

# Preface

In 1961, a young radio astronomer, Frank Drake, proposed a simple formula—now known by his name—for estimating the number of detectable extraterrestrial civilizations in the Milky Way galaxy. The formula is based on what was then a large number of unknowns: the average rate of star formation per year in our galaxy, the fraction of stars with planets, the fraction of planets in the life zone (where water is neither permanently frozen nor permanently a vapor), and so on. In the five decades since the formula was first published, the knowledge base has grown: Astronomers have answers to the first few questions, and the question of the existence of life-supporting planets is only a matter of time.

The title of this book is deliberately presumptive and provocative. Over the years of working on SETI, I have been bothered by the fact that most of the speculation about ETI have been done by physical scientists, with a handful of social scientists providing input. There are two problems with this setup. First, physical scientists live in an intellectual world where fairly rigid rules hold sway. These are demonstrable by experiment and formed on mathematical bases. Social scientists, in contrast, have not (yet) been able to prove their contentions mathematically (for the large part), have few theories bolstered by experimentation (less true of some such as psychologists), and are beset by the subjects of their inquiries questioning their methods, assumptions, and conclusions. Yet, after many years of researching and teaching social sciences, I know, and am prepared to state, that certain social phenomena are, in a sense, inevitable. That is, they represent what physical scientists accept as a given: fixed scientific laws.

I argue throughout this book that certain of these ‘laws’ make it possible to assemble a bare, perhaps weak, set of general knowledge about ETI. Some of these are based on human experiences, which *may* make them invalid for ETI, unless it is possible to peel back the human genotypical elements and look beneath them to realities based, as physical sciences are, on the generalized laws of parsimony, evolution, communication, and other features. Consider, for example, one thing we all know about ETI, which is absolutely fundamental: No researcher has ever denied, nor, to my mind, is it possible to deny that ETI are social beings. It is, I would argue, impossible to have an intelligent species consisting of one member,

let alone an empire or civilization. As such, we know (until and unless proven or demonstrated otherwise, as in all scientific thinking) that any ETI we come into contact with will be members of a society. How that society works, what its beliefs, activities, and interests are, we cannot know. Yet we can know, with a great deal of certainty certain things about these ETI from the very fact that they are social beings. This is the intent of this book: To identify what these realities are, and what their implications might be. As a consequence, the reader will be exposed to much discussion of the nuts and bolts of human behaviors, as we tease out the universals of behavior and society.

The term ‘xenology’ used throughout this book is an example of convergent evolution. I originally thought of it (and thought it was my own invention, to quote the White Knight) while on sabbatical at the University of Calgary in Canada. Subsequently, during research, I found that the term had been proposed by Freitas (Freitas, ND) and, indeed, defended by him as a scientific term for the study of non-human intelligent species. I make no apologies, though I do acknowledge Freitas’s precedence. This book is about convergent evolution: about the convergence of species into intelligence, and what it means for the human species, and perhaps about the convergence of ideas.

Villalonga, Spain

Michael Ashkenazi

What We Know About Extraterrestrial Intelligence

Foundations of Xenology

Ashkenazi, M.

2017, XVIII, 430 p., Hardcover

ISBN: 978-3-319-44455-0