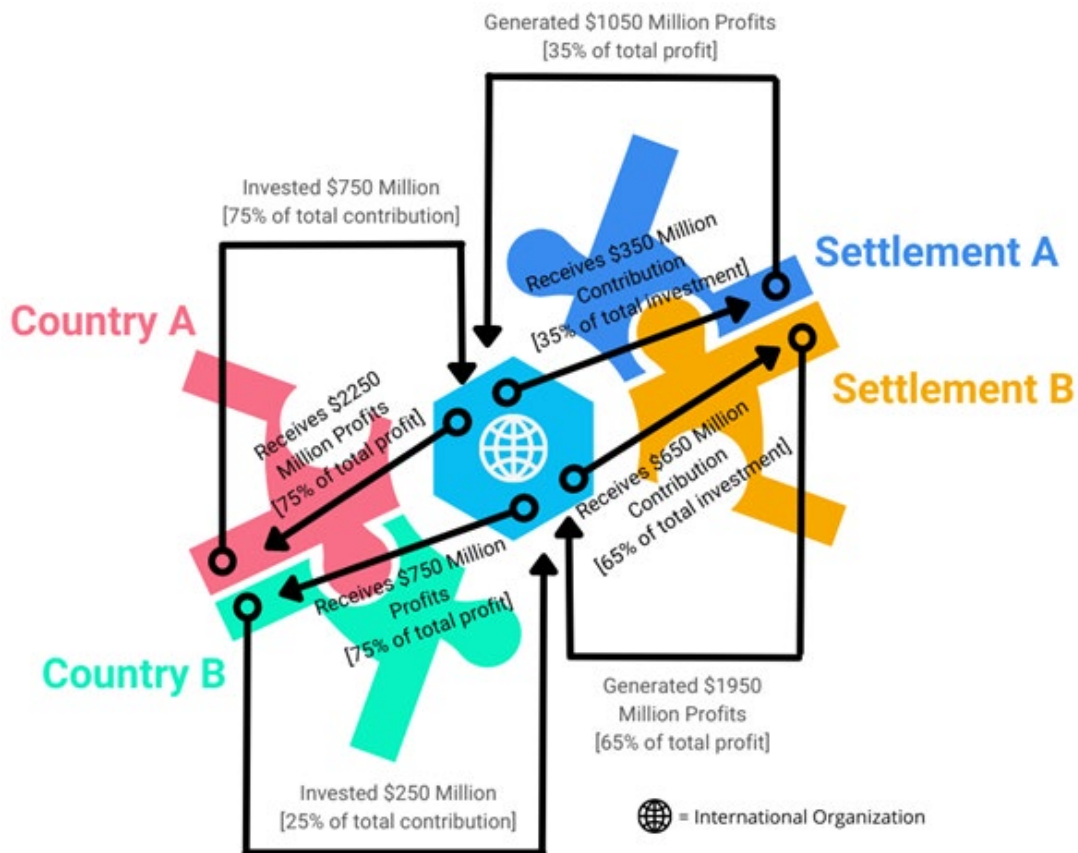
**Figure 4.** International Organization Collaboration System: Economic Diagram.

*Note that the value of profit and investments are example, implemented for demonstration purposes.*

Through the system, a healthy, peaceful, and economically beneficial cycle of trade between nations on Earth and settlements in the Solar System can be produced, where states receive fair benefits based on their investments, and settlements receive fair investments based on their contributions. The system increases the productivity and availability of necessary resources for both countries on Earth and settlements in the Solar System, thus facilitating human survival on the minimal end and providing better living conditions which enable mutual advancement.

In the example provided, country A invested $750 million in the research and development program for off-Earth colonies, while country B invested $250 million. When combined, the total amount of investment provided for the settlements is $1 billion, where country A contributed 75% and country B contributed 25% of the total. Regarding the investments of the countries, it is encouraged to prioritize the extraction of such economic resources from the respective states' military and other discretionary budget items before cutting the budgets and resources of other programs, therefore not only encouraging the establishment of settlements in the solar system, but also promoting a world repositioned towards peaceful uses of its resources. In addition, contributions are not limited to economic measures. Human resources, natural resources, technologies, etc. can all serve as contributions purposed for exchange with resources derived from the colonies (and vice versa), driving towards an equal balance from the developed countries with large economic power to developing countries with economic needs. On the side of the settlements, the information provided is that settlement A generated $1.05 billion worth of profit that can be provided to the countries on Earth, while settlement B generated $1.95 billion worth of profit to return to the Earth. For the profits being sent back to Earth, the settlements must understand that it is not required to send back everything they generate, but at an agreed and comfortable percentage that would result in mutual benefits (e.g., ≥2.5% of each settlements' total profit, which corresponds to an approximation of the current global average percentage of military expenditure of each state's Gross Domestic Product [GDP] (the World Bank 2020)). Thus, the settlement founding countries are still able to benefit from the system, and the settlements are still able to be funded by the states, but the colonies would be able to avoid economic depression when productivity and economic benefits are low. Because the entire profit the settlements can provide adds up to $3 billion, settlement A would be providing 35% of the total profit while settlement B provides 65%.

The system, designed to prevent war and associated catastrophes wherever humans roam, implements the usage of an international

organization that stays neutral in matters between all states, giving no country advantages or disadvantages in the trade or bias of any kind. To avoid advantaging any state and/or nation, it would be implied that each country sends an equal number of representatives to the organization to pursue such policies and agreements and regulate the systems to best prevent conflicts between countries who tries to take advantage of the system. Albeit imperfect, a starting point model for such an international body can be found the United Nations Security Council, which maintains a workable equilibrium through its use of rotating membership from all the world's nations. In terms of enforcement mechanisms, this where countries and/or settlements violate the agreements of the collaboration system such as in establishing unsanctioned and/or illegal side dealings, and proof is established to the satisfaction of a simple majority of the system's signatories, all participants of such activities would be assigned an increase in investment/contribution of 1 percentage point (i.e., given the previous investment/contribution is x% of GDP, the respective country/settlement would be required to raise the investment/contribution to (x+1)% of the states/settlements' GDP). Violators would be deterred from further illegal activities only beneficial to themselves, and perhaps even negatively affect other members of the system but would also contribute to benefits for all and not deplete the system of economical and natural resources. An empowered council, which itself is subject to annual elections and consists of two representatives of each nation/ethnic/religious group, should oversee, and enforce the bylaws of the system.
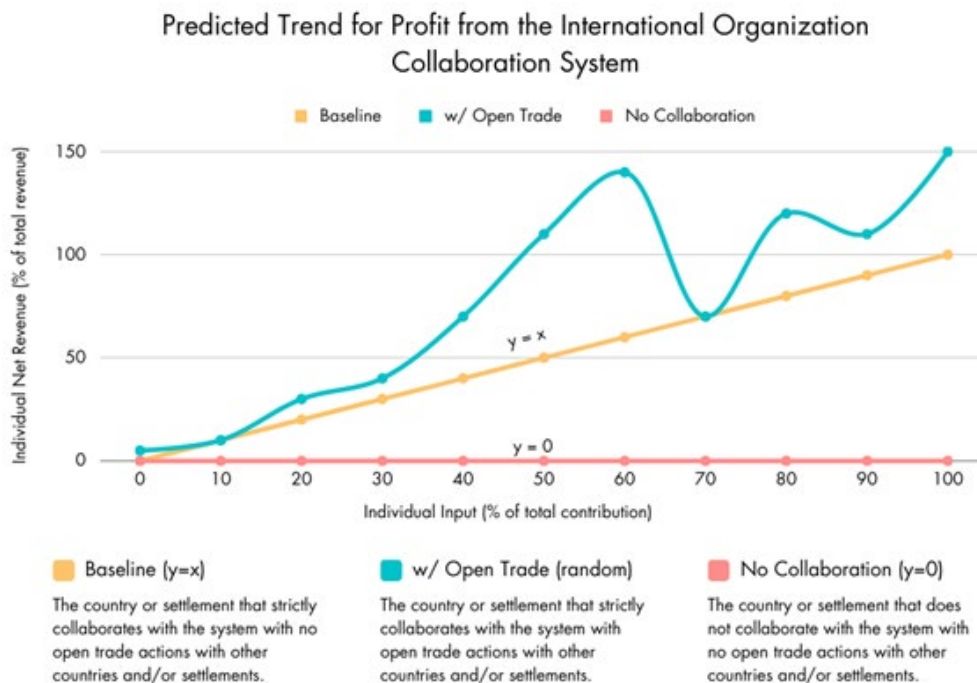


**Figure 5.** Predicted Trend for Profit from the International Organization Collaboration System Chart

Although the system can, in principle, generate sufficient revenue for countries and/or settlements, the connection between individual countries and settlements can be further established and enhanced through encouragements such as access to free, open trade. Through opening additional trade routes, the system allows individual countries and settlements to generate more profit on top of the baseline revenue already guaranteed by the system's regulated trade itself (Figure 5). Furthermore, as shown in Figure 5, with the support of the system's regulated trading relationships, the countries and settlements would not fall into drastic economic depression when the free flow of resources, goods and services between respective countries and settlements fails to operate smoothly. As shown in the case where an individual country contributes 70% of the total contribution but its trade in that scenario was unsuccessful, the country was still able to stay economically afloat because of the system's baseline regulations provided a hard floor of support. On the contrary, when a country decides to not collaborate with the system, the respective country does not have that economic support if their trade becomes unsuccessful or rejected by other countries and/or settlements.

Not limited to economic support and benefits, the encouragement of free trade between countries and settlements also poses as a cultural exchange opportunity wherein different cultures can influence others, ultimately creating a much more friendly and understanding environments for all. Through these deepened connections, enhanced collaboration and participation efforts can be facilitated, resulting in a positive trend in both free trade and system regulated trade. As the economy of the individual countries and settlements improves over time, it is also highly encouraged for these countries and settlements to help those which are struggling economically, politically and/or socially, thereby improving the

overall global economic, political, and social status.

The goal of the system, to achieve ultimate peace between countries to co-exist without major physical conflicts, requires a change in mindset. In contrary to the idea of nationalism, where over-arching pride in specific, individual countries leads many to believe in their superiority and the right of their success above others, the change in mindset should steer toward the sense of belonging for everyone in the category of the human species and as a living organism. The impulse to fight for gain at the individual or state level, while not extinguishable, needs to be rebalanced against the prosperity to be gained across the human race – both on and off the Earth. Nevertheless, it is not intrinsic to human nature to easily change mindsets on a mass scale, especially with such a dramatic turn occurring over a relatively short period of time. Since the dawn of the Industrial Revolution technological advancements have ushered society into periods of breakneck change. Indeed, the first decades of the 21st century offer concurrent testimonial in the form of the cognitive revolution as it unfolds humanity's next age, so we are told, of 'enlightenment'. To get in front of the large-scale socio-economic leveraging of the High Frontier that is

to come, and the high stakes that will come with it, implementation of an international organization to police the relationships between countries and settlements is clearly crucial.

To avoid conflicts at an unprecedented level, the international organization system must harmonize different ethnic and religious groups, facilitating them to work together and resolve/avoid conflicts peacefully. Humanity's tendency to subdivide ourselves by both immutable and mutable characteristics will not be vanquished upon leaving Earth's gravity well. Hence, the plan for the ethno-religious section of the system, which strives to keep peace within and between the settlements and our home planet, is demonstrated in the diagram in Figure 6.

With collaboration and regulation set with the international system, different religious and ethnic groups' conflicts can also be diminished through the second part of the proposal. In Figure 6, five distinct blocks are depicted to reflect the ideal that settlements needn't necessarily have the same borderlines, with each settlement possessing their own unique configurations, much like states and countries on Earth.
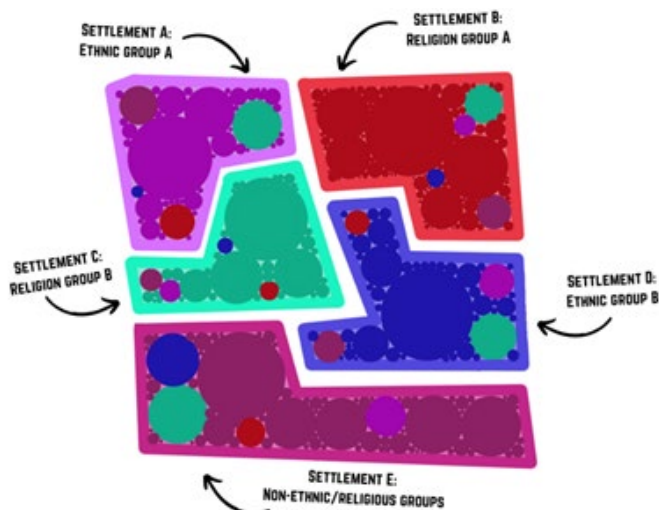


**Figure 6.** International Organization Collaboration System: Ethnoreligious Diagram.

*Note that the borders/shape/location of settlements and number of religious/ethnic groups are not drawn to scale but rendered here for demonstration of the functionality of the system.*

The circles on the diagram represent the populations, where different colors represent different groups. As shown in Figure 6, although a specific settlement is defined as the suggestive residential area of its respective religion or ethnicity, it is not mandatory for all peoples who identify as a given religious/ethnic group to settle in the appointed region (blocks generally have more than one color, although the appointed group tends to be most of the population). Therefore, the system would provide the people who are migrating to the settlements in the Solar System a digital live map of the settlements, making all related information widely available, regardless of residency. To identify which settlement would be "assigned" to which religious/ethnic groups, it is essential for the international collaborative system to include the

representatives and/or leaders of all religious and ethnic groups that desire a homeland outside of Earth.

Through negotiation and compromises, the international collaborative system should conclude which religion and/or ethnic groups would claim which region in the Solar System for settlements, and thus encourage people to migrate toward respective areas to be with their traditional people. In addition, a significant number of settlements should also be established for non-religious/ethnic groups, to serve as havens for those who do not identify closely with any religious beliefs or ethnicities and are readily capable to live together with little conflicts deriving from religion and/or ethnic-based discrimination. The proposal states

that where two (or more) ethnic/religious groups tend to incur conflicts, the spatial locations of these groups would be encouraged to be positioned a considerable distance apart, therefore lessening interactions which could leading to such conflicts. Therefore, the people with similar beliefs or the feel of belonging to a specific group can live together, causing minimal troubles and conflicts between settlements and perhaps within the Solar System.

## 4. Summary

As humanity's technological development advances, our growing capability can allow for the colonization of other celestial bodies within a matter of decades and perhaps even years. While clearly offering enormous benefits, this prospect raises the question of conflict between nations, cultures, religions, and colonies, and whether it may ultimately result in the destruction of humankind. Therefore, large-scale organization capabilities, socio-economic science, and political systems must keep apace to stay relevant with technological development's sharply rising curve, better ensuring a protected future for humans from their own "destruction". inclinations. The proposed structure of the International Organization System for Settlements into the Solar System, incorporated with the 1967 *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,* suggests a blueprint for methods combating both economic, political, and social issues regarding the conflicts arising from international disputes. Through discussions with different national, cultural, and religious groups with various economic, social, and political backgrounds, improvements on the initial proposal of the system should be incorporated for practical implementation, creating a safe, equal, and inclusive organization for all. Further, as the system is being negotiated for more practical improvements and implementations, scientists should proactively ensure that the settlements are technologically and environmentally ready for large-scaled settlements. This would take tangible form as making available technologies and resources that can reliably provide the basic requirements of life (e.g., air, water, food, climate control, radiation shielding, pressurized sheltering, etc.) at the target colony, enabling the best living conditions the latest technologies can provide and given the environmental conditions at the target colony.

Despite the long history of wars that are rooted in deep-seated conflicts between differing groups of people, examples of peaceful interactions between people of various nations otherwise at odds are seen in space. The International Space Station is one outstanding example, where for decades countries have successfully cooperated in space despite persistent political tensions back on Earth. The ISS has thus formed a basis of living and working productively in space, albeit at a very small scale. Its success in keeping a platform for peaceful international relationships – necessary for life to survive in the harsh environments beyond Earth's atmosphere - indicates a positive future where humanity can work together between and on celestial bodies. All in all, the important notion to remember when implementing interstellar mass migration of human species is to access all resources peacefully between states and settlements with the mindset that uplifts the survival prospects and benefits for all and not exclusively a certain nation or individual. This goal can be achieved via broad support from existing international organizations and their logical extensions, with the more developed states and nations of Earth taking the lead.

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