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The Motion Beyond Sense Towards Cognitive Evolution and Unified Laws of Motion

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Abstract

This paper first explores the relationship between cognition and motion. Our typical cognitive mode, based on sensory forms, is integrated and, therefore, non-motion in nature. This highlights stability and relativity for practical cognitive needs, but at the same time prevents us from developing cognition of the complete form of motion. The result is a fundamental cognitive barrier for us to understand motion. By discovering the underlying cognitive principles, however, we can revise the cognitive process and redevelop the cognitive mode to meet the purpose of direct cognition of motion. Based on this newly developed cognitive mode, we will learn motion features directly and understand motion laws and principles, to explain natural phenomena and establish wide-range connections between them. These include the underlying principles of motion, gravity, the creation of matter and material forms, universal motion, and spacetime.

Keywords: Evolution of Cognition, Motion Cognitive Mode, Motion Laws, The Law of Gravity, Formation of Celestial Bodies, Universal Motion, The Creation of Matter, Spacetime.

Introduction

Sensory observation is integrated by neuropixels which have a stable structure but no motion association between them, as explained by Fu A., 2019 (reference1), integrated information cannot provide motion features. How, then, can we learn the true motion features that are beyond our sensory perception?

First, we will use a simple motion model. Let's imagine slowly stretching a rubber strip. We are naturally aware of the developing motion trends, contracting inward while simultaneously stretching outward. These are the elastic motion features from a motion perspective, wherein two opposite motion trends exist together. These features obviously develop with motion associations which can't be understood directly through integrated information. Therefore, in scientific study, which takes integrated sensory observation as the basis, the definition of elasticity is "the ability of a deformed material body to return to its original shape and size when the forces causing the deformation are removed". This definition doesn't involve any of the motion features we noted above, only the relative changes based in sensory observation, which is cohesive with our cognitive form. The virtual motion we sense is based on the relative changes of integrated information.

On the other hand, the motion features we discovered during the development of the above motion model are due to the natural awareness of motion features held by consciousness. Let's explain the cognitive principle here. This cognitive process is based on the interaction between consciousness and sensory information. During the cognition of stretching the rubber strip, the integration of sensory information tracks the trajectory of stretching, but has not gathered the features of motion. At the same time, our consciousness can track the trajectory of sensory information as well. In other words, the movement of consciousness synchronizes with the



movement of the rubber strip through the updating of sensory input. Simply said, our consciousness also stretches. Sensory observation, with its integrated principle, can't capture the motion features of the rubber strip based on motion association. Therefore, the awareness of elastic motion features can't come from our senses. As a part of cognitive activity, within the cognitive process, our consciousness also synchronizes the motion pattern of rubber strip and becomes the carrier of the motion features we cognate. If we choose to transform the focus of relative shape-changing to the motion features that our consciousness is providing, we can start building the understanding of motion form and its features.

Elasticity as previously defined is comprised of the interactive features which are the relative changes we cognate through sensory observation. This represents a reduced, non-motion form of cognition which can help us learn, judge and make predictions regarding the interactive activities with an elastic subject. However, the cognition of the elastic motion features of consciousness does not have such targeted functions. To cognate, the features of consciousness is essentially a revision of the cognitive mode, as Fu A., (2019) states (reference 2). It is, nonetheless, the key to the door of motion truths.

The Cognition of Motion

Through these two different perspectives of the concept of 'elasticity', we can see clearly that integrated cognition focuses on relative change and motion cognition cognates motion features. Through motion cognition we will directly learn the motion features and understand motion principles. Most importantly, the truth will be self-evident, which means natural motion phenomena will become accessible for us and we will be able to naturally establish a wide range of connections among them. Elasticity is the basic characteristic of motion forms, and it can be (re-)defined as the characteristic of a subject which is able to contain and remain two opposite motion trends (expansion and contraction) at the same time. As our discoveries expand, we will gradually realize that natural motion subjects all contain elastic motion qualities. Some are easily recognizable, such as water, air, and life forms, but this also includes motion forms we can't directly sense, like magnetic fields. However, we still can identify their elastic motion features by pulling opposite magnetic poles apart. In balance, the expansion and contraction are at a stalemate. In motion, they are in conflict. Therefore, the patterns of motion development must be able to coordinate the development of these two features. These motion patterns are results of naturally developing motion, thus you also can call them motion laws. I divide natural motion law into three patterns: basic, advanced and systemic.

The Basic Motion Pattern

Within a calm surface of water, naturally balanced with the opposing forces of expansion and contraction, when we cast a stone to break the balance, motion begins with the pattern of waves to develop the diffusion of motion. In the development of motion, the pair of contradictory trends always exist at the same time and a wave is the result of the coordination of the two. A wave is a regular and periodic motion law which, through the alternating development of opposing motion trends, spreads motion. In a wave, expansion and contraction always coexist, but alternate development. This means that as the expansion strengthens, the contraction is relatively weakened and as the expansion weakens, the contraction grows, as shown in figure 1. Waves are the basic motion pattern of natural motion development. The motion pattern of a wave is directed by the elastic features of motion form.

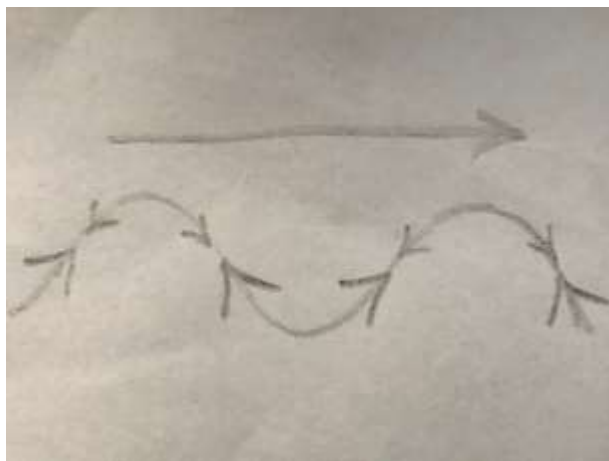


Figure 1, the basic motion pattern, allowing the coordination of expansion and contraction

The Advanced Motion Pattern

The basic motion law coordinates motion in general, but in certain circumstances, the motion conditions are beyond the range of fluctuation coordination, and the development of motion is forced to form a more advanced motion pattern to provide coordination and continuity to the motion conflict. Let's explore the formation process of the advanced motion law.

In a flat sink (like those typically found in a kitchen, see image), turn on the water and observe the impact at the bottom of the sink and the formation of an area of expansion from the center. This motion pattern is similar to that of the stone colliding with the water but with a much quicker and more consistent impact, which creates a more advanced motion pattern.

At an area, a certain radius from the center, the expansion of water begins to fail and forms a circular "conflict zone" with the continuous flow from the center. When the amount of water is small, from the center to the circle the water travels outward in waves, which means the motion conflict is weak enough and can still be coordinated with a wave pattern (see figure 2-a).



Figure 2-a, showing the conflict radius and wave pattern. Figure 2-b, as conflict increases, the law of rotation develops, as seen in the formation of the bubbles

Then, slowly increase the quantity of water, thus increasing the strength of expansion, which causes a rise in the

intensity of the motion conflict. At a certain point, suddenly, a large number of bubbles appear (see figure 2-b). Turn the water quantity down a tiny amount, and the bubbles disappear. This means there is a certain degree after which the motion conflict between expansion and contraction will cross the point of transition, and the wave pattern will be transformed in to a new motion law of rotation which coordinates the stronger motion conflict, as seen in figure 3.

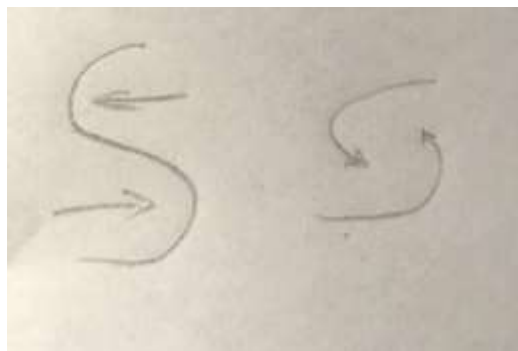


Figure 3, the formation of a vortex

The elastic motion conflict created during the stronger water burst is similar to the motion conflict created when two cars drive pass by each other. When the conflict of two opposite motion trends of airflow reaches a certain level, a vortex form. This is a naturally developing motion pattern of rotation. It is also an advanced motion law. Motion that moves according to the advanced motion law can be called advanced motion. In this case, the vortex sucks air into the water, forming air bubbles wherever the motion vortex is strong enough.

The Systematic Motion Pattern

The water in the sink is a motion model with specific conditions that can help us understand the natural development from the start of motion to the advanced motion pattern. In the continuous motion of the water flow in the sink, the formation of vortices not only creates the bubbles, but it also directs the motion pattern of the bubbles. We can observe bubbles that rotate independently, superimposed, or side-by-side. The movement of the bubbles marks the track of the motion pattern of systematic rotation. As the motion conditions continue to upgrade, we can explore the complete formation of a systematic motion pattern. For example, with a nuclear explosion, an impact wave expands outward from the center of the explosion like the water impact in the sink, but much stronger. At an area a specific radius from the outbreak center, a similar circular conflict zone forms, as well as the advanced motion pattern of rotation.

The development of motion also shifts from an initial diffusion to a rotational concentration. The motion model is pushed into systematic development. In waves, the motion development of fluctuation coordination appears in a manner of 'spreading around'; now, the motion development of rotation coordination is a 'spiraling up'. The more violent the conflict is, the more thorough and comprehensive the progression of motion coordination. In the above motion model, when the conflict is huge and strong enough, the independent, superimposed, or side-by-side cyclones will be created, from micro to macro, and will converge into a one big cyclone. It becomes a motion system which contains and maintains the unified motion law: rotation. The formation of the motion system means the coordination and continuous internal motion law has been established. Even though the nuclear explosion only shows the embryonic motion system and lasts for a limited time, it demonstrates the

process of formation from a massive explosion to a systematic motion. In general, the existence and development of motion starts from the center and expands outward, just as within the three leveled motion models discussed above which develop according to the degree of motion conflict. The magnitude of the motion within these models determines the motion pattern: wave, advanced rotation or systematic.

Universal Motion

We don't have a complete view of universal motion, especially the developmental history of the universe, but there are two factors that can help us to identify the systematic motion of the universe: the unified advance motion pattern and the elastic features of motion. First, even without understanding motion features and laws, a sensory observation already helps us to track the movement patterns of the universe from micro to macro, which is rotation. So, we learn that motion within the universe is unified based on the advanced motion law, which matches the systematic motion laws we have discovered above. But the second factor of universal motion we are not yet familiar with because it can only be understood when we switch to the motion cognitive mode.

We know that the universe is full of gravity. Imagine, we can jump up from the ground and then are pulled back to the ground. Gravity is stretched when we jump. It works like an elastic strength. If it is not clear for you on earth, try to judge the elastic features of gravity with astronauts jumping on the moon, in order to directly understand the elastic feature of gravity. Gravity is the fundamental motion of our universe, and it contains elastic motion features. Therefore, we consider the universe as a motion system based on the elastic systematic pattern. we can also confirm there was an explosion before the universe was formed, large enough to create a self-sustaining motion system. In my study, the universe, which is unified by the advanced motion law, can be understood from three different angles: regular motion, material creation, and the space-time world.

Laws of Motion

The advanced motion pattern can be represented by a spiral curve, as seen in figure 4. It is an advanced motion law which coordinates the continuous motion of the universe. Following the developmental trends of the curve, we can learn that the motion pattern is promoted by the alternating development of inward contraction and outward expansion.



Figure 4, spiral curve representing the advanced motion law

In fact, any continuous elastic motion is periodically developed, resulting from the natural existence of the elastic features of motion forms. Through the motion pattern of the spiral curve, the elastic features of motion have been coordinated, and regular and continuous motion can develop. Let's discover more details about this motion law. The precursor of gravitational motion is the elastic impact wave produced by the explosion. Gravity can be understood as an elastic vortex field based on the advanced motion law of rotation. It coordinates two opposite motion trends within itself: inward contraction and outward expansion (image5).

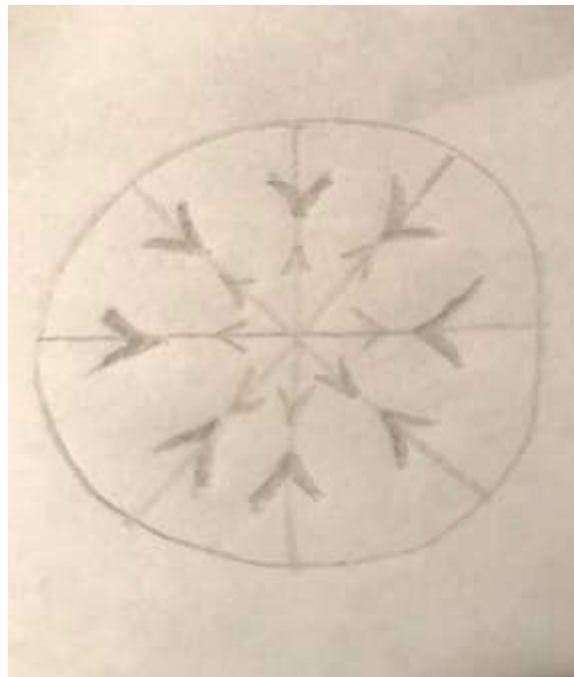


Figure 5, the coordinated conflicting forces within a gravitational field

These two motion trends can't exist in isolation, instead, they coexist as a pair of elastic features. That is why the rotation contains inward contraction, but doesn't collapse. In this case, inside the vortex, the contraction is convergent, centralized and powerful, while the expansion is decentralized and weak. This means we are affected by two opposite motion trends of gravitational motion: the strong effect of contraction and the weak effect of expansion. Therefore, even though the strength of contraction is powerful enough to confine the sea and mountains to the earth's surface, it still allows for a thin blade of grass to grow upwards towards to the sky. Attraction is the more powerful motion trend, but not the only motion trend of gravity, which means we are held to the surface of our planet by the gravitational contraction but our movements are also supported by gravitational expansion. Comparing our movement between earth and the moon, we can notice that gravitational contraction and expansion are paired motion forces. On the moon, the two motion trends are both weaker than on the earth. Therefore, we can jump higher under the weaker gravitational contraction but at the same time it is more difficult to move our body because there is less gravitational expansion to promote our movement in general.

Material Creation

The spiral curve also represents a motion law that creates basic material units of matter and diverse material

forms. According to the motion law above, I believe the motion pattern of rotation is the basic form of units of matter and the reason for their continuous existence. It appears as a particle because it is extremely microscopic and introverted due to the strong motion trend of contraction. Therefore, the foundation of matter is motion. This means that if we break the very last layer of particles, there will be nothing left. The nature of a unit of matter is highly introverted motion. The existence of the advanced motion pattern maintains the stable form of matter. Therefore, when the motion pattern is destroyed, the introverted motion releases energy, typically in the form of an explosion. This is the result of the study of high energy particle physics, which, lacking the perspective of motion, treats material units as integrated subjects which can be deconstructed. This is simply the study of the in-depth destruction of natural units of motion and the motion mechanism. It allows discovery of interactive facts which benefit technology, but not the motion truth. Not just any level of motion conflict can create matter from out of thin air. The stability of matter forms is maintained by continuous motion. The higher the starting point, the stronger the introverted strength will be and the longer the motion form of rotation will last. The microcosmic units of motion with sufficient stability become the foundation of matter. For us, there is no higher starting point than that of a cosmic explosion. It is beyond our imagination. The high start of universal motion created both stable systematic motion and a basis for the material of this universe.

Universal motion is built on a uniform advanced motion law from micro to macro. When the micro motion forms basic matter, the macro motion will naturally gather them to create bigger matter forms. The early stages of the gravitational advanced motion, acting like regional vortexes, had unimaginable extreme attraction which compressed the smaller material units. Starting from the center of the gravitational vortex, spherical material bodies were formed and grew due to the combined action of inward compression and outward distribution. This means the trend of outward dispersal uniformly distributes the matter during the compression caused by the inward centripetal motion trend. The material body grows and distorts the elastic gravitation vortex from inside. As it grows, the two ends of the vortex close and form a gravitational field wrapped around the core of spherical material. Therefore, gravitational vortexes produce planets and also drive them to move in a pattern of rotation and revolution, with universal systematic motion. As the motion gradually heads toward inevitable failure, gravitation motion is failing as well. However, gravity and mass maintain proportionality. Therefore, the scale of celestial bodies can be the basis for us to judge the relative motion strength of gravity, but is certainly not the cause of gravity. Instead, the gravity is the cause of the mass of material. As discussed above, the nature of matter is motion. The nature of mass is motion too. Mass is not true a quality of matter, but an effect of centripetal gravity. Outside the regional gravitational vortex, the mass is negligible. In this case, the mass of a body only exists within the gravitational vortex and the effect of mass is only centripetal. That is the reason bodies with a huge mass can remain suspended in space.

The cognition that mass is the cause of gravity is not based on understanding the motion law of gravity, but is a logical hypothesis based on the relative features: higher body mass is surrounded by relatively stronger gravity. It is a dialectic cognition, absent the understanding of motion. Just like all non-motion natural scientific theories, it can't answer the basic queries of natural motion phenomena such as: if mass is the cause of gravity then what causes the mass? How can bodies with a huge mass remain suspended in space? Why do celestial bodies continue to rotate? Now we understand that we can't solve the puzzle of nature motion from an integrated perspective.

Let's continue the topic of creation. The sphere is the basic form of matter created by advanced motion. During the formation of celestial body, although the growth of body does not influence the motion principle

of the gravitation vortex, it does change the shape of the vortex. Therefore, in the process of creation, the advanced motion and growing material often affect each other, leading to the creation of variety forms of material.

The spiral curve can represent the motion law which maintains its stable form and regular development. It is the motion law that results in the creation of matter, celestial bodies, galaxies and the universe. It is also the inheritance law of life. For life, this inheritance law is the law of motion and the law of creation. It maintains the stable form and regular motion during the reproductive process. In scientific study, the genetic vehicle of the continuance of life is called DNA. Due to the limitations of our current cognitive form, even though the model of DNA appears as a spiral curve, our conceptualization of DNA is still based on integrated information and shows a lack of understanding of the underlying motion mechanism. The absence of motion is a general problem within the study of material science.

In addition, there is another motion trend acting on this motion law; the growth of the motion form caused by the decrease in centripetal contraction, as the motion itself is gradually trending towards failure. Simply said, as the motion pattern follows the advanced motion law, the failure of the motion is the cause to promote the growth of motion, and they are a pair of inseparable factors. Except for strongly compressed material forms which don't have much room to grow, everything based on the advanced motion law has a period of continuous growth. Due to the gradual failure of motion, the universe and gravitational vortexes have also been failing and, thus, growing, and the distance between celestial bodies has been gradually increasing. The motion features of human life also perfectly match what we have learned here. Life is also an elastic motion system inherited by the advanced motion law, which acts periodically, towards gradual growth and motion failure. Growth through failure and failure through growth. This is a constant among every universal phenomenon since everything is unified by the same motion law.

Spacetime as a World Principle

Space-time is an environmental motion feature created by the advanced motion. We know inside the gravitational vortex, there are two fundamental motion trends coexisting. The environmental motion trend of inward contraction is the source of binding (space) and outward expansion is the source of promotion (time). The two motion trends create the effect of stability and vitality within the zone of space-time motion. Based on this understanding, space-time should be a better description of the gravitational motion create by advanced motion. Simply said, space and time are two different motion trends within one motion law. The space-time effects will act on all subjects within it as a fundamental world principle.

Space-time is a basic motion specification, and with the inevitable advancing failure of universal motion, space-time also trends towards failure, which is a unified trend of all space-times. Therefore, space-time is not immutable and deterministic. At the same time, the space-time distribution is also not equal throughout the universe. We can directly cognate the space-time motion features of different gravitational environments by switching to a motion cognitive mode. On the moon, space is weaker and time is slower than on Earth. In an environment which has no motion specification of binding and promotion, we will cognate it as having no space-time. Therefore, space-time is the effect of an environmental motion feature which can be directly recognized. Every planet is surrounded by a differing space-time motion environment. The motion features of space and time establish a fundamental rule of a particular motion world, which is based on the advanced motion law. Therefore, space-time is a world principle and order, and the universe contains countless worlds. The spiral curve also could represent a space-time motion curve. It contains an internal space-time world with a

fundamental motion principle. From the basic material units to the entirety of the universe, any natural motion phenomena based on the advanced motion law will contain specific and exclusive space-time characteristics. We can identify everything by its specific space-time attributes. Therefore, the curve can also represent an individualized or unified characteristic. From the above point of view, motion, matter, and space-time are perspectives that can be separated or connected to have a complete understanding of natural motion laws and phenomena. The spiral curve represents the advanced motion law which unifies the law of universal motion, the law of creation, the world principle of spacetime, and the nature of individualization. This is the fundamental answer that has eluded us since the beginning of the scientific study.

Motion Physics and Non-Motion Physics

It seems, perhaps, too smooth and easy to cognate nature motion through the above cognitive process, especially, compared to the long and arduous study of science with all the complex operations and profound hypotheses that have been made. The fact is that the cognitive difficulties, extreme methods, complicated mathematical formulas, and abstract concepts are created by the cognitive barrier, the barrier stripping us from motion reality. However, once the barrier is broken, the truth is self-evident. Based on the motion of consciousness, direct perception of motion features is utilized to cognate motion laws and understand natural motion phenomena.

Both integrated and motion cognitive modes can provide the recognition of a motion pattern like waves or rotation. The difference is that the integrated cognition provides no motion features, establishing a barrier to fundamentally understanding motion. In another hand, motion cognition, which bases on motion features, naturally develop the understanding of motion laws and the principle behind them. The two cognitive modes are not conflicting. The problem of integrated cognition is just that it is lacking motion, not that it is against the motion. Once we have filled in the missing information, the two cognitive modes can be unified by the truth. More importantly, the whole of natural phenomena becomes the evidence to prove that motion should only be and can only be cognized and understood in a direct way.

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