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In these days of hyper-specialization, Civilisations: Collapse and Regeneration is a volume delightful in its breadth. Spanning topics from farthest pre-history to 20th century developments and the establishment of Czechoslovakia, covering archaeology, history, and natural sciences, the compilation has something for everyone. If your interests concern the distant past, the present, or anything in between, Civilisations will reward the time you spend with it.

Prof. Joseph A. Tainter
Utah State University
Author of *The Collapse of Complex Societies*

Bárta and Kovář have brought together the best and brightest of Czech minds in the historical sciences to contemplate the age old question of why do civilizations collapse and how do they respond to such trauma. Situated at the cross-roads of Europe with few natural defences, the geography of the Czech Republic has dictated the country's own socio-economic evolutionary history and this resonates in how these twenty-eight researchers view their own pre-history and history from the Upper Palaeolithic to World War II to the Soviet invasion of August, 1968. However, these researchers go further and address issues of civilizational collapse well beyond their borders in ancient Egypt and China, the Middle Ages, and up to the present in post-September 11 USA. Together, these chapters bring fresh insights into civilization collapse and response that will be of interest not only to scholars, but to policy makers who are looking into the future and its wide range of possibilities.

Thomas E. Levy
Distinguished Professor, UC San Diego



CIVILISATIONS: COLLAPSE AND REGENERATION

Miroslav Bárta
and Martin Kovář (eds.)



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CIVILISATIONS: COLLAPSE AND REGENERATION



Addressing the Nature of Change
and Transformation in History

Miroslav Bárta and Martin Kovář (eds.)

The present volume is dedicated to the phenomenon of collapse as reflected through different kinds of historical and environmental evidence. A total of twenty-eight in-depth studies provides a heterogenous analyses of the collapse and regeneration processes in societies and civilisations separated in space and in time. The individual chapters vary in their locations, characteristics and age. They contribute invaluable observations, both general and specific, concerning the fluctuation of complexity within human history and its consequences for respective societies developing in different contexts – focusing on their inner processes or their ability (or failure) to adapt to environmental dynamics. The outcome may be surprising to some readers as most contributions clearly demonstrate many universal features that connect mankind regardless of its variables such as attained technological stage, degree of complexity or external factors such as climate change. It is hoped that the present book may serve not only as a textbook about our common past but also as a source of inspiration for how we view the world and its possible futures.

Civilisations: Collapse and Regeneration
Addressing the Nature of Change and Transformation in History

Miroslav Bárta and Martin Kovář (eds.)

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The *Heraclitus Law* describes a mechanism according to which the factors responsible for the rise of a particular civilisation or culture are usually the same as those which, in the end, instigate its crisis, meaning thus a quick and deep loss of its complexity, usually followed by a stage of regeneration and a following rise. Therefore, if we want to understand why a system is exposed to a crisis, it is necessary to analyse the stage

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14. Jaroslav Pánek

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Over the course of almost four centuries the Battle of White Mountain

(8 November 1620) turned into a symbolic milestone of Czech history and became rated as a national catastrophe or a return of the Czech Lands to the bosom of the Catholic Church. It is from this angle that national tradition and often also professional historiography evaluate both the prelude to the battle (the Czech Uprising of the Estates against the Habsburgs in 1618-1620) and the long-term preconditions leading to the crushing defeat of the Czech Estates. The current paper is an attempt to capture the White Mountain turn in history from the point of view of the drastic nature of the change, of long-term accumulation of inner tension (political, social, ideological and religious) in the Czech Lands, gradated external pressure (international policy, financial and military) and also from the point of view of the impossibility of return to the previous state of affairs after 1620. The collapse symbolised by White Mountain thus brought far-reaching and complex changes of Czech society, changes of a kind that made it impossible to later restore the classical state ruled by the Estates.

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Allah created the world and will bring it to an end at a time only He knows. Both this general belief and the real experience of their own societies make the Muslims view their history as a course towards a climax, which was attained in the revelation sent to Muhammad and in his accomplishments. Afterwards, however, followed a gradual decline. Our paper gives a survey of interpretations offered by Western and by Muslim scholars to explain the undeniable decline and stagnation of the world of Islam after the glorious period of its rise and expansion. Our account is focused on the roots of decay perceptible in the social and cultural life, especially in the Ottoman Empire. Thereafter, a detailed analysis is given to modern discussions. Attention is paid to a variety of efforts to restore the erstwhile vigour and respect in the world as well as to opposite violent trend to bring about a final apocalyptic clash, such as manifested in the ideology and practice of the “Islamic State”.

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The Ottoman Empire was founded on the traditions of Islamic universalism, the Turkish military fief system and Iranian bureaucracy. The first phase of the crisis of the Ottoman Empire in the 16th to 18th century was characterised by the decline of the classical model and, in consequence, military defeats of the Ottoman sultan by

the European Great Powers. In the 19th century, the Ottoman Empire entered the second phase of the crisis, which it tried to overcome by modernisation modelled on the European example. However, the pressure applied by the European Great Powers under the diplomacy of the Eastern Question impeded the modernisation process; the involvement of the Turks on the side of Imperial Germany during the Great War led to the definite demise of the Ottoman Empire.

17. Robert Kvaček

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The paper’s objective was to prove that although the fall of Austria-Hungary only happened due to its war adventure, which started in the summer of 1914, serious existential crises had been weakening the multinational monarchy for decades earlier. The relative political repose in Austria factually ended with the resignation of the Count Taaffe’s long-term government in 1893; since then, the “old Austria” was heading – more or less obviously – towards its fall. With regard to the “starting position” of the Czech national movement 100 years earlier, the foundation of the sovereign Czechoslovakia in the fall of 1918 seemed a “small miracle”. In reality, its foundation was a result of the fact that the Czech national polity program had not been implemented in Austria-Hungary even after decades of trying; the world war then completely stopped it: considering what happened with Austria after the war started, neither the Czechs, nor the Slovaks, or members of other nations could expect that the victory of the monarchy would enable them to carry out their national aspirations. This resulted into the above-mentioned foundation of the independent Czechoslovakia and other so called “successor states” in Central Europe.

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The peace organization that arose after World War I is traditionally denounced as a short-sighted Diktat that knocked defeated Germany to its knees. One of the main reasons for the Nazis’ ascension to power and the start of World War II is often seen in the supposed exaggerated harshness of the so-called Versailles Peace System. This study indicates that historiography refuted such a claim upon the discovery of archives. In reality, the Versailles System could have been a functioning foundation for the peaceful reconciliation of international relations. Its main problem was not an exaggerated harshness, but the inability of Germany to admit its military defeat.

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21. Michal Pullmann

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This contribution analyses the collapse of the Communist regimes from three perspectives – economic-political, socio-historic, and cultural. According to the central argument, the primary integrative ties of

the state socialist system were weakening and gradually falling apart during the later phase of Communism: the Communist ideological rhetoric, the homogeneity of society, and the ability to reach economic effectiveness and political unification. The unsolved problems culminated in the mid-eighties: Gorbachev made an attempt at systemic change with perestroika and glasnost; however, this attempt did not lead to the revival that Gorbachev had hoped for, but instead to the collapse of the entire system.

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The analysis of the position of the United States after September 11, 2001 points to the arguable degree of success of America’s response to the unprecedented terrorist attacks of 9/11, which together with the financial and economic crisis of 2008 have created the impression that the United States is finding itself in a deep crisis and that its global influence has been dwindling to give room to newly emerging powers. The current debate among leading American experts provides the material for this research into the question about whether the United States (marked by many as a present-day empire) is truly in a critical initial phase of decline and whether there are any useful historical analogies to its current situation as well the question about what the new 21st century global order might be.

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The first part of the article introduces, discusses and compares two basic categories of collapses – those of natural origin and collapses due to anthropogenic causes. In the second part the reader is presented with a gallery of commented images – engravings depicting the world’s largest natural disasters (seismic and volcanic) spanning a period from the 13th until the end of the 19th century, which document and illustrate both the advancement in Earth sciences and the development of the global civilisation today. The brief conclusion describes the current state.

24. Petr Pokorný

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This chapter aims to show that collapse dynamics can be a part of natural processes at landscape level as well. To illustrate this phenomenon, we chose an example of the transformation of forest communities in prehistory. During 2nd millennium BC, productive, nutrient-rich broadleaf deciduous forests, which formed at the end of the Older Holocene, and which survived relatively steadily over the Middle Holocene, came to sudden decline in Central Europe. “Modern” types of less productive and nutrient-poor beech, fir and pine forests have replaced them. The working hypothesis, which has succeeded in supporting rich documents, points to a natural change in connection with the progressive depletion of the ecosystem through decline in biologically active mineral compounds. It is the same kind of development that was characteristic of the temperate ecosystems of our planet during all previous interglacial stages of the Quaternary. Nutrients, especially biologically active forms of phosphorus, have arrived to the ecosystems in the form of a wind-transported dust during the loess accumulation phase of the Last Ice Age. The humid and warm Holocene climate, which has been acting for many millennia to soil substrates enriched with this wind-transported dust, has resulted in progressive soil degradation due to the successive loss of nutritive compounds; surface acidification thus resulted in a retrogressive soil and biological successions. Against the backdrop of such gradual controlling climatic and related geochemical processes, numerous biotic and abiotic events can be observed - forest fires, windswept occurrences, erosion, immigration and expansion of new organisms. Were also people responsible? To answer this question, a comprehensive environmental-archaeological research has been conducted in the Czech Republic. Indeed, correlations suggest that people really could participate in the changes, especially through logging and nomadic animal herding.

25. Karel Černý

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The chapter attempts to unpick the complex interaction between epidemic crises, the history of human society and its possible collapse. While epidemics have been “plaguing” the human race for millennia, we argue that they are by no means a homogeneous phenomenon. Careful historical examination has shown that they have to be studied from various perspectives. We start first with the term “epidemic” as it was understood by physicians in the past. The next section

presents three frameworks for historical research about epidemics: paleopathological, cultural, and bio-medical. Each has its own specifics and leads to a different understanding of epidemic crises. The final section is based upon the selection of several prominent microbiological agents (plague, leprosy, TB, syphilis, smallpox, HIV, flu) in order to comment on the specific aspects of their interaction with society. Although societal collapse, or fear of it, is an important theme throughout this chapter, we also suggest that “plagues” have often had a rather heterogeneous impact because the threat which they posed was sometimes eagerly answered, leading to progressive cultural, social or scientific changes.

26. Lenka Lisá

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Using two episodes from different periods and different parts of the world, the text introduces the reader to a way of understanding the surrounding landscape and its predicative value in pointing out the possible causes and consequences of collapses of human societies. The reader is offered an excursion to the Bronze Age on the north-western margin of Prague where in that age the unrestrained activities of farmers triggered an ecological disaster. History is repeated in the second episode when the reader is transferred in mind to the eastern coast of Scotland, to the romantic landscape of the Culbin Forest.

27. Václav Cílek

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Due to population growth and the increasing demands of mankind, we currently find ourselves in yet another transitional period of European civilisation. A characteristic feature of this period is that we have reached the limits of traditional growth and face both relative and absolute scarcity of certain raw materials and resources. The raw materials which will soon irreversibly run out are not many, but there will be a relative scarcity of practically all of them, with the exception of aluminium, iron, natural gas and a few others. Most of the traditional deposits of gold, silver, tin, and also oil are approaching the last third of their lifetime. The author anticipates that in approximately the coming three decades there will be a concurrence of climate, economic, food and energy crises which thanks to our historical experience and the ability for regeneration we shall probably be able to successfully overcome, albeit at a palpable cost.

28. Vladimír Brůna, Kateřina Křováková, Peter Chrastina

Memory of the Most Landscape 777

The authors reflect on the landscape as a space in which since time immemorial man has moved around, worked, lived and also ended his road through life. The specific subject is the Most Basin, known today especially for its up to 45-metres-thick coal seams. It has been the exploitation of this brown coal that has brought about irreversible changes of the Most landscape – a loss of its memory. The study offers a view of the Most landscape from many angles: it deals with its structure, the functions of the individual elements of the landscape and also with the identification of changes that took place in space and time – all this by applying many scientific research disciplines.

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Acknowledgements

Miroslav Bárta and Martin Kovář

It is always a pleasure to see a book one has worked on for a considerable time finally going to press. This volume presents the critical essays of several dozens of scientists from social, technical and natural sciences about a topic of great importance to our various studies. These scholars have provided in-depth probes into the fascinating problem of what causes a civilisation to collapse.

The different chapters cover studies diverse in time and in human and environmental history: they vary in their topography, their data and their dates, yet they all address two specific questions: What is a collapse and what are the indicators that led to it? These strikingly different analyses within subject matter and style contribute invaluable observations, both general and specific, concerning the fluctuation of complexity within human history and its consequences for the respective societies under different circumstances - be it centred on their inner dynamics or from external factors such as climate change (Zhang et al. 2007). In such an analysis we can see the warning flags of impending decay and, hopefully, set measures in place to divert future disasters.

The principal incentive for this project, which was originally (and in a different form) published in Czech in 2011, was a multidisciplinary seminar organised at the Academy of Sciences in Prague back in 2007. That seminar was initiated together with the natural scientist, Petr Pokorný, and medieval archaeologist, Martin Tomášek. The one-day meeting focused on the discussion of the collapse phenomenon as reflected in different spheres of academic research. Despite the disparity in the subject matter, the consequent publication (Pokorný and Bárta 2008) proved to be a success and the subsequent discourse provided the inspiration for this present project. For the most

productive discussion which ensued on that day, I am indebted to my co-organisers of and contributors to that original conference.

In the wake of the 2007 meeting, one of our desires was to enquire whether the same or comparative degree of similarity and commonality could be reached when studying collapse in different historical periods, and in societies of variable complexity in different parts of the world. This was why we decided to invite people whose chapters you may find in the following pages. This project was started without any preconceived idea and it is fair to admit that we had but a single goal: to ask each scientific community to offer its own specific perception of the collapse phenomenon as based on the analysis and interpretation of its own scientific records. It is in the achievement of this goal where we see the most important results of this endeavour. However different the individual studies may appear in their style, content and methodology, quite surprisingly, they all tell a similar story.

To all the authors who were willing to submit their texts to us: we wholeheartedly thank you for your remarkable contributions on such a monumental task. The results speak for themselves. We also thank you for the trust and patience you have extended to us during the lengthy period of production.

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Introduction

Why to deal with a collapse? Considerations on Seven Laws underlying dynamics of civilisations

Miroslav Bárta

I have often wondered about the nature of collapses that occur within the vast majority of human societies. By training an archaeologist and Egyptologist, the question often crossed my mind: *How and why did these cultures, these societies collapse?*¹

Throughout the history of ancient Egypt, for instance, a co-called collapse took place on several occasions: eg. separating the Old from the Middle, Middle from the New Kingdom and the New Kingdom from the Late period (Bárta 2019), and so on. And yet, despite its manifold modifications and transformations over time, ancient Egyptian civilisation and its culture – the language, religion and society in general remained in its essence the very same. This inner contradiction within Egyptian society was most likely the principal trigger which initiated this present project.

The broad and growing interest in the phenomenon of collapse is quite understandable today. The world is becoming more and more unstable and unpredictable: economic markets are sensitive to minute factors that are unforeseeable, the value of money is subject to volatility, the feeling of safety has disappeared together with the predictability of the climate and the increasing migrations due to civil wars, military conflicts and environmental changes. The meaning of the word ‘stability’ is itself variable and it is often difficult to keep up with the rapidly occurring changes in our world. In contrast to recent past, de-globalisation seems to be taking place in many parts of the world as indicated by recent developments (Bauman 2000; O’Sullivan 2019).

¹ I tender my thanks to V. G. Callender for many critical remarks and discussion of this text.

Severe crisis may be striking without a preliminary call, approaching unnoticed yet with a force, magnitude and consequences we could hardly predict (Kindleberg 2005). However, matters were different just a few years ago. The world seemed to function well, the climate appeared more or less stable and there seemed no reasons for worries. Only a few opinion makers and experts were able to raise their voices in apparent discontent anticipating things looming behind the horizon (Soros 1997). All these phenomena make the study of the so-called *collapse* attractive again (for instance McAnany and N. Yoffee 2009; Yoffee ed. 2019).

In order to better understand the general nature of the term *collapse*, its different definitions, nature, causes and consequences, in the late fall of 2007 I had an opportunity to initiate, in collaboration with the natural scientist and palaeobotanist, Petr Pokorný, and medieval archaeologist, Martin Tomášek, a one-day symposium dealing with the various issues linked to the phenomenon of collapse in different spheres of academic research. In the course of a few days, it was possible to put together a list of experts whom we supposed would have something essential to say on the subject. At that time nobody could foresee that such a conference would engender so much interest, despite the fact that J. Tainter's on collapse among several societies had been out for almost two decades (Tainter 1988).

Tainter took into account most of the major civilizations that have existed on our planet and came to the conclusion that an anthropogenic collapse has these main causes:

1. Depletion and destruction of resources, predominantly non-renewable resources vital for life (such as water, arable land, crude oil, etc.);
2. Transition to a new resource (for example, from wood to coal, from coal to crude oil);
3. Occurrence or appearance of an overwhelming catastrophe (cataclysm, volcanic eruption, tsunami, etc.);
4. An inadequate reaction to prevailing conditions;
5. Other complex societies (i.e. an encounter with, and a following assimilation by, another technologically more advanced society);
6. Intruders;
7. Class conflict, social discrepancies, poor governance on the part of the elite or ill treatment of a section of society;
8. Social malfunction, when a state discontinues fulfilment of its role to care for its inhabitants;
9. Mystical factors;
10. Economic factors (such as the collapse in monetary currency, state bankruptcy, etc.) and the casual concatenation of events, including the above-mentioned ones.

With the help of other colleagues, we convened a meeting of a number of disparate scientists from the disciplines of archaeology, Egyptology, history, ecology, evolutionary biology, geology, mathematics, philosophy and the history of arts. The meeting was held in the Czech Academy of Science in Prague (see remarks in the Acknowledgement section). While there were serious hesitations concerning the benefits of having such a mixed group, by the end of the day we were surprised to find that each of the outcomes – and especially their implications – had found an undeniable harmony with each other (Bárta and Pokorný 2008). What transpired above all was the fact that, despite the different nature and definitions of collapse in these separate fields of human experience and enquiry, there were also many characteristics they all had in common.



Fig. 1. Metaphor of a collapse. Huge stone sarcophagus chest resting in a corridor in the sacred animal cemetery of Serapeum, Saqqara, Egypt (about 3rd cent. BC). The sarcophagus, which was to contain the body of the sacred Apis bull, never reached its final destination in one of the underground burial chambers. The legitimacy of those who commissioned this work disappeared literally overnight; all workers and officials taking part in this endeavour dropped their tools and gave up their commitments on a single day. This is what means a collapse – sudden loss of complexity, lack of economic means, lost legitimacy, and erosion of commonly shared values compromising the social contract. (M. Bárta)

We have been convinced that it is in the best interest of the study of collapses to fashion an approach through an inter-disciplinary study and cooperation, as collapses have always been the result of the interplay between several internal and external process of different nature. Thus, we have chosen to have the same question addressed by leading experts from different, very often separate fields of science with the hope that a consequent synthesis might be discovered – not only for the purpose of theoretical study, but also for possible lessons regarding our present and future in the handling these crises.

The consensus of our conference was that, in reference to society, a *collapse* is a major and sudden loss of complexity in all major aspects that characterise a given society. This may be due to several causes, such as a failure of the social contract and the loss of eligible and easily available forms of energy – every civilisation is limited by its natural resources (Smil 2017). Our individual authors have studied how the collapse came to happen, in what ways it made itself observable and what was the nature of the course that it followed. The result of this endeavour was, among others, a monograph, consisting of some thirty authors, one which originally appeared in Czech in 2011 (Bárta and Kovář eds. 2011).

The present volume is an off-shoot of that original project. Its main aim was to clarify the basic features of critical moments in the developments of various cultures and civilizations of the past, covering mainly the period of the Holocene. For this enquiry, we sought to include not only the viewpoint of the historian or archaeologist, but also that of the natural scientists and economists. From their combined results, it is quite evident that there are numerous and obvious parallels between different peoples and different historical epochs, despite the fact that these are often separated by large spans of time and space. This publication has also unanimously shown that the triumvirate of archaeology, history and natural sciences represents a powerful tool for the study of the long-term processes at work within all complex societies.

The basic question is how can we track the inevitability of collapse? Or, how can we even anticipate it? Collapse is unwanted, but it manifests itself as a sudden and disruptive change within the overall structure of a given social entity. This book will suggest that it can be anticipated with the help of long term processes governing any kind (in terms of size, complexity and date) of society.

Most societies heading toward or already experiencing collapse processes do not even realize that something may be seriously in disarray. In the same tempting way, we ourselves may also be unaware that the phenomena which usually lead toward a collapse may already

be present in our own world. The only considerable difference is that our society has, at least theoretically, and all the necessary knowledge and technologies at its disposal to use for its advantage. Maybe now is the right time to employ this knowledge, given that our Western society may also be confronted with factors so well-known from the past that have the potential to induce a fundamental stage of transformation with a significant loss (or rise) of complexity (Oslon 1982; for the most recent overview of different aspects of a collapse in human history see Middleton 2017, 1–50 with references).

In an earlier publication (Bárta and Kovář, eds., 2011), it was demonstrated with dozens of examples that collapse can be seen as a deep transformation necessary for the regeneration of a malfunctioning system. One of the key outcomes of the book was the conclusion that collapse is not the final point of development, nor is it a dead-end in itself. In most cases, a collapse can be synonymous with expressions such as “transformation” or “renewal”, characterised by a severe loss in complexity, a total restructuring and transformation of the system. Complexity is, in this context, seen chiefly in the number of components in the system and the intricacies of the relationships among them. The collapse of cultures and civilizations can be perceived along these lines in several significant characteristics briefly summarized below – yet, in contrast to the natural sciences, collapse does not automatically lead to the extinction or disappearance of the system. Thus, in human societies there are a small number of characteristics that can be identified within each collapse. These general characteristics are summarised below (see also: Tainter 1988; Bárta 2011 and Middleton 2017):

Definition and Indices of Collapse:

- Collapse means a sudden and substantial loss in complexity.
- Collapse is generally unpredictable and therefore not expectable;
- Collapse is only a result of a protracted crisis of the social system due to inner, long-term processes (Fukuyama 2015 or Lofgren 2016), often in combination with external issues – typically environmental change;
- The actual initiation of the collapse process often necessitates a trigger – an event of no major historical relevance *per se* (take the start of the Czech Velvet Revolution – a peaceful students’ gathering in Prague – or the Arab Spring and the self-immolation of the desperate M. Buazizi)
- In the time period preceding a collapse, there is a sudden decrease in economic profitability;
- During a collapse, the existing principal structures, necessary for the operation of the given system, are largely dysfunctional or cease to exist;

- The major consequences of a collapse include decentralization, de-specialization, a decrease in the level of organization and social division;
- Civilizations usually come to a critical stage because of their inner dynamics, but the initiation of the collapse itself is often caused by an external impulse, typically an abrupt climate change (on cyclical climate changes see Bond et al. 1997 and on the role of climate changes in different civilisations compare Weiss ed. 2017);
- The process of a collapse is not linear or evolutionary but happens in major leaps (Bárta 2015, 2016, 2018 and 2019);
- The process of a collapse can also be marked by a substantial loss or transformation in the population and/or ethnicity of a given area, the hierarchical structure, the disappearance of its original spiritual substrate;
- The general population and the malfunctioning elites generally realize that a collapse is occurring only in its final stage, when it is inevitable;
- What really matters is that collapse is usually caused by the same factors that originally, at the beginning of the systems' evolution, instigated its rise (the so-called Heraclitus principle, see Bárta 2016b);
- A traditional decline in arts, architecture, literature or education and knowledge obviously associated with collapse is only a consequence of the loss of complexity (Ward-Perkins 2005).

As it transpires, there is no need to have all the above factors present simultaneously. Before moving on to further considerations, it is important to stress at this point that the following lines are related to collapses that we can observe in the course of “undisturbed” development cycles. Therefore, the following considerations do not apply, for instance, to the collapse of the Mayan and Incan civilizations, which were caused by the external colonization of a society by a technologically and therefore also militarily superior culture, the devastation of Easter Island, the Santorini catastrophe or the explosion of the Krakatoa volcano, etc. (on volcanic explosions and their impact on civilisations see Gunn 2000 or McGuire, Griffiths, Hancock and Stewart 2000).

As has been indicated in our earlier publication (Bárta and Kovář eds. 2011), when it comes to collapse, a significant number of past civilisations have shown common symptoms and, therefore, offer considerable relevance for forewarnings in the future. The history and archaeology can observe the long-term processes at work in the development of civilizations, as well as the subsequent processes of their transformations into collapse and regeneration. This is a perspective that may be offered by archaeology and history.

From the previous pages it should result that there is a high scientific relevance in the study of past social processes. Thus, the following factors that lead to the rise and collapse of a given civilisation may be summarised as the following Seven Laws (of civilisations):

Law One

Every civilisation is defined in time and space. It is not endless or eternal. Archaeology and history are two of the disciplines which may analyse their rise, maintenance, decline, transformations and/or resurgence (see Morris 2010).

Law Two

As a rule, every civilisation consists of more elements which come into being, develop, rise, peak, decline and eventually vanish and on their ruins grow others. Major changes in their development happen by means of leaps (hence *punctuated equilibria theory*) following the longer period of stasis - saturated and seemingly uneventful development.

Law Three

Every civilisation uses a universally understood language for communication and commonly accepted system of values and symbols. Every civilisation is (as a rule) characterised by: major centres with a concentration of population, monumental architecture, writing system, sophisticated systems of communication, sharing and storing data - knowledge, hierarchically arranged society, arts and division of labour and the ability to redistribute and share main sources of energy including money (social contract) (comp. Fuller 1969).

Law Four

If the prevalent tendency of the civilisation favours consumption of energy over production (negative Energy return on investment, EROI) it won't long be able to sustain the current complexity nor to expand it (Hall, Lambert and Balogh 2014). Eventually it will lose the attained complexity and implode. This is what is traditionally called *collapse*. This collapse is an inherent part of any social development. It is a transformation stage which is unavoidable for the next stage of regeneration. Collapse is not always a dead end in itself.

Law Five

Individual components of any given civilisation rise and fall through internal mechanisms inherent in the society (changing bureaucracy, quality of institutions, role of the elites and technologies, ideology

and religion, mandatory expenses, social system, etc.) and through the degree of adaptation to external factors - such as climate change. These are the internal and external frameworks of the dynamics of a given civilisations. They are in permanent interaction and under the influence of various cycles within different periods. Therefore, to understand a diachronic development of any society requires a complex and multidisciplinary approach.

Law Six

The so-called Heraclitus Principle (called after the Greek philosopher Heraclitus who was one of the early thinkers who probably addressed this issue) has a major impact on all civilisations: those factors that instigate the rise of the system are more often than not identical with those that usher in its collapse.

Law Seven

Civilisations dissolve when their system of values, symbols and communication tools disappear. Yet, the collapse does not necessary imply extinction: in most cases, civilisations that consumed their potential give way to a new one, usually carried on by the same or modified genetic substrate (population).

There is every reason to believe that from the study of long-term processes which governed societies in the past we may gather solid information and build a theory that would help us to understand our current world (comp. Ferguson 2010 and 2012). This might in turn help us to discuss possible trajectories for our future. If nothing else, the seven laws may be considered a strategic plan for reducing our future susceptibility for the collapse of our own society and design new strategies how to diminish its impact and consequences.

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