

A Critique of Ted Kaczynski's Anti-Tech Revolution

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2018

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This writing is an adaptation of an excerpt of the letter (in Spanish) by Ultimo Reducto to Ted Kaczynski dated 10/19/2017, in which U.R. discussed the main flaws and problems that he found in Kaczynski's *Anti-Tech Revolution: Why and How*. Page numbers refer to the edition published by Soregra [and in brackets are the page numbers of the edition by Fitch & Madison, in italics, and the page numbers of the edition by Publit Solugoes Editoriais, underlined]. It is advisable to have read this book previously for an optimal understanding of this text.

General criticisms

1. The book is quite tedious, not only because of what you say in the preface (that, because its content and purpose the book is written more for studying than for reading it), but because it is written in such a way that it doesn't precisely make easy its reading (or its study, if you prefer), and this also makes difficult to understand it and to focus on the train of thought of the text. I think that it could have been written in a more concise, brief and easy to read manner without losing intellectual rigour or seriousness. Regarding this, your previous texts were much easier to read (and not less serious because of this).

One of the particular aspects that hinder reading and understanding the book is that, while reading it, one gets the impression that many of its parts are superfluous. For example, among other things, I would have deleted from the main text all historical instances and quotes which you mention in support of your claims and, after eliminating many of them, I would put the rest of them just as notes at the end of each chapter.

2. In connection with 1, the book has too many quotes and references that are useless and superfluous. There can be two kinds of references in texts: those which simply appeal to the authority (or celebrity) of other authors (i.e. authority fallacy; that is, "this is this because X said it is so", being X somebody who is very famous and /or has much authority), and those that refer to facts and information sources (though both kinds appear often mixed in only one reference). The former are always superfluous in any text that pretends to be rational. The latter can be necessary, useful and valuable (or not, depending on the case; even these can end up being boring and annoying, making text reading and understanding difficult). In your book, I think, there are too many references of the first kind (or mixed).

Furthermore, what is the reason for so many quotes of the first kind? I don't know which is in your particular case, but generally, apart from dishonestly appealing to the authority fallacy, it tends to be trying to attain intellectual recognition. It seems that, in order to be an intellectually respectable author, one has to quote or to refer continuously to other famous and/or prestigious authors or individuals. Nevertheless, this is a snob vice that only deceives those who share it.

3. In connection with 2, in the book there are too many references to and quotes of Mao, Lenin, Trotsky, Castro, Carrillo, Alinsky, etc. Very often, the names of the authors quoted in a text influence the way people judge this text and his author (or even influence whether they regard it worth reading or not). And though this tendency is not rational or is subject to errors, it is not completely preposterous because it tends to be true that many or most of the authors mentioned in a text (especially regarding

humanities and “social sciences”) are ideologically akin to the author who refers to them.

Your book would be an exception to this rule, as you well point out on page 239 (166, 204), but, as you also have said to me more than once, most people tend not to take into account exceptions, nuances, unconventional cases, etc. when judging or extracting conclusions. Even I myself, who know well that you are not a Marxist, can't help feeling somewhat rejection when I see in your book so many quotes by Marxist authors!

One has to take people's non-rational tendencies into account when acting and expressing oneself if one really wants to be efficient and practical and to avoid confusion, misunderstandings and strategic errors as far as possible.

In other words, despite your nuances on page 239 (166, 204), I'm afraid that so many references to leftist authors will repel anti-leftist or non-leftist readers and will attract leftist readers. Just the opposite of what the cause needs!

4. The book pretends to be a practical tool, but I'm afraid that, actually, it is not a book written mainly basing on practical and direct knowledge or experience, but rather it is based, especially, on theoretical studies about practice. It seems that you have read a lot about political practice. Perhaps you have observed *from outside* some of the practices of some political groups. But you hardly have been an active member of any political group to date (if I'm wrong, let me know). I think that almost all your knowledge and information about the practice and functioning of political groups comes from “indirect” sources (readings of the writings by revolutionaries and activists, historical and sociological studies, polls, statistics, etc.), but not from your own direct experience. And this is a problem, because many of the details of the inner functioning of the political groups or many of the actual reactions of people regarding the practices of those groups can't be learned reading and observing from outside. If we only or mainly take as our base readings or observations from far away, we will obtain an idea about political practice that won't fit reality. And if we extract conclusions and guidelines for action basing on this idealization, we will err.

Will you trust a carpentry guide written by a person who never has even have a hammer in his hands, though he has read a lot about this matter? Perhaps it will be, exceptionally, a great guide, but most likely it isn't.

5. Apart from the above, and in connection with it, you can say whatever you want on pages 244-245 (170-171, 208-209) (and this is not the first time we talk about this), but I'm skeptic about the actual utility of studying historical cases of movements and revolutions. I am not saying that it is completely useless, but I don't think either it is always as useful as you think, or in the cases you think, or for what you think. The reasons why I'm arguing this are:

- The means and ways used for attaining some given goals tend to be dependant on the very goals pursued. The tools used for doing a particular kind of task tend to be specific for doing this task, they have been designed and created for it and

they usually aren't practical for doing other tasks. Certainly, there are "general" or "wide-use" tools that can be used for doing several different tasks, but their efficiency (the precision and quality of the products and the easiness and comfort when used) in order to carry out each of the different particular tasks for which they are used tends to be less than that of other more specific tools designed for doing only each task. The efficiency of the tools is in inverse proportion to the number of tasks they can be used for. In regard to political movements it is usually the same, values determinate goals, and these in turn determinate which means have to be used, and also the way that has to be followed for attaining them. A movement actually contrary to technoindustrial system will value and want to attain something completely different from what past revolutionaries or the bulk of the most recent political movements valued and wanted to attain, and/or did attain. And this implies that, many or even most of the times, the means, strategies, activities, methods of action, etc. that such a movement has to use cannot (and must not) be the same than those that past revolutionaries used. The more different the values and the goal of the movement against technoindustrial society from those of the past revolutionaries, the more different have to be also the means and ways used by this movement for attaining its goal and, therefore, the less useful and practical information for attaining that goal can be extracted from the study of those historical movements and cases.¹ It is not the same to overthrow a political or economical system (which is actually the goal of all those

¹ For example, the study of the history of Earth First! can be useful for a movement actually contrary to technoindustrial society, because in the beginning EF! had some values that were very similar to those which a movement contrary to technoindustrial society should have, and even some of its members suggested similar goals (things like "to go back to Pleistocene" or "to destroy industrial civilization", were the slogans of some of them and many had an intuitive notion of the evilness of civilization and modern technology, and that these are guilty of the destruction of wild Nature; but, unfortunately, they did not theoretically develop these intuitions beyond those slogans and some sporadic mentions in their texts and rhetoric).

In the same way, for example, even the study of the evolution of the American conservationist movement in the last decades can be of practical utility for a movement against technoindustrial society that shares the fundamental value of wild Nature with it. Regarding this, I think you should read, if you can, Dave Foreman's book *Take Back Conservation* (Ravens Eye Press, 2012). Yes, I know that you think that Foreman is an asshole, and in some aspects you are quite right, but the book has much information and many interesting ideas about the organization of the US conservationist movement, its bureaucratization, its drift towards political correctness and progressivism, etc. that I think that you should know. There is an article by Foreman that is a summary (very summarized) of this book: "Take Back the Conservation Movement" (*International Journal of Wilderness* Volume 12, No. 1, April 2006, pp. 4-8 and 31).

Of course, perhaps the members of a movement against technoindustrial society could also learn something from the study of the methods, the organization and the strategies of Bolshevism, French revolutionaries, Alinsky, etc. but I don't know how much useful it would be what they learned, or for what; and I doubt even if it would be worth trying to learn it, because the values and goals, and thus the means and methods of the historical revolutionaries and recent radicals are completely different from (if not contrary to) those that the movement against technoindustrial society should have.

political movements of the past and of many of the present²), than to destroy physically a whole social system, an entire society³ (the goal of the movement against technindustrial system). If you want to eat steaks, don't observe those who eat soup, because you need to learn to use a knife and a fork, not a spoon.

- The values of those historic revolutionaries and recent activists were and are generally people's sovereignty, equality, justice, democracy, human rights, progress, etc. and therefore, their ends were and are the removal of powerful classes and the redistribution of wealth and power among people, along with the setting up of egalitarian, just, democratic and modern government and society. And all those values and goals are popular values and goals, i.e. values and ends that most people easily accept and wish. It is not necessary to deceive people too much to accept them (because deep down these goals are what people want; and the more the people are -or regard themselves as- poor and oppressed the more they want those goals: more wealth, more power, more comfort, more development, etc.), so the activities and strategies of those movements were and are based on making good use of people's sympathy towards those values and goals. Given that they offered people what people wanted, it was easy for them to achieve people's support and help, and many of their activities, if not all, were aimed to achieve this support or to make good use of it (activities aimed to popular and mass mobilization, i.e. to urge most people to join them and fight for achieving those popular values and goals). The values and ends of those who wish to destroy technindustrial system have to be very different from, even contrary to, those values and goals of historic revolutions and of most recent political movements (and generally from those of most people). What a movement really contrary to technindustrial society can offer people (much less comfort, much less economic wealth, much less control over Nature generally, much less "freedom" understood in the conventional sense of absence of natural limits and restrictions, much less personal security, more small scale violence, economic and technologic recession,

² Here I am referring to the purpose and the result of the "destructive" activity of these radical movements (the attempt to eliminate what they considered bad in the preexistent society). I am not referring to the purpose of their "constructive" activity (the attempt to create a new society or at least to create again, their own way, those parts of the society that they had destroyed previously).

³ Because, in spite of what you usually state, past revolutionaries didn't destroy preexistent societies (nor they ever tried to), but only, at least, some subsystems of those societies (the political structure and/or the economic distribution, as well as only part of the preexistent ideology and mythology). The rest of the social system (the technological subsystem, the ways of production, etc.) remained intact or was even improved (i.e. it was reformed to be more efficient for the maintainance and development of that society). A society or culture is not constituted and determined only by its social order, its way of government, its way of organization and its wealth and power distribution (the only thing that past revolutionaries destroyed, to some extent), but also, and especially, by its material base (the technology, the way in which it obtains the energy, the demography, etc.) besides, secondarily, by its mythology and ideology (non-material culture). I will go on discussing this later, because it is a very important issue.

absence of modern medicine, etc.) is not precisely what most people wish.⁴ Because of the latter, this movement can't assume that majority will sympathize with it and, much less, that they will actively support it. It only can assume that a tiny minority who shares its values and ends will. That is, past revolutionaries devoted themselves to develop a strategy aimed to make a good use of people's support in order to make people help them to achieve a common goal (theirs and, generally, people's), but those who want to destroy the technoindustrial system will have to manage virtually on their own (at least for quite a long time⁵) and will have to try to achieve their goal by their own means (or even with majority opposing them). A movement really opposed to technoindustrial society, unlike past revolutionaries or many current radicals, won't be popular; and it had better acknowledge this fact and take it always into account.

- A movement that actually opposes to technoindustrial society must try to change deeply (or rather to destroy) society's *infra-structure*, but historical revolutionaries only pretended to change society's *structure*.

I'm referring here to the fact that every culture or social system can be divided into three levels, namely:

- *Infrastructure*: it is the material base of a society. All its material elements, its ways of obtaining, transforming, using and distributing matter and energy and its ways of physically relating to ecosystems (the way of reacting to those physical factors that act on society: climate, biology, ecology, geology). It is constituted by technology⁶, modes of production, means of transportation and communication, and demography.
- *Structure*: It is the way of organization of a society. It is constituted by the position that society's members occupy regarding the distribution of wealth (material products) and power, and by the interactions among these members (i.e. the social order or hierarchy), as well as institutions and activities

⁴ Yes, it is true that many people like Nature, that many of them complaint vaguely about modern life conditions and Nature destruction, and that almost all of them say that they want "freedom" (with almost none of them knowing what this term really means), etc. But few of them develop consciously, explicitly and logically those vage notions and, at the moment of truth, even fewer of them will embrace those notions and put them ahead of their own welfare, security and comfort.

⁵ Perhaps, at some point, the movement come to have as much power as to create and to use the huge propagandistic and/or repressive apparatus which would be necessary to deceive the majority of the people and to make them in favor of it or to manipulate them in order to make them act for the benefit of the movement if this considers it convenient or/and necessary. Or maybe the circumstances come to be such that people abandon their faith in current values and can be more easily manipulated. But, for the moment, the situation is very different: a movement which is really contrary to tecnoindustrial society will have the majority of the people against it and it won't be able to avoid it. And not to acknowledge this fact is another problem to add to this situation.

⁶ By "technology" I mean exclusively the material instruments, tools and products of a culture. The methods or knowledges necessary for doing tasks are "techniques", not "technologies".

aimed at organizing social functioning and distributing those wealth and power.

- *Super-structure*: It is the ideas and beliefs of a society. It is constituted by the non-material and non-organizational part of a culture; i.e. religion, ideology, morality, philosophy, artistic trends, etc. of a society.”⁷

Well, there is a hierarchy among these levels: infra-structure determines structure and super-structure in a society. The two latter depend on the former. Of course, certainly there are feedbacks, i.e. structure and super-structure can in turn influence infra-structure, reinforcing or weakening it, for example. But, generally, that is, broadly speaking, in the long term and at large scale, infrastructure is what determines structure and superstructure, what causes them, shapes them, limits them, conditions them, maintains them and modifies them.

Because infra-structure is the material base of society and it determines the other two levels, if one impinges on it the entire society or culture is modified. Thus, for example, if the flux of energy and matter is interrupted, society “chokes”, it “starves”. So, to destroy technoindustrial society, one has to impinge mainly and necessarily on infra-structure, neither on structure nor on super-structure. Maybe it can be necessary, at some point, to impinge on structure or on superstructure (for example, in order to attain enough power to alter infra-structure sufficiently), but to impinge on them exclusively or mainly won’t destroy technoindustrial society physically.

I suppose that you already know about all this thing of the three levels. But, it seems to me that you are not taking it into account so much as you should, because it seems that sometimes you mix up the three levels or don’t differentiate enough each of them. And the case of generally defending the study of past revolutions is only an example of it.

As I said, historical revolutionaries (and a great part of the present political movements) only pretended to modify society’s *structure*, its order, its hierarchy, but not its *infra-structure*, society’s material base. Some of them were successful in destroying the structure of the pre-existing societies, but as I have said too, this is not the same than actually destroying the pre-existing societies, because what determines the existence, the character and the development of a society is its material base (*infra-structure*) and they didn’t destroy it; nor they even pretended to destroy it. And they often even improved it.

⁷ These three levels have been proposed by several materialist authors, from Marx to Marvin Harris, with differences in the content of each level depending on the author. What I bring up here is my own way of understanding these levels, which doesn’t necessarily match other materialists’. For example, as long as I know, Marx considered economy is just infra-structure; however, though part of economy is in fact infra-structure (means used for extracting, transforming and distributing the matter and energy taken from ecosystems), another great part of it is not infra-structure, but structure or even super-structure (finances, trading transactions, wealth and power distribution, etc.).

If one wants to destroy the material base of a society the things that he has to do and the means he has to use are very different from those that that who wants to destroy only the social order has to do and use. Thus, beyond some very limited degree (the cases when affecting *structure* can be necessary for altering *infrastructure*), the study of the methods and practices of those who wanted to destroy just the *structure* of their societies is of no use for actually and utterly destroying technoindustrial society; only its *structure*, at best.

- On page 244 (170, 208), point 28, you acknowledge that past revolutionaries' goals were incompatible with the goals of those who today wish to destroy technoindustrial society and that their methods, either sometimes are completely unsuitable to be used by those who wish to destroy technoindustrial society or, in the rest of the cases, they must be modified to be suitable for being used today. Well, my doubt is: if, after all, one always has to modify and relativize what he learns studying history and observing other movements because, in those cases when their methods could maybe be useful to some extent, one has eventually to modify and adjust those methods to the current situation in order to be able to use them⁸, won't it be more difficult and less efficient to modify them than to invent new ones from the ground up? Often, when an old tool is not fit for a new task, it is cheaper, easier and more efficient to throw it out and to buy or make a new tool fit for this new task, than to modify the old one to adjust it to this new use.

It is also possible that each one can shows a different attitude, depending on the way he is. In the same way as there are "people of humanities" and "people of science", perhaps there are some individuals who regard easier or more useful to learn from history and from recent political movements and to get inspired by their methods, and some others who regard easier and useful to develop new methods from their own reflection, intuition and experience. Thus, I don't know if one must emphasize always so much the study of history and recent political movements (which doesn't mean that one has to reject completely the study and knowledge of historical cases).

6. As I already said in my previous letter

(<http://ultimoreductosalvaje.blogspot.com/2018/10/requisitos-basicos-para-crear-un.html>), to discuss about how to organize a movement in order to achieve enough power (in terms of technical, economic and human resources) for destroying technoindustrial system without previously having met enough able and available people, is not only useless but counterproductive. And your book deals to a great extent, and with more or less fortune, with how to organize and act to get that power. But,

⁸ Asuming that this modification isn't big enough to actually be equivalent to the rejection of such methods and their replacement by others. A deep modification of those methods could get to be practically the same as rejecting them and inventing and/or using other completely different methods.

where are the people who should organize themselves and act according to the book's teachings?

7. Throughout the whole book you use some terms in senses that are vague, ambiguous, ill-defined or different from their conventional meaning to refer to some fundamental concepts of your theory. Some examples of the use of important terms with unconventional, undefined or confusing meanings in this book are: "revolution" (and its derivative "revolutionary"), "anti-tech", "environmentalism", "natural selection", "technology", "power" or "leftism". Each of these terms has its own particular problems. Some, like "environmentalism" or "leftism", are confusing, vague and are not clearly defined (or aren't defined at all) in this book. Others, like "anti-tech", suggest meanings that actually aren't true (you are not against all technology, only against modern or industrial technology; or against that technology that needs large organizations to exist). You use some others, like "natural selection", with meanings that are different from the conventional meaning of the expression and in contexts that are different from the usual (wider, in the case of "natural selection"). Some others, like "revolution", have a conventional meaning which has a historical load that makes that people, when reading them, tend to think about things that are very different from the meaning with which you are trying to use them (i.e. they think about things similar to French, Russian, Cuban, Chinese or American revolutions instead of about destroying *physically* technoindustrial system). Etcetera.

As for the use of terms with unconventional meanings, as you have told me more than once, people tend to understand and to think about terms with their conventional meaning (the sense that they refer to usually when they use the term), and explicit explanations, qualifications, definitions, etc. added to those terms when they are used unconventionally in a text or speech, actually tend not to be taken into account by most of those who read the text or listen to the speech.

Sometimes it is impossible to avoid using (or even it can be convenient to use) a term with an unconventional meaning but, in such cases, one has to define this term well and explicitly and has to remind that unconventional meaning constantly (almost every time it is used) throughout the text. And, even so, many people will overlook those reminders and will mix up and misinterpret meanings.

Another way to prevent this problem is to coin new terms instead of changing the meaning of the old ones, but this has also its problems: people, at least at first, will be surprised reading such neologisms and this will deflect their attention from the story line of the arguments. This if one doesn't ends up "reinventing the wheel", that is, coining a term to name something that has name yet, which he simply didn't know. Though those problems are much less severe than that of the confusion between the conventional meaning of the term and the new sense with which one tries to use that word or expression.

And regarding the vagueness and the lack of precision in definitions, sometime you have tried to justify it telling me that, to some extent, it is unavoidable, that there exist limits to define terms, and that it can be even counterproductive to be too

precise. Well, it can be unavoidable to some extent and there can be insurmountable limits regarding the precision that definitions can achieve, I am not going to argue with that. What I do argue with is to what extent it is unavoidable and which those limits are. It seems to me that your threshold for vagueness and lack of precision in defining terms, or simply for using terms without defining them, is excessively low many times. If one wants some terms to be understood the way he wants, he has to take precision seriously when defining them and he hasn't to rely *only* or *mainly* on reader's "good judgement" or "common sense", because experience shows that this doesn't work. Too often it doesn't work even when one is very careful and precise about the definitions and the use of terms!

Regarding whether to try to be precise and careful about defining and using terms can be counterproductive, I think that it is even worse not to try to be careful and precise and to use them carelessly. To try to be precise and careful can make that the discourse gets complicated and loses brevity, but not to be precise and careful favours misunderstanding and confusion. What is worse? Making the reading and the understanding difficult because of formulating precise definitions and adding frequent qualifications, or promoting misunderstanding and confusion (and with them making correct comprehension impossible) because of not formulating or not adding them (or because of formulating them in a wrong manner and vaguely)? I think that it is better to try to be precise and careful. I think that the possibility of that some potentially valid readers regard texts difficult to read and tedious (or even that they decide to quit reading, and so some potential members for the movement are lost) because one tries to be precise is less bad than the possibility of many of the readers understanding things in a wrong way (or even worse, trying to implement those misunderstood things in practice) because one doesn't try to be precise enough. It is preferable that the movement lose some good potential members than that it gains members who haven't understood theory correctly, and who, therefore, act in a wrong way ruining things and perverting the movement.

8. There are two ways of questioning or criticizing something: the one we can call *critique of the essential, intrinsic, fundamental, inescapable or absolute aspects* of something, and the one we can call *critique of the circumstantial, secondary, extrinsic, avoidable or relative aspects* of it. The critique of essential aspects is, actually, the only true critique of something, because the critique of circumstantial aspects doesn't challenge the thing in itself, always and everywhere, but only its circumstances, i.e. only some aspects which affect that thing in some moments and places, but that aren't the thing itself. If one actually wants to attack something he has to make criticisms which refer to its essential aspects, because only in this way one attacks that very thing always and everywhere, regardless of the circumstances.

Well, it doesn't seem that you always have this into account. In this book (and not only in it), sometimes, you focus on criticizing circumstantial aspects of the technoindustrial system and you leave aside and don't mention its essential aspects, so you don't actually attack the technoindustrial system as such. For example, when you

say that one of the most important problems of the (current or future) development of the technoindustrial system is who will elect the one who will rule the system. Or when you ask who will decide which values will guide the government of the system. Or when you ask who will decide who will be immortal or who will not. Etcetera. But, what if at some point all human beings come to an agreement about who will be the “philosopher-king” and about which values will guide his government? (And don’t tell me that it is unlikely that this will happen, because virtually the entire story about the “philosopher-king” is equally unlikely; if we begin speculating, it is as probable or improbable that all human beings will agree about who will be the “philosopher-king” or about which will be those values as that there will be a worldwide government of a “philosopher-king”, be he human or made of tin). Would it be then acceptable that the technoindustrial system continues existing and working under his rule? If you thought it would (and I think you don’t) then you wouldn’t be challenging the technoindustrial system and its development per se and you only would be worrying about if this system were democratic or not. If you thought (as I think you do) that it wouldn’t be acceptable anyway, then you should have got straight to the point and challenged the system in itself, not the mere fact that it is not or can not be democratic. And the same goes for immortality. And if it were widespread? Would it be acceptable? Would it be desirable? Would it be good or acceptable then a technoindustrial system which made *all* of us immortal? What are you criticizing? The supposed antidemocratic character of the technological development or the technological development itself, be it democratic or not?

Thus, in order to make criticisms to the technoindustrial system that actually are radical and to design strategies actually aimed at destroying it and not to reform it, i.e. in order to question the essential aspects of the technoindustrial system and to attack it as such, it is very important to always identify and remember which is the essential aspect on which a movement that is actually contrary to technoindustrial society has to be based: the autonomy of wild Nature and the fact that the technoindustrial system will always *unavoidably* damage it, and not to get distracted by other secondary or unimportant aspects. If one is not clear in his mind about this, the result will be that criticisms will swing between circumstantial aspects and essential aspects or, even worse, merely among different circumstantial aspects, depending on the values on which they are based in each case, generating an incongruent rhetoric. And one will think that he is being radical when he actually won’t, and he will be even unwittingly promoting reforms of the technoindustrial system instead of its destruction.

9. Something similar, though not exactly the same, can be said about, at least some of the criticisms you make to the feasibility of the development of the technoindustrial system. There are some aspects of the unfeasibility of the future development of the system that are intrinsic or unavoidable, and they can be and must be exposed, but to do this is not the same than to say that the technoindustrial system is something that *shouldn’t* exist and why. One thing is to say that something is or seems impossible, or that it is not going to work and why, and another is to say that it is evil, that it mustn’t

exist and why. One has also and especially to show and criticize the unavoidably evil character of the system, regardless of the unfeasibility of its development. And you don't do this in this book.

10. The book is full of rules, proposals and claims that, at one hand pretend to be clear, categorical, defined and of general application, but on the other hand, too often, they end up being too vague, full with exceptions and nuances, and even contradictory, and at best, they depend on the subjective interpretation that each reader's "common sense" and "good judgement" make of them (in case of he has them, for in most cases they are neither "common" nor "good", respectively), when he has to distinguish among different cases and to know how to apply them in each case.

As we usually say in Spain: "For this travel one didn't need so many saddlebags", i.e. it is not necessary either to be or to look so methodical and systematic or to dictate so many rules and proposals if eventually there are so many exceptions and nuances that, in practice, these rules are impossible to apply and which determines, ultimately, what has to be done or decided is each one's intuition and judgement.

And, of course, besides a limited practical usefulness, this vagueness has other severe negative effects: it will attract irrational, confused and weak people and will facilitate the perversion and twisting of the values, ideas and goals of the movement.

What is the solution? I don't know. Maybe one simply shouldn't pretend to issue rules and propositions in those cases when making them clear, precise and of general application is actually impossible.

11. On page 16 (2, 8), you say "The purpose of this book is to show people how to begin thinking in practical, grand-strategic terms about what must be done in order to get our society off the road to destruction that is now on". Leaving aside all the problems that I see in this book and that I'm discussing in this letter, and taking for granted that the book is actually useful and necessary to achieve this purpose, to whom in particular is this book addressed? To the general public or rather to those people who can be potential members of a movement which is efficient and truly contrary to technoindustrial society? Because what would be actually important is that the book will be read and studied by those who share and understand the values, the goal and the theory of such movement, and who actually are willing to be part of it, not by the general public. However, the book has been published in such way that anybody has access to it. I guess that in this way the book can be read by people unconnected with you who are able of understanding and making the most of it, and who, at some point, could come to be valid members of a movement against technoindustrial society. The problem that I see in this is that the book can also be read (and likely it will) by other people neither so able nor so valid (and who are much more abundant) who will misunderstand it and thus will try to implement it in practice in an incompetent way to pursue the goal of destroying technoindustrial society (causing more harm than good to the real movement); or who will try to implement it "correctly", but to pursue goals that are wrong and even incompatible with the goal of destroying technoindustrial society. Would not it have been better to have spread this book as an "internal" manual,

i.e. only among those people who you know and who you actually know/think that can understand and make the most of it?

On the other hand, if, regardless of its spreading, the book is not written for the general public and it is only designed as a guide for action aimed to those who already share and understand many of your ideas, then many parts of it which are devoted to make them clear or to illustrate them by examples would be superfluous.

12. At first, (seemingly?) there is a contradiction between the idea of that it is not possible to rationally control the development of technoindustrial system and the idea of that a movement must be created to destroy this system. If one can not intentionally and rationally control the development of a society, then how can one destroy it *voluntarily*?

In connection with this (seeming?) contradiction, there is another similar one, but more concrete: if the development of a society or social group can not be rationally planned nor controlled, how can be *rationally* created and led a movement (which is a social group, after all) against technoindustrial society?

Once I raised this question to you (regarding to the principles of history that appear in *Industrial Society and Its Future*) and you answered that the principle that states that one can not rationally control or plan the development of a society has to be understood using “common sense”. Well, regarding “common sense”, see above, points 7 and 10 of this very letter.

Apart from that, I think that you should have given some space to explicitly comment this (seeming?) contradiction, because surely I am not the only one that have noticed it. The way I see it, either there are exceptions, nuances and limitations regarding the principle about the impossibility of controlling the development of a society, and you should have taken them (more) into account and explained them (better) in the book or, if there aren't exceptions, then to create a movement and to try to destroy technoindustrial society is a waste of time. I think (or want to think) that the case is rather the former one, but why is it? Which are those exceptions, nuances and limitations that, notwithstanding the general principle about the impossibility of voluntarily controlling the development of a society, would allow a movement to voluntarily destroy it?

13. What follows is a general problem not only of this book, but of your rhetoric, though it can also be seen in the book. There is a (seemingly?) contradiction in your rhetoric: sometimes you express yourself as if the development of the technoindustrial system were the work of some individual wills (technocrats, leaders, organizations with intentions and goals, etc.)⁹ and at other times you say (or you quote others saying)¹⁰ that it is a “blind”, non-conscious and non-planned process. So, what is to be then?

⁹ For example, when you say on page 55 (32, 44), “Technological advances will be ‘shaped’ in the long run by unpredictable and uncontrollable power-struggles among rival groups that will develop and apply technology for the sole purpose of gaining advantages over their competitors”.

¹⁰ For example, when on pages 34-35 (17, 25-26), you quote Thurston, Heilbroner and Elias. Or when on page 36 (18, 27), you quote Engels and Elias.

This, regardless of the validity of one or another of both stances (i.e. regardless of whether the process of development of societies is the product of the conscience and will of somebody or not), gives an impression of incongruence. You should decide which one of both stances is the correct one and express yourself always in tune with it. Or if you think that both can be valid and mutually compatible, you should explain clearly why and how they are so.

More specifically

14. Regarding the use you make of the expression “natural selection” in the context of the evolution of the technoindustrial system, apart from what I have pointed out above (you use it in a much wider sense than the conventional one, which is restricted to biology), I don’t think that this expression is a good choice, because the term “natural” in the expression “natural selection” refers to the fact of that that process is not artificial (it is the opposite of “artificial selection” which farmers carry on; and precisely because of this Darwin called it “natural selection”). However, the selection you refer to is a selection which take place among artificial systems (among human social-cultural systems) and it depends totally or mainly on activities carried out by human beings or by systems formed by them. Then, one could wonder: To what extent is “natural” (non-artificial) such selection? Certainly, often (though neither always nor totally) it is virtually as spontaneous, autonomous, non-planned, non-intentional and independent of the control by humans as is biological natural selection in wild ecosystems, but I wouldn’t call it “natural” (i.e. non-artificial). I would call it “spontaneous/autonomous selection by environment”. Conventional natural selection (biological spontaneous selection of genes) is a particular case (the most known and studied one) of the selection of elements by that system to which they belong (environment), but certainly it is not the only one. Elsewhere you said that you weren’t aware of other authors speaking about this process beyond the biological context, though as I can see, since then you have known about some of them. In fact, there are authors that have studied the development of technology following a Darwinist approach as, for example, George Basalla did in *The Evolution of Technology* (Cambridge University Press, 1989). There are authors that have applied this process of selection to explain the evolution of non-material aspects of cultures (memes), as Daniel Dennett, who you mention in this book, did. Some others have applied it to competition among human groups and cultures (as Steven LeBlanc, also mentioned in your book, did). Etcetera. However, in most of these cases, I think that one shouldn’t speak of *natural* selection, because it is not “natural” (in the sense of not being artificial) strictly speaking, and it is not biological (the context in which the expression “natural selection” is used conventionally).

Apart from the above, the idea you raise: that a process of selection among social or cultural systems takes place, implies a very polemical idea in biology: group selection. Currently, biologists are seriously debating about whether the evolution of at least some animal species (social animals; and particularly the so-called eusocial ones, among which they tend to include humans) is due to individual selection (and, with it, kin

selection), to group selection, or to a mix of both (multilevel selection). And, as far as I know, up to now they have not been able to come to terms about it.

I think that it is right to say that a process of selection among social groups, cultures or technological systems takes place, but what I don't know is whether the fact that group selection is a so polemical idea, and that such polemics is so "fashionable" today, could perhaps affect the way some readers who are informed about current tendencies in biology interpret or value what you say (there is much underlying ideology in this debate).

15. In many of the cases when you use the expressions "self-prop system" and "global (self-prop) system", I think that you simply should have used "technoindustrial system" (in the same vein of your previous texts) or, in the case of subsystems of the latter, "elements of the technoindustrial system" or something similar. The expression "self-prop system" perhaps is OK for referring to the general phenomenon (though I would rather speak of "complex systems", instead of "selfpropagating systems"¹), but, at least in the particular cases, I would use the usual name of the concrete system involved in each case.

16. You also say that the self-propagating subsystems within the global technoindustrial supersystem compete for power. I don't think that it is accurate to say it this way, because when most people hear or read the word "power" think about the imposition of somebody's will on others. And about nothing else. When you say that the "selfprop" systems of the technoindustrial supersystem compete for power, you give the impression of being referring only or mainly to what is usually understood as a "fight for power", i.e. to that the different leaders of those systems compete each other consciously and voluntarily in order to impose their will on the rest of competing systems of the same level or/and on the rest of the people. But this is an excessively simple and, in many cases, wrong vision of the phenomenon of the competition among those systems, because much of this competition is unconscious and automatic, alien to individual wills and even indirect (it often doesn't necessarily imply even agonistic relationships, i.e. direct fighting, threat or conflict among the systems involved). Generally, there is not a conscious purpose of imposing wills on others, but simply each system tends to act automatically and mechanically to maintain itself and to grow under the circumstances in which it exists. And finally, those systems that work better, that is, those that manage to obtain and to use space, energy and matter in the most efficient way, are the ones that remain. That is, "self-prop" systems, generally, be they living things, companies, mafia organizations, governments, or whatever they

¹ Because, is there any *real* (that is physical) complex system that doesn't tend to expand if circumstances allow it to do so? The "self-propagation" ability is not something special, but the general norm.

On the other hand, the term "self-propagating" suggests "reproduction" (that is, a being or a system making and spreading approximated copies of itself) rather than simply "expansion".

If only because of these two reasons, I wouldn't speak of "self-propagating" systems in many (if not all) of the cases in which you do.

are, actually compete for the space and the resources that they need to maintain and develop themselves (to expand themselves; or to “propagate”, using your vocabulary). If you want to call this “power”, do it, but I think that it is an error that facilitates misinterpretation and confusion.

17. The subtitle, *Why and How*, is misleading (I also see a problem regarding the title, *Anti-Tech Revolution*, but actually I have already commented it in point 7). In this book you hardly speak about the “why”, i.e. about the reasons for destroying technoindustrial society (I have already explained this in point 8). You rather did this in *Industrial Society and Its Future*, and in other texts.

And regarding the “how”, what you say is really too vague and general (as I have said too, for example, in point 10). The reader that is looking for clear, concrete and definite indications about what can and must be done (or about how and where we should begin) in order to destroy the technoindustrial system will be greatly disappointed. And he will be partly right.

18. This is not a criticism, rather it is a comment. In the book you speak about chaos theory. Well, though the unpredictability of many systems and processes due to their sensibility to initial conditions is something real, it could be that among those who defend chaos theory there are (or at least there were, when it got trendy in the late 1980s and early in the 1990s) many charlatans and fools. An interesting article about this is: “From Complexity to Perplexity”, John Horgan, *Scientific American*, June 1995.

And even more specifically

19. On page 27 (11, 18-19), you mention some consequences of the Green Revolution, but you forget one of the most important: Overpopulation. The Green Revolution increased human population, because it made possible that people, who without it would have starved to death, survived. And they not only survived and kept on consuming resources and destroying the natural world, but most of them, besides, reproduced, and much. It is a good example of the negative, unforeseen consequences that “doing good” always entails.

20. Page 29 (13, 20-21), Joy’s quote (i.e. the idea about that what makes complex systems and processes unpredictable is basically that, among them and between them and their environment, there are many interactions, feed-back loops and factors, and that new factors and interactions emerge constantly due to the mere autonomous dynamics of these processes and systems) is the most important idea of the entire chapter, along with that of the sensibility to initial conditions. Unfortunately, that idea is not much more developed in the rest of point II.

21. Page 30 (14, 22). I just can’t understand why you mention the equation: $x_{n+1} = Ax_n(1 - x_n)$. Why is so important to show that there are also simple or/and ideal systems that are chaotic and unpredictable? Is there any *real*, i.e. *physical*, system or process that isn’t, to one degree or another, sensible to initial conditions (i.e. chaotic)? What is important is the latter, that one never will be able to control initial conditions with enough accuracy as to be able to predict with precision the course of development of *any* physical system, beyond a certain time slot (horizon). I can’t see that this is clearly explained in this point of the book.

22. Page 31 (14-15, 22-23). You mention Heisenberg’s uncertainty principle. My doubt here is: What real and practical importance, for the sensibility to the initial conditions of physical superatomic systems, has the impossibility of determining simultaneously the position and the speed of subatomic particles? I think that little. More important is the fact that no measurement instrument will ever be precise enough (merely at the superatomic level) to prevent completely such sensibility. There always will be too few decimals in the measurements.

23. Pages 32-33 (15-16, 24). Are you sure that there are exceptions to the rule that states that one can’t make concrete and accurate predictions in the long term? Anyway, I don’t think that Moore’s law is one of them. In fact, as far as I know about it, and I acknowledge that it is not much, I’m surprised that so many people take it seriously and give so much importance to it. It seems more like Moore got it right (as far as he

got it right) by chance when he predicted the development of computing power rather than because he really understood how such process works.

24. Page 33 (16, 24). You say, “The complexity of a society will grow right along with its computing power, because the society’s computational devices are part of the society”. Judging by the way you say it, it seems that the complexity of society will grow *only* because its computing power will grow. However, computing power is not the only cause of the growth of the complexity of society and it is not the only reason why, if nothing or nobody prevents it, it will carry on growing in the future. Complexity is the number of interactions that occur among those elements that constitute a system. The more elements and interactions, the more complexity, be such elements computational devices or not. And not every element will be.

25. Pages 33-34 (16-17, 25). When you say that there are several paradoxes related to the notion of a system that predicts its own behaviour, it would have been good that you had given some examples. I can’t figure which paradoxes you are referring to in particular.

And the same goes for the paradoxes that refer to the complete self-knowledge of a society. You say: “some though should suffice to convince the reader that any attempt to envision a system having complete self-knowledge will encounter difficulties”. I don’t know what you are referring to. To Godel’s theorem?

26. On pages 34-35 (17, 25-26), you quote Thurston, Heilbroner and Elias, supposedly for showing that they also noticed that no society can “plan its own future”. However, as they appear in the book, most of those quotations (except for perhaps the second half of Thurston’s: “or to foresee all the complications that would ensue from a decision made at the center”) refer actually more to the autonomy of the functioning of social systems and, especially, to their mechanical, automatic and non-teleological nature (the absence of conscience, will, intention, purpose, finality, planning, etc.) than to their unpredictability and impossibility of being planned. Autonomy is the possibility of that the very dynamics of a system govern the functioning of it. It can have to do with the unpredictability and the impossibility of control, but it is not the same than these. And the same happens regarding automatic or non-conscious functioning. The fact that nobody leads and plans a system doesn’t imply necessarily, in principle, that it is unpredictable and impossible to plan. If it is so, it is for other reasons, not because nobody has controlled or planned it until now (this can be rather the consequence of the unpredictability of the system, not the cause of it; or perhaps not even this).

27. Page 36 (18, 27). You quote Engels and Elias writing about the “conflict of wills” as a way to explain how the development of the society (the “history”) works. This is a *dialectic* “explanation” of the development of the society. With the term “dialectics” I refer to any theory that tries to explain processes and phenomena using, mainly or only, the opposition/complementarity of *contraries*. Dialectics is something bloody old (it appears in Taoism, in Mazdeism and in Heraclitus’, Hegel’s and Marx’s and Engels’ theories; etc.) and it is as old as ineffective to actually explain anything on most of occasions. Some people, when they can’t understand and explain complex phenomena,

invent pseudo-explanations that pretend to be accounting for such processes but actually don't explain anything at all, but reassure them. Dialectics is one of the most used pseudo-explanations throughout history.

The development of a society, generally, isn't determined by the clash of wills (or of *opposite* schools or tendencies), but by other more subtle mechanisms and processes, being perhaps the main one the "blind" and spontaneous selection by the environment.

On the other hand, according to those authors that you quote, from the clash of individual wills emerges, mysteriously, an involuntary and unintentional general historical process. How? In what manner does this leap from individual consciences and wills to the collective absence of conscience and will occur? In my opinion, perhaps it would be more intellectually congruent, sensible and honest to acknowledge that individual consciences and wills tend to have little or nothing to do with the causes of the long-termed and general processes of the development of social groups. But then, of course, it would be nonsense to speak about class struggle, about evil leaders that are guilty of the big problems of the world, etc.

28. Page 65 (39, 52), note 109. The indulgent comment about the sex of the "philosopher-king" reminds me of the typical politically correct comments about "sexist language". I think it is unnecessary. And not only because it stinks of political correctness, but also because, simply, if somebody is not able to understand that the "philosopher-king" likewise could be a "philosopher-queen", without being explicitly told, then he/she is an idiot and won't get anything worthy from the reading of the book.

29. Page 68 (41-42, 56). It seems that you think that the main problem with social Darwinism consists in that this ideology makes value judgements about the results of the "natural" selection process in the development of societies. According to your interpretation of social Darwinism, the best fitted are "more desirable persons" and the worst fitted are "less desirable persons". But the main problem with social Darwinism is not this (in fact, to some extent, some of such value judgements are not so preposterous, depending which values are taken as reference)¹.

The main problem with social Darwinism is that it is a clumsy simplification of the real processes that govern the development of social groups. For example, according to social Darwinists, the power, wealth and status of the individuals is determined exclusively or mainly by biology (by their genetic endowment). However, many times,

¹ For example, if, from a biological viewpoint, the meaning of life for living beings is to produce viable and fertile offspring, it can be considered then that those living beings (people included) that produce the biggest number of viable descendants are better, biologically speaking, than those that produce a smaller quantity of viable descendants. If adapting to social and cultural rules enhances the probabilities of reproductive success, then those who best adapt to them will tend to be more successful at breeding and thus will be better, biologically speaking. Of course, if one takes as reference other values (biological or not) which are different from reproductive success, or if one doesn't give importance at all to biology, the evaluation of this social adaptation process can be different.

By the way, I think that biology is very important and that it should be much taken into account when evaluating social processes.

this is not so. There are innumerable cases in which one individual has a lot of power, abundant wealth and/or a high status not because he has actually the talent necessary for them (i.e., not for mainly biological reasons), but only or mainly because he has *legally* inherited them (something, in principle, totally alien to biology)² from his parents or ancestors (who sometimes aren't even biologically, i.e. genetically, related with him; he can have been adopted, for example), or for other reasons. And vice versa, there are many people who are very able (probably because of their genetic endowment, to a great extent) but are in socio-economic and political positions that are very much lower than those for which they, in principle, would be fit. This is the main problem of social Darwinists: they do not take into account this abundant exceptions, i.e. they overlook the fact that the socio-economic and political position of the individuals in human societies is not determined exclusively (and very often, perhaps, not even mainly) by their genetic endowment, but also by other many factors (for example, by mere chance), in principle, alien to biology (or over which biology has, at most, a weak or very indirect influence)³. Social Darwinists are simplistic people.

30. Pages 72-73 (45, 60-61). You say, "if the supersystem in question is weak and loosely organized, or if it has no more than a modest effect on the conditions in which its subsystems exist, the subsystems may not become strongly dependent on the supersystem", and you give as examples the independence of hunter-gatherer bands from their tribes and that of labor unions from their confederations, as well as the dependence of labor unions on the legal and constitutional framework and ... that of the sheep on human protection! Generally speaking, I agree with the idea that you want to express, but to what extent can one consider that the "legal and constitutional framework" is a supersystem of labor unions? The definition of supersystem that you give (with which I agree) is more or less that a super-system is that system of which is part the system one is referring in a given moment (subsystem). Are the labor unions part of the legal and constitutional framework of a society? The labor unions aren't laws, but organizations. Even more odd, are sheep a subsystem of humanity? Are the human beings (i.e. the human species) the supersystem of the sheep? In both cases, you have chosen two groups of elements and you have presented them as being part one of the other, respectively, though actually this not so. Both are part of another set, which is actually the supersystem of both, and which you don't mention. I think that you wanted to refer to the fact that the labor unions are part of a society governed by laws and by a constitution and that these labor unions depend on those laws and constitution for existing and functioning correctly. However, both the labor unions and

² Culture is not something totally independent from biology, if only because the ability to produce culture is actually determined by genetics. But, besides the genetics of the individuals who constitute a given social group, many other factors influence the concrete development and expression of its culture. So much so that the influence of genetics on the final form adopted by a culture often ends up being minimal.

³ This is true even when speaking about the social position of certain non-human individuals in the social groups of their species.

the laws are mere subsystems (of different type and category, and not even included one into another) of the super-system that is modern society. And something similar happens with the example of the sheep and the human beings. Sheep are part, as production means, of some social-cultural systems and they depend on the protection and care that human beings provide them, and both human beings and sheep are part of (that is, they are subsystems or constituting elements) of such societies. Instead of speaking about labor unions as subsystems of the legal framework and sheep as subsystems of humanity (i.e. of the human species) you should have spoken about them as subsystems of a modern society which has some legal and constitutional guarantees and about sheep as subsystems of some human societies. Or even better, you should have looked for clearer examples, in which the sets you mentioned were actually subsystems and supersystems one of another, respectively (like in the case of hunter-gatherers or of labor union confederations).

31. Page 73-74 (46, 61). What is the difference between *Proposition 4* and *Proposition 5*? The say virtually the same.

32. Page 73-74 (46, 61). Propositions 4 and 5. (See also the second paragraph of proposition 5). I don't think that the only limit to the size of the geographical area over which a "self-prop" system extends itself (I assume that here you are referring particularly to human social-cultural systems and not generally to any "self-prop" system) is its capacity of transportation and communication. I think that there are other physical limits too. For example, climate conditions can make impossible human life in some regions, regardless the capacity of communication and transportation. In fact, even within the very region occupied by a social-cultural system there can be some areas that are virtually empty because of this, or because of other factors (for example, because of the existence of some vectors of transmission of some infectious diseases, as happens with the tse-tse flies which transmit the sleeping sickness -trypanosomiasis- in some African regions). And also the existence of rival systems can limit the extension of the territory occupied by a system.

33. Page 76 (47-48, 63). You say that the "world system" is constituted by everything that exists on the Earth, and that it is approaching to a state in which it will be dominated by a relatively small number of "global self-prop systems". However, to what point is true that global self-prop systems can dominate (i.e. to control and to rule) the whole Earth (i.e. what you call "world system")? Will they actually control and rule the biosphere (taken as the world set of non artificial ecosystems), for example? Or rather, will they simply utterly destroy it, or interfere with and degrade it until it stops functioning as it has been doing to the date (in a self-regulated and relatively stable way), but without achieving to rule it and to avoid some autonomous dynamics and some unwanted effects? There is a difference between to interfere with the autonomous functioning of something and to control it. The former not always implies the latter. In fact the latter, the control, occurs only in an incomplete and limited way many times.

Or, in other words, dominating the world systems seems to be contradictory with the idea, that you defend in this book, about that complex dynamic systems are uncontrollable because they are unpredictable.

34. Page 79 (50, 66). You say: “To reverse this process and ‘decouple’ the worldsystem would require the design, implementation, and enforcement of an elaborate plan that would regulate in detail the political and economic development of the entire world. [...]o such plan will ever be carried out successfully”. I understand that you are referring to the reformist propositions about decentralize and divide the technoindustrial system into smaller and more mutually independent systems, but don’t you think that, thus, it also could be concluded from this that the system would be impossible to dismantle or to destroy?

35. Page 79 (50, 66). You say that, in order for the system to become “global”, first the “aspirant” subsystems must get together to face a common “external threat”, but once the global system has eliminated or subjected those subsystems that could be its rivals there will not be any “external menace” against which join them anymore and the competence among them will destroy internal cohesion again. Or this is at least what I understand.

Well, my first doubt is of what can consist the “external menace” to a global system constituted by all those rival subsystems, each one of them “aspirant” to end up being only itself the global supersystem. A meteorite or some similar cosmic disaster? A geologic cataclysm at a global scale? An extraterrestrial invasion? A pandemic? I can’t figure out any other “external threat”, and these seem very improbable or not much credible (especially the extraterrestrial invasion).

My second doubt is, to what extent wouldn’t be virtually the same, though seen and presented another way, the set constituted by the rival systems, “aspirant” each one of them to be the supersystem of the rest though none of them have succeeded in imposing over the rest for the moment, than a dominant global supersystem constituted by rival subsystems subjected to it?

My third doubt is, in the case you are presenting here, couldn’t one think that the “external threat” common to the rival subsystems is the very dominant supersystem which subjects them?

And finally, my fourth doubt is, do you really think that all this story about the competence for the domination among self-prop systems is a good explanatory model of the details of the real phenomenon of the development of the technoindustrial system in all or most cases? To me, sometimes, it rather seems a true gibberish.

36. Page 84 (53, 70). In my opinion, the fragment “as well as the test of selection over every shorter time-interval” at the beginning of page 84 (*at the middle of third paragraph in the second half of page 53; at the middle of the second paragraph on page 70*), is superfluous (it is already implicit in what you have said just before that paragraph).

37. Page 84 (54, 70-71). You say that the number of individuals in each generation of a biological organism is very important, and that a species which have being near

extinction can have been constituted, at a given point, only by a few thousand individuals, but that any mammalian species has had millions of individuals in each generation through *almost* all of its evolutionary history, from among which the “fittest” have been selected. Well, I can’t understand completely well what you are trying to say in this paragraph. What do you mean here by “*almost* all its evolutionary history”? Do you mean that the number of individuals of any mammalian species hasn’t been reduced to a few thousand individuals (“bottleneck effect”) ever, and that the episodes of drastic reduction of the population, even near to extinction, would have happened only in those species previous to the emergence of mammals (from some of which emerged the latter), but never in the mammals themselves? Or rather, do you mean that the number of individuals in any mammalian species almost never have been reduced to those “bottleneck” episodes? Anyway, as far as I know, “bottleneck” episodes are, actually, something relatively usual in the evolution of species, mammals included. In fact, it seems that even our species passed through them, even more than once, tens of thousands of years ago, just before beginning to become a pest. Some authors say that at some point we were only two thousand individuals. Perhaps the number of individuals in each generation is not always so important for the survival and evolutionary success of a species.

38. Page 86 (55, 72-73). Honestly, the mere fact of being discussing the arguments of Kurzweil about Fermi’s paradox seems to me intellectually stooping as low as Kurzweil himself. The mere fact of being writing about this issue embarrasses me, and if I am doing it is only to show you that it is a stupid thing.

For starters, one thing is to say that civilizations, extraterrestrial or not, destroy themselves when they invent radio and another is to say that they destroy themselves when they reach some advanced degree of technological development (that can go far beyond of merely using radio). It is obvious that not every civilization destroys itself when it invents radio (here is the technoindustrial society on the Earth to prove it). Another question is whether civilizations destroy themselves when they reach some degree of technological development posterior to the mere ability to use radio waves. But this question can’t be solved, for the moment, given the lack of empirical data.

Anyway, although the supposed extraterrestrial civilizations destroyed themselves when they reached the ability to use radio, this wouldn’t solve Fermi’s paradox (to reach the ability to use radio implies that they would have sent at least some few messages before destroying themselves, or simultaneously). And if they selfdestroyed when they reached a quite further degree of technological development than the invention of radio, then the paradox would be even less solved.

In conclusion, apart from the nonsense that is the very fact of speaking about extraterrestrials, Fermi’s paradox isn’t even relevant in this book. If you want to try to show that every civilization that reaches a given degree of technological development will end up destroying itself, you should use other arguments or data.

39. On page 105, first and second lines (69, *at the middle of the page; at the middle of the second paragraph on page 89*), you say, “It is seriously to be doubted that it will

ever be feasible to ‘upload’ a human brain into electronic form with sufficient accuracy so that the uploaded entity can reasonably be regarded as a functioning duplicate of the original brain”. Here you shouldn’t have used “brain” but “mind”, because, as far as I know, what is uploaded into a computer are information and programs, not material objects. A brain is a material object (hardware). Mind is information (software).

40. Page 110 (73, 93-94). The comparison with biological processes such as evolutionary radiation and extinction is a bit feeble, as even you seem to acknowledge in note 127.

41. Pages 111-112 (74-75, 95). You use the comparison with religion (Christian or Marxist) to try to expose the technophilia of “techies”. It is not the first time that you use this method of comparing with religion. In “The Truth about Primitive Life” you applied it to anarcho-primitivism too. And it is an error.

First, it is an error because it is a double-edged sword. Nobody is safe from this way of trying to discredit a movement or a current. One can apply it to anybody and anybody can be convincingly presented in such a way that he can seem to belong to a religious movement or to behave as a religious fanatic kook. And the more radical, emphatic and categorical his stances are, the easier is for one to do it. So, as we say in Spain: “cuando las barbas de tu vecino veas pelar, pon las tuyas a remojar” [“If you see your neighbor’s beard on fire, water your own”]. In fact, it has already happened that someone compares you, me and those who think that a movement for destroying technoindustrial society should be created with religious believers (for example, some Mexican radicals supposedly opposed to the technoindustrial system, who aren’t worth even mentioning, did it some years ago).

Second, this way of criticizing a stance actually neither questions nor proves anything. You simply compare something supposedly bad with another thing that supposedly is also bad, and you expect that those who read it will regard the former as bad because it resembles the latter. Yet, this doesn’t prove that you are right when you regard bad, ridiculous or despicable either of the two. If it is bad, it will be for other reasons different from the mere fact that it resembles another thing that supposedly is bad. This stinks of logical fallacy (it surely has even a technical name, but I don’t know it).

Third, if one who reads your comparisons of “techies’s” technophilia with Christianity and/or with Marxism is critical about Christianity and Marxism or, even more, about religion generally, he can agree with you about those comparisons (though, perhaps, not for the same reasons; maybe he doesn’t even question modern technology, for example) and you both can get together to mock “techies” for their technophilia (and, perhaps, for the same reason and using the same method, he will mock you). The question here is if you actually pursue getting together with him to mock “techies” and if this is of any practical use. On the other hand, if that comparison is read by somebody who doesn’t question religion, or Christianity and/or Marxism, he won’t understand why it is so bad or ridiculous to resemble Christians or Marxists. Do you really want to keep away every religious people? (I guess that you do want to keep

away Marxists; and rightly). Are you sure that none of them can be a valid member of a movement against technoindustrial society? I, certainly, doubt seriously that they can be (because of the irrationality that implies the mere fact of being religious or believers), but I wouldn't dare to discard completely this possibility.

Fourth, I don't think that some supposedly "religious" aspects or traits are bad or ridiculous (though I think some others are, of course). Furthermore, maybe they are unavoidable (they correspond to some tendencies and needs that are part of our nature). This kind of comparisons tend to be made by despicable people, such as relativists, who aren't clear in their minds about anything and, besides, they are proud of it. I am not saying that you belong to this kind of people, I know you don't. But you have stooped low to their level through using this method.

42. Page 129 (86, 107), note 126. I don't know to what extent the assumption that you make that the 99.9% of the species that have gone extinct haven't left any descendants living today is correct. I have not read Benton's text so I don't know exactly on which data you are basing this assumption. However, it is probable that some past species transformed themselves into other species and, as the former stopped leaving remains in the fossil record, they have been considered extinct, while actually, to some extent, they continued living with other appearance. For example, did australopithecines actually go extinct or rather, at least some species of them, continued living with another appearance when they give rise to early human species (*Homo* genus)? What I don't know is if "extinction" by evolutionary transformation has being more, less or equally frequent than extinction without descendants.

43. Page 130 (86, 107), note 127. Certainly, some qualifications should be added. Among them, that the truth of that statement will depend on how many species and individuals survive those changes, and on how are those changes, for example. There can be some cases of too big and/or too rapid changes where that statement isn't true.

44. Page 143 (95, 119). "If Marx had never lived [...] the terminology and the details of the theory would have been much the same". This is pure speculation. One can't prove it empirically (it would be necessary to go back in time and to eliminate Marx's parents to check it out). It seems logical, yes, but it is unprovable.

45. Page 144 (96, 119). The statement about the permeability of little children to ideological and psychological influences by some adults who they respect is only partly true, i.e. sometimes it is truer than others and with some children more than with others. Generally, it works with many ideas and values, in most people, and in most situations; but sometimes, with some individuals and ideas, and/or in some situations, it doesn't.

46. Page 174 (118, 146). The fragment "Postulate 4 does not assert that a successful revolutionary movement is corrupted until all of its original leaders have become politically inactive" is unfathomable to me. Either I am not taking into account some nuance when translating it to Spanish (it wouldn't be strange, because my first language is not English) or it is not well written. If it claimed: "Postulate 4 does not assert that a successful revolutionary movement *is not /cannot be corrupted* until all

of its original leaders have become politically inactive”, it would make sense to me. It also will make sense to me if it said: “Postulate 4 does not assert that a successful revolutionary movement *is not/cannot be corrupted before* all of its original leaders have become politically inactive” but, as it is written in the book, it makes no logical sense to me.

Anyway, the case discussed on this same page would be an example that would *clearly and perfectly* fulfil Postulate 4 (de Valera was still alive and active and the movement didn’t become corrupted), so I don’t understand the reason for this qualification. If the movement had been corrupted when de Valera was still alive and active, then perhaps it would be worth pointing out that, according Postulate 4, this also could happen (hence “*at the latest*” in Postulate 4). But this wasn’t the case.

47. On pages 175-182 (119-125, 148), you say that you are discussing “how present-day efforts to deal with the problems generated by modern technology, including the problem of environmental devastation, are doomed to failure through neglect of the five rules”. But:

- The examples you discuss are not representative of every existing “present-day efforts”.

I am not suggesting with this that other authors or proposals unmentioned in the book are more realistic, feasible or desirable, nor that they better fulfil the rules that you are giving in this chapter, but simply that you don’t provide enough examples as to pretend being offering and discussing a representative sample of the actual and present kinds of currents or schools that supposedly are radical and critical towards the technoindustrial system and are doing things inefficiently and incompetently.

Furthermore, the two examples you discuss, Glendinning and Naess, are quite old instances.

- You focus again in discussing the feasibility of things instead of discussing whether the very nature or content of them is acceptable and desirable per se. It is not clear at all, at least on these pages (nor perhaps in this book), that you don’t agree with the goals of their proposals (and thus, with the values and ideas on which these are based). It rather seems that you accept at least some of them as desirable, though you believe they are unfeasible (either because they don’t fulfil the rules you give in this chapter or for other reasons).
- Related with this, the fact that those authors’ proposals that you quote don’t fulfil the rules that you give in this chapter, is the least of it. Even it is the best that can happen.

Those quoted authors are all of them a bunch of hippies and/or leftists. And there lays, precisely, the invalidity of their proposals. On one hand, these people have their heads in the clouds. They are idealists (i.e. anti-materialists) that don’t understand

not only how the technoindustrial system does work, but how the world does work generally either. And thus, they propose unfeasible solutions and yes, besides, they propose them in a wrong way (not taking into account the rules that you point out in this chapter). And, on the other hand, the values by which they are inspired, and with them many of their goals, are unacceptable to anybody who isn't a leftist and/or a hippy too.

In fact, they are not even radical enough, among leftist and hippies, as to propose something but reforms. Many of them not even reject modern technology! Cable TV? Collective means of transport? Car-free areas? Are you sure that these people are actually concerned about "the problems generated by modern technology, including the problem of environmental devastation"?

What is actually the difference between these people and modern technocrats and managers of the technoindustrial system who propose "sustainable development", "renewable energies", "clean technologies", "social welfare", "human development", "fighting poverty and social alienation", etc.?

And my main question is: Why, knowing that these authors have nothing to do with your ideas and goals (and that, at least in the case of Glendinning and Naess, they aren't radical even among their peers -Luddists and deep ecologists, respectively-), do you present them as examples for illustrating errors to avoid by a movement contrary to the technoindustrial system? In doing so, it can seem that you are suggesting tacitly that there is some kind of affinity between you and them; and that, though their strategy is wrong, their values and goals can be and must be taken as reference.

What's more, I think that in mentioning those authors as instances in your book, even for criticizing them, you are granting them a status and an importance as critics and radicals that they haven't and that they don't deserve.

48. Page 179 (122, 151). You mention the Sierra Club as an example of group that fights for preserving wilderness. Well, nowadays, some people like Dave Foreman would say the opposite -that the Sierra Club has been taken over by politically correct environmentalists and "experts on organization" (beware with these ones!) who don't give a shit about wilderness. Maybe you aren't very up to date about what happens in the American conservationist movement . (Remind my suggestion of reading of footnote 1 in this very letter).

49. Page 182 (124, 154). The reference to Mao is an example of superfluous quotation of the first kind I mentioned at point 2 in this very letter. Besides, in his advice, Mao did refer to the "principal contradiction" of the situation because he was a Marxist, and thus dialectic. These individuals always are looking for the "contradictions of the capitalist system", that is, the clashes between opposite elements inside the social system, which according to them are the cause and the engine of "history"; and if they don't find them, they invent them. But, as I have said, real processes many times, if not always, are not caused nor maintained by clashes between opposites. There can be conflicts and rivalries, between elements of the system or between the system and other external systems, but these conflicts neither are actually "contradictions" nor are

necessarily the cause or the engine of processes; and many times they aren't even an important factor that influences on these processes (often, rather, they are just effects).

In this case, there is a clear principal conflict, to which you allude: the technological system versus wild Nature (though, ironically, I doubt that Mao had regarded it as a "contradiction", much less a principal one), but I wouldn't call it "contradiction", for two reasons:

- There is no contradiction in that the technoindustrial system destroys and subjects wild Nature, on the contrary, this is the coherent and logical result (not contradictory at all) of its functioning. They are incompatible systems and if one grows and flourishes the other decreases and is degraded. The true contradiction or paradox would be that they were compatible.
- Using Marxist or dialectical terminology, not only things aren't clarified (rather, they are obscured), but also you are giving rise to Marxists to feel attracted by your rhetoric, and to absorb and manipulate it more easily (as they have been doing for decades with any novel thing that sounds like "revolutionary" to them), or to approach and get into the files of a movement contrary to technoindustrial society. And, also, in using Marxist terminology you favour that the non-Marxist or anti-Marxist readers feel repelled by your rhetoric.

Thus, while it is true that the conflict between the technoindustrial system and wild Nature is the fundamental conflict on which a movement really contrary to the technoindustrial system should focus and base its ideology and practice, you would have done better leaving Mao and his dialectical way of thinking aside from this issue.

On the other hand, at least in other occasion, you wrote explicitly (apart from having suggested it other times) that the fundamental conflict is between the managers of technoindustrial system (or "technocrats", as you tend to call them sometimes) and ordinary people. But this latter conflict isn't the same than the conflict between the technoindustrial system and wild Nature. Which one of both should we choose? In my opinion, it is much more appropriate to speak of the conflict between modern technology (or technoindustrial society) and wild Nature than to speak of the conflict between technocrats and common people, among other reasons because notwithstanding you once said that when you spoke of the latter you didn't mean you were defending "class struggle", this is precisely what it sounds like.

50. Page 182 (*124, 154*). This is the only one page of this book on which you mention wild Nature. Being this, supposedly, the principal ideal and value on which the movement should base its ideology and activity (you have chosen the goal of destroying technoindustrial society, supposedly, because you regard that such society unavoidably commits outrage against wild Nature), you mention it too little in this book (only once). One misses more references to the fundamental value among so many pragmatic proposes. This is much related with my complaint about that in this book you actually

haven't discussed the reason (the "why") for trying to destroy technoindustrial system (see point 17 in this very letter).

51. Page 184 (126, 155-156), note 19 (and the fragment of the main text: "Jesus's dictum, 'Do not kill', was never intended to prohibit *all* killing, but only 'murder', i.e. *unjustifiable* killing" page 142 (95, 118), to which it refers). This note and this fragment of the main text seem superfluous to me. In them, you assume the role of a student and interpreter of the Scriptures, but except for Christian true believers and theologians, who else does mind whether Christ said exactly that or something similar but different? Have you written this book for them? What's more, who does mind what Jesus Christ did say, if he did say anything? Furthermore, this fragment and the note seem not only superfluous but also speculative to me. Everything one can say about this matter, however much one quotes the Bible or other sources, is speculation. Nobody actually knows what that individual did say or did mean in this case.

52. Page 194 (133, 162), note 160. You say: "The system could be 'killed' by shutting down one or more of its essential functions (e.g. computer networks, electrical power grid, or transportation and communication facilities), but the death of the system might also be achieved in some other way". Which one? Examples? If you don't mention examples of how to "kill" the system in other ways that aren't physically destroying (or "shutting down") its infra-structure, I am not able to figure them out. Often throughout the book you invest much effort in explaining and illustrating in detail things that are superfluous and when it is actually necessary that you explain yourself and that you give examples, like in this case, you leave them out and you take for granted that the reader does understand what you are meaning.

53. Page 195 (133, 162-163), note 162. Refuting Fred Hoyle's statement that the technoindustrial system couldn't be built again if it collapsed, you say that you think that, after a relatively long period, the technoindustrial society could be rebuilt after its breakdown, because, though there couldn't be found and exploited high quality metallic ores any more, there would be many available remains of scrap.⁴ Are you sure? Hoyle also mentions that energy sources (coal and oil) would have been depleted or that they couldn't be extracted without advanced technology. How could be made function again a technologically advanced society without concentrated high quality energy sources, such as coal and oil? Electricity (regardless of how it is produced -through the sun, water, wind or nuclear fision-) does not serve to make efficiently function some elements, such as many transportation means or mobile machinery, which need freedom of translation and power at the same time. And using it to previously transform water into hydrogen which can be used as fuel would be very dangerous (hydrogen explodes), besides inefficient. All this without entering discussing how plants for electricity production would be created without using a previous industrial technological system (i.e., a whole set of interdependent tools and apparatuses).

⁴ You seem to have changed your mind regarding this matter with the passing of time, because some years ago, if I do remember right, on at least one occasion you said rather the opposite.

54. On pages 200-201 (137-138, 168-169) you quote Mao speaking about the flexibility regarding practice. But what I miss here is an explicit *emphasis* on that the text of Mao (and what you say just before it) does refer *only to action*. Otherwise, you are leaving the door open for many people to overlook this detail and to understand that nothing, not only in the practice, but also in the theory against the technoindustrial system is unchanging or fixed, that everything is subject to the possibility of being modified, left aside or replaced by other thing if this is regarded necessary or convenient. And this is not true. To speak of flexibility without setting continually, emphatically and explicitly limits to it, is to run the risk of that the movement is perverted by those who haven't into account nuances and exceptions; who to a great extent are majority. As you know, people tend not to have into account qualifications, exceptions or explanations that go beyond gross generalization when drawing to conclusions. They don't take them into account even when one repeats and emphasizes them very often. Much less when one doesn't and trusts in their "common sense".

Used means and methods perhaps must vary according to circumstances, but fundamental values and the ultimate goal inspired by them, must *never* change, be left aside or replaced by others. The value of the autonomy of the wild, the radical rejection of technoindustrial society and the goal of destroying this society must be unchanging. Changing them would be to corrupt the movement. It wouldn't have hurt to recall it here. No caution is too much in order to try to avoid this corruption to happen.

55. Page 246 (167, 210). What do you exactly mean by "radical environmentalism"?

Generally (in this book and elsewhere) you speak of "environmentalism" without making very clear what do you mean (see point 7). In English, many people use the term "environmentalism" to mean the same thing what in Spanish we generally call "ecologismo" (which is an equally vague term). That is, any school of thought or movement concerned about the degradation of the environment. However, in English, some people differentiate between "environmentalism" and "conservationism" (or "preservationism"⁵) because, according to them, "environmentalists" (which in this case I translate literally as "medioambientalistas") would be people only or mainly concerned about the immediate environment in which humans live (and, as most humans live in urban or rural environments, they are concerned especially about the humanized environment -improving air and water quality; preventing or palliating the noxious effects on human health of pollution; promoting organic agriculture, green technologies, renewable energies, "eco-friendly" lifestyles, etc.-, not about the wild one), whereas "conservationists" would concern especially about wild, non-humanized environment (preserving wilderness, wild biodiversity, endangered wild species, etc.). As you can see, it is not an arbitrary or absurd distinction. Those who differentiate between "environmentalism" and "conservationism" tend to be part of the second movement (though, to complicate things even more, many conservationists don't reject to call themselves "environmen-

⁵ Actually, there are also some people who distinguish between "conservationism" and "preservationism" but, so as not to complicate matters further, let's leave it at that.

talists” too and they don’t even see the difference and the incompatibilities between one environmental school of thought and the other). And, moreover, there is a close relationship between environmentalism and leftism (though there are leftists in both movements, they tend to be much more abundant in environmentalism).

All things considered, to say simply “environmentalism” doesn’t shed much light on the matter or even promotes confusion. And to say that a movement contrary to technoindustrial society will have some degree of affinity with “radical environmentalism” doesn’t clarify it much. Which “environmentalism” are you referring to? To that which is especially concerned about humanized environments (“environmentalism” strictly speaking; what I call “medioambientalismo” in Spanish) or to that which is especially concerned about wild environments? Because I actually think that, regarding the values defended, the movement that you promote would have more affinity with the second of these other movements than with the first one.

And regarding the term “radical”, much the same thing. Even though you try to clarify the sense with which you are using the term with the example of Bill McKibben (246, 171, 210) (whom I wouldn’t regard precisely much radical), the conventional sense of it is another quite different (and I think that even this isn’t much clear often: when people hear “radical” they tend to think sometimes of “violent” and other times of “leftist”, and some other times of both things at the same time, but they don’t tend to think of “that who makes environmental propositions that are unacceptable to the majority of the people in the technoindustrial society”).

56. Page 247 (172, 210-211). I think that the example of infiltrating into, and even of taking over *EF! Journal (EF!J)* is unnecessary or even counterproductive.

First, because infiltrating is not so easy or so great as it could seem. And likely its consequences would be much different from those expected.

Second, because perhaps you are unwittingly ruining somebody’s plans. From now on the people in *EF!J* will be more on the alert and they can take steps to protect themselves from a possible invasion, and so infiltrating will be much more difficult for anybody who had been thinking about it.

And third, because you can be encouraging some brainless people (stupid and thoughtless people) to follow that path and to cause more harm than help to the cause of destroying the technoindustrial system and to environmentalism -what I call “ecologismo” in Spanish, see previous point- (the ends of which many times wouldn’t have to be bad or incompatible with those of a movement against technoindustrial society).

57. Page 247 (172-173, 211), you say that the movement contrary to technoindustrial society must maintain clear lines of demarcation between itself and radical environmentalism and simultaneously collaborate with it. But you don’t clarify much how to do it. It is not something easy to achieve, and it probably won’t work in many cases. Is something like to have a cake and to eat it at the same time. You have to do either one thing or the other, but very often you can’t do both at the same time

without having problems. The best and safest way of distancing oneself from others is by not having any contact with them.

58. Page 249 y 251 (174-175, 213-215). You say that a movement contrary to the technoindustrial system should keep up to date with the knowledge and the use of technology. This, again, is not only virtually impossible to attain (the movement will always have much less means and resources than its rivals to keep up with technological issues), but probably, if it is tried seriously, it will have unforeseen (or even predictable) negative consequences. It is more advisable and sensible to know how to take advantage from the resources that are available and to set the proper targets which attack than to try to put the movement at the same level than the system regarding means and resources, running an “arms race” with it.

59. Page 277 (193, 235). You say “Steven LeBlanc argues that among primitive societies natural selection favors ecological recklessness”, but this is not accurate. As you say in the end of the paragraph, he admits that his model is excessively simple and that it can’t be applied in every circumstance. I think that you should have said this in the beginning, not in the end.

On the other hand, LeBlanc simply uses an imaginary, simplified example to explain his stance about that primitive war has ecological causes, and to show that ecological prudence won’t prevent war if there are other groups around who don’t put in practice this kind of prudence. The fact that this example can seem true to a great extent to you and me, does not prove that reality actually works this way. In other words, LeBlanc hasn’t proved with real examples that among primitive peoples group selection favours lack of ecological prudence. He only has reasoned it theoretically (and, besides, he has done it in a very simplified and idealized manner).

60. Page 283 (197, 240-241). In the first paragraph of point D, you say “self-prop systems that challenge the global self-prop systems also appear at the biological level. Thus there are invasive species -plants or animals that multiply uncontrollably in new environments- and new infectious diseases (e.g. AIDS and Lyme disease) that arise more rapidly than means for curing or preventing them can be found. In addition, older varieties of disease-causing bacteria that once seemed well under control have evolved new forms that are resistant to antibiotics, so that the corresponding diseases are difficult or impossible to cure”. Well, here there are two things that don’t add up very well.

- To what extent infectious microbes which are hard to kill or invasive species can be considered rivals for the technoindustrial system? Unless the former attain the degree of a pandemic which kills *most* human population, livestock or crops (which, at least to date, as far as I know, never has happened at the global level), or the latter replace greatly the rest of the species in the biosphere or at least those which constitute the staple food for human beings and their livestock (which is equally unprecedented), I don’t see that currently they really are its rivals, and in fact you acknowledge it in the next paragraph). In the future, I

don't know. Perhaps it occurs something similar to a "zombie apocalypse" or to a mass extinction (like that brought about by the first photosynthetic beings billions of years ago⁶) caused by some non artificial organism, but seen from here and from now, it sounds a bit like science fiction. To me, more dangerous for the technoindustrial system seems to be those species of the same types, i.e. infectious or invasive, but genetically modified (or completely artificial beings like the hypothetical self-replicable robots and nanorobots). But, again, and for the moment, we are going far into science fiction.⁷

Anyway, some of the hypothetical cases of biological or robotical "self-prop systems" that would be more dangerous for the technoindustrial system, not only would be dangerous for it, but also for many other species and for the ecosystems that they constitute, or even for the whole biosphere, so this is not precisely a desirable situation for those who wish to destroy the technoindustrial system for the sake of the wild.

- To call bacteria or invasive species "self-prop systems" after having been using abundantly this expression in chapter 2 to refer mainly to the technoindustrial system and to its social-cultural subsystems (organizations, technological systems, etc.) sounds strange, however much it is logically consistent with your definition "self-prop system".

61. On pages 285-289 (201-202, 243-246), you suggest that there are certain "not understood, not recognized, unknown" and even undetectable ("too complex or subtle to be [...] even recognized by human beings") mechanisms which, according to you, are developed by organizations in order to make their members act in such a way that they are useful for the maintenance and development of these organizations. And you give the example of the European military superiority compared to other non-European societies, which, according to you, can be explained through such "mysterious" mechanisms. Well, here I completely disagree with you.

First, generally, because to make use of "ghostly" (because it sounds like they were "supernatural forces") undetectable factors for explaining real phenomena seems to me

⁶ The extinction was actually caused by the first photosynthetic organisms that produced oxygen (O₂) as a by product of the photosynthesis (cyanobacteria). Before the emergence of cyanobacteria, all organisms on Earth were anaerobical and O₂ was toxic for them. So, when cyanobacteria emerged and began to produce oxygen, the vast majority of the environments on Earth became uninhabitable for anaerobic organisms, which mostly disappeared. The survivor anaerobic species had to take shelter in marginal anaerobic environments, to this day. *Note added later by U.R for this critique.*

⁷ And while today's science fiction sometimes becomes tomorrow's fact (page 284 (198, 242)), many other times, perhaps most times, it doesn't and it can't. The feasibility of science fiction has a limit which is set by physical laws. It is not the same that Jules Verne dreamed about submarines in the nineteenth century than that Isaac Asimov dreamed about "psychohistory" in the twentieth century or than that Kurzweil dreams in the twenty-first century about making his conscience be eternal. Submarines don't break any law of physics, but the exact prediction of the future development of society (what Asimov called "psychohistory" in *Foundation*) or the immortality of conscience would do.

unscientific, not much rational, idealistic (in the sense of anti-materialistic) and not much serious. Things of such kind don't explain anything. It's true that the absence of evidence isn't evidence of absence, and that many details of complex systems and processes are difficult or impossible to know accurately (this is what makes these systems be greatly unpredictable), but to resort to what can't be proved (i.e. what can't be verified that it is true) through empirical facts in order to explain things is not much rigorous and stinks of irrationality and pseudoscience. If you follow this way, you progressively will end up defending bigger and bigger nonsense.

And, second, because in the particular case of European military superiority, in spite of what you say in the book, it can be perfectly explained through material factors like the superiority of European armament (it is not the same a bayonet -which in addition to stabbing and cutting, is fixed to a fire arm that shots lead bullets- than a spear; nor is the same a Toledo steel sword than a macuahuitl; nor an armour and a helmet made of steel than a jaguar fur and body paintings; nor to attack/self-defend riding a horse than to attack/self-defend on foot. If necessary, which of them would you choose to fight a battle?); Europeans' greater resistance to those infectious diseases that were introduced and spread by themselves in other continents; an advanced animal husbandry (both for food and for transportation and agricultural work); better techniques of marine navigation; a bigger total population -not only in the place of the conflict, but also in the rearguard and in their European native country-; etc. It is not necessary to introduce supplementary explanatory factors (Ockham's razor), and much less "ethereal" ones.

62. Pages 290-292 (203-204, 247-249). It seems to me that the way you discuss the example of Tikopia leaves a lot to be desired.

To begin with, you are basing on Diamond's data. I told you once that I don't trust the version offered by Diamond in *Collapse* about the history of the island and about how its inhabitants attained the apparently "sustainable"⁸ condition in which they lived when Europeans arrived. Diamond pretends to be presenting Tikopia as a real model of a human society which, through voluntary and conscious control, attained a state of balance (demographic stability and sustainability) and avoided collapse, and I think that this previous Diamond's intention biases the presentation and interpretation that he makes of facts.

Moreover, your way of expressing yourself here is excessively vague and confusing. Was Tikopian society stable or not? Because, reading what you write, it is not clear at all. Furthermore, what do you mean here by "economic collapse"? And by "collapse"? And by "economy"? And by "stability"?

⁸ By the way, the fundamental value has to be wild Nature, not "sustainability". In fact, "sustainability" (to maintain indefinitely a society in a steady state; whatever this is) doesn't imply necessarily compatibility with wild Nature. However, if only not to break the thread of the argument, I won't discuss this issue here and I am going to accept as correct the implicit assumption (probably taken from Diamond) about that "sustainability" is a valid and fundamental criterion for ecologically evaluating a social system. *Note added later by U.R. for this critique.*

Finally, you try to apply your theory of self-prop systems to the example of the doubtful stability of Tikopian society saying that the population was too scarce and uniform and the environment too “poor” for strong and aggressive self-prop systems to emerge. Well, and what happened in Easter Island then? Was its population much bigger? Was it more diverse? Was the environment “richer”? I don’t think so. And if aggressive self-prop systems couldn’t emerge in Tikopia, why there were wars every now and then? What do you mean exactly by “any reasonable period of time”? Couldn’t it be that your theory fails to explain these cases, and you are trying to apply it to them forcibly, or too vaguely, so that it fits? Both here and elsewhere in the book (see point 34 of this letter), I am left with this impression. Couldn’t it be more like that, at least in the way you are presenting it in this case, this theory doesn’t offer a good explanation? Perhaps your theory of the competition for power between self-prop systems is still too “green” (i.e. unripe) and you should have polished it more before making it public and applying it to real cases.

I think that all this issue of Tikopia (and the development of complex societies generally) can be seen and explained more clearly otherwise, in a more conventional manner and without resorting to the theory of the spontaneous selection through competition for power between self-prop systems.

As you acknowledge, it is more than doubtful that Tikopians actually attained some balance and sustainability (a stable population size and a stable “economy”). In fact, after arriving to the island their population grew until it reached the limit imposed by the carrying capacity of the original ecosystems in the island for a way of food production that at first was based on a mix of agriculture, animal husbandry and hunting and gathering. At that moment, they reacted like every society that reach the carrying capacity for a given degree of social-cultural development tend to do: with war, emigration and/or new ways of food production (intensifying agriculture, animal husbandry and fishing and progressively replacing hunting and gathering with them). In doing this, they overcame this first limit to population growth and they kept on growing, until they reached again island carrying capacity, this time for fishing, agriculture and animal husbandry. By then, all the surface of the island would be already exploited and the only options would be war and emigration. And, if every now and then they had to kill one another in wars or to emigrate, it was because they weren’t able to keep population stable.

The case of Tikopia doesn’t seem so special or so different from the rest of the colonisations of islands in Polynesia. Included Easter Island (which some people, like Diamond, would regard to be very different from the case of Tikopia). They arrived to an island, they grew until they reached the carrying capacity of the ecosystem for the maximum degree of development of the gathering-farming techniques their society could attain, and then they get involved in wars and/or they go to colonize the next island. All the rest are minor details. If some islands seem to have remained better preserved than others (and, indeed, no colonized island has remained well preserved)

it is probably because of material and objective factors (alien to human will and conscience), such as that they were bigger islands or that they were colonized later.⁹

⁹ Diamond and others say and, according to what you said to me on other occasion, you also seem to think partly, that the Tikopians achieved population balance and sustainability consciously and voluntarily, for example, deciding to get rid of all their pigs, regulating fishing or applying birth control (including infanticide), but I don't believe it. In the case of pigs, it seems more likely to me that, in one of the several episodes when they overcame the island carrying capacity, they ate all pigs, without thinking much about it, by mere necessity, and that casually that resulted in being a way of enhancing food availability because this way they eliminated the competition with pigs for food (which in turn is a trap that tends to produce more people -see point 19 in this critique-). And regarding birth control, if they really tried it seriously, it doesn't seem to have worked very well (what is not surprising given that they were primitive humans without modern contraceptives), because they had to get rid of the excess of population periodically migrating or/and killing each other in wars. Regarding fishing regulation to prevent collective action problems (like the tragedy of commons, for example), even if they had tried it, it doesn't seem to have been enough for maintaining a population that actually was growing, not steady.

Final Note

Take into account that some of the errors or problems mentioned in the above points are mere particular examples of wider errors or problems that I find in your general theory and rhetoric, not only in this book.

Finally, there is a book I miss in the bibliography of *Anti-Tech Revolution*. It is *The Collapse of Complex Societies* by Joseph A. Tainter. I don't know if you have already read it or even if you have ever heard about this author but, in case you have not, I think you should read it.

A critique of his ideas & actions.



Ultimo Reducto
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2018

Ultimo Reducto's blog

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