OLEKSIÎ POLUNIN

DOES THE EXPERIENCE OF TIME FLOW SHAPE OUR ABILITY OF CAUSAL THINKING? METAPHYSICS AND DAILY LIFE

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Does the Experience of Time Flow Shape Our Ability of Causal Thinking? Metaphysics and Daily Life

The human mind continuously produces explanations. An explained world is perceived as more understandable, more secure and open for forecasting. In many cultures that have a notion of time, time flow serves as foundation for notion of causality and for world description. Having at hand these two variables – time and causality – one wonders whether our experience of time flow impacts our ability to understand causality and so produce a proper world description?

Causality is applied for modelling of the simple events and for explaining the most complex happenings in the world like war or even expansion of universe. This is why one examines the mind's contribution to understanding causality. Both explanation and causality, belong to our idea of the world and they also shape it. They are dynamic

and extended along our experience of time flow. Every change or a turbulence in mental representation of time flow impacts on causality representation. Thus, one examines the role of human mind for creating a reliable world picture. Examining stability of mental cause-effect representation one examines the limits of our world picture and the possible dimensions for its further development.

An Experience of Time Flow and the Mind's Epistemic Ability in Peace and in Wartime

An experience of time flow is heavily predefined by a sequence of the actual events. At the same time the realm of events is an array of potential causes and effects. But what will be perceived as an event is decided by the human mind. A temporal shape and subjective value of an event modulate its potentiality to be perceived as a cause or an effect. A zero subjective value of an event eliminates its chance to serve as effect or as cause. One cannot build an explanation on nothingness. The mind judges what could be a cause depending on its own actual functional state. The state of the mind is often under impact of an actual environment. In peace time, under normal life conditions, the flow of events is mostly under the control of the subject. One actively shapes the line of events and so the line of one's life. Events may lead to wins or losses, but in most cases they do not endanger existence of subject and the subject's social relations. The simple daily occurrences such as visiting the supermarket, the university or the bank are tied to the regularity of official opening hours. One goes to bed without any doubt whether one will awake in the morning. One is able to recognize a schedule and the meaning of events. The events in most of the cases do not endanger personal existence. One shapes the events of one's life or one lets trustworthy others shape them. For instance, one may take advantage of a Christmas sale that

consists of a set of monetary saving propositions. After being judged, the propositions shape our behavior. What is important is that time continues to flow evenly for most such events. We could call it the healthy peaceful daily routine.

In wartime, the flow of consciousness often becomes highly segmented and disorganized. Usual daily activity can be interrupted many times a day. Time flow at the night becomes dependent on the alerts. Interruptions of life-line become a banality of being, that is, they become routine. After experiencing the multiple interruptions by air-alert and explosions even usual civilian daily life manifests itself as a dynamic turbulent mosaic. A person becomes just a figure on an uncertain field of events. At least partly one loses one's subjecthood and learns to be just part of the situation, to be an object or even an occasional target. One experiences a transition from the Heideggerian *Dasein* to a *nicht-sein* (non-being). Experience of time flow becomes decomposed and not integrated any longer. A person "jumps" in both mind and body from one micro-situation to the next. A lot of mental energy gets lost on such "jumping." After a while the mind stops ordering the events and just follows their flow without spending energy for their organization along the conventional timeline. In such a state one gets aware that for understanding the events and causality one must keep at least a certain amount of subjecthood and an organized experience of time flow. One begins to value the linear life flow with all its advantages, such as reliable cause-effect thinking, goal-means acting, being in control of what happens, being able to plan and to forecast one's actions and feelings. This phenomenological interdependence between experience of time flow and ability to cognize causality stresses the importance of its experimental examination. Mental life in wartime forces one to ask, what have we done to have lost the normal

comfortable kind of being? How and when has our mind failed to perceive essential events, establish causal relationships, and then also prevent danger. Human history has thrown up many such failures of the mind, to which list of examples we can also add the current Russian-Ukrainian war.

To Be or not to Be Perceived as an Event; Or how One Becomes Mentally Blind

Daily life presents to the mind a flow of events that go through an evaluation process. Firstly, one notices a valuable event, takes it as possible effect, then one looks for its cause. After finding the cause one strives to organize a repetition of the cause, and so the repetition of the valuable effect. If the effect was negative, one learns to prevent the cause. In such a way one changes one's role from a passive observer to an active creator of life. But do we perceive all events that help us to seek out their causes? What makes one event valuable and another ignored? How do we miss events with the potential to be an important cause? What is the ground of such mental blindness?

Every kind of prevention rests upon an ability to perceive an event and recognize in it potential danger or victory. One is hardly ready to prevent what is not perceived or what does not exist. And the question of existence is strongly bound by our mental representation of time flow. What is not given on a subjective timeline ceases to exist for that subject. The further away something is on a timeline, the less important it is for the mind. The comfort of being in the present time and the pleasure of future blindness are routed in a particular form of our mental representation of time. When a mistake is made, it is always made now and here, within an actual representation of time flow that

predefines the horizon of thinking and modulates the evaluative processes. Holding the mental horizon short and narrow, one avoids the cognitive and emotional costs for a deep event processing.

One such event happened in 2007 at the Munich Security Conference. A voice announcing the future aggression become loud enough. Vladimir Putin (2007) proclaimed that the failure of the USSR is a historic tragedy of the 20th century. With diplomatic words, he stated that the end of the world's largest prison – the USSR – was a historic tragedy. So, as the biggest tragedy, he declared the end of the Gulag, the end of the Soviet totalitarianism, communist cynicism and tyranny; the end of militarized aggression towards the civilized world. It was a tragedy indeed, but tragedy for the KGB-mind, in which people are not persons, but objects.

In Munich Putin spoke loud enough, but the event was misevaluated. Later, in 2022, Fried and Volker wrote that the real moment of revelation was Putin's conclusion that the liberal order, the Free World, was of no value to Russia (Fried, Volker 2022). Here we are not discussing the possible immediate and adequate preventive steps as reaction to Putin's speech. Of interest is the mind's inability to evaluate distant events, and so to forecast the set of possible consequences. In 2007, the possible consequences were too far away in the future to be valuable enough to break the comfortable being of Western politicians in their secure present moment. The same is true for most of the political leaders in Ukraine and other post-Soviet countries. Thus, a proper reaction was absent.

From a psychological perspective, Putin's speech was a self-report about the deep grief which was dangerous enough just because of Moscow's inability to accept the loss

of tyrannical power and to process the perverse grief in a civilized way. The speech was a warning, but the true cause was existential grief, the loss of the previous tyrannical self-expression. The tyrannical self-expression become illegal and immoral in the world of freedom. Thus, the KGB-mind was deeply confused by the existential vacuum it faced in the world of freedom, enlightenment and equality. That black yearning for unpunished tyranny, multiplied by years of authoritarian rule manifests as a wild act of aggressive war in Georgia in 2008 and in Ukraine first in 2014 and then in 2022.

Of course, besides the mentioned extreme example as causal relata one can take other events from daily life of normal people. As a potential cause one can take for instance, a marriage proposition, a buy-out proposition, or even an invitation to lunch at a restaurant. All of them change value along a timeline and depending on an actual mental representation of time flow. Correspondingly, it changes their ability to serve as a cause. This is the general interdependence between time flow representation and causality.

The next question is how the mind overcomes a warning event. In the same way as the smoker's mind overlooks a cognitive dissonance from the warning on a cigarette package, the European and Ukrainian politicians ignored Putin's explicit warning. The warning was not powerful enough to break the comfort of the present time being, and so it was devaluated. Its temporally distant future consequences were even further devalued. One finds such ignorance in the other domains of life: in education and in health care. For instance, one ignores bad habit which later result in a health problem. This devaluation rests upon the specific mind's ability to present and to undervalue the temporally distant events.

How Many Time Flows Run Our Mind?

The conventional thinking about time assumes that time is a kind of receptacle where everything happens and where individual behavior unfolds. But it is not the only way to think about time. We can look at time from a different perspective. Time is a basic category developed by the cognitive system for modelling an environment. A time-concept is a product of the mind and serves for better adjustment to the environment. We conceptualize human time processing as kind of cognitive controlling, which helps to shape individual and social behavior (Polunin 2015; 2016; 2021). This explains why the human mind as a creator can have more than one representation of time flow.

The multiplicity of time representations rests upon the mind's ability to reflect information in manifold ways (Polunin 2021). Daniel Dennett and Marcel Kinsbourne contrast two models of consciousness in terms of their treatment of subjective timing: the standard Cartesian Theatre model and the Multiple Drafts model (Dennett, D., Kinsbourne 1992). These two models show two ways to represent the temporal relations between events in the stream of consciousness.

In linguistics one finds clear indications of the mind's ability to develop several cognitive representations of time flow. In behavioral economics, Keith Chen used the fact that languages differ widely in the ways they encode time to prove the hypothesis that those languages that grammatically associate the future and the present foster future-oriented behavior (Chen 2013). According to Chen, the speakers of such languages save more, retire with more wealth, smoke less, practice safer sex, and are less obese. Our experimental studies (Polunin 2015; 2016) also demonstrate usability of the different cognitive

representations of time flow for framing a decision making. Another source of arguments for the multiple representations of time flow is developmental psychology, according to which the representations of the past and the future first appear in different developmental phases and are quite independent from each other.

So, an array of convincing arguments from numerous disciplines points to the mind's ability to develop multiple representations of time flow with different features. This requires a corresponding transition from the concept of singular time to a concept of the multiple time flows. In fact, time dissipates into a number of separate time flow representations generated by the human cognitive system. And each time flow representation impacts causality perception differently.

Cognitive Representation of Time Flow and Causality Studies

The temporally tagged events provide a basis for causal relations. But the introduction of the multiple representations of time flow raises a set of questions in regard to causality modelling. One shapes a new perspective on an already created world picture. The multiplicity of time representations means a multitude of intertemporal changes for one and the same object (event) over one and the same physical time distance. Such an impact influences a final representation of an event and thus the final establishing of causality.

According to James Woodward the manipulability theories of causation assume that causes are to be regarded as devices for manipulating effects. The manipulationist approach assigns a central role for understanding causation to human action. In this case, the action consists

in activating different mental representation of time flow and mapping the cause and effect on them. This manipulation induces a discrepancy in the representation of cause, and so enables examination of its limits and reliability. So, we distinguish manipulation of cause and manipulation of cause representation, and the same for effect and representation of effect. Such variables provide ground for a number of experimental studies, enabling the development of instruments influencing subjective causal attribution.

But how do we induce such manipulation of the events representations? By alternating time representation for one and the same worldly happening, one influences the judgment outcome regarding availability/absence of the causal relationship. It was experimentally shown that different mental representations of time impact the representation of an event differently (ibid.). So, the value of an event is a function of an actually activated representation of time flow. Holding constant all other variables, one varies the value of event (or object), changing only the actual representation of time flow. If such an event plays the role of a cause, the cause shows the variation in power. So, one manipulates an outcome of causality judgment without any manipulation of worldly events. This distinguishes an intervention in the mental representation of cause from a real-world intervention.

Conclusion, Perspectives and Practical Relevance

Immediately given human experience coincides with experience of time flow. The human mind naturally relies on varied representations of time, and so it induces the instability in representation of causality. This aspect was missed in earlier causality studies. The proposed introduction of multiple time representations necessarily

stresses the interdependence between the time and causality representations and leads to a deeper reductionism in causality modelling. It highlights the more elementary contributors to establishing the cause-effect relationship. One emulates an intervention that impacts the judgment outcome about a presence/absence of a causal relationship. This is an intervention into a person's internal world without touching the worldly causal relation. Thus, such variability of cause-effect relationship highlights the contribution of the cognitive system to development of causality representation, of explanations and finally of a world picture. It stresses the role of subjective time flow for our ability to cognize causality and so to produce a set of world descriptions. This contribution, being dynamic in its nature, is analogous to the role of functional features of a spyglass for creating an object's picture.

Causality does not only have explanatory power, but it is an essential part of action preparation. Thus, the modelling of causality in the space of the multiple mental representations of time flow contributes to further and more precise modelling of individual and social behavior. The described variability of causality representation widens the spectrum of behavioral responses to the world and reflects one of the adaptive mechanisms at the cognitive level.

The especially interesting fields of application of the multiple mental representations of time flow are: the temporal shaping of message or story, causality and responsibility modelling in legal studies, and intertemporal modulation of affect. One can induce emotions in various ways, and in many cases our emotions drive our behavior – personal, economic, political one. An event causing emotion can be mapped on the different representations of

time flow. Consequently, factually one and the same event enjoys discrepancy in its subjective value. As a result, one faces a discrepancy in affective reactions and their differing impact on behavior. So, one enables modulation of the affective reaction and of the behavioral outcome. Such an approach is applicable to the tasks of advertising, persuasion, modulation of subjective event-assessment, for temporal relativizing of values and responsibility. The modern mass-media technologies can turn it into a potentially powerful instrument.

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