

The Future as an Undefined and Open Time: A Bergsonian Approach

Jonathan Jancsary¹ 

Received: 12 August 2016 / Accepted: 27 November 2017 / Published online: 12 December 2017
© The Author(s) 2017. This article is an open access publication

Abstract The questions what the future will bring and if and how it is possible to anticipate coming events have intrigued human beings since the dawn of time. Over the course of the centuries human beings have found better and more sophisticated ways to calculate and predict certain prospective occurrences, for example earthquakes, thunderstorms et cetera. In the Europe of the nineteenth century this potential of rational (natural) sciences led to the idea that it would once be possible to anticipate everything that will happen in the universe, going as far as that it should even become predictable how human beings will develop and which actions they will choose. The French philosopher Henri Bergson verbally fought against this kind of belief and developed a so-called process ontology, which claims that nothing in the universe is ever fixed. In fact everything that exists is an ongoing and evolutionary process (*élan vital*) without a fixed goal. And since—according to Bergson—our rational mind is solely capable of understanding and therefore predicting rigid entities but not processes, any belief in the complete predictability of the universe must be abandoned. Instead, we should focus on the possibilities of an open, spontaneous and creative future, which we will only then be able to understand, if we get more in touch with our so-called intuitive faculty, which is able to fathom a process in its processual state.

Keywords Bergson · *Élan vital* · Evolution · Intuition · Process ontology · Rationalism

✉ Jonathan Jancsary
Jonathan.Jancsary@student.uibk.ac.at

¹ Department of Philosophy, University of Innsbruck, Innrain 52, 6020 Innsbruck, Austria

Close your eyes, and see the stars
The shadows, and tremors
Of the sun¹

1 Introduction

For human beings the seemingly separated triptych of past, present and future shapes their daily life in enormous dimensions. Instead of having a rather limiting and “analytical” linear view on time, in which the past is something gone and the future something which has no relevance yet, human beings experience the phenomenon of the past much more as a period of lost possibilities. Decisions made in the past cannot be reversed, nor can situations witnessed ever be (fully) forgotten, and it is highly likely that even consciously suppressed memories are forming our being each and every moment. In the same manner the future is generally experienced as a creative playground. In principle everything will be possible tomorrow and one can embrace new feelings, take new steps and form one’s life and one’s environment. One could go as far as to say that the future is something that does not exist² in its final form yet and is therefore malleable and can be created from scratch. Or, judging from a restricted human perspective, it is possible to say that the future is something that cannot be fully and completely grasped and recognised by our faculties and methods of perception.

Nevertheless, human beings try to forecast and predict what will happen not only in the coming hours and days, but years. And, without doubt, some forecasts are rather accurate. Judging simply from blind and unscientific empirical evidence, it is, for example, possible in one’s daily life to predict to a certain degree how a person will react to a certain stimulus. This goes as far as that it would be highly difficult to live in a community or society without a certain possibility of anticipation. Also, there remains little dispute over the fact that our rational mind and especially its use in natural sciences has made it possible to predict events at least to a certain degree of probability. One just has to think, for example, of earthquake warning systems, weather forecasts et cetera. Without going into detail about the question of predictability in natural sciences, there is one kind of impression which still haunts all sorts of predictions, forecasts and anticipations: there always seem to be surprises and unexpected events, which we did not see coming. And when such events are taking place before our eyes, we have to deal with them in spontaneous and often intuitive ways, because we usually have not had the time and the chance to prepare for such instances.

Obviously as with most topics in philosophy this insight hardly offers anything spectacularly new. Since the dawn of time human beings have always tried to predict certain events in order to prepare for the future, but even then they knew that

¹ Taken from the song ‘Shadows Of The Sun’ of the Norwegian band Ulver.

² Without doubt, the term “existing” here is highly problematic if interpreted in a strictly analytical and philosophical perspective. However, we may use this word here in a more general and everyday manner and not as a philosophical or scientific term.

independent of how important certain plans and forecasts were, the moment of unpredictability was always present, and till this day it seems to be hanging over us like the often mentioned mythological Sword of Damocles. The main difference to earlier days, however, is that we have become better at forecasting and predicting, and this has given rise to the narrative that unexpected events would not happen if we were able to include each and every relevant variable in our calculations of when and where something will happen. But this is more of a problem of technical advance and adequate calculus than a philosophical one, since there seems to be some form of societal agreement that with the constant development of natural sciences and statistics our ability to predict will also become better and better until the margin of error is finally so low that unexpected events are unlikely to occur, at least concerning big events like the explosion of a volcano et cetera.

However, there was probably a time in the Western world, when the belief in this narrative was even stronger than today. In the nineteenth century natural sciences were blossoming and scientists deciphered new “secrets” of our universe basically on a daily basis. Therefore the belief that after hard scientific work human beings will at least one day be able to fully understand and comprehend nature, the universe and the essence of human beings was growing. While this was understood by many as a utopian dream, some philosophers and thinkers also saw the downsides not only of such a belief but also of the danger of it becoming a reality. After all and very simply put, would a completely predictable universe not give rise to a certain form of determinism and therefore abolish all freedom? (Jurevičs 1949, pp. 154–156) Because of this scepticism the belief in natural sciences and their possibilities was highly criticised. One main point of criticism, which will also be the cornerstone of this article, attacked the premise of the whole argumentation and claimed that it was simply impossible to fully fathom the future and all its opportunities with the help of classic scientific rationality and thinking.

In the second half of the nineteenth century a philosopher dealt with these problems in remarkable depth. Henri Bergson, a French philosopher, who lived between 1859 and 1941, developed a unique and precise way of thinking about rationality, its helpfulness and its limits and tried to answer the question of how to understand time and especially the future. Most interestingly, the anarchist thinker and philosopher John Zerzan thought that Bergson was one of the very few exceptions in Western philosophy who was able to break free from the “imposed [...] numbered time” (Zerzan 2015, pp. 17–18), meaning he was able to interpret time not in a quantitative and purely rational way, but in a qualitative way and with a new perspective.³ And while Zerzan surely was exaggerating when it came to the idea that Bergson was basically the only Western philosopher thinking in a different manner than in quantitative terms about time, there is some truth to the idea that Bergson had a very unique view on the phenomenon of the future and that he tried

³ It is indeed one of Bergson’s key ideas in his first book “*Essai sur les données immédiates de la conscience*” (1889) to show that most philosophers and thinkers actually treat the phenomenon of time the same way as the phenomenon of space: “Concerning material things one will not have to argue that every notion of numbers and/or counting is connected to a certain notion of space. Counting itself is then a discontinuous process, which means that while counting we proceed jerkily from one unit to the next by interpreting numbers as parts of a given space.” (Albert 1995, p. 90; my own translation).

in a still unrivalled way to think the universe and human beings as open, creative and spontaneous beings. However, he did not condemn rationality and natural sciences as a whole, but rather tried to find a link between rationality and a new concept called *intuition* which is supposed to be able to grasp these open, creative and spontaneous phenomena like the future. Even more, Bergson actually tried to bring creativity and rationality, quantity and quality, physics and mystics together in a so-called “holistic” approach.

In order to make Bergson’s position clearer and to show, why it is of great importance to look at the future both from a rational and a so-called intuitive way, this article will deal with the following three points: (1) Firstly, a short introduction will be given to the classic idea of nineteenth century Europe to show how our analytical and rational mind, which is the key faculty for the research methodology of the natural sciences, is able to understand and, therefore, predict everything that happens in our universe. This idea will be exemplified with the help of the theories of Charles Darwin, since on the one hand the theory of evolution was of great importance to nineteenth century Europe and on the other hand Bergson himself frequently made use of this theory and tried to implement the theory of evolution in a unique way into his philosophical thinking. (2) Secondly, Bergson’s position concerning the theory of evolution and his opposition to the claim of natural sciences that everything can be understood with our rational mind and, therefore, can be predicted will be discussed. The focus will lie especially on the concepts of *intuition*, *creativity* and the meaning of an *open and free universe*. (3) Thirdly and finally, a short summary of Bergson’s position will be given and the consequences of combining rationality and intuition in order to interpret how we shall deal with the future will be discussed. It will be shown that Bergson’s philosophy offers a unique way of combining rationality and creativity and is therefore able to grant us a new perspective on the future and on predicting coming events.

Analysing Bergson’s philosophy and, specifically, his concepts of time and duration against the background of the developments of natural science during his time is in itself nothing new, but it is on the one hand important to highlight Bergson’s thoughts and ideas in the context of the current discussion concerning anticipation. This is because of the fact that Bergson’s rather unique understanding of time opens new perspectives for the philosophical questions of anticipation. On the other hand Bergson’s basic philosophical thoughts help to show more clearly how the general ideas of process philosophy and process ontology – especially in the long run – may be of interest for the handling of certain philosophical questions concerning the topic of anticipation.

2 Darwin’s Theory of Evolution as an Example of How to Understand and Predict the Universe

When Henri Bergson appeared on the stage of philosophy in the second half of the nineteenth century, the academic as well as the mainstream discourse had undoubtedly been shaped by philosophical and scientific movements like positivism, scientism and mechanism. While those three movements were and still are

not completely congruent, they all share some basic ideas, above all the concept that the universe and human beings can be explained by classic Western rationality and its expression in various (natural) sciences. And since this belief was particularly strong during that time, the chance to interpret the universe and to predict further events with the help of the rational mind was accentuated by such famous thinkers as Hippolyte Taine, Ernest Renan, John Stuart Mill and Herbert Spencer, whose voices of authority often were not only limited to the academic world but also stretched into mainstream discussions. (Jurevičs 1949, pp. 22–23)⁴ Obviously the widespread success of this kind of thinking—at least concerning mainstream discussion and everyday life—had a lot to do with the fact that natural sciences were easily able to show their applicability and their usefulness in form of technical advancement. The same could not be claimed of philosophers who were mainly concerned with completely abstract metaphysical problems. Philosophy, therefore, was at some kind of turning point and had to decide which direction to take: should the philosophical discourse be shaped by the success of natural sciences and by a convergence to this kind of thinking or should philosophy try to re-define its role in the scientific discussion and its task in general?⁵ While Henri Bergson was and still is often interpreted as a radical philosopher of the irrational, of a philosophy of life, and of intuition, he actually tried to walk the middle ground and combine metaphysical ideas like *intuition* with scientific knowledge and rationality. This also means that Henri Bergson was involved in the scientific debates of his time⁶, but although in his young years he was extremely dedicated to the philosophical movements described above (mainly positivism and scientism) he soon began to see the problem that these two rational ways of interpreting the world were simply too limited to perceive the universe as a whole:

[Therefore,] [t]he philosophy of Bergson did not develop in continuity to cognate philosophies and ideas, but much more in opposition and protest against the oversimplifying, flattened out and un-intellectual direction of positivism, mechanism and materialism. (Jurevičs 1949, p. 23; my own translation)

Nevertheless, Bergson remained interested in the results of natural sciences all his life and he devoted a great deal of attention especially to one scientific theory,

⁴ While the authors mentioned—especially Hippolyte Taine and Ernest Renan—were especially important for France, the philosophical discourse in Germany, for example, was mainly shaped by Neo-Kantianism and their interest in conceptualising a philosophy of science.

⁵ This is, of course, a question that has pained philosophy since the rise of natural sciences, and even in the 21st century this matter is far from decided. One may not forget concerning this matter that philosophy and natural sciences did not use to be two separated phenomena. It was normal and typical that from the times of the Ancient Greeks to the modern Western age philosophers worked and thought about issues and problems we would nowadays count to the area of responsibility of natural sciences. But even G.W.F. Hegel, who lived in the 18th and 19th century, still thought about such problems in a serious matter and wrote a text called “Dissertatio philosophica de orbitis planetarum”, in which he talked about our solar system and tried to explain the complexity of the universe.

⁶ Henri Bergson’s discussion with Albert Einstein, which, among others, took place in his book “Durée et simultanéité. À propos de la théorie d’Einstein”, about Einstein’s theory of relativity is still debated and re-evaluated in the 21st century.

namely to Charles Darwin's *theory of evolution*. Coincidentally, Darwin released his epochal book "On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life" in 1859, the same year in which Bergson was born. The ideas contained in that book did not only strongly shape Bergson's thinking, but also the whole scientific discourse in the Western world, and it is vital to talk about the basic premises of this theory in order to better understand why it was believed that it would once be possible to understand and therefore anticipate the evolution that the whole universe and also all human beings would take in the coming future. Darwin's theory basically rests on two rather simple pillars:

Darwin's evolutionary claims involve two central theses: that present and past forms of life are all descended from one or few primitive life forms (descent with modification); and, second, that **a primary mechanism of evolutionary change is the mechanism of natural selection**. (Lloyd 1998, p. 478; my own accentuation)

This merely states that animated beings evolve from primitive life forms into higher forms of life, and from this it can be inferred that all forms of life are (in some way) related to each other and that (at the moment) human beings represent the highest forms of life. However, this concept or idea was nothing new in general. Thinkers like W. Harvey, G.W. Leibniz and J.G. Herder had had similar ideas, but none of them had been able to develop an empirical and "verifiable" method in order to test this hypothesis. (Rensch 1972, p. 836) For this Darwin constructed the well-known formula of *natural selection* which states that via the help of modifications and changes various life forms are either better or less able to adapt to their surroundings, and those who are able to adapt, naturally, have a higher chance of reproduction and, therefore, survival. Darwin himself describes this process in the following way:

If during the long course of ages and under varying conditions of life, organic beings vary at all in the several parts of their organisation, and I think this cannot be disputed; if there be, owing to the high geometrical powers of increase of each species, at some age, season, or year, a severe struggle for life, and this certainly cannot be disputed; then, considering the infinite complexity of the relations of all organic beings to each other and to their conditions of existence, causing an infinite diversity in structure, constitution, and habits, to be advantageous to them, I think it would be a most extraordinary fact if no variation ever had occurred useful to each being's own welfare, in the same way as so many variations have occurred useful to man. But if variations useful to any organic being do occur, assuredly individuals thus characterised will have the best chance of being preserved in the struggle for life; and from the strong principle of inheritance they will tend to produce offspring similarly characterised. This principle of preservation, I have called, for the sake of brevity, Natural Selection. (Darwin 2006, p. 80)

The main question, however, remains how Darwin's idea and theory of "natural selection" is interpreted and what kinds of consequences are being inferred from it.

Within humanities and (natural) science two lines of thought can be found in the nineteenth and twentieth century: (1) While Darwin mostly talks about the *principle* of natural selection (see quotation above), a lot of readers and scientists interpret and still are interpreting this principle as a so-called mechanistic process⁷ (Rensch 1972; Lloyd 1998), which means that the process of natural selection and of evolution per se is deterministic. Evolution itself appears to be an automaton, a deterministic and automatic elapsing process. This way of interpreting Darwin led to the fact that “the peculiarity of life and the autonomy of [the human being’s] mind was subordinated under the given factors of the physical-chemical mechanism” (Jankélévitch 1994, p. 15; my own translation). As with all animals a human being, therefore, becomes in its essence a solely biological entity and all its features can be explained by natural selection and the survival of the fittest. Our mind with all its facets can be known and analysed simply under the pragmatic perspective in how far it helped and still helps us to adapt to our surroundings and survive in the universe. It is, more or less, a simple function which is useful in the struggle for survival. In consequence, this interpretation of the concept of natural selection and of evolution leads to the idea that if we have sufficient data all characteristics of the various life forms (including human beings) can be understood simply as a physio-chemical and biological reaction and, therefore, these characteristics can one day be fully understood through the methods of natural sciences. To put it simply: If the process of evolution and development of life forms follows a rational and mechanistic principle, our rationality will, one day, also be fully able to understand all developments and characteristics of life forms and the universe per se. Naturally, this is a very strong thesis with immense consequences:

Over the centuries both admirers and enemies of Darwinism recognized not only the punch this theory dealt to the biblical narrative of creation, but also a final argumentation for a materialistic concept of human beings and life per se [...] (Kolakowski 1985, p. 16; my own translation)

(2) It is, however, important to mention that there were also other interpretations of the theory of evolution and the concept of natural selection present in nineteenth and twentieth century Europe. Especially the philosophers of life, who focused on experiences and so-called *erlebnisse*, on an intuitive understanding of life in general, and on feelings and emotions, did not simply reject this biological and rational concept of evolution, but much more had a certain way of looking at it from a different angle. (Jankélévitch 1994; Worms 2013) They saw evolution not as some kind of mechanical and, therefore, deterministic concept, but they emphasized the creative and the spontaneous elements, which can also be seen in such a theory. In their view the human mind can neither be simply explained by certain mechanical premises and concepts nor do they believe that evolution works in a straight-forward manner. It is, therefore, not completely predictable. Moreover, they emphasise the seemingly endless opportunities of the human mind and its potential to adapt, to overcome limits and

⁷ Most interestingly, this interpretation of Darwinism is still very present today. In the articles about Darwin and his theories in the renowned “Routledge Encyclopaedia of Philosophy” and “Historischen Wörterbuch der Philosophie” one can also find the word “mechanism” in order to explain the natural selection and the theory of evolution, see Rensch (1972) and Lloyd (1998).

to evolve freely. Therefore not all adaptations and modifications can be rationally explained and there are always different ways of adapting and of reaching the goal of survival. They also saw, so to speak, the “irrational” potentials of human beings, their creativity and their spontaneity. The philosophers of life feared that because of the mechanistic and, in consequence, deterministic worldview proposed by positivists, the richness of human life and of human experiences would be destroyed:

In all these we find the same principle; the principle of a free spontaneous and creative life as the essence of reality. Not law but aliveness, incalculable and indomitable, is their subject-matter: not human logic, but actual living experience is their criterion of truth. (Underhill 2002, p. 27)

Obviously, Darwin’s theory may simply serve as an example of one of many theories of those days to show that natural sciences and especially their mechanistic interpretations were becoming so strong and important that scientific potential appeared to be infinite. While metaphysicians had often thematised the same topics studied in biology, physics and chemistry in the nineteenth century, generally they did not reduce the whole universe and the essence of humanity to a materialistic and mechanic process, which could be explained fully with the help of rational and scientific concepts and methods. But in the nineteenth century, as mentioned above, the idea that with the help of rationality everything becomes understandable because everything rests on rational premises became so prominent that it shaped all discussions and discourses. The idea that natural events and actions of (human) beings could be explained and, in consequence, also predicted with the help of rational, and often mechanistic theories was definitely no rarity. How far these ideas went can, for example, be perfectly illustrated with the help of the German philosopher Arnold Gehlen, who clearly named one of the more obscure examples of a mechanistic approach of those days:

The question if the life of the [human] soul works according to the laws of mechanics has once occupied psychology actively. This led to huge controversies and to the composition of more than one so called >>holistic<< method. (Gehlen 2004, p. 116; my own translation)

The point of all these mechanistic approaches to various theories of natural sciences is that if something is explainable with the help of the rational mind, then it is also predictable, even if we do not yet possess the necessary tools to make these predictions. Thus if the process of natural selection is a mechanistic and automatic one and if we have all necessary data about the environment and know what kind of modifications would be best for such an environment, then we will be able to predict how (human) beings will develop and evolve in the future. And if the mind and brain of human beings is simply the result of the natural selection and if its key characteristic is simply to define actions and thoughts which are helpful for the survival of the individual, then—again with enough data—we will one day be able to calculate and predict which kind of actions a human being will set in a specific environment. The world becomes, so to speak, deterministic and unfree, and the future is no longer an open and a creative space, but much more a calculable and predictable entity that can neither be avoided nor escaped.

3 Bergson's Combination of Rationality and Intuition

Henri Bergson's philosophy stands between these two interpretations. He is neither a mechanistic thinker with a firm belief in the complete and total control through natural sciences nor is he a lofty artist philosopher who is more interested in style than in content. Bergson tries much more to combine (natural) sciences and intuitive philosophy in a unique way (see for example Bergson 2008, pp. 49–51; 57–60 as well as Bergson 2013b, pp. 158–159, and also Margreiter 1997, p. 201 and Deleuze 2007, p. 33). The important part is, simply put, that Bergson tries to break the predominance of rational thought, while still acknowledging its distinct potential for certain questions:

Our hopelessly presumptuous reason imagines possessing all essential elements to recognize and understand the truth either by birth right or by right of conquest, innate or acquired. (Bergson 1959, p. 41; my own translation)⁸

His attempt to connect these two seemingly different ways of thinking can be easily shown by his interpretation of Darwin's theory of evolution. Bergson acknowledges the general idea that one part of the human mind is especially designed for survival and for practical use and that this part can actually be explained and predicted (to a certain point) with the help of the theory of evolution: "In its natural state intelligence aims at a pragmatic goal." (Bergson 1959, p. 110; my own translation)⁹

This part of the human mind can be labelled as the analytical faculty. However, at the same time Bergson clearly argues against the attempt to restrict the human mind to its analytical capabilities. For human beings also possess something else than their rational mind, namely their potential to gain so-called *intuitive* insights. (Kolakowski 1985, pp. 14–17) Bergson, therefore, tries to create an understanding of the world which does not negate the important contributions of the rational mind, but also highlights the fact that no holistic understanding of the universe and of human beings is possible solely with the help of the analytical faculty (see for example Bergson 1959, pp. 107–116):

Whatever it [the intelligence/the analytical faculty, J.J.] then does, it converts the organised into the non-organised, because without reversing its direction and without perverting itself it wouldn't know how to grasp true continuity, real mobility, reciprocal intersection and to say it all, this creative ["créatrice"] evolution, which is life. (Bergson 1959, p. 114; my own translation)¹⁰

⁸ French version: "Notre raison, incurablement présomptueuse, s' imagine posséder par droit de naissance ou par droit de conquête, innés ou appris, tous les éléments essentiels de la connaissance de la vérité."

⁹ French version: "L' intelligence, à l' état naturel, vise un but pratiquement utile."

¹⁰ French version: "Quoi qu' elle fasse alors, elle résout l' organisé en inorganisé, car elle ne saurait, sans renverser sa direction naturelle et sans se tordre sur elle-même, penser la continuité vraie, la mobilité réelle, la compénétration réciproque et, pour tout dire, cette évolution créatrice qui est la vie."

Bergson argues time and again for the human potential to combine both rational and intuitive outlooks and he does so with the help of Darwin's theory of evolution, namely in that way that evolution is "responsible" for the development of both the intellect and the intuition, the analytic and the intuitive faculty (see for example Bergson 2013b, pp. 190–198). Or as Bergson puts it:

We said that life, since its origins, has been the continuation of one and the same impetus ["*élan*"] which separates itself into diverging lines of evolution. (Bergson 1959, p. 45; my own translation)¹¹

However, before we can look at Bergson's interpretation of this theory in detail, we need to clarify a few vital points about his ontology in order to better understand the combination of rationality and intuition.

3.1 Bergson's Process Ontology

Henri Bergson builds his philosophy on few central building stones, one of them is the concept of the so-called *élan vital* (vital impetus/vital force).¹² This concept can be described in the following way: the whole universe and therefore all human beings are not only infused by this force of the so-called *élan vital*, but the whole universe and all human beings *are*, in fact, this force. The universe is basically nothing else than energy and, in consequence, a never ending process. Bergson uses the picture of an explosion as a metaphor in order to tell his readers more about this rather abstract concept of the *élan vital*:

But we have to deal here with a grenade which immediately bursts into fragments; fragments which themselves have been some sort of grenades which then again immediately burst into further fragments, which again were meant to burst and so forth, [...] (Bergson 1959, p. 73; my own translation)¹³

Naturally this metaphor¹⁴ of an explosion demands interpretation, and if we take a good look at it we can come to the following conclusions: (1) Firstly, in Bergson's philosophy the universe must be understood as a continuous and dynamic process.

¹¹ French version: "Nous disions que la vie, depuis ses origines, est la continuation d'un seul et même élan qui s'est partagé entre des lignes d'évolution divergentes."

¹² The concept of the *élan vital* is, of course, highly linked to *the* central term in Bergson's philosophy namely *la durée* (duration) which demonstrates that we have to think of time not in the form of spatial parts, but as an ever flowing process. We will see that the *élan vital* can basically be described in the same manner.

¹³ French version: "Mais nous avons affaire ici à un obus qui a tout de suite éclaté en fragments, lesquels, étant eux-mêmes des espèces d'obus, ont éclaté à leur tour en fragments destinés à éclater encore, et ainsi de suite pendant fort longtemps."

¹⁴ It is important to note that it is a vital part of Bergson's philosophy that he uses metaphors or pictures in order to explain his key concept of the *élan vital*. According to Bergson it is impossible to explain intuitive knowledge with the help of classic language, which is based on rationality because words always limit the experience and make it rigid and stiff. Therefore Bergson is faced with the well-known problem of how he should explain his intuitive insight that the universe has to be understood as an *élan vital* without being able to talk with philosophical words about this concept since these terms would always corrupt his concept and his idea. We will come back to this problem later in the essay. (Bergson 2013a, pp. 54, 57)

This, secondly, leads us to point (2): there are no entities in our universe which are stiff and invariable and can be understood simply with the help of a mechanistic concept or even the rational mind per se. This has to do with the fact that for Bergson our rational mind and especially mechanistic concepts are only able to grasp rigid entities, but not ongoing processes (Bergson 2013b, pp. 19–21; Kolakowski 1985, p. 74):

The intellectual understanding, when referring to a certain aspect of lifeless matter, on the contrary has to present us with its faithful imprint, which has been printed on this particular object. It only becomes relative when it pretends to represent life, so to say the printer who took the imprint. (Bergson 1959, p. 9; my own translation)¹⁵

And if everything in the universe is actually a dynamic process, then our rational mind can only ever grant us a very limited look at worldly phenomena. But if that is the case, why do so many objects appear solid and invariable to the human eye? This has, at least to a certain degree, to do with the fact that these seemingly rigid phenomena are “grenade fragments” whose energy level is rather low. The energy impetus granted by the explosion of the “grenade” is beginning to fade away. A stone serves as a good example for such a “grenade fragment” with little energy, since it appears to our human eyes as completely solid and unchanging, while—in reality—the spark of energy is still present, although it is basically hidden to our modes of perception. The energy of the stone and therefore its process-character is simply so low that we cannot see it with our limited rational faculties. Or to say it differently: the stone is and remains a changing object, but we are not able to perceive it as such a phenomenon. Other entities like, for example, young children or young plants that develop so fast that the process of growth is almost visible with the naked human eye have to be understood as “fragments” with a lot of energy. This, of course, explains why the process is visible at all. (Bergson 2013b, pp. 19–21; Fellmann 1993, pp. 76–77)

Along with these two conclusions come two very important additional points concerning the question of how Bergson interprets the future: (1) This *élan vital* is actually “flowing” or developing in some kind of direction, however, neither do we know where this movement will ultimately lead it nor does the *élan vital* know its destination itself.¹⁶ It creates the universe and with it the future as it spontaneously and creatively evolves. (Albert 1995, pp. 94–96; Bergson 2013b, p. 42; Cohen 1999, p. 26) So, on the one hand, the future seems to be unpredictable, because it is constantly spontaneously designed (see for example Bergson 2013b, pp. 69–70; 107–119):

¹⁵ French version: “La connaissance intellectuelle, en tant qu’elle se rapporte à un certain aspect de la matière inerte, doit au contraire nous en présenter l’empreinte fidèle, ayant été clichée sur cet objet particulier. Elle ne devient relative que si elle prétend, telle qu’elle est, nous représenter la vie, c’est-à-dire le clicheur qui a pris l’empreinte.”

¹⁶ It remains one of the most difficult aspects of Bergson’s last work “Les deux sources de la morale et de la religion” to understand how the *élan vital* can at the same time flow into a certain direction and be somehow aimless.

Duration [and the *élan vital*] become[...] synonymous with existence—with life as perpetual change and invention of novelty. (Guerlac 2006, p. 6)

But on the other hand, and this constitutes the second important point, (2) Bergson believes that if the universe is energy and continuous process, then we cannot understand the future completely and holistically with the help of our analytic mind. As mentioned before, our analytical mind is only capable of working with classic rationality and with rigid and fixed terms and concepts, but when we use such categories or such modes of thought then we destroy the process-character of what we are trying to understand, in this case the future. As soon as we use our analytical mind to attempt a complete understanding of coming events, we try to apply a rigid and inflexible pattern on a process and therefore violate its basic structure and its essence. We are then only able to perceive a certain rigid and stiff excerpt of the real phenomenon and so we are ignoring its process-character, which actually is its key characteristic. (Kolakowski 1985, p. 74)

If we link this basic ontological premise of the so-called *élan vital* with the theory of evolution, then we get the following picture: the explosion of the “grenade” and the discharged energy spread and scatter according to the lines of evolution. This means that the evolution of beings is the direct result of the nascent energy of the *élan vital*:

When the grenade explodes, its fragmentation into particles can at the same time be explained by the explosive force of the powder that it contains and by the resistance imposed by the metal. The same accounts to the fragmentation of life into individuals and species. (Bergson 1959, p. 74; my own translation)¹⁷

So the process of life and of the universe was given shape in the form of an evolution into species and individuals. This evolution and development, which we can experience in our universe, therefore represents, at least to a certain degree, the direction this energy is taking. (Bergson 2013b, p. 69) As we can see here Bergson interprets Darwin’s theory of evolution according to his unique process ontology, which leads to interesting consequences not only for the question of how rationality and intuition are combined in the potential of human beings, but also for the question of what we can say about the future and what the future will bring.

3.2 The Evolution of Man: From Instinct to Intuition

According to Bergson animals have little to none analytical capabilities, but thanks to their *instinct* they are able to interact with life and the *élan vital* in a unique and direct way. (Bergson 2013b, pp. 162–165) But what does that exactly mean? First and foremost, this explains nothing else than that the faculty of instinct works “unconsciously”. This means that the animals are not able to distance themselves from themselves and realize that their way of perceiving the world happens via the

¹⁷ French version: “Quand l’obus éclate, sa fragmentation particulière s’explique tout à la fois par la force explosive de la poudre qu’il renferme et par la résistance que le métal y oppose. Ainsi pour la fragmentation de la vie en individus et en espèces.”

help of their instinct. From this perspective animals are not able to change to a meta-perspective. On the one hand this leads to enormous advantages for animals because they manage to directly interact and live within the so-called *élan vital*, the everlasting and ever flowing process of life. Because of the animals' missing analytical faculty the animal never exists in distance to its life and the *élan vital*, but it is always rooted directly in the process of life. The animal, therefore, experiences the *élan vital* in its processual character, and this means nothing else than that animals are in fact much closer to reality than human beings. One could also say that the animal constantly exists in the present. On the other hand this strength of the animal is simultaneously its weakness, because an animal can never reflect on its actions and its life since it does not have a functioning analytical faculty. All of its actions happen naturally and, as mentioned before, instinctively, which leads to different consequences. For example most animals are unable to build and use inorganic tools and they are not able to construct a specific form of language like human beings, et cetera. (Bergson 2013b, p. 191; Jurevičs 1949, p. 175) Although natural sciences have made a lot of progress in investigating animals and some opinions of Bergson are not valid any more¹⁸, the overall point still stands: animals are more and specifically driven by instinct.

Now, if the theory of evolution is true and if animals have a faculty called instinct with the help of which they are able to interact directly with the *élan vital*, what does that mean for us human beings? Could it be that there is nothing left of the animal spirit in us and that we are forced to act simply within the boundaries of rationality? Is our rational mind the only faculty of perception we can use? Without doubt, rationality respectively the analytical faculty is the great and definable evolutionary step human beings are famous for and proud of. In contrast to animals, human beings are able to distance themselves from their actions and from the world. They can reflect on their actions and on themselves and thus, to speak with Bergson, they constantly step out of the ever flowing stream/process of life. On the downside, the analytical faculty cannot ever bring us directly in contact with the *élan vital*, because our rationality always brings forth fragmentations and, in consequence, is unable to experience life in its processual character (Fellmann 1993, p. 78):

Bergson will argue that science gives us the world mediated through symbols, which deform our sense of reality to the extent that they immobilize what we experience as occurring in temporal flow. He will argue that ordinary language only reinforces the worldview established by the formal languages of mathematics, and that all of these modes of symbolic representation interfere with our ability to grasp the temporal nature of reality. They crush our sense of duration. (Guerlac 2006, p. 19)

Bergson uses the example of a musical piece in order to illustrate his point in detail: Our analytic mind is able to abstract certain notes or passages from a musical piece and analyses it with regard to its compositional value or its complexity. But our

¹⁸ Bergson's general examination and occupation with animals and the latest biological research once again underlines the point that Bergson was always interested in the natural sciences and tried to implement new scientific research in his philosophy and his thinking. A good example can also be found in his small work "Le Rire", in which he talks about animals' (in)ability to laugh.

rational investigation of this musical piece will never be the same as actually listening to the music. Only when the musical piece is played and when all notes coalesce into a stream of music we are able to really perceive what this composition is all about. With the help of our rationality we, of course, also gain a certain insight into what this musical piece is all about, but we can never perceive it unfolding itself and we can never recognize it in its proper processual character. We can only “rip out” a certain part of it and, in consequence, fragment the piece, which obtains its beauty not by its single parts which are analysed piece by piece, but by listening to the flow and constant interaction of its parts, which become one in the ever flowing process. (Bergson 2012, pp. 77–78; Jurevičs 1949, p. 41)

Naturally the same accounts for our perception of life and the universe in general. With the help of rationality we are undoubtedly able to fragment reality and take a very close look at its singular parts, but we are never able to really experience the *élan vital* in its processual character. But if animals are able to do that, why can we not do the same? Since human beings are also animals and since the *élan vital* discloses itself through evolution, it seems obvious that human beings must have the capabilities to overcome the ever distant and rigid rationality and find a faculty and a method to get directly into contact with the ever flowing process of life. Bergson believes that we can indeed do that and that we have the necessary faculty, which usually just lies dormant, namely the so-called *intuition* (see for example Bergson 2013b, pp. 191–203):

But intuition, which I would like to call the uninterested and self-aware form of instinct and which is able to reflect upon its object and broaden it indefinitely, would lead us into the inside of life itself. (Bergson 1959, p. 123; my own translation)¹⁹

Man is not, on Bergson’s terms, primarily an instinctive animal. He is a vertebrate, hence a creature of intelligence. In man, however, can be found potentially compensatory instinctive capacities which, if extended and made reflective, might give us the key to many puzzles. These insights Bergson calls “intuitions”. (Gunter 1982, p. 644)

The following can be said in order to sum up this basic thesis before we move on to look in detail at the idea of *intuition* and its meaning for an interpretation and an anticipation of the future: (1) the universe is not something rigid and fixed, but much more a continuous dynamic process which expresses itself in the form of evolution, a theory made famous by Charles Darwin and then uniquely interpreted by Henri Bergson. (2) Because of the ontological structure of the universe, the analytic mind of human beings is not enough to fully comprehend the essence of this world. In order to understand the *élan vital*, we need a method or faculty which enables us to understand the energetic process in its processual state. Bergson sees the instinctive faculty of the animal as some kind of proof for the assumption that we human beings must also have the capability to not only look at life from a distant, rational

¹⁹ French version: “Mais c’est à l’intérieur même de la vie que nous conduirait l’intuition, je veux dire l’instinct devenu désintéressé, conscient de lui-même, capable de réfléchir sur son objet et de l’élargir indéfiniment.”

perspective, but to perceive the stream of life in its processual character. The faculty for such a view is our intuitive potential.

4 An Intuitive Approach to Philosophy

Intuition is a term which has often been used in the history of philosophy and which, in consequence, has a lot of different connotations. In Bergson's philosophy *intuition* means first and foremost a way of thinking which allows the recognition of processes in their processual character:

Intuition is what reaches spirit, duration [la durée] and pure change. (Bergson 1969, p. 23; my own translation)²⁰

Or as the German philosopher Bollnow puts it:

Intuition captures the plurality and the diversity at once, without having to take the detour of the discursive method of the mind. It [the intuition] is therefore capable to perceive the flowing in its processual character. (Bollnow 1958, p. 51; my own translation)

Such a form of thinking is not only difficult to fathom, but also hard to explain. An intuition is some kind of borderline experience (Jurevičs 1949, p. 97) which is related to so-called mystical experiences.²¹ Thus an intuition has to be understood as a form of direct view respectively direct experience that has no need for symbols or pictures. Since any intuition constitutes direct and imageless knowledge and insight it is highly difficult to talk and to transmit these insights to other people because human beings are solely able to communicate with the help of words, symbols and pictures. (Bollnow 1958, p. 51; Margreiter 1997, p. 201) That is why Bergson tried to invent so-called fluid terms (“des concepts fluides”), which is basically another term for metaphors and analogies (Bergson 2013a, p. 54; Mullarkey 1999, p. 9). The Bergsonian concept of the *élan vital*, which is explained by the energetic explosion of a “grenade”, is the perfect example of such a fluid term. Of course, the energetic explosion of a “grenade” is only a metaphor, but with the help of such pictures certain insights which cannot be grasped by man's rationality can be transmitted, at least to a certain degree.

Even though it already seems to be highly difficult to talk about such an abstract and un-speakable concept like intuitive experience, Bergson wants to go even further and implement his concept of intuition as a specific kind of philosophical method. But how can a borderline experience actually serve as a method for philosophy?

Here we reach the point where Bergson explains how intuition and rationality, two concepts which seem to be diametrically opposed, have to work together in order to reach philosophical knowledge:

²⁰ French version: “L'intuition est ce qui atteint l'esprit, la durée, le changement pur.”

²¹ Bergson deals extensively with the question of mysticism in his last great work called “Les deux sources de la morale et de la religion” which was first released in 1932.

We therefore assign a limited object to metaphysics, mainly the mind [“l’esprit”], and a special method, above all intuition. From there, we neatly distinguish between metaphysics and science. But from there we also attribute the same value to both of them. We believe that both, the one and the other, can touch the heart of reality. (Bergson 1969, p. 26; my own translation)²²

Intuition shall, of course, not work as a classic and analytic method, but intuitive experiences can still serve as some kind of beacon of light for philosophers. This means that according to Bergson it is likely that philosophers have some intuitive ideas and thoughts which haunt them, but which cannot easily be explained by classic reason and are therefore dismissed as “irrational”. Philosophers then have to try to come as close to this intuitive grasping of reality as possible with the help of rational concepts and philosophical language. They have to struggle with words and try to find ways to speak about their intuitive experience which guides their philosophy. One can therefore almost speak of a dialectic relationship between intellect respectively rationality and intuition. This close relationship between rationality and intuition can also be shown by the fact that Bergson does not believe in any kind of wondrous intuitive insight into phenomena one rationally does not know anything about:

Intuition by the way will only be transmitted by reason/intellect. It is more than idea. Nevertheless, in order to spread/to be transmitted intuition and ideas will have to overlap. (Bergson 1969, p. 31; my own translation)²³

This means that if one, for example, believes that he or she can have intuitive insights into the scientific field of astrophysics or also philosophy without ever having read anything about these topics and ideas, then he or she is plainly wrong. Intellect and intuition work together and intuition is no shortcut to knowledge. Only after one has studied the respective field or science of life in general and only after one has tried to understand different concepts with the help of rationality, is it possible to have this intuitive or even mystical insight which is then basically nothing else but a sudden understanding of the process of reality. (Bergson 2008, pp. 49–51; 57–60; Deleuze 2007, p. 33; Kolakowski 1985, p. 41) Still, after such an intuition has happened it needs to be translated into partly rational means and words in order to talk about what has been gained through the intuition, even though our “normal” language always robs these experiences and insights of their processual character, which is why Bergson tried to work with the aforementioned fluid terms.

All in all intuition and intellect always have to work together and both faculties have to be utilised in the right way in order to gain a holistic understanding of reality. The key is not to ignore rationality and its potentials, but to acknowledge the great possibilities and seriousness that lie in intuitive experiences, which have to be

²² French version: “Nous assignons donc à la métaphysique un objet limité, principalement l’esprit, et une méthode spéciale, avant tout l’intuition. Par là nous distinguons nettement la métaphysique de la science. Mais par là aussi nous leur attribuons une égale valeur. Nous croyons qu’elles peuvent, l’une et l’autre, toucher le fond de la réalité.”

²³ French version: “L’intuition ne se communiquera d’ailleurs que par l’intelligence. Elle est plus qu’idée; elle devra toutefois, pour se transmettre, chevaucher sur des idées.”

taken seriously because they allow a glimpse into the processual character of reality. It is therefore vital to understand that Bergson neither rejects rational sciences nor does he want to replace them completely by an intuitive approach or method. However, Bergson does indicate that we are in constant danger of overestimating our rationality and of underestimating our intuitive traits (Bergson 2013b, p. 63). Or as two interpreters of Bergson put it very clearly:

He [Bergson] also saw that science posed a threat: the risk of overstepping its bounds and of trying to explain what it could never understand. (Guerlac 2006, p. 42)

Bergson never declares science and the analytical mind as useless; he rather states that because of their specific essence and character they are unable to really fathom the phenomena of creativity and time. (Kolakowski 1985, p. 13; my own translation)

In this sense (natural) sciences are clearly overstepping their boundaries when trying to anticipate and predict the future solely with the help of calculable, mechanistic and/or rational means. But how shall we then, according to Bergson, treat questions about the future?

5 The Future as an Open and Spontaneous Phenomenon

Bergson's ideas concerning process ontology and intuition are extremely helpful when we try to gain a new and fresh perspective on the question of the future and of anticipation. In a lot of cases we just think about the future in polarities, because we either believe that we are able to anticipate (or at least calculate to a certain probability) what the future will bring or we think that very few things can actually be predicted when it comes to long-term consequences and events. And we usually assume that we can either anticipate our future with the help of rationality or we are convinced that it is not possible at all. But Henri Bergson's philosophy teaches us something that was later made famous by Jacques Derrida and his idea of the *différance* (for example Hill 2007, p. 16), namely that no matter what kind of pole in a dualistic system we affirm, we always acknowledge the other pole as well, since we validate the dualist system as a whole by choosing one pole. This means that no matter if we either believe in determinism and predictability or if we believe in total freedom and unpredictability, it is actually (in some ways) the same because we are only choosing and acting within a constant and invariable frame of reference. This, of course, also accounts for the question whether or not we believe that with the help of rationalism we can predict the future. No matter which side we choose, we are unable to leave the dualist system and acknowledge it at the same time. And this problem goes even further: one could say that the polarity between predictability and unpredictability, between determinism and freedom, between rationality and creativity itself is constructed by our rational mind and it, therefore, needs to be forced open if we really want to gain new insights and if we want to understand that

nothing in the world solely works according to seemingly fixed and rigid entities, but according to processes.

In his philosophy Henri Bergson therefore forces us to take another look at the world, which naturally affects our way of thinking about the future in general as well. The *élan vital*, the ever flowing energetic explosion, evolves in a certain kind of direction, but at the same time it remains unknown where this direction will lead to and what exactly will happen on the way this energy is taking. Thus, on the one hand the future remains an open, creative and also spontaneous phenomenon, but on the other hand it is possible to get directly into contact with the *élan vital* via the help of our intuition and to catch a glimpse (at least in some way) of the direction this *élan vital* is taking. If we oversimplify this theory, we dare say that we simultaneously can and cannot know and predict anything about the future. This can be said for different reasons: (1) First of all, as has been mentioned many times, Bergson does not reject rationality nor its ability to predict and anticipate as a whole. As we have seen, various “fragments” of the so-called “grenade” have little energy left and their processual character has slowed down tremendously, which makes it easier for rational thought to tell us something about its future development. It is, to use a simple example, easier to predict the development of a stone in one’s own garden than to (fully) anticipate the development of one’s own child. So the calculable and rational way of predicting the future is, of course, possible in some ways, but it has its clear limits. (2) Secondly, an intuitive approach to the future cannot simply complement the rational way of anticipating the future nor does it make it possible for us to know everything that will happen, because the *élan vital* itself does not follow a clear and fixed path. This means that even with the help of intuition we can never fully predict the development and evolution of the energy of life. But even if we could do that, we would, (3) thirdly, always be faced with the difficulty that an intuitive experience is much more complex to communicate and even to understand for oneself. No doubt, thanks to intuitive perception and insight it is possible to gain a glimpse into the developments and evolutions of the future, but it can never be grasped as sharply and as precisely as we are used to when we exercise our rational faculty.

If we close the curve and return to the anarchist philosopher John Zerzan, who mentioned that Bergson was the first Western philosopher who tried to break free from the system of numbers and quantities, we can in some way agree with his thought and adapt it on a broader basis. (1) First of all, Bergson’s theories and thoughts call for a rather unique bridge between rationality and “irrationality”, between reason and intuition, between order and chaos. This connection between such and similar phenomena allow us a unique interpretation of the future. This means that, (2) while some aspects of the future seem to be so stiff and rigid that they can actually be predicted solely with the help of rational reasons, there are other aspects—as for example the development of human beings—which will forever remain unpredictable if we only use our analytical faculty. That is because the “fragment” of the “grenade” which represents a human being is still too energetic and too powerful, and that is why only intuitive insights may help us to understand some of the characteristics of this process. The future is, as mentioned before, an open and undefined time and phenomenon. The question that now

remains is the following: what follows from such an insight? Basically nothing else than (3) that man's need to continuously order the universe and the future and to make them rigid and stiff will not help in getting a clearer picture of the coming events. The real challenge is not to impose rational order on an energetic and free process, but to learn to live with some form of chaos, free development, and spontaneous evolution in the universe.

Acknowledgements Open access funding provided by University of Innsbruck and Medical University of Innsbruck.

Open Access This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

References

- Albert K (1995) *Lebensphilosophie—Von den Anfängen bei Nietzsche bis zu ihrer Kritik bei Lukacs*. Karl Alber Verlag, Freiburg
- Bergson, H (1959) *L'évolution créatrice*. Les Presses universitaires de France, Paris. Online-version: http://classiques.uqac.ca/classiques/bergson_henri/evolution_creatrice/evolution_creatrice.doc. Accessed 13 Nov 2016
- Bergson, H (1969) *La pensée et la mouvant*. Essais et conférences. Les Presses universitaires de France, Paris. Onlin-version: http://classiques.uqac.ca/classiques/bergson_henri/pensee_mouvant/bergson_pensee_mouvant.doc. Accessed 13 Nov 2016
- Bergson, H (2008) *Denken und schöpferisches Werden [= La pensée et le mouvant*. Essais et conférences, 1938]. Europäische Verlagsanstalt, Hamburg
- Bergson H (2012) *Zeit und Freiheit [= Essai sur les donées immédiates de la conscience, 1889]*. CEP Europäische Verlagsanstalt, Hamburg
- Bergson, H (2013a) *Philosophie der Dauer*. Gilles Deleuze (ed), Felix Meiner, Hamburg
- Bergson H (2013b) *Schöpferische Evolution [= L'évolution créatrice, 1907]*. Felix Meiner, Hamburg
- Bollnow OF (1958) *Die Lebensphilosophie*. Springer, Berlin
- Cohen RA (1999) Philo, Spinoza, Bergson: The Rise of an Ecological Age. In: Mullarkey J (ed) *The New Bergson*. Manchester University Press, Manchester, pp 18–31
- Darwin C (2006) *On the origin of species by means of natural selection*. Dover Publications, New York
- Deleuze G (2007) *Henri Bergson zur Einführung*. Junius Verlag, Hamburg
- Fellmann F (1993) *Lebensphilosophie Elemente einer Theorie der Selbsterfahrung*. Rowohlt, Reinbek bei Hamburg
- Gehlen A (2004) *Die Seele im technischen Zeitalter und andere sozialpsychologische, soziologische und kulturanalytische Schriften*. In: Rehberg K-S (ed) *Gesamtausgabe*, vol 6. Vittorio Klostermann, Frankfurt am Main
- Guerlac S (2006) *Thinking in time: an introduction to Henri Bergson*. Cornell University Press, Ithaca
- Gunter PAY (1982) Bergson and Jung. *J Hist Ideas* 43(4):635–652
- Hill L (2007) *The Cambridge introduction to Jacques Derrida*. Cambridge University Press, Cambridge
- Jankélévitch V (1994) *Bergson lesen*. Turia + Kant, Wien
- Jurevičs P (1949) *Henri Bergson. Eine Einführung in seine Philosophie*. Karl Alber Verlag, Freiburg
- Kolakowski L (1985) *Henri Bergson. Ein Dichterphilosoph*. Piper Verlag, München/Zürich
- Lloyd EA (1998) *Evolution, theory of*. In: Craig E (ed) *Routledge encyclopedia of philosophy*, vol 3 *Descartes, Rene-Gender and science*. Routledge, London, pp 476–483
- Margreiter R (1997) *Erfahrung und Mystik – Grenzen der Symbolisierung*. Akademie Verlag, Berlin

- Mullarkey J (1999) Introduction – La Philosophie nouvelle or Change in Philosophie. In: Mullarkey J (ed) *The New Bergson*. Manchester University Press, Manchester, pp 1–18
- Rensch B (1972) Evolutionstheorie. In: Ritter J (ed) *Historisches Wörterbuch der Philosophie* vol 2: D-F. Wissenschaftliche Buchgesellschaft, Darmstadt, pp 836–838
- Underhill E (2002) *Mysticism—a study in the nature and development of spiritual consciousness*. Dover Publications, New York
- Worms F (2013) *Über Leben*. Merve Verlag, Berlin
- Zerzan J (2015) *Why hope? The stand against civilization*. Feral House, Port Townsend