The Contours of the Unknowable

Jencel Panic

# Synopsis

To reconcile this paradox, we should consider what truth really is, as our current everyday notion of it is obviously wrong - truth does not exist in the world, truth is subjective. Reality is like a canvas that contains the form of the world, but it is up to the observer, to us, to draw the *contours*: we circle one spot and say “This is A”. Then we take another picture and search for where A went, or for other instances of A. It is through these contours, that the unknowable, becomes knowable.

What if everything you believe about the world — every cause and effect, every memory, every sense of understanding — is a fragile mental construct, designed not to reveal the truth but to shield you from it? In *The Contours of the Unknowable*, we embark on a journey to dismantle these mental constructs and confront the chaotic, uncertain nature of existence.

From the moment we are born, our minds begin to weave a narrative, piecing together the fragments of our experiences into a coherent story. This story, guided by the principle of causality, gives us a sense of control, a belief that we can predict and understand the world around us. Yet, as Jencel Panic reveals, this sense of control is a deceptive one. Our memories, far from being accurate representations of past events, are shaped by the very mental images that distort our understanding of the present. The stories we tell ourselves are comforting, but they are also limiting, boxing us into a deterministic worldview that leaves little room for the unexpected, the unexplainable, the truly real.

The roots of this illusion run deep. Drawing on Zen Buddhist philosophy, Jencel Panic explores how our minds, in their quest for stability, create rigid mental images that we mistake for reality. These images become dogmas, reinforcing themselves over time until they are nearly impossible to question. The more we rely on these images, the more disconnected we become from the true nature of the world, which is anything but orderly. In this book, we confront this disconnection head-on, peeling back the layers of illusion to reveal a world that is far more chaotic—and far more fascinating—than we could have ever imagined.

At the heart of this exploration is the concept of determinism, the belief that every event is the inevitable result of preceding causes. While this idea has driven much of human progress, from the development of physics to the creation of complex social systems, it is also a dangerous oversimplification. By treating the world as a predictable machine, we ignore the fundamental unpredictability of life. We create a mental model of reality that is neat and tidy, but utterly detached from the messy, entropic nature of the universe itself.

In the Zen tradition, the mind is likened to a mirror, reflecting the world as it truly is. But over time, our mirrors become clouded with preconceived notions, with expectations, with memories that no longer serve us. *The Contours of the Unknowable* is an invitation to clear away the fog, to see the world with fresh eyes. It is a call to embrace uncertainty, to find freedom in the realization that we do not—and cannot—know everything.

This book is not just an intellectual exercise; it is a practical guide to living more fully in the present moment. Through the insights of Zen Buddhism, cognitive science, and philosophy, Jencel Panic provides tools for breaking free from the mental constructs that bind us. By letting go of the need for order, we open ourselves to new possibilities, to a life that is richer, more vibrant, and more in tune with the true nature of existence.

# Introduction from the author

the concept of knowledge is deeply intertwined with the concept of time — to understand knowledge, we need to understand time. But what do we know about time, and what *can* we know about it? The short answer is: not much. The notion of time is intricately tied to how we perceive the world. Knowledge is accumulated over time, and it largely presupposes the concept of time. Simultaneously, our perceptions shape time—they are the material from which time is crafted. Thus, to understand knowledge, we must first understand time. But the reverse is also true.

This inherent paradox is why this text does not follow a very precise structure — describing paradoxes in a precise manner is just not possible. In fact, this lack of precision is probably the main reason why this subject isn’t studied more. Why devote our (*ahem*) time to trying to understand this subject when the research is arduous and the results are so elusive? My answer is simple: because it’s important. Time is connected to knowledge, aging, youth, and perception itself.

While most of the “results” I’ve reached resemble the Socratic wisdom of “I know that I know nothing,” the process of writing these essays has been very fun.

One thing we do know about time is that the principle of cause and effect is instrumental – if not for time itself, at least to our ability to comprehend it. Almost all of our knowledge is “causal knowledge,” and this is the starting point of this text. So sit back, pour yourself a glass of wine (you might need something stronger for the later chapters), and enjoy the journey.

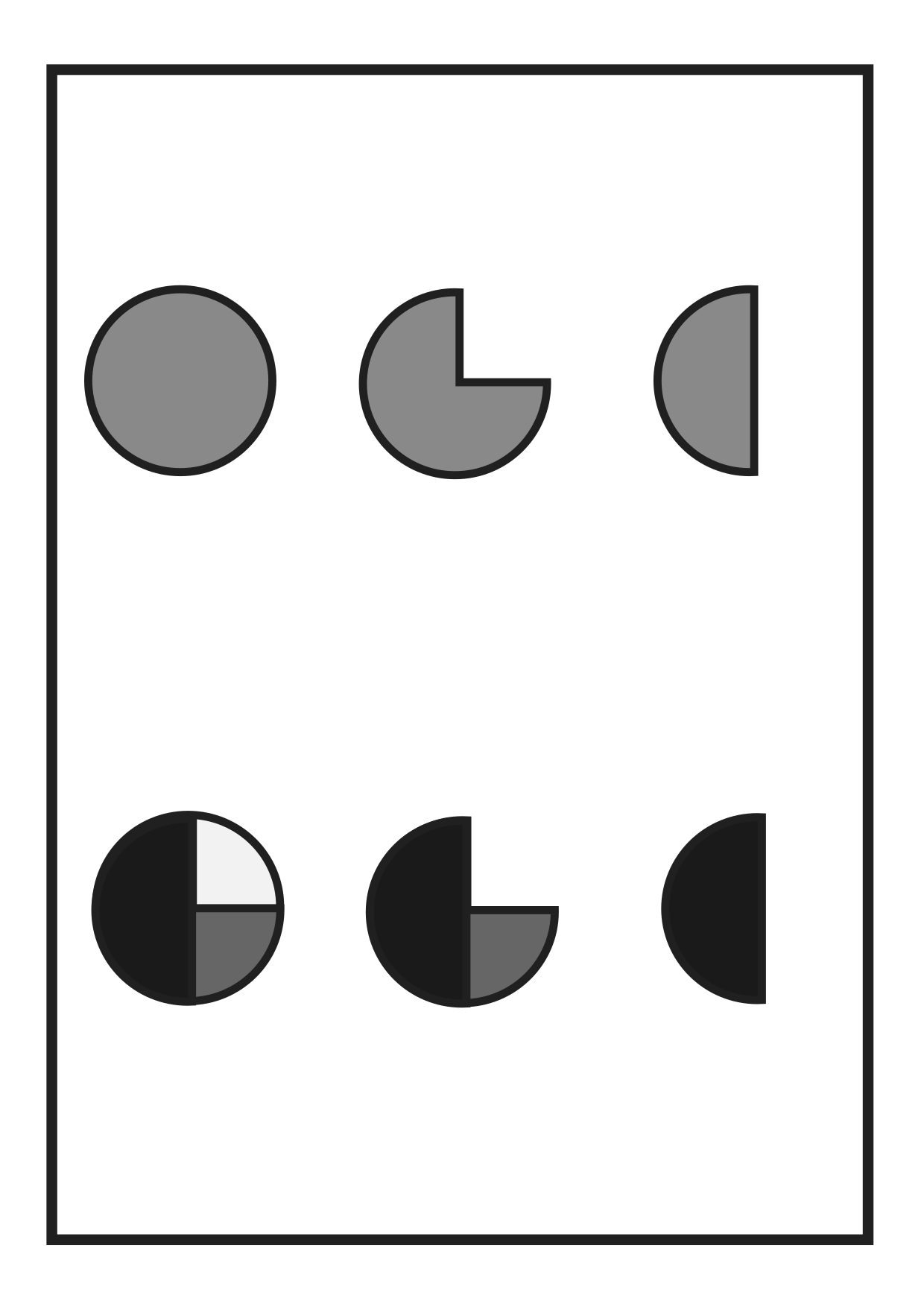
# Frames of Reality: The Interplay of Causality and Temporal Perception in Defining Knowledge

*On Causality as the Defining Principle of All Knowledge and on the Subjective Nature of All Knowledge.*

If I throw a die or think of a random number and then tell you what it is, I doubt that would you consider this information “knowledge” (unless your goal is to argue with me). This is because such data, when considered in isolation, is highly unlikely to be relevant to anything that will happen in the future. So, we can define knowledge as “information that is relevant in the future, i.e., that can be used to predict it.” Thus, the concept of knowledge is deeply intertwined with the concept of time. So, to understand what knowledge is, we must understand what time is. Indeed, to have a concept of the future at all, we must be able to perceive time. So, let’s explore how we do that. There are many ways to approach this question, but I often find it benefitial to think about things in terms of input and output:

1. We can view the *input* that our brain receives, which forms our perception of time and continuity, as a collection of frames – pictures of different states of reality. These frames are then somehow unified in the *output*.

In other words, the mystery of time can be reduced to the following riddle: We have two pictures, and we have to identify the elements of the first one in the second one, like a reverse version of the “Find the Ten Differences” game. This might sound simple, but it is far from it.



1. For the perception of time to be realized (and for knowledge to be created), the list of frames must be interpreted as signifying some form of change from one state to another—such as a change in position (motion), shape, or color.

* If all the frames are all alike(e.g., if you are staring at a blank wall), you would not be able to perceive change (and thus, time).
* But, if the frames are all entirely different, don’t have anything to do with one another, you also wouldn’t be able to perceive change.

To perceive change, then, we must be able to interpret the frames in such a way that there is an aspect of them which is different for each frame but at the same time stays the same for all of them. This requires us to postulate the *identity* of objects and events (we can view objects as just prolonged events).

1. The basic form of identity of events and objects (where objects are merely collections of events) is grounded in the concept of *causality*. When observing event A in one frame followed by event B in the next, we presume that A ⇒ B (i.e., B is caused by A).

This implies that identity is just a manifestation of causality — they are basically the same thing. For instance, if I see an object on my desk, and then I see a similar object in the next moment, I assume it is the same object, meaning that the object’s presence at time x *causes* its presence at time x + 1.

There are other ways for defining the identity of objects (we can say, for example, for example, that an object is the same only if it is composed of the same atoms), but this is the main way that identity is perceived by people in practice. A ship that has had all its parts replaced over time is still considered the same ship, even though its material composition has changed.

However, if we think more about the ship, we realize that identity, defined in this way, is not absolute.

1. Causality is in the eye of the beholder. A ⇒ B is not an objective fact about the world but a mental image. This is because B is partly defined by its internal characteristics and partly by being “the thing that follows from A (if B occurs without A occurring first, (e.g. if there is thunder without lightning) to what extend would it still be B?).” Similarly, A is partly defined as the thing that precedes B.

This is the most essential of all propositions: Imagine we know that A ⇒ B and we observe A and then another event, B', that resembles B but also differs in some characteristics (note that this is not just a thought experiment but a general description of perception, as all events are unique).

In this situation, we have two choices:

* We may assume that A is not actually A but some other event A', thus discovering a new fact: A' ⇒ B'.
* Or we may assume that since it follows from A, B' must be some variant of B, thereby expanding the rule A ⇒ B to include this new characteristics of B.

The former kind of thinking is called “empirical”, the latter one — “dogmatic”. When thinking empirically we *obtain* new information about the world, while dogmatic thinking allows us to *use* this information to make predictions. These two approaches complement each other, like input and output, like question and answer.

With this, we establish that dogmas like A ⇒ B are not truths but rules for organizing information. We might naively consider them true because they “work” — they help us achieve goals or avoid trouble — but in reality, they are neither true nor false. Instances that follow a rule might only follow it by accident or because we perceive them that way. Instances that don’t follow a given rule are simply not instances of that rule. No rule is inherently true or false and so no proposition is true or false either.

By the same token, we may naively think of the causality maxim (of A ⇒ B) as true (true as in “valid law of nature”, let’s say), because when we perceive A, followed by B, and it is easier to explain that by postulating causality than to just say it happens by accident (Occam’s razor). This may lead us to believe that causality is some kind of law that exist in the world, or rather a meta-law, which implies the existence of all kinds of other laws. In this case, we would be overlooking the following:

1. B is not a specific state of affairs but a mental image, a pattern we begin to search for based on our prior knowledge of A ⇒ B.

We search for B and often find it, even when there are no perfect candidates. If we already believe in A ⇒ B, we will see B wherever we see A. In this case, we say that someone sees B *even when it is not really there*, but the fact of the matter is we cannot possibly see anything that *is* there (in the way that we see B in this example).

Causality is neither a rule nor a meta-rule, but a *belief* that every thinking being must hold to some extent, in order to be a thinking being.

The last statements may rise some objections which I will attempt to address, using the somewhat forgotten form of philosophical dialogue. Let’s imagine that the physicist Isaac Newton, (who pioneered the modern scientific method) had a chat with the philosopher David Hume (who challenged the principles on which this method is based).

## **Hume and Newton**

**Hume:** Causality is not a quality of the world, but merely a *belief*. It is a very general belief and one that every thinking being should hold to some extent, but still, it is just a belief.

**Newton:** That is nonsense. The world clearly adheres to certain laws, independent of our observation. This means causality is a characteristic of the world itself i.e. a law.

**Hume:** OK, let’s say you are right. If causality were a law, there ought to be a way to test it, as we do with all other scientific laws, right?

**Newton:** Of course, and as a matter of fact, we do that often. All scientific theories are based on the causality maxim. A scientific theory is nothing but the assumption that a statement of the form A ⇒ B is true. We then test this theory by conducting experiments where we make A happen repeatedly and see if B follows. So, besides testing a given theory, every scientific experiment also tests whether causality itself works.

**Hume:** This is true, but many, if not most, experiments fail, at least to some extent. Doesn’t this suggest that causality itself fails?

**Newton:** The only reason why experiments fail is that we don’t yet know enough to conduct them properly. Blaming causality for our failure is ridiculous. If our theory is exactly right, it will produce the expected outcome every single time.

**Hume:** That sounds too theoretical. Can you give a concrete example of an experiment that always gets the expected outcome? If you do, you win.

**Newton:** Very well. Let’s consider this very simple experiment: a pistol is aimed at a window. The trigger is pulled, and the window shatters.

**Hume:** But what if there’s no bullet in the pistol? Or if the pistol is broken?

**Newton:** OK, let’s assume a bullet is necessarily fired, and the aim isn’t off. Then the glass breaks.

**Hume:** What if the window already has a hole?

**Newton:** No, there isn’t. The bullet hits the glass, okay?

**Hume:** Alright, but how fast is the bullet moving?

**Newton:** Let’s say it hits the glass with *sufficient* speed.

**Hume:** Sufficient for what?

**Newton:** Sufficient to break it.

**Hume:** See what you did there? You defined the situation so that the effect is embedded in the setup.

**Newton:** So, you’re saying the effect can be *embedded* in the setup? That sounds quite objective—not really a belief.

**Hume:** Look, there may be possible cases where you will be able to *guess* whether the glass gets broken, but this does not make the general principle true. Because there is no general principle, in a first place, only a mental image and situations which remind you of the mental image.

## References

* Dogmatism and Empiricism are two schools of medicine in ancient Greece and Rome. Dogmatism was pretty much lame, but Empiricism, also known as Pyrrhonism (and later skepticism), is the origin of many of the ideas that I discuss here.
* The definition of identity and the example with the ship are from the treatise of human nature by David Hume.

# From Mental Images to Truth: The Role of Goals and Emotions in Knowledge

*On the different systems of knowledge depending on the goals that a given individual has and on urges and emotions as the ultimate source of truth.*

Let me describe to you a natural phenomenon that I observed. It is a very weird one - at one moment it is green, but at the second it fades to black and then it becomes invisible. I suspect it can take some other colors too… It sometimes produces sounds too, but here is no way you can tell what it is going to do next. Such phenomena may very well exist (it might be completely random or it might be governed by some laws, that we just cannot perceive), but there is neither a way for us to know that it does exist, nor a reason for us to be interested in it. Because this phenomenon does not repeat itself in a way that we can perceive, it cannot be mapped by any mental images, and we can only perceive the world through mental images.

1. A mental image (or dogma) is a set of impressions combined into a single perceptible entity. All objects and events we perceive are actually just mental images.

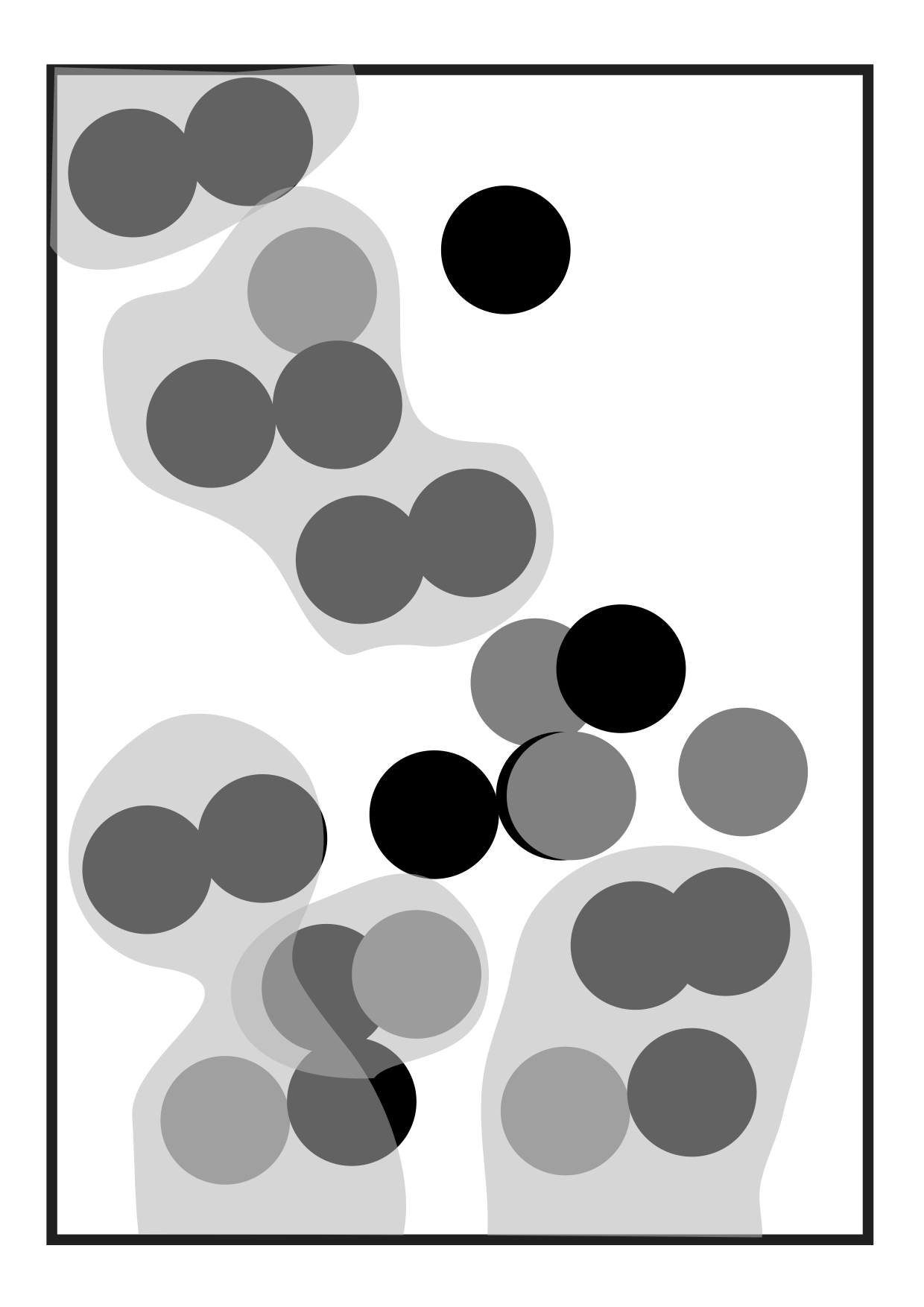
Because the of fact that we only see mental images implies reality as we perceive it is not objective, many (weird) philosophers have argued that we are actually living in a dream or a simulation of some kind, and that reality as we perceive it is not at all related to the reality that actually exists. But for me that is clearly not true - while mental images themselves do not say anything about the real world, *the fact that we have gotten the habit of creating mental images* does say something - their existence is a proof (the only proof?) that the world is not completely random.

So we are put in a really weird situation:

* Mental images would only make sense only in a non-random world (in a world that is completely random there will be no point nor reason to combine several things as one).
* The concentration on different aspects of reality and the usage of different sets of mental images results in widely different interpretations of reality (none of which are correct).

So, 1) there exist some truth in this world, but at the same time 2) we can never know this truth is. The collision between those two statements has naturally led to many philosophers to despair.

To reconcile this paradox, we should consider what truth really is, as our current everyday notion of it is obviously wrong - truth does not exist in the world, truth is subjective. Reality is like a canvas that contains the form of the world, but it is up to the observer, to us, to draw the *contours*: we circle one spot and say “This is A”. Then we take another picture and search for where A went, or for other instances of A. It is through these contours, that the unknowable, becomes knowable.



But where does A originate from initially? What provokes us to start perceiving the world in terms of A-s and B-s and not just gaze at it and wonder what the hell is happening all the time? Up until now, we spoke a lot about the subjective aspect of knowledge, but we never said anything about the *subject* AKA the human, animal, robot, god or other lifeform that/who actually perceives reality, makes these assertions and has these thoughts. But how do we even define what a subject is in this context? I claim (you will see why shortly) that it is defined by the things they *want* - their will, urges, wishes, emotions etc. or their “goals” as I will call them here.

Now, a goal is not a specific state of affairs of the world - there may be many states of affairs that constitute the realization of a given goal - rather a goal is a kind of mental image that a given observer has, with one more detail, that it is associated with feelings of pleasure.

1. A goal is a mental image representing a state of affairs which is for some reason desirable for an individual, or the opposite - undesirable.

With that in mind, let’s go back to the distinction between dogmatic and empirical thinking. As we said, when thinking empirically, we *obtain* information about the world, and when thinking dogmatically are we able to *use* the information that we gained. We said that empirical and dogmatic thinking go hand in hand, that you cannot have one without the other, but another way to look at it is that they are actually in conflict - one makes you smarter, but unable to do anything - the other turns you into a mindless machine that can only chase windmills.

Furthermore, when comparing the two modes of thinking, we might say that the empirical part is somewhat more “legit” than the dogmatic one. When thinking empirically, we enrich our representation of the world. If we have goals, empirical thinking helps us find more ways of achieving them. If our aim is knowledge and precision, we should only think empirically and practice suspension of judgment, collecting all information and enriching our knowledge without trying to unite and structure it, as every structure is a simplification.

We think dogmatically simply because of our (living beings’) modus operandi — sometimes, we just *have* to act. The situation becomes “do or die” for some of these goals, as abstract as they may be, and sometimes our whole existence depends on achieving them.

If this factor wasn’t there, our whole world would be different — we would just observe reality forever, studying it, becoming more intimately knowledgeable with the way it works, but doing nothing more. But we get hungry. And when that moment comes, we *have* to assume we know enough and switch to dogmatic mode in order to catch some prey or get to the grocery store. It is at this moment that the mental image is formed. The image of food is a product of the fact that we get hungry. In general, any mental image is a product of a goal:

1. All mental images that a given individual forms are either desirable (or undesirable). So all mental images are trivially associated with or are themselves goals (or anti-goals).

A corollary of that is:

1. No mental image or piece of knowledge that relies on mental images is objective — they are all actually a product of the individual’s characteristics.

For example, the pistol and glass example is associated with the desire to break the glass for some reason.

So, we were talking about truth (I know such detours might make the reader wish to take a pistol themselves and point it at either their head or mine, but there is no other way to go about). As we said, mental images are not, by themselves, true or false. This is because (let’s reiterate it once more) we can assess whether a given mental image works only by applying it and interpreting the result, but we can only do that using *other mental images*. We cannot see reality outside of the mental images, so when considering it by itself, we cannot call an image true or false. We cannot even compare one image to another and say which is better or closer to the “real world” (because, again, we only perceive the “real world” through images). I love Wittgenstein’s essay “On Certainty,” especially the opening sentence, which was written in response to G. E. Moore’s argument against skepticism, where he raised his hands and said, “Here is a hand, and here is another one.” Wittgenstein’s response is apt: “If you do know that here is one hand, we’ll grant you all the rest.”

That is, if we have a starting point — if there is one thing that we know to be true — then everything else can indeed follow from it. But we do not have such a starting point, which is why mental images are, by themselves, neither true nor false.

The situation changes when we observe mental images in connection to goals. Goals are, by definition, desirable (or undesirable), they cause pain (or pleasure), they make us fed (or hungry). And it is based on these sentiments that we deem the mental images that correspond to them true (or false).

1. A mental image has a degree of reality that can be equated with the degree to which its corresponding goal is desirable for the individual (based on the individual’s own subjective criteria). Comparing mental images with one another is a converged way of comparing the goals for which they stand.

Notice that I don’t say that truth can be equated with how often the goal is successfully **achieved** by the individual. This is because achieving a goal is abstract; having it influence our worldview is not.

In our everyday thinking, we don’t always associate truth with pleasure and falsity with pain. For example, we have expressions like “truth hurts,” representing the conflict between mental images and reality. Let’s discuss how perception evolved to reach that point.

## Evolutionary Perspective

The behavior of the simplest organisms, those with no brain or a rudimentary one, can be described by the stimulus-reaction model—they perceive an object and react to it immediately in the manner they are predisposed to, with natural selection clearing out inadequate responses. A little more complex, but still simple, are organisms that can also judge whether a given reaction was “good” or not (e.g., by using pain detectors) and store good stimulus/reaction pairs in their brain (e.g. seeing a predator and running away). These pairs resemble rudimentary memories, but unlike real memories, they don’t require an organism to have concepts of time, causality, or other related concepts in order to be recorded, as:

* They do not constitute sequences of actions or events.
* They are not related to one another in any way, i.e., there is no before and after.

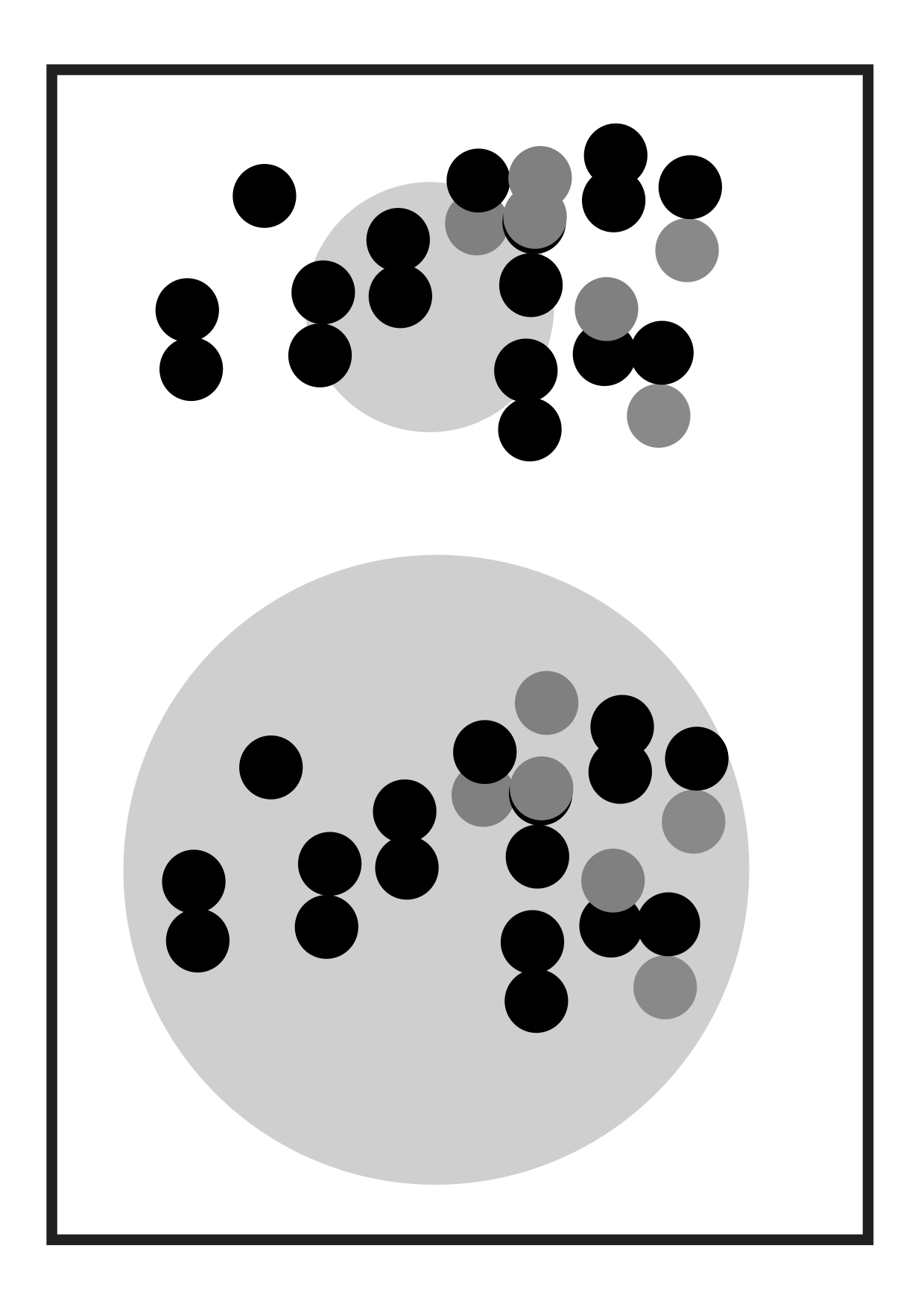
Such organisms can also process concepts, though in their case, a concept is simply a collection of similar memories. However, these organisms remain quite simple. For them, the concepts of truth and falsity — if we can even call them that — are equivalent to feelings of pleasure and pain.

More complex are organisms that possess the ability — or perhaps it’s more accurate to say “ambition” — to predict the future. These organisms have a concept of both the future and the past, as the notion of prediction precedes the concept of the future itself. Predicting the future requires more than just recalling past experiences and reacting accordingly; it requires the organism to understand the concept of a “world” (or “substance,” as it is sometimes called). This allows them to produce mental images that:

* Involve multiple steps leading toward a common goal.
* Can be organized into a hierarchy, where one goal serves as a step toward a larger goal.
* Are self-reinforcing (more on that later).

The main distinction between those two types of organisms lies in the types of knowledge they possess. Simple organisms hold knowledge with a *limited scope*, while more complex ones have knowledge that is *universally valid*. These two types of knowledge correspond to two types of Aristotelian syllogisms:

* Some A-s are B (limited scope)
* All A-s are B (universal)



When we consider how these types of knowledge are acquired, we see that, although comparable, they are fundamentally different:

For a simple organism that thinks in terms of statements with *limited scope*, thoughts are merely tools for achieving more favorable outcomes in reality. Their significance is limited. For example, a simple organism that encounters a sour apple may be “unhappy” with the taste, but it would never be unhappy about the *fact* that its assumption turned out to be false.

A simple organism discards an idea as soon as it feels wrong. Being wrong doesn’t lower its self-esteem, cause an existential crisis, or force it to abandon related ideas.

Furthermore, a simple organism doesn’t feel the need to unify different phenomena under a common cause, nor does it ponder why things are the way they are instead of some other way (as I currently do). The simple organism is humble — it doesn’t hope to ever truly know the nature of things, so it doesn’t concern itself with them.

If simple organisms assume they are *wrong by default*, whereas we, because we are “smarter,” assume we are correct by default.

1. Statements with limited scope can only be justified by *observation*. If I observe two or three objects that I categorize as As (e.g., “apples”) and find that they possess the property B (e.g., “tasty”), I can conclude that Some A-s are B based on those observations alone, relying on my instincts.

On the other hand, statements with universal scope are axiomatic by nature — they shape reality as much as they describe it. My basis for asserting All A-s are B is not fundamentally different from my basis for saying Some A-s are B. What differs is my decision to assume that this piece of knowledge is universal.

## References

* The idea that mental images are goals is likely influenced by Immanuel Kant, who suggests that concepts resemble *rules* of perception. From this, one could speculate that these rules define goals.
* The notion that everything is uncertain due to the lack of a starting point in our thoughts and judgments has been around for a long time but was articulated most effectively by Wittgenstein. Later, related ideas were formalized by Kurt Gödel and Alan Turing, both of whom were influenced by him.
* David Hume wrote extensively about emotions (“passions”) in the second part of his *Treatise of Human Nature*.
* For more on the evolutionary perspective, consider Robert Sapolsky’s work.

# From Deterministic Models to Entropic Realities: Rethinking Our Understanding of the World

*On the Concept of the World and Determinism as the “Default” Worldview*

In the world, there would always be events and things that challenge our established worldview. Sometimes when these unexpected occurrences arise we adjust our thinking to accommodate them, to take them into account. But, if there is no way to adjust our thinking, we just ignore the things that don’t fit into our worldview as if they do not exist. If there is an event (or even a whole aspect of reality) that does not uphold to our worldview we would not be merely unable to *make sense* of that event or aspect (as seeing an event without being able to make sense of it would indicate that we can theoretically comprehend it by merely adjusting our thinking), we would not be able to perceive it in any way, even if it happens before our very eyes.

1. Mental images of the particular shape the mental images of the general e.g. having the image of A ⇒ B in our head, when we search for a new image, we will search for it only in the space which is not occupied by A-s and B-s so the new image would be supplementary to A-s and B-s, like a jigsaw puzzle and hence our whole worldview.

The only way to prevent this narrowness of perception is to assume that the world is fundamentally unknowable or chaotic—that it is unlawful by its nature. However, this assumption is a cognitive dead end — it halts our ability to perceive and process information. This is why we typically operate under the opposite assumption: that the world is orderly and knowable.

When applied to broader thinking, this assumption of an orderly world establishes determinism as the “default” worldview. It compels us to interpret even non-deterministic phenomena within a deterministic framework: the mental image that represents “the world.”

The mental image of the world (let’s call it M) functions as a central dogma, controlling this world and making correct predictions about it is the central goal.

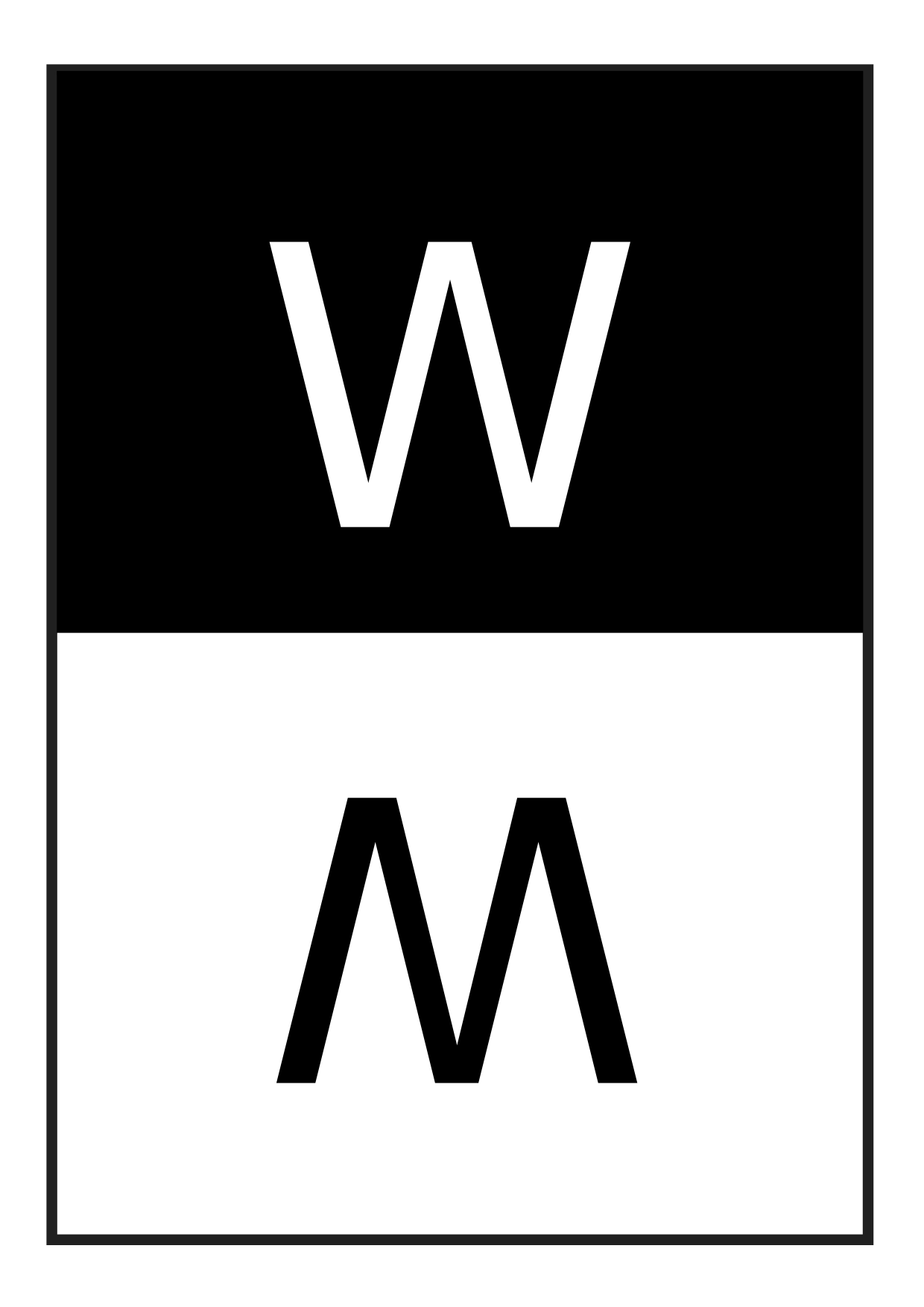
In this context, the goal of “controlling the world” is encoded in the defining characteristic of this mental image — determinism.

In deterministic systems, non-deterministic events can only be explained by “hidden variables” theories. These theories posit that any failure to predict an outcome is due to a lack of knowledge or understanding. While it is good stance to adopt for evolutionary reasons, as it drives us to analyze and systematize our surroundings, it becomes problematic when we take it too seriously.

If we think about it, it would be quite strange if the world were truly deterministic.

1. We perceive the world through mental images.
2. These mental images are subjective representations, evolved primarily for the survival of our species.
3. Therefore, the idea that we could model the objective world deterministically using our subjective mental images seems implausible.

Indeed, while we can model certain aspects of the world with some degree of accuracy, the notion that we could perfectly model the entire world suggests that it was designed specifically for us—a proposition that I find highly unlikely. The resemblance between our mental images and the world is, in my view, an illusion. These mental images, including M, exist solely to satisfy our urges. If we ever reached a state where our urges were fully satisfied, time would freeze for us, and our mental image of the world (M) would cease to exist. However, such perfection is unattainable—not due to physical limitations, but because of the inherent limitations of our inner world, of ourselves as “non-gods.” This is actually where the belief in God comes from: one could define God as a being who possesses what Kant calls “active intuition”—a being whose thoughts directly create reality. Unlike ordinary beings, whose thoughts do not alter reality, God is singular, unique, and immortal by definition. For God, the mental image (M) *is* the real world (W). In contrast, for humans, M and W may seem similar but are fundamentally different.



Simply put, God’s mental image (M) *is* the real world (W), while our mental images only bear some resemblance to W, reflecting the idea that humans are created in God’s image.

In the many ways we differ from God, we can say that M is not the same as W, although they are often observed as similar. While M is deterministic and orderly, W is not.

Conflating M with W, not recognizing that they are different things, can lead us to the mistaken belief that the world (W) is deterministic (i.e. everything we see that is not lawful is an illusion), when in reality, unpredictability is the defining characteristic of the world. When we fail to observe anything unpredictable, it means we are perceiving the world dogmatically, through a pre-established set of images. In contrast, perceiving the world empirically means engaging with its unpredictable nature. This illustrates that M and W are not only slightly different but do not overlap at all. This is not because they lack any similarity but because they operate according to two different, even opposing, principles.

1. The real world (let’s call it W) is our source of empirical knowledge.

Physics offers a perfect example of this difference. Although physics began as a discipline rooted in determinism, it has gradually shifted towards probabilistic models, such as those found in quantum mechanics.

The principle behind M is, of course, the same principle that is behind all other mental images i.e. causality. To understand the principle governing W, let’s revisit the concept of a mental image. Mental images don’t describe specific substances or materials, rather, they describe arrangements of these substances. Causality explains how these arrangements change over time. However, given a set of arrangements, some will fit into our mental images and follow the principle of causality, while others will not. The latter type of arrangements are much more probable. Over time, ordered arrangements tend to become disordered—a paraphrase of the second law of thermodynamics, which states that the entropy increases over time.

If M is based on information governed by the principle of *causality*, then we might say that W’s defining characteristic is the somewhat opposite concept of *entropy*.

The real, objective world (W) naturally resists mental appropriation and the principle of causality. As entropy in the world increases, our ability to predict its development decreases. Over time, fewer events occur, and all mental images become obsolete.

The entropy of our human world (M) rarely decreases. M is ordered and predictable, but only because we actively make it so. Our actions create order and make causality work.

This brings us back to a central proposition:

1. “Causality is in the eye of the beholder; A ⇒ B is not a fact about the world, but a mental image.” It may seem that we use cause and effect to understand order, but in reality, we use it to act, and through our actions, create order.

The principle of causality is ultimately irrelevant to W, because causality can only be defined in contexts where we are in control. Asserting that **A** causes **B** simply means that removing **A** will eliminate **B**. Thus, causality is a tool for control, not an inherent characteristic of the world.

## References

* The concept of the world as an idea is central to Arthur Schopenhauer’s work.
* The dichotomy between causality (or information) and entropy is inspired by Hans Reichenbach’s book *The Direction of Time*, particularly Chapter 4, “The Time Direction of Macrostatics.”
* For more on the connection between the second law of thermodynamics and living beings, check for example “The Animate and the Inanimate” by Sidis

# Dogmatism Through the Lens of Memory: The Unreliability of Past Events in Shaping Our Worldview

*On the Ability to Memorize and How Our Thinking Becomes More Dogmatic Over Time Due to Mental Images and Goals Mistaken for the Actual World*

Practitioners of mnemonics have long understood that the easiest way to remember a collection of unconnected pieces of information is to just make up some connections between them. This is because our brains cannot capture raw perception data — they can only capture mental images and causal connections i.e. we only remember events that are connected with one another.

1. Because we necessarily see them as connected, all events that we remember form a structure known as a causal chain.

An event that has nothing to do with our causal chain is simply not perceived by us (or, if perceived, it is not remembered even for a second). In many ways, placing the event in the causal chain is perception itself.

However, since we humans have only one causal chain — that is, we do not have multiple ways to perceive a given collection of events that we can switch between, putting an event on the causal chain also means replacing it with a mental image.

1. Due to the way memories work, mental images reinforce themselves over time — having the image of A ⇒ B in our minds, we would see A-s and B-s all over the place.

One of the biggest biases in our perception of time, which we have already discussed, is our inability to differentiate between the mental images representing the world (M) and the world itself (W). This results in us thinking that our perceptions represent the state of affairs, whereas they are merely a record of our mental images. Memories are probably the chief reason for this bias, as they can multiply it indefinitely: the moment we perceive a given “frame,” the memory of it is rich in sensory (empirical) data, which can be further analyzed and interpreted. But as soon as we perceive the next frame, many aspects of the previous one are compressed, leaving only those that provide context for the next frame. Then, when a third frame is perceived, the two we already have are packaged together again, leaving only the aspects useful for the perception of the third frame. The problem is that *there isn’t a way to know which aspects will actually be useful for providing context in the future*.

Like causality, we naively think of our memories as true representations of reality because they “work,” i.e. because they have a good success rate at predicting future events. However, as with any other mental image, we do not have a clear criterion for what it means for memories to “work”. Like any other mental image, memories represent an interpretation of reality, but they are also immutable. Once an event in the past is categorized under a mental image, let’s say A, it cannot be taken to mean anything else than A, even if we start using better and more accurate mental images for such events in the future.

1. The interpretation of past events cannot be modified, and different interpretations cannot be compared with one another, as the raw perceptive data is lost when details of the event are forgotten. Let’s say we experience an event that we label A at time T1, and then later, at time T2, we “upgrade” our understanding and categorize the same class of events under a new related mental image — A'. (We can think of A' as better and more accurate, although whether it is so is actually irrelevant for our example.) Although this upgrade in our worldview would affect all future events, it would not change how the event experienced at time T1 is categorized—it will still be A. Because sensory data is lost, there would be no way for us to know whether it was actually A' or not.

In other words, past events that we remember are mere projections of the mental images we used at that instant. They are as unstable and as subject to change as our future projections.

Furthermore, events that are part of the causal chain can be compressed further by imposing additional structure over time. For example, if I remember that I went to school yesterday, I do not remember going out of the house, locking the door, waiting for the bus, etc., as all of this is implicit. (Some computer compression algorithms are based on the same principle.) This compression process repeats more and more as our memories age. For instance, in ten years, you wouldn’t remember every day you spent at school, you’d just have a very abstract image of the time you spent there. However, this compression algorithm is “lossy” — meaning that over time, our memories become more and more abstract. We remember less and less of what really happened in the form of actual events and more in the form of abstract mental images.

The more abstract a concept, memory, or mental image is, the less *real* it is (or rather, the less it has to do with the concept of realness). However, because memories are images and not raw perception data, we cannot modify our perception of past events. The more distant an event is, the more abstract and “stylized” it becomes, i.e., connected with the mental images we used when we perceived it. Because of this, we cannot use our memories to create any *new* mental images, only to extrapolate on the images we already have. This is why older people tend to be more dogmatic than younger people—we accumulate more mental images with time and, therefore, perceive less. The only way to prevent this is to have no memories at all.

## The Default Interpretation

We showed that memories are a very unreliable source for understanding reality, unreliability that we should take into account when making any conclusions based on them. However, as humans, our stance is not like this, as many of these images are deeply embedded in our minds.

It is often said that the definition of insanity is doing the same thing over and over and expecting different results. This saying clearly embodies one of the main (if not *the* main) postulates of all human societies. In just a few words, it describes both the function that all people have in society (making the world behave uniformly for everyone) and what to do with those who refuse to participate in that task (label them as “insane,” i.e., exclude them from it). In reality, this principle is not entirely true.

For example, Suppose I experience something that brings me positive emotions (e.g. consume some tasty food). According to this principle, I would associate those emotions with the thing (or more precisely, with its appearance) and strive to repeat that experience to achieve the same result ( i.e. I would think that “more is better,”) But obviously this doesn’t work. So perhaps a more fitting definition of insanity would be — doing the same thing over and over and expecting *similar* results all the time.

Someone might argue that the example is simplistic and that anyone in their right mind would know when to stop eating. However, I would argue that the reality is that most of us do not know (or we know in theory but not in practice). And that even this basic and seemingly obvious fallacy is something we struggle to grasp, and I believe it is enough to illustrate my point. Thoughts like “more is better” are an inherent defect of the law of causality and the way we perceive the world, and they cannot be removed without undermining causality itself.

## References

* Nassim Taleb often deals with the human inability to see and account for uncertainty.
* Marshall McLuhan discusses the cultural aspect of our worldview in his book *Understanding Media*.

# The Real World and the Self: Deconstructing Identity and Choice

*On the Real World and the Self*

When the roman emperor Julius Caesar crossed the river Rubicon and entered enemy territory, he famously declared, “The die has been cast.” This phrase implied that from that moment onward, battle was the only option, and in this sense, its outcome had been predetermined (I believe (though I’ve never seen anyone else claim it) that the die he referred to belonged to the Greek/Roman deity Decuma/Lachesis—one of the three Fates, who, according to myth, determined the course of each person’s life by casting a die). While I might be wrong about the reference, the phrase nevertheless serves as a fitting illustration of the Greco-Roman view of fate as a destiny — predetermined and immutable, like a thread through which we are all bound to travel (another image drawn from the myth of the three Fates).

But that view is nonsense. Fate isn’t predetermined. At any moment, Caesar could have chosen to retreat, surrender, spend the day fishing in the Rubicon, or pursue a thousand other things instead of, or in parallel with fighting. The reason Julius Caesar didn’t see any of those options is that he wouldn’t be Julius Caesar if he chose any of them — meaning they wouldn’t fit the narrative that is himself.

In much the same way, each of us has countless options that could dramatically alter our fate. Yet we rarely consider the vast majority of them simply because we feel that choosing them would make us lose our identity.

The idea of the self, like identity in general, is a personification of what is knowable — your persona, your job, the things you know and believe — these make up who you are. Any habit, thought, or urge that falls outside this narrative isn’t truly part of the self. And this isn’t because such habits/thoughts/urges are rare, better, worse, or in any way different from the rest of your habits/thoughts/urges. They aren’t part of the self precisely because they aren’t part of the narrative.

1. The self is not who you are, but who you want to be — your projected goal.

We spoke how the concept of God is a personification of the aspect of reality that doesn’t adhere to the principle of causality and remains unknowable. Religious rituals can be rationalized with the following argument: although we can’t truly understand the unknowable aspects of reality, we must pay tribute to them so as not to forget their existence. In this respect, the greatest mistake of these rituals, and of religion as a whole, is that they anthropomorphize (or personify) the unknown by assigning a self to it—God.

The idea of the human self has certain similarities to that of God and is flawed for the same reasons.

All conflicts within ourselves are essentially conflicts between different types of goals, each of which entails different mental images. For instance, believing that A ⇒ B and perceiving the world in terms of A’s and B’s implies one role for us, while believing that X ⇒ Y and perceiving the world in terms of X’s and Y’s implies a different role. The common characteristic of these views is that they both necessitate *a* role, as they wouldn’t exist otherwise. In this sense, we might say that there isn’t one M, but many M’s, all interconnected.

To see the origin of the idea of causality, we need to look nor further than within ourselves. In fact, the concept of oneself is just a treatment of the concept of causality.

## Roles

We are defined by what we identify with. When we identify with an idea or dogma, our sense of self is tied to its validity—meaning, if the idea is proven wrong, our identity feels threatened. This is why the self-concept clings so tightly to its beliefs: unlike ordinary, empirical ideas that can be weakened by the discomfort of being proven wrong, the concept of the self resists this challenge.

1. The idea of the self shapes all other ideas.

Unlike other ideas, abandoning the concept of the self causes pain. Thus, the self is a constructed fiction — a role we play, like actors on a stage.

Consider Julius Caesar. Though history remembers him as a great Roman emperor, a victorious general, and a figure of immense power, he was also, perhaps, a failed poet, an average swimmer, or a person with chronic back pain—a person not so different from you.

Comparing yourself to Julius Caesar may seem absurd, but remember that the image of Julius Caesar we hold is, in many ways, a fiction. So how is being “you” any less of a fiction? It isn’t, really. However, when you act as yourself, at least you avoid confusing others about who you are.

Moreover, you can’t avoid playing a role. Even if you refuse to play roles, that itself becomes your role.

The most absurd thing is to take your role too seriously—to believe that the “you” others perceive is the real “you” and to cling to that identity even after it has outlived its usefulness. Sometimes, roles have a purpose. In collaborative efforts, for example, it’s helpful for everyone to know their parts. That’s when roles work.

By playing your role with good timing and without unnecessary intensity, you acknowledge that roles are not something to be taken too seriously.

## References

For more on the recursive nature of the self, refer to *Gödel, Escher, Bach* by Douglas Hofstadter.

# Conclusions

The ideas outlined here have far-reaching implications, but attempting to synthesize them into prescriptive rules for living would not do them justice. It would merely reduce them to yet another doctrine, which is precisely what we’ve sought to avoid. However, I won’t leave you completely in the dark. Here are some conclusions I’ve personally drawn for the illusion that is myself:

* Don’t become overly attached to specific interpretations of reality. Practice empirical thinking, keeping your mind open to new evidence and perspectives.
* Don’t worry about making mistakes—anything worth doing is worth doing poorly.
* Compare things in terms of quality, not quantity. Acquiring more possessions won’t bring happiness, just as living longer won’t lead to immortality.
* If you’re feeling sad, it might be because you’re thinking of yourself too much. Shifting your focus outward can often provide relief.

# Appendix

## Table of M and W

|  |  |  |
| --- | --- | --- |
|  | M | W |
| **Kantian equivalent** | World as we perceive it | World as it is |
| **Characteristic** | Fragmented | Unified |
| **Mode of perception** | Dogmatic | Empirical |
| **Defined by** | Causality | Entropy |
| **Time structure** | Chain | Graph |

M is unified in a sense, as it obeys common principles. However, W is unified on a much deeper level—where chaos and lack of structure make everything interconnected. Meanwhile, our mental world (M) is fragmented, allowing us to isolate and view specific parts independently.

## Short History of Causality, Determinism, and Time

* **~520 BCE** - **Heraclitus** comments on the elusive nature of the causal chain and its connection to the self.
* “We both step and do not step in the same rivers. We are and are not. Moreover, we step into and out of the river as different beings.” (B49a)
* **~360 BCE** - **Zeno of Citium**, the founder of Stoicism, proposes that every event has a cause, and given the same circumstances, the same result will occur.
* “It is impossible that the cause be present yet that of which it is the cause not obtain.”
* **~300 BCE** - **Euclid** publishes *Elements*, demonstrating how a complex deterministic system can arise from a small set of rules using inductive reasoning.
* **~210 BCE** - **Sextus Empiricus** nailed it with his critique on inductive reasoning, arguing that a universal rule cannot be established from an incomplete set of instances.
* “When they propose to establish the universal from the particulars by means of induction, they will effect this by a review of either all or some of the particulars. But if they review some, the induction will be insecure, since some of the particulars omitted in the induction may contravene the universal; while if they are to review all, they will be toiling at the impossible, since the particulars are infinite and indefinite.”
* **1687** - **Isaac Newton** publishes *Principia Mathematica*, introducing calculus and positing the existence of absolute time and universal laws.

“Absolute space, in its own nature, without regard to anything external, remains always similar and immovable. Relative space is some movable dimension or measure of the absolute spaces; which our senses determine by its position to bodies: and which is vulgarly taken for immovable space … Absolute motion is the translation of a body from one absolute place into another: and relative motion, the translation from one relative place into another …”

* **1739-40** - **David Hume** publishes *A Treatise of Human Nature*, critiquing induction and asserting that cause and effect are subjective and imaginary.
* “This deficiency in our ideas is not, indeed, perceived in common life, nor are we sensible, that in the most usual conjunctions of cause and effect we are as ignorant of the ultimate principle, which binds them together, as in the most unusual and extraordinary. But this proceeds merely from an illusion of the imagination; and the question is, how far we ought to yield to these illusions. This question is very difficult, and reduces us to a very dangerous dilemma, whichever way we answer it. For if we assent to every trivial suggestion of the fancy; beside that these suggestions are often contrary to each other; they lead us into such errors, absurdities, and obscurities, that we must at last become asham’d of our credulity.”
* On Newton:
* “While Newton seemed to draw off the veil from some of the mysteries of nature, he showed at the same time the imperfections of the mechanical philosophy, so agreeable to the natural vanity and curiosity of men; and thereby restored her ultimate secrets to that obscurity, in which they ever did and ever will remain.”
* **1781** - **Immanuel Kant** responds to Hume’s critique, investigating causality in *The Critique of Pure Reason*, and refuting Newton’s concept of absolute time.

Now let us proceed to our problem. That something happens, i.e., that something or a state comes to be that previously was not, cannot be empirically perceived except where an appearance precedes that does not contain this state in itself; for a reality that would follow on an empty time, thus an arising not preceded by any state of things, can be apprehended just as little as empty time itself. Every apprehension of an occurrence is therefore a perception that follows another one. Since this is the case in all synthesis of apprehension, however, as I have shown above in the case of the appearance of a house, the apprehension of an occurrence is not yet thereby distinguished from any other. Yet I also note that, if in the case of an appearance that contains a happening I call the preceding state of perception A and the following one B, then B can only follow A in apprehension, but the perception A cannot follow but only precede B. E.g., I see a ship driven downstream. My perception of its position downstream follows the perception of its position upstream, and it is impossible that in the apprehension of this appear­ance the ship should first be perceived downstream and afterwards upstream. The order in the sequence of the perceptions in apprehension is therefore here determined, and the apprehension is bound to it. In the previous example of a house my perceptions could have begun at its rooftop and ended at the ground, but could also have begun below and ended above; likewise I could have apprehended the manifold of empirical intuition from the right or from the left. I n the series o f these perceptions there was therefore no determinate order that made it necessary when I had to begin in the apprehension in order to combine the manifold empirically. But this rule is always to be found in the perception of that which happens, and it makes the order of perceptions that follow one another (in the apprehension of this appearance) necessary.

(…)

If, therefore, we experience that something happens, then we always presuppose that something else precedes it, which it follows in accordance with a rule. For without this I would not say of the object" that it follows, since the mere sequence in my apprehension, if it is not, by means of a rule, determined in relation to something preceding, does not justify any sequence in the object.d Therefore I always make my subjective synthesis (ofapprehension) objective with respect to a rule in accordance with which the appearances in their sequence, i.e., as they occur, are determined through the preceding state, and only under this presupposition alone is the experience of something that happens even possible.

On Hume:

“I freely admit that the remembrance of David Hume was the very thing that many years ago first interrupted my dogmatic slumber and gave a completely different direction to my researches in the field of speculative philosophy.”

* **1814** - **Pierre-Simon Laplace** introduces scientific determinism:
* “We may regard the present state of the universe as the effect of its past and the cause of its future. An intellect which at a certain moment would know all forces that set nature in motion, and all positions of all items of which nature is composed, if this intellect were also vast enough to submit these data to analysis, it would embrace in a single formula the movements of the greatest bodies of the universe and those of the tiniest atom; for such an intellect nothing would be uncertain and the future just like the past would be present before its eyes.” (*A Philosophical Essay on Probabilities*)
* **1905** - **Albert Einstein** publishes “The Thermodynamic of Moving Bodies,” proposing the special theory of relativity and slowly killed Newton’s concept of absolute time, aligning with some of Kant’s ideas on space and time (though Einstein opposed Kant’s idealism).

the same laws of electrodynamics and optics will be valid for all frames of reference for which the equations of mechanics hold good. We will raise this conjecture (the purport of which will hereafter be called the “Principle of Relativity”) to the status of a postulate, and also introduce another postulate, which is only apparently irreconcilable with the former, namely, that light is always propagated in empty space with a definite velocity c which is independent of the state of motion of the emitting body. These two postulates suffice for the attainment of a simple and consistent theory of the electrodynamics of moving bodies based on Maxwell’s theory for stationary bodies. The introduction of a “luminiferous ether” will prove to be superfluous in as much as the view here to be developed will not require an “absolutely stationary space” provided with special properties, nor assign a velocity-vector to a point of the empty space in which electromagnetic processes take place.

On Kant:

The very fact that the totality of our sense experiences is such that by means of thinking (operations with concepts, and the creation and use of definite functional relations between them, and the coordination of sense experiences to these concepts) it can be put in order, this fact is one which leaves us in awe, but which we shall never understand. One may say “the eternal mystery of the world is its comprehensivibility.” It is one of the great realizations of Immanuel Kant that the setting up of a real external world would be senseless without this comprehensibility. (Albert Einstein, Out of My Later Years)

*1935* - ***Einstein*** (again) along with *Podolsky* and *Rosen* argues that the universe puts forward what is now known as the *EPR paradox*, and argues that the quantum-mechanical wave function must be an incomplete description of the physical world. But the real significance of the paper is that it takes as a given the assumption that the universe is deterministic.

While we have thus shown that the wave function does not provide a complete description of the physical reality, we left open the question of whether or not such a description exists. We believe, however, that such a theory is possible.

Or in Einstein’s own words:

I, at any rate, am convinced that [God] does not throw dice

*1964* - ***John Stewart Bell*** publishes a paper titled “On the Einstein Podolsky Rosen Paradox” where he makes the simplest and at the same time most ground-breaking discovery in this list by just realising that there exist some quantum phenomena which cannot be accounted for any deterministic model of the universe (that is unless you are willing to believe that two particles can “communicate” with each other so that they can synchronise their states, and they can do so faster than the speed of light). This article is largely an effort to examine the philosophical implications of Bell’s inequality are outlined in this article.

Einstein said that it is theory which decides what is ‘observable’. I think he was right - ‘observation’ is a complicated and theory-laden business. Then that notion should not appear in the formulation of fundamental theory. Information? Whose information? Information about what? On this list of bad words from good books, the worst of all is ‘measurement’. It must have a section to itself.

On Euclidian geometry

I agree with them about that: ORDINARY QUANTUM MECHANICS (as far as I know) IS JUST FINE FOR ALL PRACTICAL PURPOSES. Even when I begin by insisting on this myself, and in capital letters, it is likely to be insisted on repeatedly in the course of the discussion. So it is convenient to have an abbreviation for the last phrase: FOR ALL PRACTICAL PURPOSES = FAPP.

(…)

I expect that mathematicians have classified such fuzzy logics. Certainly they have been much used by physicists. But is there not something to be said for the approach of Euclid? Even now that we know that Euclidean geometry is (in some sense) not quite true? Is it not good to know what follows from what, even if it is not necessarily FAPP? Suppose for example that quantum mechanics were found to resist precise formulation. Suppose that when formulation beyond FAPP was attempted, we find an unmovable finger obstinately pointing outside the subject, to the mind of the observer, to the Hindu scriptures, to God, or even only Gravitation? Would that not be very, very interesting?

From “Against ‘measurement’”, Physics World (August 1990)