

Policy Sciences for the Space Epoch

By Bob Krone, President, Kepler Space Institute

Abstract

In 2012, I proposed a philosophy of reverence for life within ethical civilizations. It was adopted by the Board of the Kepler Space Institute (KSI). We have not received criticisms from readers. I identified the policy sciences as the way to achieve it. This article provides my reasons for that choice. I believe that Earth's policy making capacities are crippled by human behavior and historic international conflicts. There is potential for improvement as Earth's people settle in Space, but no sign of Earth's leadership producing reverent and ethical societies here. The absence of human negativity in Space provides dramatic new opportunities. All the resources needed for the growth of humanity are in Space. Appropriate policy can make that growth successful. Without it, humanity's future is in serious danger. I believe that the policy sciences contain the solutions. If solving those problems is impossible on Earth, then doing so in Space will provide models for the Earth. This article is heuristic and solicits breakthrough thinking and new research.¹

Keywords and Phrases: The policy sciences, Human space settlement governance, leadership, avoiding the repeat of Earth's social and political errors while building in Space.

The Space Philosophy Proposed by the Kepler Space Institute: Reverence for Life within Ethical Civilizations

In the first issue of the *Journal of Space Philosophy*, Fall 2012, I proposed to readers the following Space Philosophy:

- 1) Reverence for life is the foundational purpose that will sustain humankind in perpetuity.
- 2) Ethical civilization will be the environment facilitating that end.
- 3) The Policy Sciences hold the solutions for creating ethical and successful civilizations.

These are the three essential foundation blocks of *The Kepler Space Institute Philosophy for the Space Epoch*. Building those three basics will produce the highest probability for successful Space exploration, development, and human settlements. It would also capture Space resources for humankind's needs on Earth and in Space within *The Law of Space Abundance*. Failure to build any one of those building blocks will destine humankind to continuing mistakes and catastrophes similar to, or

¹ For a summary of my visions for Space helping Earth, see Salena Gregory, "Bob Krone Visions: Earth from Space," *Journal of Space Philosophy* 4, no. 1 (Spring 2015): 33-41.

worse than, those that have plagued Earth's societies throughout history. This is global leadership's major challenge for the 21st Century.²

That previous paragraph captures the macro vision for benefits that can flow to Earth, and its people, from Space. The Fall 2012 article defines terms, cites historical relevance, and elaborates on the two basic human-oriented building blocks.

Science and technology have brought humankind to a place where human extinction has an increasing probability. A future in which an ethical foundation is missing will result in civilization collapse. The essential characteristic of positive progress and survival for humankind will be the universal acceptance of ethical civilization as its vision.

The Policy Sciences

Elsewhere I have described the origin and scholarly development of the Policy Sciences by Yehezkel Dror.³ I am not stating that his writings exclusively contain the solutions humanity needs for implementing a successful Space epoch, only that for starters analysts and policymakers should begin with his public policymaking analyses and prescriptions. For this essay, I outline some of his prescriptions that should not be overlooked and urge readers to study his published books and journal articles.

Why Policy Sciences?

The main goal of the policy sciences is the improvement of policymaking – everywhere. It is composed of a complex set of disciplines and methods. It was initially proposed in 1951 by Professor Harold D. Lasswell of the City University of New York.⁴ Policy scholars recognized that there was a need to integrate the numerous quantitative and qualitative philosophies, techniques and tools of management, decision sciences, and behavioral sciences. That integration goal has never been fully achieved, as the public policy arena in 2015 is more diverse and complex than it was in 1951. What has consistently existed is the need for policymaking improvement. Dror in 1971 wrote that “establishment of Policy Sciences as a new superdiscipline involves a scientific revolution.”⁵ Today the best description of the policy sciences is that it is a herd of sheep with multiple shepherds and guide dogs, each with diverse interests and goals.

² Bob Krone, “Philosophy for Space: Learning from the Past – Visions for the Future”, *Journal of Space Philosophy* 1, no. 1 (Fall 2012): 17-18. Emphasis original.

³ My first description of Yehezkel Dror's works was in Robert M. Krone, *Systems Analysis and Policy Sciences: Theory and Practice* (New York: John Wiley & Sons, 1980). Subsequent ones can be found at www.bobkrone.com and in Salena Gregory's article in this issue of the *Journal of Space Philosophy*.

⁴ Harold D. Lasswell, “The Policy Orientation,” in *Policy Sciences*, ed. Daniel Lerner and Harold D. Lasswell, (Stanford, CA: Stanford University Press, 1951), Chapter 1. This is considered the beginning of Policy Sciences as a new discipline. In 1971, his book *A Pre-View of Policy Sciences* (New York: Elsevier) was published. That year Yehezkel Dror founded *Policy Sciences: An International Journal*. He has continued to 2015 as a co-founder and major scholar for the policy sciences.

⁵ Yehezkel Dror, 1971, Dror, while a senior staff member at the U.S. Rand Corporation, wrote this in “Prolegomena to Policy Sciences” in *Policy Sciences: An International Journal* 1, no. 1 (Spring 1970).

The Problem

Why do we need policy sciences when every head of state has policy advisors, there are many excellent think tanks, and most universities have policy as part of their academics? The answer is that policy problems are overwhelming those in policy positions at an increasing rate globally; and this has been happening since World War II. In the first issue of *Policy Sciences: An International Journal*, in Spring 1970, Dror wrote in the abstract:

Establishment of Policy Sciences as a new supradiscipline involves a scientific revolution, requiring fargoin innovations in basic paradigms. Particularly essential are: (1) Integration between various disciplines, and especially of the social sciences and analytical decision approaches; (2) bridging of the “pure” vs “applied” dichotomy; (3) acceptance of tacit knowledge as a scientific resource; (4) changes in interface between science and values; (5) broad time perspectives; (6) focus on metapolices; (7) commitment to policymaking improvement; and (8) concern with extrarational and irrational processes, such as creativity.⁶

Harold D. Lasswell, in the same *Policy Sciences* journal, wrote:

Policy orientation includes five intellectual tasks: goal clarification; trend description; analysis of conditions; projection of future developments; invention, evaluation and selection of alternatives.

As of 2015, the scientific revolution Dror stated in 1971 has made some progress in each of those eight areas, but the integration of disciplines has proven to be partial, not systematic, and only marginally effective in solving real-world problems. The five intellectual tasks for problem orientation proposed by Lasswell remain valid. But the conclusion for today must be that policy problems are not being solved at an acceptable rate with increasing risks to humanity. The policy sciences are sound in theory, but their implementation has been hampered by political feasibility realities.

Leadership

This subject has been a concentration of Yehezkel Dror throughout his professional career. It is the focus of his latest book, *Avant-Garde Politician: Leaders for a New Epoch*.⁷ Here Dror picks a time perspective of 100 years as essential, which historically has been limited to some Chinese planning and which democratic nations find impossible to do. And he clearly identifies humanity as the macro purpose for policymaking due to the metamorphosis into which humanity is moving and its radical

⁶ Yehezkel Dror, “Prolegomena to Policy Sciences,” *Policy Sciences Journal: An International Journal* 1, no. 1 (Spring 1970): 135.

⁷ Yehezkel Dror, *Avant-Garde Politician: Leaders for a New Epoch* (Washington, DC: Westphalia Press, 2014). See also Bob Krone, “Leadership will be Key: Applying Yehezkel Dror’s *Avant-Garde Politician: Leaders for a New Epoch*,” *Journal of Space Philosophy* 3, no. 2 (Fall 2014): 12-17.

implications. He states that: “A vast majority of political leaders are sleepwalkers as far as the future of humanity is concerned.”⁸

A critical aspect of that metamorphosis is the rapidly escalating human capability to destroy humanity or change its nature. Mid-20th Century leaps in that capability have been nuclear weapons and emerging synthetic biology.

Anyone in a public decision-making position should study Dror’s *Avant-Garde Politician*. For this article, I want to share with readers Dror’s operational principles for an advisory system for an avant-garde politician:

- Creativity is essential, but is not necessarily provided even by the best of professional staff.
- Personal meetings between leader and select thinkers, researchers and artistic creators.
- Study and workshops by advisors and outside professionals and thinkers.
- Majority opinions are not necessarily correct. Differences of opinions between knowledgeable professionals signify real uncertainty.
- When very important issues are at stake, have separate units working on them without contacting one another.
- The quality of the professionals and their commitments to their tasks are the crucial factors determining the worth of their products.
- Some rotation between diverse advisory positions, academic and research institutions is essential for constant improvement of professional competence.
- A Chief of Staff managing all of the advisory system is needed, who combines recognized professional authority with a wide open mind and a soft hand.
- Leaders must be benefited by their professional advisors without being their captives.⁹

The twenty prescriptions Dror has in his 2014 book for guidance of leadership are:

1. A genuine theory.
2. Long range perspectives and holistic plans ... tactics as process rejected.
3. Leadership is a profession which has to be learned ... needs self-training.
4. Get rid of wretched amateurism.
5. Be a vanguard, not a rearguard ... lead the multitude while enlightening and educating ... to transform radically the conditions of life of humankind.

⁸ Dror, *Avant-Garde Politician*, 3.

⁹ *Ibid.*, 289-90.

6. Flexibility necessary, but subservience to spontaneity should be avoided and concern with trivialities is counterproductive.
7. Coordinate large-scale action that achieves quantum, exponential results.
8. Learn and teach how to live and how to die.
9. Free yourself from the influence of traditional phrases inherited from the past world outlook.
10. Conceptual innovation and change in a normatively mediated way.
11. Does not ignore issues cardinal for the future of humanity.
12. Move ahead morally, cognitively, and volitionally.
13. Understand concerns for the long-term survival of the human species.
14. Selfless service and devotion to a high ideal, goal, vision.
15. Do not live from it, but for it ... not for unearned privileges.
16. Lay foundations for an improved future.
17. Design a breakthrough epoch.
18. The profit motive is a sordid one compared with serving generations to come.
19. Seeking power for personal benefit is a cardinal sin.
20. A positive impact on the future is a work of art for leadership whether it is remembered or not.

The conclusions I have reached about leadership after fifty years of experience, teaching at the graduate level and publishing on the subject, are that leadership is the most important function of management and that moral leadership is the most important component of leadership.

I want to share with readers one of the many personal impacts that Yehezkel Dror's writing has had on my life. In this 2014 book he has as Chapter 19, "Innermost Philosophy." It gave me the realization that at my age of 84, after earning a doctor of philosophy degree and being the editor-in-chief of the *Journal of Space Philosophy*, I had never fully examined and documented my own philosophy. Doing so¹⁰ brought me to the conclusion that I should have done it starting at age 30 instead of 84, and that it would be a valuable self-examination project for every adult person.

High Pressure Planning and Policymaking under Adversity

Yehezkel Dror's first book was *Israel High-Pressure Planning* in 1966.¹¹ In 1986 he published *Policymaking under Adversity*.¹² Dror was already well established in Israel as a public policy professional in 1966. By 1968 he was recognized as the co-founder of the policy sciences, the first Editor of the *Policy Sciences Journal*, and a policy consultant to heads of state and those advising heads of state. In *Policymaking under Adversity*, he described six policy principles for handling adversity:

¹⁰ Bob Krone, "A Personal Philosophy," *Journal of Space Philosophy* 3, no. 2 (Fall 2014): 71-89.

¹¹ Benjamin Akzin and Yehezkel Dror, *Israel High-Pressure Planning* (Syracuse, NY: Syracuse University Press, 1966).

¹² (New Brunswick, NJ: Transaction, 1986).

1. Societal architecture expresses the necessity to bring about significant structural changes in important societal institutions and processes.
2. Critical Mass – adversity features have change thresholds that depend on their dynamics, size, and complexity states of stability or turmoil, specific fields, and more. To achieve impact, policies must reach an appropriate critical mass, sufficient to have the intended effects on their targets.
3. Selective radicalism, where a limited number of societal variables are changed radically.
4. Risk readiness with minimum avoidance. Policies are gambles in the face of uncertainty. Risk determination is a main policy principle issue.
5. Output-value priority analysis estimates the impacts of policies on reality.
6. The central mind of government must enjoy command authority to make and implement tough policies. The ability of democracies to follow this policy principle can well be critical for their survival.¹³

Policymaking under adversity is a constant as the 21st century begins. Since adversity in its varying forms is endemic to public policymaking everywhere, this subject belongs in philosophical studies and academic curricula focusing on Space exploration, development, and human settlements.

Crazy States

In 1971, Yehezkel Dror published *Crazy States*.¹⁴ As with all Dror works, when reading them decades later, his analysis and prophetic wisdom strike the reader as phenomenal. *Crazy States* was the first theoretical analysis of terrorism and of fanatical entities. It is a brilliant analysis of states that are, or will be, considered fanatical, extreme, ideologically or religiously aggressive, missionary, or terrorist. His concept of a crazy state is any state or entity that does what is considered irrational or commits evil damage to others. Since he published this book, the world has experienced an increasing incidence of what today is generally called terrorism.

For the purposes of this 2015 *Journal of Space Philosophy* article, the existence and behavior of crazy states must be identified as an Earth phenomenon unacceptable for planning the Space Epoch.

Design

Yehezkel Dror had remarkable creative writing years in 1971 and 1972 – three books, many papers from his RAND work, and his co-founding of the *Policy Sciences Journal*. His *Design for Policy Sciences* book was one of those.¹⁵ He begins that Preface with:

This short volume is devoted to the presentation of the idea of the policy sciences, as a new superdiscipline based on novel scientific paradigms. My main thesis is that contemporary scientific approaches are inadequate

¹³ Ibid, 103-04.

¹⁴ (Lexington, MA: D. C. Heath and Company, 1971).

¹⁵ (New York: Elsevier, 1971).

for meeting the requirements of relevance and the needs of humanity. Urgently required, therefore, is a different scientific approach, orientation, methodology, and method—which I call, following Harold D. Lasswell, “policy sciences.”¹⁶

Since his becoming the co-founder of the policy sciences, Dror has been its leading scholar, teacher, and practitioner. In this publication, he describes the common weaknesses of science contributions to policy, then provides the dimensions of policy sciences, prescribes ways to advance it, and ends with its implications for the future. A few of those implications that will have direct effect on the design of missions in the Space Epoch are:

Policy Sciences is directed at the reform of politics—if not all of politics. Policy Sciences, which is explicitly oriented toward redesign and even nova-design of the policymaking system, does have fargoing implications for politics. A main implication of Policy Sciences for politics is that many tacit assumptions and implicit choices are made explicit. Politics must be redesigned so as to be able to handle clear-cut alternatives, on one hand, and more value and assumption explication with posing of clear alternatives on the other hand. And one clear requirement is for politicians to be better qualified in a number of respects. Policy sciences will provide knowledge, concepts, and ideas of much significance for better policymaking. But in democratic systems citizens at large must be able to understand that knowledge for their role.

On this last point Dror created his “Third Dror Law”:

Unless the capacity of citizens to comprehend complex policy issues and to consider critically policy studies increases significantly—the role of citizens in shaping policies will diminish or result in worse policies.¹⁷

That law has been proven accurate through subsequent history. The conclusions I reach today, in 2015, are that the extensive policy sciences theory created by Yehezkel Dror will be important in the design of human settlements in the Space Epoch. But the associated conclusion must be that the complexities and diversities of Earth-bound politics continually impede the kind of policymaking improvements that Dror identifies as essential. This is not a conclusion I enjoy sharing with readers, because one important variable for success in the future Space Epoch will be the quality of policymaking by Earth’s national and international decision makers.

Governance

Yehezkel Dror, in the preface to his 1994 book *The Capacity to Govern: Report to the Club of Rome*, states, “Radical redesign of governance is, therefore, required; otherwise, increasing social costs, even existence-threatening failures, are

¹⁶ Ibid., Preface.

¹⁷ Ibid., 128

unavoidable.”¹⁸ In my 2006 edited book, *Beyond Earth: The Future of Humans in Space*, Dror’s Chapter 5, “Governance for a Human Future in Space,” was his first extrapolation of his life’s research and extensive writings into space. He begins that chapter with the sentence: “New forms of governance are essential for engaging in moving humanity beyond Earth.”¹⁹ Dror describes humanity moving into a radically novel new epoch in which living in space is only one of its features. He sees that epoch as having a tremendous potential for better or worse.

Dror was correct when he finished his *Beyond Earth: The Future of Humans in Space* Chapter 5 with his conviction that:

On all of these levels much attention needs to be given to governance, because without restructuring governance, the movement of humanity into Space will remain a dream or, even worse, may take the form of nightmares becoming a dismal reality.

Capacity to Govern

In 2001, Yehezkel published *The Capacity to Govern: A Report to the Club of Rome*.²⁰ The message of that book was consistent with his “Dror’s Law #2” which he published in 1971:

While human capacities to shape the environment, society, and human beings are rapidly increasing, policymaking capabilities to use those capacities remain the same.²¹

Unprepared societies and obsolete governance create the problems. In many cases governments are unable to deal adequately with rapidly mutating problems or opportunities. Dror discusses ten characteristics of global change-creating problems:

1. Rapid non-linear change.
2. Increasing uncertainty and inconceivability.
3. Globalization.
4. Multiplying complexity.
5. Powerful global actions.
6. Growing prosperity coexisting with increasing inequality.
7. Intense frustrations, trauma, dependency and unrest.
8. The likelihood of harm and evil.
9. A lot of conflict and violence.
10. All the changes leading to mutations.²²

¹⁸ (Abingdon, UK: Frank Cass, 2001), x.

¹⁹ Yehezkel Dror, “Governance for a Human Future in Space,” Chapter 5 in *Beyond Earth: The Future of Humans in Space*, ed. Bob Krone (Toronto: Apogee Space Press, 2006), 41-45. Bob Krone and Yehezkel Dror have been professional colleagues since 1969.

²⁰ Yehezkel Dror, *The Capacity to Govern: A Report to the Club of Rome*, (London: Frank Cass, 2001).

²¹ Yehezkel Dror, *Ventures in Policy Sciences: Concepts and Applications* (New York: Elsevier, 1971), 2.

²² Dror, *Capacity to Govern*, 39.

Dror defines political culture as the values, beliefs, norms and assumptions on governance and politics with the patterns of social relations linked with them. He makes the interesting point “that there are many more possibilities for the future than we know from historic and present realities.”²³ It is those possibilities that need to be examined for application to Space settlements.

Humanity

All of the social and political structures on Earth throughout its history were created by human decisions. The cost-benefit ratios of those decisions now put humanity on Earth in a precarious and uncertain state. After spending his professional career examining that state, of identifying its success and failures, then prescribing solutions, Yehezkel Dror has come to the conclusion that redesigning governance to guide needed global transformations is essential; and that the over-arching goal and priority of future policymaking must be the improvement and survival of humanity. Any sub-optimization to lesser goals will inevitably result in continuing the status quo of high costs and failures. I agree.

Conclusions and Recommendations

Alan Shepard, talking about his time on the lunar surface during Apollo 14 Mission, February, 1971, said: “When I first looked back at the Earth, standing on the Moon, I cried” That emotional reaction is the human goal we seek as we begin the Space Epoch. We want humans in the future to look back on Earth from Space and think of the joys and turmoils people experienced on Earth and reflect on how well Space leadership guided them through time. And also on how that wise guidance for the explorations, the development, and the human settlements brought humanity to a Golden Era. An era where life and travel both on Earth and in Space brings happiness within the Law of Space Abundance.

President John F. Kennedy’s address at Rice University on September 12, 1962 described our universe accurately: “The vast stretches of the unknown and the unanswered and the unfinished still outstrip our collective comprehension.” A hypothesis I have for this article, discussing the policy sciences as a critical tool for implementation of a philosophy based on reverence for life within ethical civilizations in space, occurs to me now:

If the knowledge and prescriptions of Yehezkel Dror were known and adopted two thousand years ago humanity on Earth would have evolved completely differently – and vastly better – than it did.

Testing that hypothesis is impossible. Today humanity is on the verge of creating a new Space Epoch. The policy prescriptions of Yehezkel Dror are known. All that is needed to apply them to implement a Space philosophy of reverence for life within ethical civilizations is global leadership’s decision to do so. There are no barriers in Space to prevent that decision. The barriers are within decision clusters on Earth.

²³ Dror, *Capacity to Govern*, 51.

The greatest use of our lives today will be to advance comprehension of the universe with the goal of contributing to a golden era for humanity.

About the Author. Dr. Bob Krone is President of the Kepler Space Institute and Editor-in-Chief of *The Journal of Space Philosophy*. His four careers are covered in his curriculum vitae at www.bobkrone.com/node/103.



Notes by the Editor. Bob Krone's first contact with Yehezkel Dror was in 1969. Bob was in his doctoral program in Political Science at UCLA and Dror was a senior staff member with RAND Corporation on leave from Hebrew University. Dror taught just that one course at UCLA. That began a professional collegial interaction that has remained to 2015. ***Gordon Arthur, PhD.***