RESCUE AND RECOVERY AS A THEOLOGICAL PRINCIPLE, AND A KEY TO MORALITY IN EXTRATERRESTRIAL SPECIES

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Abstract. New theological understanding can emerge with the advancement of scientific knowledge and the use of new concepts, or older concepts in new ways. Here, the authors present a proposal to extend the concept of "rescue and recovery" found in the United Nations Law of the High Seas, off-world and within a broader purview of other intelligent and self-aware species that humans may someday encounter. The notion of a morality that extends to off-world species is not new, but in this analysis, rescue and recovery become an imperative when any intelligent and self-aware species is in harm's way. Rescue and recovery encompass a necessary action component except perhaps in those cases where rescuers are in danger. The authors explore three biblical examples of rescue and recovery to derive a fundamental meaning of the concept.

Keywords: astrobiology; biblical analysis; compassion; cross-contamination; decision-making; first contact; the good Samaritan; space exploration; universal morality

Intelligent Self-Aware Species

The modern concept of "rescue and recovery" has roots in our understanding of human compassion. However, as we shall see, the full concept of "rescue and recovery" is more complex than compassion in the model we present here. Both rescue and recovery, and compassion have a beneficent stance that is values-based, often theologically based, and the resulting behavior is highly variable. This is not unexpected for a species with analytical abilities and complex social organizations like *Homo sapiens*. The concept of "rescue and recovery" implies something about the importance

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of an individual who is intelligent and self-aware—from whatever culture on Earth, or whatever star system in the universe.

In this analysis, our main focus is on western culture. However, we are well aware that love and compassion are two central tenets of Buddhism. In that religion, the concepts of "love" (metta) and "compassion" (karuna) are seen as two sides of the same coin. Buddhism holds that we love when we want others to have happiness, and we experience compassion when we wish for another being to be free from suffering. In Buddhism, compassion is universal, and so extended to all beings, not just humans. Western tradition emphasizes action more than the Buddhist tradition, that is, on doing something to end suffering, on pragmatically transcending the mental act of wishing, which is in line with our proposed definition of compassion as a special form of decision-making. Our view is that, while cultural definitions and uses vary, there is one pan-human species trait for a capacity of compassion. It may also characterize other species in our universe. Our task here is to confront the concept of "rescue and recovery" and ask whether it might also characterize other self-aware and intelligent species in our universe, and if so, the importance of that fact for humanity as a spacefaring species.

The enfolding of a modern concept like "rescue and recovery" into traditional structures of theological principles and applying it in the future to other spacefaring species, can seem awkward. Therefore, we reference biblical and etymological research on compassion (Rappaport and Corbally 2018, 227–32), and here, analyze three biblical examples of "rescue and recovery".

Our goal is to understand the deepest nature of rescue and recovery, and to outline a unified concept that emerges from human philosophy, ethics, psychology, and sociology, but is also applicable to other intelligent and self-aware species, whether on Earth (if one can find them or genetically engineer them) or from other star systems. By implication, the meaning we capture in the concept of "rescue and recovery" is intrinsic to human life as well as extrinsic to it because a morality similar to human moral capacity could emerge in other biologies.

There is enormous utility in identifying theological concepts that apply to other spacefaring species, because soon, either next week or in the next millennium, First Contact will likely occur between humans and another intelligent species (Campa, Corbally, and Rappaport 2022). How are we to judge them? How are they to judge us? Ethicists Milligan (2015, 2021), Persson (2012), and others have discussed the need for viewing extraterrestrials within the purview of a more inclusive morality than a human-only morality. These authors point also to the likelihood that extraterrestrials will be equipped with moral judgment, themselves, and will use it. From a perspective of the social sciences, we add strong support to this notion. It is not conceivable that spacefaring vehicles could be constructed without

complex social organizations, and equally improbable that evaluations of behavior would not attend the functioning of those organizations. "Right and wrong" may vary in the details, but not in the utility. As we shall see, recognition of "right and wrong" is woven into the notion of "rescue and recovery".

An Alternative Definition of Compassion

The concept of compassion involves moral principles, social assessments, and complex maneuvers that can also be at the heart of "rescue and recovery". The view we take of "compassion" is different from most psychologists, who view it as an emotion or as a way of suffering with another person, in accordance with the etymology of the word (Skeat 1888, 125). Later social scientists were to adopt this meaning (Merton 1976, 68), and many philosophers and psychologists see compassion as essentially a type of emotion (Steele 2000; Radey and Figley 2007; Leget, Gastmans, and Verkerk 2011).

An alternative view of compassion is presented here, which views emotions of various types as accompaniments to a type of human social decision-making based on a specific neurology typical of the human species. Aspects of compassion are "beneficent"—but then, many animal activities are beneficent. Other animals care for, clean, and feed each other. They also share some of this beneficence with humans sometimes, and will do so off-world (Rappaport and Corbally 2023). *The humanity is found in the decision-making. That is what made compassion so special, even unique, at least on Earth.*

Emotions can emerge at any point in a social decision-making process and they can change, so we still hold them important. However, we do not point to a specific emotion or time in the decision-making process, because cultures vary in their prescribed emotions for compassion. In addition, situations and personalities vary. Compassion is universal in our species unless there is a defect in biology, personality structure, or social structure. Yet, it is expressed quite variably—again, not unexpected for a species like ours. The capacity for compassion accommodates all kinds of different human social structures.

Language has changed with society. In Rappaport and Corbally (2018), we completed an etymological analysis of "compassion" in the Septuagint Bible and the social circumstances in which the term occurred. We analyzed the words for compassion and related terms, dipping deeply into their origins and eventually coming to see that compassion was central to human social life, as some might say, at the "gut level". The Greek words for "compassion," "to have compassion," "to be tender-hearted," and "to have mercy" all had their ultimate roots in words for the "entrails of divination," "to eat the inner parts (of an offering)," "sensibilities," "spirit,"

and "boldness". Compassion's full application sometimes required courage in biblical examples. It can require "guts" in today's colloquial language—a word, we suggest, that is not chosen by accident. There is a biology behind the type of decision-making we call "compassion".

Decision-Making as a Useful Species Trait

We do not yet know all the neurological requirements for the emergence of a capacity for compassion, and how likely they are to evolve in other species in the universe. On Earth, compassion appears to be an evolutionary amalgamation of basic primate sociality and the exceptional decision-making skills that emerged in our own species. It is so widely found, historically, culturally, and geographically, that we conclude it must have genetic roots. Essential for compassion is a biology that allows *de minimis* an assessment of future consequences of action or inaction, and an estimation of "right and wrong" along a continuum (Rappaport and Corbally 2020b; Kitcher 2009; Korsgaard 2009).

Decision-making is still not fully modeled at genetic, synaptic, hormonal, organ, network, behavioral, and group levels. In Rappaport and Corbally (2019), for example, the levels for the emergence of compassion from genetic to group are suggested, and the concept of "cultural neural reuse" is introduced as a possible mechanism for producing both consistency and variation of compassion across the species, *Homo sapiens*. There is research on human decision-making at each of these levels, for example, Popova, Kulikov, and Naumenko (2020) at the genetic and hormonal levels, but there is no integrated, testable model. Further neurological details on decision-making can be found in Rappaport and Corbally (2022), including the application of those results to human spacefaring—which is known to cause changes in the nervous system.

There is much to suggest that human *group* problem-solving is unique in the animal world, in part due to the involvement of symbolic systems and use of multiple symbolic systems concurrently. If compassion is indeed an integral part of religious thinking, as many see it, for example, the phenomena of immanence and transcendence, then there is substantial knowledge of the brain organs that manage these experiences, as well as ritual and mythology—including newly discovered functions of the cerebellum as a "quality control" of stored models that is exercised in interplay with the frontal cortex. There is an overview of the neurology of these experiences in Rappaport and Corbally (2020a). The evolution of this neurology within the context of the Extended Evolutionary Synthesis is described in detail, in Rappaport and Corbally, *The Emergence of Religion in Human Evolution* (2020b). Decision-making is a featured theme.

The process of social decision-making becomes apparent around 3 or 4 years old, when youngsters begin to solve problems in groups (Dean,

Kendal, and Schapiro 2012). It is not a smooth and uncontentious process as they try one thing, then another. Children disagree, as adults do. This process is not evidenced by other primates. Group problem-solving is one of the best traits that humans have to survive the coming changes in environmental balance on Earth, and space missions to other worlds. In the future, with the introduction of artificial intelligence, better results may be achieved with a combination of human and AI dual-group decision-making.

Universalization of Compassion

Culturally, compassion did not always apply to everyone, but it has changed, and, that past change suggests it can also change in the future if necessary. In the western world, the capacity blossomed historically when Jesus of Nazareth preached that it was important to help the poor. The idea of helping strangers and travelers appeared in ancient Mediterranean texts, and that idea also became part of Jesus' teachings. The people who were new to the formula were enemies. Jesus preached that it was important to have compassion for enemies, that is, those individuals who had acted wrongly and therefore needed help. The theme has carried into the modern day. This goes far beyond the Golden Rule that is observed in the Old Testament and in Greco-Roman culture (Kirk 2003; Seitz [1969] 2009).

Parables in the Bible detail the thought processes and intricate social steps leading to what, if any, action steps should be taken in a particular situation where compassion is appropriate. The writers of biblical stories clearly knew about these social complexities because they are featured repeatedly. The stories lay bare in a simpler time and place the essential nature of compassionate decision-making and its potential action component. The concept has blossomed as an integral part of the modern rationale for hospitals, social welfare programs, and international aid. It most surely will become interplanetary. It may become interstellar.

Can we say the Golden Rule is universal among all intelligent and self-aware species in the universe? Probably not, but we can model the biological features that appear to enable it here on Earth, as well as the social complexities that characterize its use. Finally, we can prepare to judge and be judged by other intelligent species. It may not be easy.

The Concept of Rescue and Recovery

A biblical concept of "rescue and recovery" was more difficult to analyze than "compassion" because it could not be pegged to specific Greek words quite so easily (cf. Rappaport and Corbally 2018). Rescue and recovery scenarios in the Bible can be very complex because they can go on for lengthy periods while the "rescued" fights being rescued.

The concept has been important on Earth's high seas in recorded times, and in the future, it will be important in protecting humans off-world, as on the lunar surface. The willingness to help others who are not like oneself is one of the origins of the rescue and recovery principles that we find in the United Nations Preamble Part VII, High Seas, Article 98, which defines a "Duty to render assistance" and instructs that

> 1. Every State shall require the master of a ship flying its flag, in so far as he can do so without serious danger to the ship, the crew or the passengers: (a) to render assistance to any person found at sea in danger of being lost; (b) to proceed with all possible speed to the rescue of persons in distress, if informed of their need of assistance, in so far as such action may reasonably be expected of him…

We have recommended that these principles be extended to rendering aid off-world, especially during the upcoming settlement of Earth's Moon, both on the surface and in cislunar space. In the near future, efforts at rescue and recovery could be difficult, expensive, and controversial for exploratory missions to Mars and the asteroids, when help will not be easily available. Very difficult decisions may be forthcoming regarding rescue of crew on Mars or the Moon. However, alternatives are being developed, for example, instances of disease and injury off-world can sometimes be managed by using physiological stasis until help is available. Robotic surgeries are already being developed for some predictable emergencies like appendectomies (Lanfranco, Castellanos, and Desai 2004; Sheetz et al. 2020; Pantalone, Satu Faini, and Cialdai 2021).

Compassion, and Rescue and Recovery Are Different

The two concepts, "compassion" and "rescue and recovery," are similar, but different. The concept of rescue and recovery includes additional components in its ideal form. It emphasizes an action component that, for compassion, was derivative. Rescue and recovery are not tentative, but purposeful, directed, and imperative. Of course, there are circumstances in which they would cause danger to rescuers, and then they would regrettably be withheld.

The concept of rescue and recovery implies that someone is in distress who is important to save for some reason. That reason can be internal, according to one's beliefs, or external, in response to peer pressure or law enforcement, or most likely, a combination of both. When we again examine the United Nations Preamble Part VII, High Seas, we see that there is a requirement "to render assistance to any person found at sea in danger of being lost". That is different from compassion, whose social decision-making stems from a gut feeling about a fellow being, rather than from a social requirement for protecting others like oneself.

The action of "saving a person" is built into the notion of "rescue and recovery" and it implies that the person should be set right and able to breathe and survive. Embedded in the imperative nature of that requirement is the notion that the person is "important" for some reason. It could be the captain or another officer, or a sailor, or a paying passenger, or even a stowaway. The provision states "person". Therefore, rescue and recovery as a singularly coherent concept implies something about personhood, and that is where its relevance as a theological principle begins to shine through.

In the sections below, we address the issue of personhood within the broad but still restricted framework of rescue and recovery in the Bible. The stories force us to ask: "Who is worth saving?" and "Why?" This leads to our central thesis and the relevance of rescue and recovery as a theological principle for humans, and more inclusively, other "persons" in the universe.

Rescue and Recovery in the Bible

We examine selected stories of rescue and recovery in the Bible in a search for a deeper understanding of the concept and what it implies about personhood. That may be more important than readers suspect, especially in the future.

The Tale of the Good Samaritan: Action Counts. The tale of the Good Samaritan in the tenth chapter of the book of Luke has much to say about the people who rescue or do not rescue, others. The story goes that each of two people pass by a certain man who has been robbed and hurt by thieves. Those two men should have helped the man who was in trouble—who had his raiment stripped of him, and was wounded. He was in bad shape—"half dead"—but a priest passed him by, as did an assistant to priests. Those who should have aided the man did not, and so their roles did not lead them to rescue the wounded man. Therefore, the initial lesson of the tale is that a person's role does not always indicate what he will do. Action is the primary key, not role definitions.

Who helps the wounded man? A Samaritan, from a group of ancient Israelites, had compassion for the wounded man and he took action. Through a variety of means, the Samaritan rescued the man: He tended to his wounds, placed him on the Samaritan's own "beast," and took him to an inn. The Samaritan made sure he would survive once he left him at the inn by giving money to the innkeeper so he could care for him. The Samaritan even looked further into the future and promised re-payment should the innkeeper spend more on the wounded man.

In the end, the writer of Luke asks, who is the true "neighbor" of the man who had "fallen upon thieves"? It was not the ones who should have

acted, but another who did act. The story points to the Samaritan, who shows "mercy" on the wounded man, and the reader is told to do likewise: Show mercy on those in trouble, irrespective of their identity as "neighbor" or not.

The little story outlines very clearly the parameters for helping others and, to an extent, for showing mercy, and likens having mercy for those in need to the actions of Jesus, that is, to actions whose motivation derives from holiness and love. To rescue and recover a person in dire need has—if not a supernatural quality—then a quality that derives from holiness and that sets actions to rescue the needy above and apart from the ordinary.

That is an important distinction to remember. The act of rescue and recovery has much to say about both the rescuer and the rescued, and the uncertainty of their roles. The key is action. One can pray every day and appear as holy as one should, but the key to holiness is in acting: doing the right thing, according to laws and examples given by one who is holy.

Conversion of Saul in Three Versions: The Tale Evolves and Its Meaning Clarifies. The book of Luke tells the story of the life and ministry of Jesus of Nazareth, until his death and ascension into heaven. The book of Acts was supposedly written by Luke the Evangelist, around 70–90 A.D. The writer of the book of Luke (either Luke, himself, or someone else) must have felt that the story of the conversion of Saul to Paul was extremely important because it is given three times. As Paul, he roamed widely, wrote, and taught the gospel throughout the Levant and neighboring regions.

Each of the three versions of Saul's conversion is different (Hedrick 1981), but in all three versions, the man's name changed from Saul to Paul. His identity changed. Irrespective of other details, Saul's "rescue and recovery" and his ensuing career as an evangelist and teacher of the Gospel of Jesus Christ is among the most widely known rescue and recovery stories in the Bible or in western history and culture.

Considering the enormous influence of Paul through his writings, his conversion is, in a word, epic. It provides one of the sure foundations for the concept of rescue and recovery as a theological principle. We begin to see more clearly how it fits into the entirety of Judeo-Christian theologies in that it defines who is to be saved and why, and who ultimately does the saving. The roles of rescuer and rescued are clarified. We shall see in the story of Jonah, with clarity, that the one who decides who will be rescued is God, not man. Here in the story of Saul's conversion we also see that God is the one who decides which human being will carry forth the Gospel. In following this last notion to its ultimate meaning, it is God who is the ultimate rescuer—which we see most clearly in the third version of the story of Saul's conversion.

We are left to ponder which humans are worthy of saving, as God appears to be very selective. However, we understand that the story of Saul's

conversion is one of a type, an image or a model to be followed by other humans who confront an opportunity to "be converted" or to "be saved". Too often in modern religious "conversion," the process is presented as something that the person decides to do. It is useful to remember, in the stories of Saul's and Jonah's conversions, that the ultimate decision maker is God, himself. Saul and Jonah both fight their conversions, as other humans fight their conversions, and wait for perhaps another time.

The perspective that we are left with is that because humans bear the burden of self-consciousness, they are all worthy of rescue, so that they may ponder and reflect, and live and learn another day. If approached with honesty and clear vision, this opens everyone to conversion. When we extend our parameters for inclusivity this far, we prepare ourselves for confronting other species with the same or similar self-consciousness that our species has. The rationales explaining the reasons that anyone is worth saving are complex, and none of the Great World Religions completely covers all points—which is, perhaps, the point. The door is left open… to whom? We wonder, while we begin to colonize other planetary bodies in our solar system and eventually other star systems, and tentatively confront the possibilities of encounters with, not ourselves, but others like us in very special ways.

To us, the sequence of the three versions of Saul's conversion appears chronological, from an early telling, to a later telling. However, differences between the first and second versions may also be due to the identity of the people to whom the story was told (Witherington 1998, 312). The chronology is most apparent between one and two, and then three, which is the most mature and evolved version. It is also the shortest.

The first version appears in Acts 9:1–43. It is often given as Acts 9:1–19, but that only takes the story through its "rescue" phase. It takes effort on the part of quite a few people to cure Saul because he is initially known for treating people badly. In the rescue phase, there are multiple steps for curing Saul's "blindness" and having his sight restored. The emergence of his insight occurs in the remainder, and is, in some ways, foisted upon him, in Acts 9:20–43. This section focuses on the "recovery"—the healing and rebirth as Paul. Saul does not become Paul altogether willingly. He fights the recovery, much like addicts fight recovery from abuse, and it is noteworthy that he becomes healthier even in Acts 9:1–19 because he is eating better. Indeed "eating better" is an important step in addiction recovery, as well. In the remainder of verses 20–43, the story involves many characters, and a gradual acceptance by Paul of his vocation to spread the Gospel. Logically, the recovery of Paul never quite ends, until the end of his ministry, which is covered, by implication, in other books of the Bible's New Testament, often consisting of letters to nascent Christian communities.

The first version of Saul's rescue and recovery in Acts is the longest, and it has quite a number of characters running around and doing very active

things that are important in the rescue of Saul and his recovery and re-birth as Paul. The first story is a bit more mechanical and less spiritual. We refer to it as the "Action Version" and we think it would be a good version for youth. As a drama, it also provides a variety of different characters for young people to "play" in a small production or in a simple reading.

The second version of the tale is found in Acts 22:6–21. In this version, which is shorter and gets more quickly to the point, a devout man, Ananias, gives Saul his sight, but also gives him his "job description". He gives Saul his sight in both literal and spiritual senses so that he can be "filled with the Holy Ghost". Paul begins to regain his strength, and Ananias makes it clear that "…The God of our fathers hath chosen thee, that thou shouldest know his will…" Ananias makes Paul's mission clear in Acts 9:15, "For thou shalt be his witness unto all men of what thou has seen and heard." Thus, the tale of the rescue and recovery becomes a model for teaching what should happen to others. Its purview instantly expands out from just Ananias and Paul, infinitely, as an image for others to follow. Ananias gets Paul quickly out of Jerusalem and sends him to "the Gentiles," and on to do God's work. In a sense, Ananias gives Paul his "job description," so we see the second version as appropriate for adults. It has less running around, fewer characters, and it focuses on the job Paul has been chosen to do.

The third version we have named the "cosmic version," and we believe it would be good for theology students, perhaps in a combined reading of all three versions, to understand where the ideas in the third version originated. In the last version in Acts 26:12–28, Paul's job becomes most urgent of all, but also the most general, diffuse, and ministerial. The word "minister" appears in the third version but not the other two. Only in the last version, probably the latest version, is the import of Paul's work stated in cosmic terms. Although "eyes," "sight," and "light" figure prominently in all three versions of the story, it is only in the third version that we see the true purpose behind "seeing the light" in Acts 26:18: "To open their eyes, and to turn them from darkness to light, and from the power of Satan unto God, that they may receive forgiveness of sins, and inheritance among them which are sanctified by faith that is in me." Version three is the only version where "Satan" is named. In previous versions, evil actions were described, but not Satan, himself. Ananias is no longer needed to point Paul toward his job. Paul receives his "assignment" directly from God. If history is any judge, Paul did a very good job. Indeed, the battle that Saul went through, and that Paul continued, was the battle between Good and Evil.

In an analysis by Hedrick (1981), the third version is understood as a story of Paul's vision or dream, as told to Roman governor Agrippa. Talbert's analysis (2005, 208) explains that the third version is given in compelling, heavenly terms that a Roman like Governor Agrippa would

understand. Thus, the Roman Governor would recognize that Paul had to obey and follow directions given by God in a vision or dream.

Note that only by extending the verses usually cited do we see clearly both phases of the entire "rescue" and "recovery" process. Different references cite different verses.

Jonah, the Reluctant Rescuer, Revisited. Our final example of a rescue and recovery tale in the Bible is found in the Old Testament (where "Jonah" becomes "Jonas"). There are many analyses of the interaction between Jonah, the mariners who fled a storm at sea, and God. Philip Kendall (2020) has summarized the lessons of Jonah in this way: (1) God reaches out to those we do not reach out to; (2) God gives blessings we would not expect to be blessings; (3) God has objectives we may not like. All these lessons appear elsewhere in the Bible, but they are brought into sharp, even irritating, relief in the Book of Jonah. By the end of Book 3, we are left wishing that Jonah's recovery would progress a bit faster. He is saved from the sea. He is out of the whale's belly. He is set upon his task of delivering the word of God. Still, the back-and-forth tussle continues to the end, between Jonah and God, and between Good and Evil.

The lack of a conclusive end to the Book of Jonah, that is, one easily summarized for youth, is perhaps its own best point. One can be rescued, and still not completely recover. One can be rescued, recover, and then need to be rescued again. The precariousness of human life comes at us full force on a complete reading of the Book of Jonah. We say to ourselves: Yes, this is the way life is. The rescue and the recovery never end. They are part of the lives of self-aware beings the entire time they are alive. There are satisfying periods, sometimes very calm, but they are always punctuated by battles with our baser instincts, or another's. The battle between Good and Evil does not end until death, a death that each one of us knows will come. In our self-awareness, we are never allowed to relax for long because the battle between Good and Evil continues around us, if not within us. Having been rescued and having recovered, we find ourselves called to rescue another. The timeline of a self-aware human life is much like the Book of Jonah: long, sometimes chaotic, gratifying, disappointing, beautiful, and evil, all those things at once.

Rescue and Recovery as a Theological Principle

Structures, Principles, and Lessons Learned

Rescue and recovery represent a process consistent with human nature. As a concept, it fits neatly into a broader structure of theological principles and provides a context explaining the impetus for the rescue of any self-aware human—because of the human capacity of self-reflection and

positive change, as we saw in biblical examples. Anyone so gifted is worthy of rescue. We conclude that, when possible, rescue is the only humane course of action based on Judeo-Christian values, and the central values of other Great World Religions.

As we saw in the biblical stories, it is possible that a person selected by God to be rescued is not happy about it. Therefore, theologically, it must be assumed that God has knowledge that humans do not have. Humans are seen to be at the mercy of forces greater than they can master, and this is true, whether we reason theologically or scientifically. It appears to us that theology serves the needs of humans as intensely social and very intelligent beings, since it views them as worthy of rescue, but still imperfect.

After rescue, recovery can be difficult, and it can best be summarized theologically as a struggle between Good and Evil, as it became evident in the third version of Paul's conversion. We saw how both Paul and Job struggled with God's selection of them to be rescued. Many substance abusers describe a struggle within themselves with nearly the same forcefulness. Indeed, humans are caught routinely in choices that are difficult to make. So, the theological paradigm available to them in biblical examples is useful. It helps the believer realize the struggle. Sometimes, the struggle is not easy to recognize. One often has to stop and think.

There are cosmic dimensions to rescue and recovery. We conclude that the Bible, as a source of moral guidance, often implies a continual and lifelong struggle. This is a view with which many people would agree whether from a theological or sociological or psychological perspective. The cosmic struggle seems to fit the human perception that life is an unsettled competition between forces that are not completely under human control.

Rescue and Recovery among Intelligent Social Species

Rescue and recovery are predicated upon the notion that intelligent, self-aware individuals are important and worth saving within a problem-solving social structure, whatever their role, if only to support others. There is inherent value in safeguarding individuals that have an ability to view the self, others, and life itself on a timeline, and as finite, valuable, and to be cherished. Derivatives of this self-conscious viewpoint are human beneficence, self-correction, an ability to reason whether an action is morally wrong, regret for wrongdoing, and an ability to become better group members over time. To broaden our perspective, we ask: Could we meet other species like this someday? Are we ready?

In valuing themselves, these species (if indeed there are others) could well value other species like themselves. They therefore may value us if they recognize similar abilities. Could there be problems on meeting? Indeed, because the ability to conceive of life on a timeline is also essential in planning aggressive actions. Intelligent social groups build spacecraft, but they

also build weapons. Yet, if enough self-aware group members join in like cause to forestall those developments, then there is a chance. Self-aware species will likely be very much aware of the chances that life presents, and they have the intelligence to calculate odds. This ability to calculate odds permeates biblical stories, but it is rarely stated in those terms. The recognition of such calculations could be an indication of another species' intelligence and level of awareness.

Rescue and Recovery Off-World: A New "Law of the High Seas". We argue for a new, comparable "Law of the High Seas" for off-world environments, including cis-lunar space, the Moon, deep space, Mars, the asteroids, and the other planets and moons that humans will visit in the future. We argue on behalf of both humans and other intelligent, self-aware species.

Compassion will form an essential basis for rescue and recovery efforts in space exploration, on the Moon's surface among different moon domes, and in the asteroids among risk-tolerant miners. Whether supported by individual countries, groups of nations, or commercial businesses, there must be an equivalent "law of the high seas" in space and on other planetary bodies. It would state that the goal is to use space for peaceful purposes to benefit "humankind"—an expression already appearing in the 1962 United Nations "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space". The term "humankind" may someday change to "intelligent species" or another term more satisfying to all.

An off-world planetary corollary is that any person found stranded with low oxygen reserves or a torn environmental suit would be rescued, helped, and sheltered—no matter what the nationality. The version as it relates to the high seas on Earth reads: "There is a duty pursuant to international law for a ship to attempt the rescue of persons at danger at sea" (United Nations Preamble Part VII, High Seas). Although not always followed, the foundation of this action architecture is compassion, and even more important, rescue and recovery as we define it here. Viewed from its larger perspective, rescue and recovery disentangles beneficent human decision-making ("compassion") from the identity and culture of the species, and goes on to include all intelligent and self-aware species in the cosmos.

Theology and Engineering, Strange Bedfellows. Rescue and recovery takes many forms and is open to much interpretation. Yet, it is routinely linked to beliefs in the worth of the individual who needs rescuing, and to deeply felt convictions that begin to emerge among humans in early childhood. Those beliefs hold that individuals are uniquely qualified to contribute to group decision-making. Without those beliefs in the worthiness of other social-group members, it would be impossible for a society to conceive, plan, and build a spacecraft. We can suppose that similar values and beliefs

about individuals tend to arise in other intelligent, self-aware species that rely on group decision-making.

Intelligent social beings cooperate in many modalities, from prayer to engineering. Morality and law are based, at least in part, upon the same social decision-making skills that build spacecraft. There are rules for social interaction, and without them, a society could not be organized, and advanced technologies would not emerge, nor would miscreants be punished by institutions set up to adjudicate them. Some of the same social interaction needed for worship is also needed for building spacecraft. All this depends on an intense sociality that began to evolve in Primates 65 million years ago. It has only become more intense, more complex, and has resulted in the planned construction of ships of discovery that will take the human species to the Moon, Mars, and other star systems. We do not rule the latter out.

Social, Moral, and Engineering Implications of Starships. There is an important, converse principle to the generalizations above, namely, that any starship construction must have necessarily required cooperation and joint planning (unless completely executed by robots, which is conceivable). It also reciprocally implies a type of the sociality similar to the one we find on Earth only in the genus Homo. A similar sociality could be derived through another biology. It is only logical that, if we see a starship, we suspect the species behind it may be much like us. It takes the same character, and that quality must arise naturally in evolution in other star systems. It takes the same self-awareness and self-correction.

There is no other way to get a starship (with the all-robot exception). Reciprocally, there is no way to genetically insert the planning and proclivities to build starships. It takes intelligent, highly organized, and socially aware beings. They need not be exactly like us, but they are likely to be somewhat similar. An alien species needs a highly organized neural system that guides the action of appendages of some kind, but they need not look like our "hands". They simply need to accomplish what our hands and eyes, and nervous system can accomplish. Without these features, there would be no starships. It takes engineering, and while it might sound odd, engineering is a very social enterprise. It is built on generation after generation of cooperation.

The population of the Sol System will occur through the efforts of intelligent, self-aware bipeds who use their hands as multipurpose tools (or the extensions of those hands in digital form), are intensely social, are both physically and mentally agile, and able to build spacefaring vehicles, in a word, humans or something like humans. How many star systems host such species? Statistically speaking, it should be many, but certain unusual things occurred in the evolution of the Sol System that make us wonder:

Just how common are spacefaring species? It may not be as many as we supposed.

A Future Space Scenario of Rescue and Recovery

Use of Scenarios in Research, Philosophy, and Planning

We illustrate rescue and recovery in a scenario of an encounter with beneficent, ethical, moral beings from another star system. The scenario we use is but one example of a variety of purposes for the hypothetical scenario. For example, scenarios have been used as teaching devices, for government planning, and as "thought pieces" in the field of philosophy. These serious purposes take the scenario far beyond the moniker of "science fiction".

Use of the Scenario in Anticipating Extraterrestrial Species

The scenario below focuses on the points made in this analysis. We keep in mind the need for intense sociality in building both societies and starships. Cooperation, communication, ability to correct oneself and others, ability to adjudicate problems and flaws in a rational, problem-solving context—all those qualities are needed by any species to build starships and societies. Therefore, spacefarers encountered in First Contact may be much like we are, due to parallel evolution. They may appear different, and biologically, they will be different, but our view is that there is a good chance they will be like us in important aspects of cognition and morality. Does this imply that species that are completely different from us, and with whom we shall have difficulty communicating, do not exist? No.

Readers may find most unusual the possibility that visitors to the Sol System will consider humans within the same or similar moral parameters as we do. Whether First Contact is initiated by us, by them, or by accident, they may closely watch how we treat each other (Persson 2012). During human exploration of our system, even at its outer reaches where encounters with Earthlings would be less likely, it may be possible for other species to recognize a like ability and nature. We surely understand their need to recognize such an ability. It is our need, as well.

Available Scenarios for Students of Extraterrestrial Morality

Arnold Benz and Samuel Vollenweider created a fascinating dialogue in *Mission to Saturn* (2021). A debate occurs *en route* about science and God. The authors also included an intriguing rescue scenario on Saturn's moon, Titan, that involves an enigmatic lifeform.

The tale below is a full rescue and recovery scenario that follows sequentially from an existing narrative written for "An Ecotheology for Human Settlement of the Outer Planets: Roles for Religion Beyond the Warmth of the Sun" (Rappaport and Corbally 2023). The present scenario picks up

where that one leaves off. It occurs near Ganymede, the largest of Jupiter's moons, and it follows the activities, thoughts, and feelings of scientists on a voyage of discovery. The issue of cross-contamination with non-Earth biological species is important, and readers are referred to Arnould (2021), Billings (2021), Milligan (2021), and Peters (2021). Each of these authors takes a different perspective on off-world biological contamination: integrating it into environmental protection; or establishing a kind of interspecies or universal ethics; or examining the program and policy aspects.

Contamination issues found in the following scenario include protection of both terrestrial and off-world biomes that are important to either other species or humans. As we have written before, the great distance of the outer planets from Earth could provide a buffer to protect terrestrial species from exposure to life forms with a very different chemistry or biology, compared to Earth's.

Contamination is important in the following scenario, but equally important are the expectations about other intelligences and the likelihood of encountering them in the far reaches of our Solar System. The frequent image of an unexpected landing on Earth may not be how First Contact occurs. It may not happen soon. Humans may have to wait quite a while to encounter another intelligent species. We may already be settled on the Moon, Mars, and the asteroids when it finally occurs.

If an outer planet's moon such as Jupiter's Ganymede harbors life under the frozen crust over its ocean (NASA 2022a; Planetary Society 2022), it is less likely to be directly related to Earth's life forms because of sheer distance. Ganymede has been discussed as the location of a habitable aquatic environment (SciTech Daily 2022). The conditions for life to emerge, now or in the past, appear possible. However, there is no way of knowing if the species are consistent with Earth's life forms, or if they have been evolving using a nonterrestrial biology that arranges organic molecules differently.

It remains our hope that readers will enjoy all the mentioned scenarios that give a feeling for the lengthy and distant space discovery voyages ahead of us and help to illustrate the theological issues discussed here.

What Happened at Ganymede?

The science crew of the spaceship of discovery were very busy after their visit to Enceladus, one of Saturn's moons. They identified a tiny organism in the Enceladus ocean that resembled a rotifer on Earth, but it was not on any terrestrial lineage. The shipboard biologist found the self-replicating molecules in its cells folded in on themselves so differently, he had a hard time calling them by the terrestrial names, RNA and DNA. The crew talked about cross-contamination, wondering yet again about safety procedures once they returned to Earth.

Unexpectedly, the Captain received new orders from Mission Control. The spaceship of discovery was directed not to visit ice-locked Pluto, but to return to Earth via Jupiter and effect a slingshot maneuver around the planet that would propel the ship faster on a return course for their home planet. The Captain was disappointed that they would not visit Pluto. He wondered why. Yet, Mission Control said nothing of the reactions of terrestrial religious leaders to their discovery of a life form clearly on a different path of evolution. However, the comm engineer captured several clear broadcasts. The crew were alarmed at the discussion of plans to meet the ship of discovery before it reached Earth, to take and destroy its "contraband species" that two powerful alliances called "the work of the Devil." A third alliance said they would steal the species to create a biological weapon. They did not conceal their intentions but used it as a threat to subdue other nations. Worldwide violence and international movement of troops intensified.

At length, the Captain assembled the crew and confided he was not sure who was in charge at Mission Control. The crew were shocked, but they agreed to function as normally as possible, and they did. One and a half years later, as they approached Jupiter's moon Ganymede, the news from Earth was that war had drawn in the inhabitants of the Moon, but not Mars. The Captain assembled the crew and suggested that they begin to think about returning to Mars instead of Earth. The crew members nodded, but they were clearly upset. To make matters worse, they were running low on water.

The engineers met and planned to capture water from the ice-covered Ganymede ocean which research suggested could contain more water than all Earth's oceans. Yet, any liquid water would be kilometers below the ice crust. They reasoned that they had found a way through a barrier like this on Enceladus and they could do it again. Their only problem was purification, in case some rotifer-like species were present in the Ganymede ocean. They did not have filtration equipment for water that would fill their tanks. They decided to get what they could and purify it later. The landing vehicle departed the spaceship of discovery and was soon eclipsed by an aurora produced periodically by Ganymede's unique lunar magnetic field. The crew thought they had lost the lander. The Captain held his breath. The landing ship reappeared, and the excavation equipment they used on Enceladus was out of the landing vehicle, but the two engineers had disappeared. The crew were stunned. Suddenly, there was a bright flash from the direction of Saturn. "Why Saturn?" they wondered. They left Saturn behind them a year and a half ago.

Finally, there was another flash accompanied by a strong vibration that shook the entire spaceship. And then, the unimaginable happened. They could see that a link to the underground ocean was opened. The tanks were filled on the landing vehicle and the water source was secured for future

use. The Captain shook his head, baffled. Then an even brighter light encompassed them all and the crew were blinded. When they recovered, the holding tanks on the spaceship of discovery were full of water. They looked toward Ganymede and both the landing vessel and the two crew members were gone. The Captain smiled to himself: That was an even trade! He had always known something like this might happen out here in the far reaches of the Solar System, but he hoped someday to see his two crewmen again.

The comm engineer sent out repeated messages to Saturn's Enceladus for a week's time, but the only message to be sent in return was this reassurance in an earthly Morse code, "We are safe." The Captain made arrangements for the slingshot procedure and calculated a new course for Mars. Just prior to initiating the slingshot maneuver, the crew strapped themselves into their harnesses, looked around, and found their missing crewmates strapped in, too, smiling! The Captain nodded and grinned. First Contact. He knew it. They might need them in the Inner Planets, the way the war was going.

The crew were overjoyed, the mood shifted, and everyone began talking excitedly about what they expected on Mars. The biologist would be delighted to get his hands on their electron microscope. The small shipboard scope answered only some of his questions about the "Saturn rotifer's" cellular mechanics. The engineers began planning procedures to prevent contamination, filter the Ganymede water, and help forestall the war from spreading to Mars. There was a great deal to do.

The story that the two missing crewmates would tell was kept private and portions of the event were erased from the Ship's Log. The Captain's Log was the only remaining documentation and it remained under seal for decades, until long after the war ended. The crew landed safely five and a half years later at the Mars orbital station.

Conclusion

What are readers to conclude from our exploration of the concept of rescue and recovery? It is an understanding that began with biblical study, but ended with a scenario at one of Jupiter's moons. How can they use the scenario presented in this last section? How can this analysis serve to guide the study of scientific, philosophical, and theological understandings in the future? Although scientists are accustomed to being reviewed, corrected, and to tossing out a bogus theory, it is more difficult for theologians to do the same. They tend to tie past understandings found in sacred scriptures to new understandings that are sufficiently congruent to feel comfortable. Scenarios in the outer planets of our solar system may seem very far, very strange, and a little scary.

We would be remiss in our responsibilities as authors not to emphasize the importance for our species of the emergence of a new and exciting adventure for all of humankind. Our view is that we all must participate, however we can, in this adventure off our homeworld. That interest causes us to look upward to the stars, but also deeply within ourselves to discover how we feel about this new enterprise. Are we sufficiently stimulated to look at new web sites and new academic journal papers in brave new fields? We hope so. The result can be, must be, the deeper exploration of both philosophical and theological understanding which will serve us well as we examine, from a distance, the explosion of knowledge that space will stimulate.

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