

## The Way We Become Free

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*Published in:*  
The Noosphere Outside In

*Publication date:*  
2023

*Document Version:*  
Submitted manuscript

[Link to publication](#)

*Citation for published version (APA):*  
Weinbaum, W. D. R. (2023). The Way We Become Free: Further thoughts on the evolution of freedom. Manuscript submitted for publication. In *The Noosphere Outside In: Consciousness Beyond Autopoiesis* Bright Hall Publishing.

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[Submitted to:] M. Lenartowicz & Jessie Eggers (Eds.) The Noosphere Outside In: Consciousness Beyond Autopoiesis (Forthcoming 2023)

# **The Way We Become Free**

Further thoughts on the evolution of freedom

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## ***Abstract***

“The way we become free” continues where “The way we are free” has left off in finding the more profound meaning of the epistemic gap which is a concept central to understanding the kind of freedom agents, humans and others can enjoy that is compatible with determinism. After a brief introduction that connects this article to the previous one, the body of this article is divided into three parts that deconstruct the somewhat simplified procedural basis of the epistemic gap that was developed in the previous paper, replacing it with progressively deeper understanding of the nature of the gap. The first part analyzes connections between the complexity of processes such as those taking place in the unfoldment of choice and deliberation on one hand, and compressibility and predictability of models representing such processes on the other hand. It continues to examine the effects of complexity on the epistemic gap exploring three characteristics of complex processes, namely, hidden parameters, historicity and sensitivity. The last section of this part further examines how distinct events, and their relations (particularly cause-effect relations) are formed highlighting the constructive role of the agent in forming them. The conception of the process of choice as constituted from sequences of a priori defined connected events is replaced with a more subtle description. In the second part, the Bergsonian perspective on freedom is explored in some detail. Central to this exploration is Bergson’s concept of duration, how it affects our understanding of time, and consequently understanding the epistemic gap as the loci of a generative process of individuation – not merely being free as a state but becoming free as an open-ended process. The final part further illustrates the individuation of freedom in the dynamic balance between goal-oriented cognitive processes and the open-ended unfoldment of conscious experience in duration. The article concludes by raising the idea of freedom as a pure quality beyond the grasp of philosophical discourse.

## 1. Introduction

In my paper “The Way We Are Free” [Ref in the book] written more than 10 years ago, I developed an alternative understanding of freedom compatible with our understanding of determinism and causative closure and yet far from rendering the concept of individual freedom null. Central to this understanding was the concept of *epistemic gap*. An epistemic gap arises as a minimal time interval necessary for the unfoldment of a mental process from being determinable by its causative circumstances to being actually determined. Within this time interval, while my analysis gives up on the notion of a so-called free cause-independent choice, the agent remains the sole and original author of the resulting mental state whether it remains within the sphere of one’s subjectivity or is expressed by action effective in one’s environment and is perceivable.

The idea behind the existence of the epistemic gap is that the unfoldment of a mental state (and generally any state of affairs in the world) requires the execution of a certain procedure – a chained sequence of events, the outcome of which requires a minimal time interval. During this interval the outcome of the procedure *cannot be known*. Among all agents that are somehow informed by the same causative circumstances, the one quickest to determine the outcome will be privileged among all others because once the outcome is finally determined, the epistemic gap closes, disappears, *for all the agents*. Still, while the gap is open, we do not and cannot know the outcome though it is a determinable outcome. Simply, being determinable and being determined are not one and the same, and since the latter is not simultaneous with the former and requires a process of determination, while this process takes place, the knowledge of the consequence cannot be available.

The kind of freedom allowed by this non-availability of knowledge during the epistemic gap, is indeed not the supramundane intervention that defies determinism and causal closure promised by the more naïve understanding of free will. It is rather a natural process of determination, of bringing forth the genuine and unique self-knowledge that

was not and could not be available otherwise. Still, it can be said that in any such act/process of exercising freedom a person describes and defines herself anew. When making a choice, any choice, a person may become conscious to how the choice (re)defined who she is only once it unfolded to its conclusion. She may become conscious to the fact that the knowledge of the choice irreversibly changed her. Coming to know one's choice is indeed a moment of surprise and wonderment, because if it was indeed a choice, its outcome could not be known beforehand. At the very moment of coming to know the choice that was made, reflections such as "I could have chosen otherwise" are not valid anymore; the reflecting person is not the same person as the one that made the choice. At the very moment of coming to know, the instance of freedom existing within the epistemic gap disappears and responsibility begins (ibid, pp. 17-21).

Since developing these ideas, I was wondering quite often about the nature of the epistemic gap and the seemingly profound connection between freedom and the state of not-knowing as its fundamental condition. In the years that followed I became familiar with the writings of several prominent philosophers primarily Bergson's work about freedom (Bergson, 2001), Deleuze's Bergsonism (Deleuze, 1991). These works among others have helped me to deepen and renew my understanding of the concept of freedom – an understanding I wish to share in this article.

Perhaps the most distilled version of my new understanding is to be found in the title I have chosen, replacing "The way we *are* free", with "The way we *become* free" – a small difference that makes all the difference as I aim to show that freedom is not so much a state of an agent or a mind but rather a process – a process of individuation. We are never free unless we mean 'being free' in the sense of becoming free. As I propose here, this sense releases the concept of freedom from a fixed definition and renders it generative within itself.

The rest of the article is divided into three sections. The first, revisits and further develops the concept of the epistemic gap while examining its complex nature and conditions. The second presents and synthesizes the Bergsonian perspective with the updated understanding of the epistemic gap adding to it a metaphysical depth. The last concluding section further reflects on the concept of freedom in the light of the ideas developed in the preceding sections answering why being free can only be understood in the sense of becoming free.

## **2. Down The Rabbit Hole of The Epistemic Gap**

### *2.1. Determination as computation*

The argument for the existence of the epistemic gap in “The Way We Are Free”, is developed around the idea of the temporal correlation between mental processes of deliberation and choice and their corresponding computational analogs in the brain. Assuming such correspondence is rather a strong assumption, way too strong compared to how causes and effects are related to each other in general. We developed our argument based on the execution of a computational procedure  $P$  based on necessary logical relationships between the results of successive steps of the computation. The principle of causation “like causes lead to like effects”, in contrast, is merely based on repeated empirical observations of the conjunction of cause events to their effect events. From these observations, a general connection is inferred. There is no logical necessity here, merely a somewhat shaky certitude based on past observations/ experiences (Lorkowski C.M., n.d.). The correspondence we have posited in the first article is therefore more exacting than is warranted in realistic cases. Let us consider in some more detail this correspondence. We start with observing a natural process  $P_{\text{natural}}$  (e.g., a neural process in the brain) trying to figure regularities in how it unfolds and relations of dependence in its mechanics. Based on such observations, we then construct a model  $P_{\text{model}}$  representing our knowledge of the regularities and mechanical relationships that have been found. In modelling natural processes, we replace the causative relationships we have found with functions that are logically necessary

relationships. The resulting model can then be turned into a computational procedure  $P$  with the help of which we can *simulate*<sup>1</sup> the natural process artificially and test if the representation we have formed is indeed faithful to the original. Modelling is an extremely powerful mental tool for learning and understanding the world around us. It works well given two conditions: first, is that the observed regularities indeed reflect necessary relationships, that is, deterministic relationships; second, that the representation is faithful to the actual process, that our observation-based knowledge really captures the mechanics involved in the unfoldment of the natural process. Realistically, we can ensure neither the first condition, certainly not the second one. Even for relatively simple cases we can never have complete knowledge of a process based only on a finite number of observations. Models therefore are always to remain simplified approximations to that which they represent.

Coming back to the epistemic gap, due to the inherent fallibility of the second condition, our assumption of correspondence between any actual unfoldment of the process of choice and its simulation by a deterministic computational process is always to remain an approximation. Furthermore, even if the first condition stands perfectly, since determinability merely establishes a necessary dependency between the set of initial conditions and their eventual outcome but is agnostic as to what would that outcome be, it seems that determinability alone helps little in figuring the outcome via simulation. All sorts of unexpected contingencies that are not integral the agent's deliberative process may intervene in it and change its outcome without being reflected by our model because they were never captured by observations. This indeed corresponds to our intuitions about the limits of modelling a world in flux, and we must not forget that the agent himself is an entity in flux too – changing while deliberating. We see already that the idea of the epistemic gap as arising from the time necessary for computation presents only a lower boundary for the duration of the gap. In the following subsections we are going to further examine additional assumptions that

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<sup>1</sup> Simulation is not necessarily a computation run on a computer. In most cases we simulate processes in our minds by reasoning about the logical relationships and functions that form our model. Computers only allow to address much more complex processes by vastly automating such reasoning.

shape this idea so as to refine our understanding not only of the way we are free, but to try to highlight how we become free in the gap.

## *2.2. Complexity and the Epistemic Gap*

Complexity is a vast topic spanning across many disciplines (see e.g., (Heylighen et al., 2006; Mitchell, 2009; Morin, 1992; Simon, 1962)). To learn how complexity affects the epistemic gap and freedom, we need first to introduce it in a manner coherent with the ideas discussed thus far. It is beyond the scope of this article to introduce the topic of complexity in depth. Here we will only consider three important characteristics complex processes, namely, hidden parameters, historicity and sensitivity.

It is worth first to examine the relationships between complexity, compression and predictability. A model of a natural process is supposed to represent as faithfully as possible the mechanism of the process being modelled. We can gain predictive power about the natural process if we are able to simulate it much faster than the time of its natural unfoldment, say by using powerful computing devices or by figuring shortcuts. Knowing the behavior and outcomes of a process much in advance, we can use such knowledge to our advantage. A simple familiar example is the weather forecast. Computing power is only part of the story in this case. Even though we have a pretty good model of the planetary weather system and extremely powerful computers, the state of the art of weather forecasting remains limited to a couple of days at the most and even then, it is prone to gross mispredictions. Why is that? One answer is that the weather system is extremely complex and so is the model. In such cases the predictive power of a model does not depend only on computing power but additionally and more significantly on finding simplified compact models that are still faithful representations of the natural process. Finding such compact models is called in the jargon of computing compression. Creating a compressed model can be understood as leaving out of the model the variables and relations that have little influence on the outcome and remaining with a model representing only the most salient ones. Such compressed models are much simpler and significantly easier to simulate. The combination of



compression and computing power is indeed the key to effective prediction and let us recall that the epistemic gap is always only as long as the time it takes to produce a reliable prediction of the outcome.

This is why establishing cause-effect relationships and relying on them is so very attractive. If I can observe a process and identify a relatively small number of causative conditions that regularly determine its outcome, even by proximity, I have in my hands a model with a significant prediction power. The knowledge that sunrise follows the night pretty much regularly and without failing (till now) allows me to predict that in a few hours the sun will rise, and I can plan ahead accordingly. I do not have to wait till dawn to know just that. I am using a very compressed model to know things much in advance.

An intuitive measure of the complexity of a process is thinking about it in terms of its most compressed model that still faithfully represents its dynamics and reliably predicts its outcomes. A complex process has many variables and relations all or most of which are salient. None of these can be left out without the model seriously losing reliability. Compression then becomes hard if not impossible. The more complex a process is, the less shortcuts are possible, models therefore are less compressible and consequently possessing less predictive power. When it comes to very complex processes such as the ones happening in brains, living cells, social organizations or weather systems, modelling them reliably becomes a very difficult problem and often impossible. Predictability is vastly reduced or simply non-existent. What remains is just observing such processes unfold in their own time. Let us now examine in some more detail those characteristics of complex processes that make them difficult or impossible predict.

### 2.2.1. Hidden Parameters

Hidden parameters encompass everything both variables and relations that influence a process and are missing from its model. Complex processes may have very many internal variables and states and present as many different behaviors. So many in fact that it largely exceeds the number of observations of behaviors one can possibly hope to

perform. In such cases, any model of the process will be based on incomplete knowledge of the process being modelled. Even more disruptive are cases where complex processes may possess internal states or variables that are not directly observable from the outside. The effects of such states are only indirectly expressed via observable behaviors. No matter how detailed a model of such process might be its representation of the process has significant 'blind spots'. Processes with hidden parameters present a wicked challenge to any attempt to predict their outcome. In a typical case we do not even know of the presence of hidden parameters. We only witness an erratic and unexplainable failures of our model's predictions on a background of a relatively reliable performance most of the time. In other cases, a working model simply cannot be found even when based on a large body of observations.

For the case of mental states and their underlying brain processes, it is evident that we are facing an extremely complex system with many hidden parameters. The complexity of the human mind is such that even a lifetime of observations will hardly be enough to form a reliable model. Prediction beyond simple heuristics is currently impossible. Fortunately, it seems people keep on surprising each other pretty frequently. In terms of the arguments presented in the preceding article, this means more freedom.

### 2.2.2. Historicity

The concept of historicity is the case where the present behavior of a process depends on its history of interactions. For humans, it is evident that past experiences affect one's choices not less if not more than the current situation. But historicity is a feature of complex processes in general. The dependency on historical events can itself be simple or complex but the major effect in relation to the epistemic gap is that observations made only on discrete instances do not provide anymore enough knowledge about how the observed process unfolds. Once preceding instances are known to have left their signature, so to speak, on the current instance, a good model must take these into account. This brings up at least three complications in building the model. First, if the process is influenced by long term history (e.g., the influence of childhood experiences

on the behavior patterns of an adult person), we might not have much of the relevant knowledge required to build a faithful model. Second, even if the process is influenced by relatively short-term history, and the historical information is available, there arises a technical problem that simulating a single instance of the process requires processing the information of many instances backward which makes it computing-intensive. In such cases the predictive power of a model is reduced simply because it takes longer to compute the prediction. This is a major reason why weather prediction is complex. Predicting the next day's weather depends on at least few days back weather information. Collecting and processing such information can take a considerable fraction of a day. Third, figuring out regularities of how preceding instances affects the present instance of the process itself becomes a complex difficult problem (e.g., testing the efficacy of an anti-aging drugs).

Considering mental states per se, not merely abstract models of mental states, historicity becomes a very significant factor. The epistemic gap can be said to extend towards the whole history of a person. Here, the principle "like causes lead to like effects" cannot be applied locally but rather more realistically should be understood in the sense "like histories of causes lead to like histories of effects". Again, once we consider the mental processes of persons (and by extension complex processes in general), the epistemic gap allowing one's freedom only gains in substantiality.

### 2.2.3. Sensitivity

A third consequence of complexity to be addressed here is sensitivity. This is perhaps the most disruptive to the possibility of predictability aiming to eliminate the epistemic gap which again renders our ignorance within the gap much less penetrable. Sensitivity is a feature of a specific subset of complex systems or complex procedures having to do with the phenomenon of chaos (Prigogine & Stengers, 1984; Strogatz, 2018) being a result of feedback dynamics<sup>2</sup>. The dynamics of conventional non-chaotic systems is such that

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<sup>2</sup> See an elegant description [here](#).

trajectories of consecutive states tend to converge towards a so-called “steady-state”. This steady-state dynamism reflects the fixed causal relationships and structure of the process. Such processes tend to “forget” their initial states. No matter what such state might be its influence on the process trajectory is transient. In other words, such systems have only short-term memory – limited historicity that can reduce to none.

Cases where the trajectory of unfoldment of a process dynamic is influenced by history were already discussed briefly above. Such processes are indeed sensitive to their initial conditions, but this sensitivity is limited. Beginning from approximately similar initial conditions yield approximately similar unfoldment of trajectories. Even if those history-dependent trajectories remain unique and do not eventually converge into a single dynamic, still, knowledge of the history of the process can afford significant predictive power.

A third category of processes – chaotic processes, are those where the sensitivity to initial conditions is *not limited*. While for processes of the first category, perturbations in the initial conditions have little influence on the eventual trajectory of unfoldment, and for processes of the second category (with historicity) the degree of influence on the trajectory is proportional to the size of the perturbation, for processes of this third category, in contrast, there is an acute sensitivity to perturbations. In other words, even an infinitesimal perturbation of the initial conditions will result in a completely different trajectory. No matter how bounded the difference between the starting points of two trajectories might be, the corresponding development of the two trajectories remains unbound. What this means to our examination of the epistemic gap is that if P is complex and chaotic, the unfoldment  $(C, P) \rightarrow E$  is infinitely sensitive to perturbations in C which renders the correspondence “like causes lead to like effects” inapplicable. For such processes no pattern of regularity can be found as a basis of a faithful model. Chaotic processes’ effects are therefore unpredictable from their causes though they remain entirely deterministic. Furthermore, complex processes may present multiple regimes of sensitivity depending on their initial conditions. These may be converging to

steady state for one range of input events, be sensitive to initial conditions with bounded sensitivity for a second range of input events and become chaotic for yet another range.

In summary we see that complex interactions involved in the production of effects from causes present further deepening or obscuration of the epistemic gap. All three characteristics of complexity discussed here are intuitively familiar to us from everyday application of the theories we form about the minds of other persons. Being familiar with one's history of experience makes one's actions and responses somewhat more intelligible and predictable, while the lack of such knowledge has the opposite effect. Also, emotionally intense states of mind often seem to be closer to a chaotic regime, as a person becomes increasingly sensitive to minute changes in his/her perceptions. Occasionally, a misplaced word, a minute gesture or even a change in intonation can bring about completely unpredictable responses and behaviors.

### *2.3. Are Causes and Effects Discrete Events?*

In "The Way We Are Free" as well as in the most common everyday practices, we are used to parse the continuum of passing time into progressing sequences of distinct events. The whole discourse about causality and determinism is framed in terms of relationships between events. In his *Treatise* (Hume, 2012) Hume defines "cause" as follows:

- 1. An object precedent and contiguous to another, and where all the objects resembling the former are placed in like relations of precedency and contiguity to those objects that resemble the latter.*
- 2. An object precedent and contiguous to another, and so united with it, that the idea of the one determined the mind to form the idea of the other; and the impression of the one to form a more lively idea of the other. (T 1.3.14.31; SBN 170)*

Hume's analysis of the relation of causation and its predictive power argues that the relationship on causation is maintained by the mind and never to be found in the related

events themselves and moreover that the relation is produced and maintained only on account of previous experiences (memory) and based on a *relation of resemblance* between one instance of cause-effect relation to other such remembered experiences (Lorkowski C.M., n.d.).

Without entering the nuances of the definition, we notice two details of interest: first, that causation relates *objects* or their mental representations (their ideas in the language of the definition) and second, the related objects are contiguous, and one precedes the other. What Hume calls *object* and in this writing is termed *event*, plainly associates with a well contoured and distinct entity and where the word contiguity certainly brings up the association of a physical spatial closeness. Before further examining what this particular use of words comes to signify, I would like to direct attention to the very premise of how events appear in the mind. Necessarily, having distinct cause and effect events in mind is to do with a prior operation of distinction. Contiguity speaks of a shared boundary across which a relation is formed. Indeed, when thinking about events, the foremost distinction is that of precedence; the cause event always precedes the effect event. However, this relative situatedness in time is not enough. Between two points in time  $t_a$  and  $t_b$  that comes after  $t_a$ , there are infinite points that could serve to distinguish a former event from a latter one, but only very few if any of such dividing points divides the continuum  $t_a - t_b$  into two events such that we can say that the former *causes* the latter, or that the latter is determined by the former. The points that do allow such distinctive relation are singular and signify the way we make sense of our continuous flow of sense impressions, feelings and thoughts by forming distinctions. In other cases, the same machinery of distinction-making operates in an opposite sense; it contracts many observable changes in the same continuous flow into a single monolithic event e.g., a tune, or an uttered word that are grasped at once.

Differentiating and contracting is how we make sense. We punctuate an endless continuous flow of change into significant events that can be related and reflected upon simultaneously at many levels. This sense-making process, producing at once both us as subjects and the world we find ourselves in, is a profound expression of who or what we

are, as it authors on the fly everything describable and representable in the course of its progression. The distinctions being made, the boundaries that are drawn are the products (or better yet the very substance) of our individuation – of how a confused stream of differences become sequences of sense and action that in turn become a complex ongoing autobiographical happening.

It would seem that certain events we observe in the world around us inevitably cause other events in a manner that is independent of our observation. A gust of wind making an apple fall off its brunch, a lightening followed by a thunder, the movement of the sun across the skies implying the turning of the earth and so many more... Yet, what makes these events what they are, is the same agency that binds them together into cause-effect related structures.

Indeed, we can imagine that events in the world can be punctuated by themselves and for themselves and we can further imagine that as such they repeat in such a manner that the occurrence of some necessitates the occurrence of others thus forming observer independent cause-effect relations. But even if we entertain such idea of natural processes where cause-effect relationships are observer-independent, we need to consider the question of scale<sup>3</sup>. The punctuation of events is scale-dependent, that is, at different scales different kinds of events are physically relevant and therefore different cause-effect relationships. Even for the simple case of two billiard balls approaching, colliding and receding, we can imagine entirely different happenings taking place at different spatiotemporal scales and all these somehow belong to the same phenomenon and are somehow related. What we may consider as a definite phenomenon, definite interactions and relationships that would amount to causative explanations is already selected by setting a priori a scale of relevance. Whatever we can possibly imagine (and it's a lot!) will inevitably be that which makes sense to us as observers – that happening in the world (or in our own minds) that we care about. All the rest is for us indifferent. This very happening surely implies a scale.

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<sup>3</sup> On the problematics of scale and some approaches to address it see: [How Mathematical 'Hocus-Pocus' Saved Particle Physics](#) and [The Cartoon Picture of Magnets That Has Transformed Science](#)

The point I am making here is not anymore about whether the unfoldment of observed events is deterministic and how free are we during such unfoldment. It is about our role as the creators of the underlying landscape of events in relation to which the question of determinism and freedom is posed in the first place. We need to acknowledge the inherently productive role of the process of sense-making – the very process of our individuation in drawing the world lines across which we sense and act and by that progressively become. Causes and effects are indeed, at least to a significant extent, distinct and discrete yet we must consider how they become distinct and by whom. This last question “by whom?” itself folds back into the “how” as boundaries are continuously formed and reformed. I believe that reflecting on that reshapes yet again the question of freedom and places it yet deeper into a process of individuation. It is this process of individuation I chose to denote by redefining the singular first-person pronoun “I” as that which replaces the procedure P in establishing the existence of the epistemic gap. “I” is not a reproduceable or a repeatable procedure like we first depicted P, but rather a unique singular unfoldment of significance – the significance of being somebody.

Regarding processes of individuation, it is essential to note that the freedom of becoming is not indefinite and not everything goes. Human individuals, like other living beings, are products of a long evolutionary process both biological and cultural, meaning that how life events are punctuated – the very manner of sense-making is itself historical and is subject to many preexisting constraints accumulated during long evolutionary and developmental processes. Our bodies are constrained in the way they interact with their environment and our cognitive mechanisms are optimized for surviving in certain environments and as such are bound to extract certain signals from the environment that are rendered as more important (for survival) than others. Finally, there are the choices that we make that define us, committing us to certain future trajectories while closing the doors on others. These conditions are inevitable yet there is no limit to the freedom of becoming still allowed under them; evolution did not give



us wings and yet we fly higher and far. The way we are free is the way we become free and there is a way to go yet deeper into the rabbit hole.

### 3. Time and Duration – The Bergsonian Perspective

The ideas mentioned in 2.3 further converge in essence into the concept of *duration* (*durée*) invented and developed by Henri Bergson (Bergson, 2001). Though it is beyond the scope of this article to get into the nuances and intricacies of this important concept, it will not be complete without introducing it.

Bergson was interested in understanding the perception of time and in the way we are used to represent the passage of time in our thinking and communication as a discrete sequence of moments passing one after the other from the past through the present moment and into the future. He noticed that the way we represent time has a strong analogy to how we represent and understand space and distances in space. Things can be close or far in time in a similar manner that things are close or far along a spatial line. This way of representation renders time quantifiable. Whether we measure it in microseconds, seconds, hours, weeks or years, lifetimes etc., these are all quantities of time passing<sup>4</sup>. Bergson's philosophical insight was that the sense of quantifiable time that we hold is only a superficial aspect of something much more profound. For Bergson, time is first and foremost a continuum or flow<sup>5</sup> of change of heterogeneous quality. In more technical terms, the nature of time is *intensity* rather than *extensity* and due to its heterogeneity, it cannot be really quantified since this would mean that it is homogeneous, that is, given to description by varying aggregates of identical units. The quantification of time, argues Bergson, is useful for managing and coordinating operations in the world as it allows to objectify time, so to speak, treat it as objects (i.e., events) with a beginning and end that can conveniently be related to each other while

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<sup>4</sup> Interestingly, one of Bergson's fundamental contentions with Einstein was about the idea of the equivalence of space and time dimensions in Einstein's theory of relativity.

<sup>5</sup> Flow is a more familiar term. But it already implies metaphorically movement in relation to something static, like a river flowing over a riverbed. Duration would rather be understood as a continuum of change without an external frame of reference. Still, we use the word flow for readability.

remaining distinct and separated from each other. According to Bergson, therefore, time is a flow, a process, a continuum of change which he termed *duration*. Our conventional representation of time is merely a useful distortion and simplification, a superficial externalization of duration. Following Bergson's analysis, the idea of delimited events brought into cause-effect relationships is coherent with the objectified representation of time but as such it only envelopes and hides a more profound sense of time – virtual duration.

Understanding duration amounts to understanding time in an entirely different manner. When we observe our states of consciousness, it is indeed true to say that the present moment passes into the past, yet it is also evident that *all our past experience* endures in what becomes now the present moment. Stated otherwise, all the past is contemporaneous to every present moment and persists with it. Inasmuch as the present moment of experience changes the past as it passes into it, also that past becomes intrinsic to the next moment of experience. The passing moments are not distinct from each other, but each interpenetrates all others, each is defined and redefined by all others. Our experiences and our mental states are therefore ultimately heterogeneous. No single moment repeats twice, and each has its own unique and singular quality. Duration is the process by which the present is produced from the past selected by the impressions coming from the environment. The whole of our past affects the very manner by which we are posed towards the environment and the operation of our sense perceptions. In other words, in duration the very way we perceive and relate to the environment evolves as well. Duration is therefore pure quality in flux. Bergson speaks of how all of duration is *contracted* into each of the present moments to make it a singular actual experience and where different aspects of duration are present in each such experience with different degrees of contraction or condensation. This is what makes the present experience intense. Intensity here does not carry attributes such as “strong” or “weak”, intensity is how experience is singularly felt, or how it makes us feel and act. The unfoldment of conscious experience as duration is how we as conscious

beings become, how we individuate<sup>6</sup>. To gain further grasp on the concept of duration we need to further contrast it to the present in that that the present is *actual* while duration remains *virtual* yet both actual and virtual are real. The present moment is the only existence that – “is” – partakes of pure being, while duration – the whole of the past – is pure becoming<sup>7</sup>.

It is indeed the case that Bergson’s insight about time seem to originate from phenomenological observations of conscious experiences. But the concept of duration can be expanded with some modifications (as Bergson himself did in later work and others, importantly Deleuze, did as well) to any system which is complex enough. It is worth to note how the contemporary understanding of complex systems, especially the limits of representation briefly discussed above, is coherent with Bergson’s concept of duration. The connection is to do with heterogeneity. Duration as the endurance of all the past in the present state of the process necessarily renders it radically heterogeneous. But heterogeneity is exactly what prevents a process from having compact compressed representations<sup>8</sup>. The more heterogeneous a process is, the less compressible it becomes since compression is based on finding regularities (read as homogeneous occurrences). Consequently, the more heterogeneous a process is the less it is given to prediction. Realistically, in order to gain a degree of predictability we create approximate models of complex processes that homogenize the heterogeneous behaviour of the process<sup>9</sup> and thus allows a degree of compression. The tradeoff of such choices is that prediction becomes a matter of probability rather than certainty and exposes the model to so-called Black Swan events – rare occurrences of extreme deviations of predicted outcomes from actual outcomes (Taleb, 2008).

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<sup>6</sup> Notice that the concept of duration is more radical than what was discussed earlier as historicity, there we still assumed relationships between discrete elements in a scheme which is still analyzable.

<sup>7</sup> The notion of the future is encompassed in duration, acting makes the present moment pass and let the future *become as* the present.

<sup>8</sup> See also Wolfram’s(Wolfram, 2002) discussion of the principle of computational equivalence.

<sup>9</sup> As mention above, this is done by considering only certain behaviors as relevant discarding other variations as merely noise.

When it comes to the extreme complexity of brains, two points are worth noticing. We know from contemporary neuroscience that all experiences leave physical traces on our neural system and possibly on the entirety of our organism, so there is a point in seeing conscious states as ultimately heterogeneous since no experience is experienced by exactly the same organism. Yet, we also know that we forget most of our experiences, or rather in our ongoing cognitive processes we compress our experiences keeping in memory only those deemed significant<sup>10</sup>. Furthermore, contemporary cognitive theories describe brains as very avid predictive machines that coordinate the organism's interactions with its environment according to progressive predictive models that continuously self-improve by monitoring their own prediction errors (Clark, 2015). Indeed, as Bergson himself noted, cognition seems to work by limiting, to some considerable extent, the underlying heterogeneity of duration into more or less regular patterns, by that effectively forming compressed representations of the interactions of the organism with its environment. From an evolutionary point of view this makes sense and applies to all life forms since cognition, be that of a rudimentary unicellular creature and up to human level, can only work by finding regularities in such interactions; regularities that increase the probability of the organism's survival and successful replication.

An interesting and far from simple picture arises here regarding the dynamic balance forming between heterogeneity and homogeneity in how cognitive systems work, how they parse the continuum of interactions into so-called objectified events, finding predictable regularities in their relations, and how this very balance is continuously driven to change by evolutionary selective pressures. It is also worth mentioning that all high-level sense-making, symbolic representation, conceptualization, categorization and

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<sup>10</sup> Such criteria of significance are products of individuation as well but discussing how they form is beyond the scope of this article.

reasoning, all supported by language<sup>11</sup>, follow a similar logic of moving away from the fundamental heterogeneity of conscious experience towards a more homogenized images, models, theories and stories that avail increased cognitive efficacy, that is, predictability and thus control.

Still, in cases where evolutionary pressures are close to neutral, and similarly in cases where higher cognitive and thinking process are exploratory and open-ended rather than goal-oriented, the truly creative movement of becoming in duration remains uninterrupted (Weinbaum, 2022). How does this picture of deeply intricate existential relationships between duration as intensity and time as extensity affects our understanding of freedom? To start answering this question, let us further attend to Bergson's analysis of free will.

The third chapter of "Time and Free Will" (Bergson, 2001) is a brilliant and meticulous analysis of the problematics involved in the concepts of free will, determinism and cause-effect relationships. The source of the problematics, according to Bergson, is rooted in the confusion he exposes in the philosophical discourse between time as a geometrical representation and time as duration. Bergson's argument is quite involved, and I will quote here two short fragments that seems to distill his major point:

*[...] If I glance over a road marked on the map and follow it up to a certain point, there is nothing to prevent my turning back and trying to find out whether it branches off anywhere, but time is not a line along which one can pass again. Certainly, once it had elapsed, we are justified in picturing the successive moments as external to one another and in thus thinking of a line traversing space [This relates to time as a geometrical representation.]; **but it must then be understood that this line does not symbolize the time which is passing but the time which has passed** [my emphasis]. [...] All the difficulty arises from the fact that both parties [those arguing for free will and those arguing against it and*

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<sup>11</sup> Language seems to be a major if not the major evolved instrument of homogenizing experience. Symbolic representation in language gives up the indefinite variety of experience and gains the means of meaningfully communicating (and retention) experiences encoded in linguistic expressions. Just imagine the vast heterogeneity that disappears into relatively simple words like: 'red', 'rose', 'sun'...

*for determinism] picture the deliberation under the form of an oscillation in space [the agent choosing a path out of alternatives], while it really consists in a dynamic progress in which the self and its motives, like real living beings, are in a constant state of becoming. The self, infallible when it affirms its immediate experiences, feels itself free and says so; but, as soon as it tries to explain its freedom to itself, it no longer perceives itself except by a kind of refraction through space. Hence a symbolism of a mechanical kind, equally incapable of proving, disproving, or illustrating free will.*

*(Bergson, 2001, pp. 181-183)*

What happens to the agent in the unfoldment of his own becoming is further clarified in the following:

*When I myself pass through a certain psychic state, I know exactly the intensity of this state and its importance in relation to the others, not by measurement or comparison, but because the intensity of e.g., a deep-seated feeling is nothing else than the feeling itself. On the other hand, if I try to give you an account of this psychic state[to another agent but also to myself at a later moment], I shall be unable to make you realize its intensity except by some definite sign of a mathematical kind: I shall have to measure its importance, compare it with what goes before and what follows, in short, determine the part which it plays in the final act. And I shall say that it is more or less intense, more or less important, according as the final act is explained by it or apart from it. [...]*

*Hence, we have to distinguish two ways of assimilating the conscious states of other people [and of ourselves at later moments]: the one dynamic, which consists in experiencing them oneself; the other static, which consists in substituting for the consciousness of these states their image or rather their intellectual symbol, their idea. In this case the conscious states are imagined instead of being reproduced; but then, to the image of the psychic states themselves some indication of their intensity should be added, since they no longer act on the person in whose mind they are pictured, and the latter has no longer any chance of experiencing their force by actually feeling them. Now, this indication itself will necessarily assume a quantitative character: it will be pointed*

*out, for example, that a certain feeling has more strength than another feeling, that it is necessary to take more account of it, that it has played a greater part; and how could this be known unless the later history of the person were known in advance, with the precise actions in which this multiplicity of states or inclinations has issued ?*

*(Bergson, 2001, pp. 185-187)*

Bergson argues that our conscious minds partake in two distinct modalities, an immersive modality – coursing and becoming in duration, and a reflective modality – when we reflect, represent and report to ourselves and/or others our inner states as an unfoldment in linear geometrical time. Only in the immersive modality it can be said that we are free and only then our freedom is real. The heterogeneity of experience as it unfolds in duration is indeed determinable but since it is incompressible it is determined singularly by the lived process of becoming. The regularities expressed by cause-effect relationships simply do not apply to processes unfolding in duration. As noted above, realistically certain regularities are inherent in any cognitive process, but the important point here is that for complex systems such as brains, predictability is inherently limited and not merely technically limited. This leaves open an epistemic gap for freedom as becoming to exist as a real phenomenon.

The problematics begin, however, when freedom is addressed via the reflective modality of the mind. A philosophical discourse is by definition reflective as it deals with conceptual representations rather than lived experience that always remains outside the grasp of such discourse<sup>12</sup>. The subject matter of the philosophical discourse about freedom is a fabricated story conceived by reflective consciousness made to report and explain a sense of being free that cannot be grasped by consciousness bound by representations<sup>13</sup>. This story, argues Bergson, is self-contradictory in its attempt to capture within static conceptualizations the heterogeneous dynamism of a process.

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<sup>12</sup> See also chapter 2 in (Weinbaum, 2022).

<sup>13</sup> It would seem as if the reflective modality operates to dominate the immersive modality by replacing it with a fabricated static caricature. See: (McGilchrist, 2019).

The point discovered in “the way we are free” and further developed here is that we cannot simultaneously be free and know that we are free. Here, a fine distinction must be made between the intuitive unmediated knowing of a lived experience and the more conventional knowing mediated as representation. While becoming (individuating), we have the lived experience of that becoming but we do not know what or who we are. We cannot possess the latter (knowledge of being) while engaged in the former (becoming). This not-knowing is the deeper meaning of the epistemic gap.

Once we get to self-reflect on something of significance that happened to us (if indeed it was felt as such) while being immersed in lived experience, we do it by telling ourselves a story of either a free choice or a necessary fateful unfoldment. But neither of these really came to pass. Our lived experience is almost seamlessly replaced by knowledge as representation, that is, an objectified static image depicting a sequence of discrete events and their inferred static relationships. What eventually appears to us in self-reflection, remembered, and is the subject matter of any further discourse is the product of a process, not the process itself. The latter remains irreproducible and ungraspable.

#### **4. The way we become free – the Individuation of Freedom**

Bergson’s arguments in support of the real sense of freedom based on the concept of duration have provided us with a metaphysical foundation that further consolidates the idea of the epistemic gap and the freedom of becoming it allows. While developing the idea of freedom from “being” to “becoming”, we have also highlighted connections between complexity, predictability and freedom and lastly the more nuanced connection between freedom expressed in the immersive modality of conscious experience and the knowing emerging in reflection. Yet, this is still far from being an endpoint. Notice that much of the discussion presented in both articles as well as in Bergson’s treatment was focused on arguing how freedom is possible in a causally closed world where everything is determinable. While doing that, the very meaning of freedom changes. In “the way we are free”, I highlighted this change as follows: “The classic problem of free will is the problem of whether we are inherently able to control a given life situation. [...] The sense



of freedom described here leaves behind the need for control. The meaning of being free has to do with [...] the unfolding of who we are while being in the gap, the transition from a state of not knowing into a state of knowing, that is. It can be said that it is not the choice being originated by me but rather it is I, through choice, who is being continuously originated as the person that I am.” [ref in the book] The idea of becoming is indeed already apparent in this quote, and clearly it is the “I” that becomes. Are we to conclude that freedom signifies individuation in duration? The answer would be both yes and no. Let us further consider here the two modalities of consciousness and their respective role.

Remarkably, the reflective modality of consciousness is itself an ongoing process taking place within immersive duration only that the underlying cognitive processes constrain the heterogeneous unfoldment of experience and renders it into a much more homogenized symbolic expressions in language. This constraining that transforms almost seamlessly present experience into represented experience is an extremely powerful ability and an essential element of social organization and civilization. The price of gaining this power, however, is paid by *how* one becomes free, one’s individuation is constrained by the very cognitive/linguistic processes that render our becoming into symbolic represented products – I am this, I am that, I am not this but I am that, I would like to be that but not this... etc. Here is where freedom, to a very significant effect, is framed into homogenized discrete trajectories and images operating within duration.

So here is the interesting dilemma: freedom as individuation seems to have degrees – it seems to increase or decrease depending on the extent it is *less or more symbolically representable* (and describable) respectively. Even if the two modalities are kept relatively distinct and reflectivity is not too (con)fused with immersivity, what is often retained in long-term memory is the story we are telling ourselves about what happened and not what actually happened. If, however, the two modalities are fused, one becomes entirely bound to individuate along well homogenized and representable trajectories.

Much of one's freedom is hijacked, so to speak, by the social structures one is engaged in. It could be counterargued that freedom which is not representable is perhaps individually enjoyable but of little value or significance beyond the personal subjective sphere. I argue that this is very much not the case. All creative activities, all innovation erupt first as spontaneous expressions that are not representable by means of the existing symbolic and linguistic means. New concepts, artistic expressions, even scientific insights start as embryonic and largely formless expressions that only later are made into meaningfully representable expressions. Creative, generative processes can be understood therefore as processes where individuation becomes constrained to produce tangible communicable products, but for that to happen, individuation must start as free of constraints as possible.

Following carefully this line of thought, it is (hopefully) unavoidable noticing how the story being told here about the interplay of immersion and reflectivity is placing subtle constraints on the concept of freedom rendering it more meaningful yet less "free", so to speak, in terms of the individuation of the concept itself. This is an actual (second order) example of the tradeoff just mentioned above. Not only that, but we presently discover that the very (meta) cognitive operation described already describes certain ongoing mental processes as more or less "free" than others. In other words, we find ourselves with a homogenized quantifiable concept of freedom. Indeed, we gained an instrumental advantage, what seems to be a valuable understanding, but there is also a disturbing sense that some precious subtlety has been lost in the process. Can it be recovered, and if it can, how? I believe it can, but it is truly a challenging conscious operation that I called elsewhere "thought sans image" (Weinbaum, 2022). Thinking without image is the very process wherein non-symbolic thinking is transformed into symbolic thinking but where this very transformative process individuates. Normally, prior to representation, we already have in mind a preconceived image of how thought forms, that is, how it begets its representable form. Thinking without image is exactly this: letting thought to be shaped independently of such preconceived image(s). Thinking becomes experimental.

What occurred to me while retracing my own line of thinking here is that I need to let freedom itself to individuate unconstrained by an a priori image, or at least release it from the various images and stories it accumulated in this and other discourses. It further occurred to me that almost surely Bergson already had this thought though he never expressed it explicitly: *freedom as pure quality*, that is, ultimately heterogeneous, incomparable, not even to itself, and interpenetrating all other moments – the becoming that is hidden yet inherent in all instances of being. I will leave this point open to the reader’s contemplation.

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