Journal of Contextual Economics, 142 (2022) 2: 141 – 158
https://doi.org/10.3790/schm.2024.360042

The Aesthetic Ground of Scientific Inquiry

By Adam De Gree*

Abstract

This article is about the relationship between visions and theory. In the modern vision, the world is a collection of things. In the process vision, the world is a system of relationships. Each of these visions structures inquiry in a distinct way. If the world is a collection of things, time and place are irrelevant and knowledge is objective. If it is a system of relationships, context determines meaning and knowledge. In the modern vision, regularity is a matter of equivalence, while in the process vision, regularity is a matter of order. Visions shape scientific inquiry, but they are not themselves scientific, for they cannot be grounded in facts about the world. Instead, they are aesthetic judgments with claims of subjective universality. Moreover, shared aesthetic commitments align thinkers in diverse fields. The present article illustrates how F. A. Hayek's *The Sensory Order* and Alfred Schütz's *Phenomenology of the Social World* flow from the process vision and can help scholars understand it.

JEL Codes: B25, B41, B53

Keywords: F. A. Hayek, Alfred Schütz, Philosophy of Science, Economic Methodology, History of Economic Thought

1. Introduction

This article is about the relationship between visions and scientific theory. I follow Thomas Sowell in maintaining that, "visions are the foundations upon which theories are built" ([1987] 2007, 2). Visions shape science by making some things seem self-evident, while obscuring others. Just as there is something that draws people to certain forms of art, visions pull theorists towards conclusions with inexorable regularity. These "pre-analytic acts," as Schumpeter called them (1954), form an invisible but essential part of the scientific process. Thus, to understand theory, one must behold the vision that stands behind it.

While Sowell's *A Conflict of Visions* traces the influence that two visions of human nature, the "constrained" and the "unconstrained," have on political and economic thought, my project is somewhat different. In the following argument, I will attempt to illustrate the importance of two competing visions in moral science. I call the first of these "the modern vision," and the second, "the process vision." I argue that certain explanations make sense in the first, while being non-sensical in its counterpart.

If it is true that visions underly theories, the ground of scientific inquiry lies in aesthetics. In Kant's ([1790] 2008) formulation, the hallmark of an aesthetic judgment is

* Independent Scholar. The author can be reached at celsius15@gmail.com.

its claim to subjective universality. Aesthetic judgments are not made on the basis of objective facts, but as a reflection of subjective experience. However, this experience is supposed to be universal because of the characteristic features of the human mind. Kant demonstrated that the mind's aesthetic categories, such as "space" and "time," organize all the "things" that make up human experience. Throughout this paper, I follow Kant (very loosely) in using the term "aesthetic" to mean, not beauty, but the manner in which the world is structured. The "modern vision" and the "process vision" are the names of the two aesthetics that this article investigates. I argue that these visions structure experience in a mutually contradictory manner. It is scientifically interesting because substantive conclusions flow naturally from both visions.

In the modern vision, the world is a collection of objects, built up from parts. Everything in this world can be isolated, and nothing changes except through placement in a different configuration. As a result, the modern vision eliminates time. In a timeless world, all knowledge is objective, and all explanations are mechanical.

In the process vision, the world is represented as a system of relationships. Because relationships stretch across both space and time, contingencies such as time and place are significant. Indeed, change is a time-bound drama of transformation effected by new relationships. Rather than being built up from parts, wholes in this world are imagined as organisms, and knowledge of them is inferred from the meaning of their parts.

This project is inspired by Iain McGilchrist's (2019) work on the bi-hemispheric brain, but it does not rest on the findings of neuroscience. Nor is this aesthetic reading of the moral sciences unique. In *The Cultural Study of Law*, Paul Kahn (1999) offers an account of the legal aesthetic – the space and time of law.[1] In the Bourgeois Era trilogy, Deirdre McCloskey argues that a new vision of human nature served as the master resource fueling the Great Enrichment (2006; 2011; 2017). In *Seeing Like a State* (1998), James C. Scott unleashes a withering critique against what he calls "high modernism." Moreover, the book that resulted from Erwin Dekker's quest to critique modernism in economics, *The Viennese Students of Civilization* (2016), identifies common patterns of thought uniting economists, physicians, psychologists, and political philosophers in pre-war Vienna. It is perhaps a sign of the postmodern times that scholars see promise in the cultural analysis of science.

In this article, I describe the two visions and call attention to their substantive implications. Then, I compare F. A. Hayek's contribution to theoretical psychology, *The Sensory Order* ([1952] 2020), with Alfred Schütz's *Phenomenology of the Social World* ([1932] 1967). I illustrate that theories based on the same vision evince a common pattern, even when their content is entirely distinct. Some may object that a merely surface-level similarity between two or more thinkers is too superficial to be of academic interest, particularly when the alleged similarities are not addressed by the theorists in question. However, I argue that if the same pattern is reflected in the work of numerous authors in different fields, it is worth investigating for two reasons:

[1] Kahn argues that, "law's rule is a set of resources for structuring the meaning of events" (1999, 117). Kahn's project is strongly reminiscent of the therapeutic skepticism that influenced the Viennese students of civilization (Dekker 2016, chapter 6).

1. The Hermeneutical Reason: If a diverse array of thinkers working independently of one another in far-flung disciplines are united by a common pattern of thought, the articulation of their shared commitments can only aid the interpretive effort.
2. The Substantive Reason: Visions have consequences because they structure inquiry and action.

2. Two Visions

"We cannot reason into a world of perception" (Kahn 1999).

Just as it would be a mistake to study the rule of law in the United States without taking Western beliefs and customs into account, it is short-sighted to confine a description of visions to any one field. Indeed, the many similarities between modern art and modern science indicate that visions are, like law, deeply rooted elements of our cultural heritage. In order to highlight just how "global" these visions are, I will discuss two works of art that embody the modern and process aesthetics.

Pablo Picasso's *Girl with a Mandolin (Fanny Tellier)* expresses a quintessentially modern vision. This 1910 work is a poignant example of cubism. In cubism, as with much of modern art, time is obliterated, and space, the other half of the fabric of experience, dominates. Fanny's features, so beautifully disfigured, are offered up to the beholder in an infinitesimal moment of perception. It seems that in the next instant, her body may well fall apart, for her limbs bear only an arbitrary relationship to her trunk. One is left to wonder what the music that she is playing could possibly sound like in this timeless universe.

A world that has been stripped of time is a world in which all things are instantaneously evident, in which all forms are, like Fanny's face, a collection of more basic elements. This vision presents reality as a geometric canvas where atoms are rearranged in stop-motion discontinuity. One gets the sense that a powerful computer could predict the entire course of Fanny's life with the data captured by a single snapshot, for everything about her can be articulated. Yet though everything about Fanny is known, there is no one to know it. No human could inhabit the cubist perspective.

The neuroscientist, psychologist, and philosopher Iain McGilchrist writes that, "modernism in general openly rejected the unique specifics of time and place, and of concern for the context of different peoples at different times for different purposes, in favor of timeless universalism" (2019, 1106). This pattern is not limited to the visual arts: the modern novel rejects narrative, just as modern music chops time up into percussive rhythm. The modern social theorist envisions the market as Picasso imagined Fanny Tellier – a composition of fundamental units that are immediately evident.[2] In this vision, change occurs when these units – capital, the money supply, consumption goods – are rearranged between t_1 and t_2. A similar tendency can be found throughout modern thought.[3]

---

[2] In *The Sensory Order*, Hayek calls these "wholes" ([1952] 2020, 146).

[3] Sowell's "unconstrained vision" is a modern vision.

Figure 1: Girl with a Mandolin by Pablo Picasso
Source: Wally Gobetz, Flickr. CC BY-NC-ND 2.0

This is the aesthetic that grounds John Stuart Mill's assertion that distribution can be divorced from production ([1848] 2006), Oskar Lange's contention that a powerful computer could calculate the optimal quantities of goods based on objective exchange-rates (1936), and Irving Fisher's quantity theory equation, MV=PQ. In the same vein, influential theorists expound upon the ethical arrangement of wealth (Galtung 1969; Rawls 1971). It is due to the prevalence of the modern vision that the concept of equilibrium has "resonance in bourgeois economics similar to 'God willing' in Abrahamic religions" (McCloskey 1990). In equilibrium, all trades are settled, and all knowledge of time and place is revealed (Hudík 2018). As a result, issues that were once thought to be matters of fate are imagined as engineering problems (Dekker 2016).

The ideal of perfect knowledge is baked into the modern aesthetic. It underlies what Edmund Husserl deems the "mathematization" of the world that was initiated by Descartes' quest for absolute certainty ([1936] 1970).[4] Perhaps its most vivid articulation is the passage of Laplace's *Philosophical Essay on Probabilities* in which the scientist proposes that a great intellect could "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

[4] "Truly a realizable, though infinitely distant goal – not for the individual or a given community of researchers but certainly for the infinite progression of the generations and their system" (*ibid.*, 65).

eyes" ([1825] 1994). This destruction of time, so clearly manifest in *Fanny Tellier*, is both a precondition and consequence of perfect knowledge.[5]

Yet when time vanishes, the entire phenomenal world disappears with it. The world-encompassing formula of Laplace's demon conveys nothing that human beings need to know about their lives. People do not live among atoms, but, as Michael Polanyi (1961) put it, in a world of meaning. It is why Fanny is an aberration, even in her own portrait. A mind that knows only the location of all of the matter in the universe would know nothing about a girl holding a mandolin, for neither girls nor mandolins are variables in an atomic equation. Even for Picasso, they are visible for an instant before time's great gears work their ceaseless disassembly. Dust to dust.

The crystallization of the modern aesthetic stands as a unique achievement of human creativity. It is thanks to this vision that many of the mysteries of nature have been prized from the jaws of superstition. Indeed, it may be said that this intellectual resource has fueled the birth of a new stage in the development of human knowledge. Yet like any mortal contrivance, it has its limits. In its representation of perfect knowledge, the modern aesthetic effaces all that is contingent, time-bound, contextual, and meaningful.[6] It thus requires a counterpart.

Hildegard von Bingen's depictions of the Trinity are striking artifacts. In *Cosmic Man*, God the Father frames the mortal realm, while God the Son, Jesus, is the red figure embracing the Earth – the Earth is, in other words, God's body. Meanwhile, the Holy Spirit permeates the universe with its light. In the words of Heinrich Schipperges, "the human figure seems to hold the universal network or system in its hands, thus accepting humanity's task of creative commitment to the world" (1998, 75). It is a powerful image.

The point here is not that religious faith is a necessary complement to the modern aesthetic. Rather, it is that the process aesthetic has deep roots of its own. St. Hildegard's vision rejects fundamental elements in favor of an elemental pattern. In the process aesthetic, the world is not a geometric canvas – it is system of relationships. Thus, each creature in this image is in relationship with all that is. Regularity is not a matter of equivalence, but of order.

The parts of this picture are not objects, but relations, because each element lives in and through the whole. The nature of the human figure in the center of the image consists in its place in the universal system. Far from being accidental, this nexus of relationship is constitutive. If the figure were to be placed outside of the red body of Christ, his body would have no substance. This is because the process aesthetic does not represent change as the rearrangement of fundamental units on a geometric canvas, but as a transformation effected by new relationships. In this context, parts are not independent objects, but nodes in the network.

Like its modern counterpart, the world represented by the process aesthetic determines the nature of knowledge. In *Cosmic Man*, all knowledge is knowledge of relations. Moreover, it is no accident that even Hildegard sits within the image – the rela-

[5] Bergson's ([1911] 1964) term for this, "spatialization," is apt.

[6] In Polanyi's terms, modernity "annihilates reality" (1961).

Figure 2: Universal Man by Hildegard of Bingen
Source: Wikimedia Commons.

tionship between the visionary and her vision is of paramount importance. The whole system of relationships transcends an instantaneous view because there is no way for mortals to step beyond the frame. Time thus enters this representation along with its fellow-travelers, meaning and imperfect knowledge. Yet while it may be possible to imagine time as a discontinuous sequence of moments, this is not the case from within the frame. To move within the system is to travel in a time and space that endure.

Analogy is the key by which this world is read. There is no isolated "man *is*," but a contextual "man *is like,*" because relationships are at the core of the vision. Since the elemental pattern moves from observer to part to whole and back again, knowledge grows in a process of "tacit inference" in which new relationships are uncovered.[7] The order in which the parts appear may always be modified because the whole remains out of sight. Knowledge is imperfect precisely because of the presence of potential.

This is the vision that grounds Hayek's observation in *The Sensory Order* that, "it seems that a question like 'what is x?' has meaning only within a given order, and that within this limit it must always refer to the relation of one particular event to other

[7] This is Polanyi's term.

events belonging to the same order" ([1952] 2020, 138). It leads Kant to argue that a truly scientific description of a leaf must address the relationship between leaves and trees ([1790] 2008), and Mises to declare measurement impracticable in economics because there are no constants to quantify ([1949] 2008). It can be seen behind David Schmidtz's rejection of the notion of distributive justice in favor of a contextually functionalist conception that orders competing claims (2007). More obviously, it powers Bergson's contention that, "science as a whole is relative to the particular order in which the problems happen to have been put" ([1911] 1964, 253). It is this inescapable contingency that forever differentiates knowledge from data.

Sowell's "constrained vision," and all the conclusions that flow from it, fall within the process aesthetic. Yet the world represented by this vision remains far more difficult to grasp than the world structured by the modern vision. That may be a sign of the times, or it may reflect an inherent quality of the intellect, as the process philosophers claim. As Alfred Whitehead observes, "On the whole, the history of philosophy supports Bergson's charge that the human intellect 'spatializes the universe'; that is to say, that it tends to ignore the fluency, and to analyze the world in terms of static categories" ([1927 – 1928] 1985, 209). Whatever the case may be, it must be said that a world built from the parts up is far easier to imagine than a world that is a system of relationships. Yet the claim is not that only one of these visions is "true."[8] The claim is that both serve as complementary resources. Both offer useful insights into a complex world.

These visions are complementary because they can be brought to bear on the same issues. Perhaps the most well-known expression of their intersection comes from Heraclitus, who obscurely remarked that, "Into the same rivers we step and do not step, we are and are not" (Graham 2021). Yet these visions structure more than archaic paradoxes. They shape highly sophisticated scientific concepts as well.

Hudík (2018) contrasts two notions of equilibrium: the price-theoretic conception forwarded by Machlup, Friedman, and Becker on the one hand, and Hayek's equilibrium concept on the other. Machlup's equilibrium is described as a compatibility between variables selected, so that they display no tendency to change. These variables are isolated elements of a problem situation that economic analysis is meant to explain – for example, restaurant pricing. As such, they are instantaneously evident, constituent parts of the situation at hand. This makes the price-theoretic conception of equilibrium quintessentially modern. The modern aesthetic drives researchers to answer questions by analyzing isolated variables.

In this view, equilibrium is not meant to be descriptive, for the real world is too complex to model realistically. Rather, it abstracts from the broader context to explain aggregate phenomena by means of an equation. This useful fiction reveals what is really happening in the problem situation. Restaurants price their meals at less than the market-clearing price because individual demand depends on the aggregate quantity demanded. Thus, long lines boost overall profitability.

[8] At least, not in the common-sense meaning of the term. I am certainly open to the idea that a vision may be true in the same way that art, or love, may be true, but this truth comes only in a roundabout way.

Hayek's equilibrium concept, on the other hand, describes a pattern of relationships that prevail throughout society. This equilibrium is not an equivalence of fundamental elements, but an ordered system of relationships. Moreover, it cannot be explained by the modern equilibrium concept because "changes occurring in the economy are not clustered around specific points in time but are dispersed over a continuous range" (Hayek 2007, cited in Hudík 2018, 16). For Hayek, the sequencing of discontinuous moments obscures the issue because change is simply assumed to occur in the space "between" two moments. In contrast to Machlup, Friedman, and Becker, his process equilibrium is explained through reference to systems of meaning, such as property and the price system. This is typical of the process vision, which drives researchers to answer questions in terms of patterned relationships. Thus, problems of ignorance and scarcity are overcome through social institutions that transmute and communicate knowledge, allowing restaurateurs and diners to plan their evenings.

These two versions of equilibrium illustrate the different ways in which the modern and process visions structure scientific inquiry. The modern vision impels a search for answers in the immediately evident components of the situation, while the process vision impels a search for answers in the relationships which act as preconditions for the situation. In the modern vision, what is to be explained is the current arrangement of pregiven variables – diners, restaurant capacity, preferences – in isolation from any broader context. Since these variables already exist, they are not the subjects of inquiry, and the situation is self-contained. In the process vision, what is to be understood is the social order in which restaurants might emerge. The existence of a restaurant is a "marvel" that must be accounted for because it points beyond itself to a broader system, one that cannot be apprehended *in toto*.[9] The questions flow naturally from these aesthetics.

Yet, as Hudík argues, these two conceptions are not diametrically opposed to one another – they are complementary. The process vision reveals that prices communicate information about scarcity, which makes the persistence of long lines outside of restaurants seem problematic to researchers. The modern vision then illuminates the way in which restaurant prices respond to both individual and aggregate demand. The solution is then integrated back into the theory of the price system – a theory about ordered relationships. One may say that the process vision both precedes and follows the modern vision.

3. Process and Meaning

Perhaps the best way to see how the modern and process visions shape science is to consider two theories in more detail. I discuss Alfred Schütz's *Phenomenology of the Social World* ([1932] 1967) and F. A. Hayek's *The Sensory Order* ([1952] (2020). These works seem entirely distinct – the first is a phenomenological exposition of the constitution of meaning, and the second is a foundational work of cognitive science. However, Koppl (2002) shows that both Schütz and Hayek are methodological Misesians. I argue that they share more than a Misesian approach – their theories

[9] Hayek's choice of words in *The Use of Knowledge in Society* (1945) indicates an experience of beauty.

follow the pattern of the process vision, which determines both their questions and their answers.

The *Phenomenology of the Social World* must be placed in the context of a then-burgeoning reaction against the modern vision. More specifically, this work is in dialog with two emerging philosophical traditions: the process philosophy of Bergson, on the one hand, and phenomenology, on the other, which had recently been developed by Husserl. Both strands of thought reject the modern notion of philosophy forwarded by Descartes. In Descartes' view, philosophy is the project of constructing an absolutely valid system of objective knowledge, and the truths it uncovers are eternal and immutable. Yet in practice, this lofty ambition invited attack, if only after generations of thinkers tried and failed to build a system that met his Euclidean requirements (Bergson [1911] 1964; Husserl [1936] 1970).

Process philosophy expresses one line of assault against modern philosophy. Bergson argues against the tendency to conceive of reality as fixed and unchanging. To process philosophy, the impression of stasis is illusory, the product of a mind that is only one small part of a larger reality that overwhelms the limited scope of consciousness. The following excerpt serves as a snapshot of Bergson's vision:

> Doubtless we think with only a small part of our past, but it is with our entire past, including the original bent of our soul, that we desire, will and act. Our past, then, as a whole, is made manifest to us in its impulse; it is felt in the form of tendency, although a small part of it only is known in the form of idea. From this survival of the past it follows that consciousness cannot go through the same state twice. The circumstances may still be the same, but they will act no longer on the same person, since they find him at a new moment of his history. Our personality, which is being built up each instant with its accumulated experience, changes without ceasing. By changing, it prevents any state, although superficially identical with another, from ever repeating it in its very depth. That is why our duration is irreversible. We could not live over again a single moment, for we should have to begin by effacing the memory of all that had followed ([1911] 1964, 8).

While Husserl pursues a methodology of his own making, his vision of the mind is in many ways similar to Bergson's. He, too, appreciated the great challenge facing attempts to forge a transcendental philosophy: "The difficulty that a particular quality of the human soul (which itself belongs to the world and is thus presupposed with it) is supposed to accomplish and to have already accomplished a formative process which shapes this whole world" ([1936) 1970, 118). To make headway, Husserl marvels at the meaning of Descartes' *cogito* and interrogated consciousness, thereby fashioning a transcendental basis for philosophy.

Beyond his philosophical influences, Schütz was deeply involved with the third generation of Austrian economists. He met frequently with Mises and Hayek in the Mises-Kreis and the Geistkreis (Dekker 2016; Caldwell and Klausinger 2022), and one of his aims in the *Phenomenology of the Social World* was to fashion a phenomenological ground of inquiry for Misesian social science. Mises was deeply influenced by Bergson himself, adopting a Bergsonian notion of intuition (O'Driscoll and Rizzo [1985] 2016; Koppl 2002) and affirming that economics is "a theory of processes and changes" ([1949] 2008, 353). Thus, it is not surprising that Schütz's inquiry is grounded in the process vision.

4. Schütz's Constitution of Meaning

For Schütz, a decision precedes all inquiry – a decision about what the items of inquiry mean. Yet this decision is mysterious, for it is difficult to say how it is that the world becomes meaningful. It is why Schütz sets out to explain the constitution of meaning. In doing so, he is confronted with two possibilities. The first – flowing from the modern vision – is to take the complex structures of meaning that are evident in experience and analyze them into their fundamental constituents, the "building blocks" of meaning.[10] The other – derivative of the process vision – is to investigate the process by which experience becomes meaningful, without seeking fundamental units of meaning. Schütz's questions, and his answers, can be traced back to the choice between these two visions.

His decision to adopt the process vision is by no means inevitable. Whitehead says that "all modern philosophy hinges round the difficulty of describing the world in terms of subject and predicate" (1985, 49). Given this bent, it may be said that the common-sense view of meaning corresponds to the common-sense view of language. In other words, people encounter a world of objects and "paste" meaning onto it. Just as the physical world is composed of fundamental units – atoms – the world of experience is built up of fundamental units – meanings. By cataloguing these fundamental units, modern philosophy aspires to construct a firm ground for empirical inquiry as the "handmaiden to the sciences."

Schütz rejects this position to argue that there are no fundamental units of meaning with which to ground social science. He shows that meaning is not "attached" to phenomena as adjectives are to nouns, for this would presuppose a ready-made list of meanings that are pasted onto an incoherent world. Rather, the very surface of things is rich with meaning. It is not that subject and predicate are cobbled together, but subject is apprehended in relationship. Thus, there is no time at which consciousness is empty – no moment in which the mind presents a meaningless world. It is the constant generation of meaning, not its momentary appearance, that Schütz seeks to describe.

On his account, meaning is the result of a particular kind of attention, "a certain way of directing one's gaze at an item of one's own experience" (*ibid.*, 48). This way of attending orders experience into a meaning-context, which Schütz calls the "project." In his conception, individuals project a completed act into the future, and it is this projection that orients experience and makes the world comprehensible. For Schütz, the project is a constant, for the mind is always oriented towards *some* project, be it simple

10 "In all these cases certain meaning-structures within the social world are made objects of observation. They are, to be sure, inherently intelligible and as such open to scientific interpretation. But the fact is that each of these meaning-structures is further reducible into certain elements out of which it has been constituted. These elements are nothing else than processes of meaning-establishment and understanding occurring within individuals, processes of interpretation of the behavior of other people, and processes of self-interpretation. But these processes have not as yet received the attention they deserve. Beyond that, the problem of tracing back all the meaning-structures in question to a single basic element has hardly been acknowledged" (Schütz [1932] 1967, 11).

or complex. It is a highly pragmatic and teleological conception.[11] It also implies that meaning is not a once-and-for-all matter, for when attention changes, so does meaning.

It is because attention changes that "the meaning of an action is different depending on the point in time from which it is observed" (*ibid.*, 65). Moreover, it is "not a problem of physical time, which is divisible and measurable, but a problem of historical time" (*ibid.*, 12). Time changes the relationships that constitute meaning. Note that one of these constitutive relationships is that between the observer and the observed. In keeping with the process vision, the observer is within the frame. Far from being objectively ascertainable, meaning is forever tied to experience, having profound implications for the practice of science.

Schütz explains the fundamental role that attention plays in the constitution of meaning as follows:

> *On the one hand*, I can look upon the world presenting itself to me as one that is completed, constituted, and taken for granted. When I do this, I leave out of my awareness the intentional operations of my consciousness within which their meanings have already been constituted. At such times I have before me a world of real and ideal objects, and I can assert that this world is meaningful not only for me but for you, for us, and for everyone [the modern vision]… *On the other hand*, I can turn my glance toward the intentional operations of my consciousness which originally conferred the meanings. Then I no longer have before me a complete and constituted world but one which only now is being constituted and which is ever being constituted anew in the stream of my enduring Ego: not a world of being, but a world that is at every moment becoming and passing away – or better, an emerging world [the process vision] (*ibid.*, 35 – 6).

This passage may be taken as a phenomenological exposition of Bergson's "duration." Different intentional stances make of one and the same world two diametrically opposed phenomena. Thus, Schütz is essentially concerned with a relational order, for he claims that meaning only exists in relation to a project, within a certain mode of attention. This attention reveals an order emergent from the elements of experience, by which they gain their meaning.

It is by positing the project – putting the visionary within the frame – that Schütz answers the question that both process philosophy and phenomenology address: how can it be that the mind creates the world, when it is just one part of it? The project situates what Husserl calls the "particular quality of the human soul" that mediates meaning within human practice, thus circumscribing objective truth-claims to their relational context. In so doing, Schütz participates in the Humean tradition of "using reason to 'whittle down' the claims of reason" (Boettke 1998, 27), for he replaces the single, absolutely valid ground of investigation with multiple possibilities of interpretation.

Far from being limited to the sphere of internal introspection or artistic appreciation, multiple possibilities of interpretation also populate the social sciences, where different projects entail different meanings. In Schütz's words,

[11] "Even the deepest level of the stream of consciousness of the solitary Ego to which the reflective glance can penetrate is pragmatically determined" (*ibid.*, 74).

> Highly complex cultural objects lend themselves to the most detailed investigation. The state can be interpreted as the totality of the acts of those who are oriented to the political order, that is, of its citizens; or it can be interpreted as the end result of certain historical acts and therefore itself as a historical object; or it can be treated as the concretization of a certain public-mindedness on the part of its rulers, and so forth. The art of a particular era can be interpreted as the expression of a particular artistic tendency of the time or as the expression of a particular interpretation of the world preceding and determining all artistic expression, in other words, as an expression of a particular way of "seeing." However, it can further be interpreted as a historical development which comes about in the form of a variation on the known style of an earlier epoch, whether due to the succession of schools or simply of generations. These are mere samples of the numerous possibilities of interpretation, and to each of them corresponds a special interpretive scheme and way of giving meaning to the object of interpretation ([1932] 1967, 137).

Thus, the search for the ground of social science ends in the relationship between the scientist and the subject matter – not in claims of objectivity, but of subjective universality. Schütz posits that meaning is grounded in analogy, in seeing an entity such as the state *as* something, and it is communicated through metaphor. What is real for social science is not a list of cultural objects, but the system of relationships that gives each object meaning. The implications of this view are significant.

To sum up, Schütz's account of the constitution of meaning exemplifies the process aesthetic. He argues that meaning is a system of relationships effected by attention, and that it changes with time. Thus, rather than transcending temporality, meaning is a time-bound phenomenon. This account, while expressed through the medium of phenomenology, is entirely in accord with Hayek's theory of neural classification. The mechanism of the latter will be explained below.

5. Hayek's Sensory Order

Hayek's *The Sensory Order* ([1952] 2020)*,* like Schütz's *Phenomenology of the Social World,* was written against the backdrop of a modern vision of science (Koppl 2002; Caldwell 2004). Indeed, much of Hayek's work in economics must be interpreted in this context. His most referenced paper, "The Use of Knowledge in Society," hinges on a subjectivist interpretation of "datum" (1945). Despite some disagreements, Hayek is Misesian in his approach (Koppl 2002). His theory of mind flows naturally from a process vision that permeates his oeuvre.

Before *The Sensory Order*, there was strong coincidental evidence for the connection between the brain and the mind. It was undeniable that damage to the brain often altered the mind, and that this damage seemed to reflect a particularly close connection between certain regions of the brain and certain domains of mental experience. Yet while coincidence suffices for daily life and medical practice, science requires a theoretical basis for the assertion of a causal connection. So long as the brain remains a black box that somehow creates consciousness, the exact nature of the relationship between the brain and the mind remains mysterious. *The Sensory Order* is an attempt to resolve this mystery.

Hayek sets out to provide a theoretical basis for the apparently causal connection between physical events – namely, the interactions of neurons – and mental phenomena. Thus, while Schütz describes the experience of consciousness, Hayek sets out to explain how neurons could give rise to any conscious experience in the first place. His project is not to provide a scientific account of the actual connection between a given neural event and a given mental experience. Rather, it is to construct a solid foundation for scientific inquiry by identifying a shared pattern ordering both physical and mental phenomena. Analogy forms the entire basis of his position.

Hayek's account is superior to those of his contemporaries because he does not set out to break experience down into its fundamental elements, such as color and sound, and then explain how the mind rearranges these elements to create the phenomenal world. To Hayek, this "sensualism" constitutes question-begging. He makes the same move as Schütz in asserting that it is not the current arrangement of already-existing elements, but the creation of those elements, that must be explained. Thus, *The Sensory Order* is not analytical so much as it is narrative in form.

Neurons are the main actors in Hayek's story. When excited by stimuli, they pass an electric charge to their neighbors, communicating a message from the periphery to the center. Over time, "especially close connections can be expected to form between the central neurons" ([1952] 2020, 62) to which impulses that often occur together are transmitted. Much as water follows the path of least resistance until it carves out a riverbed, electric current cascades through the brain's neural landscape, etching out well-worn channels. Thus, "each individual impulse or group of impulses will on its occurrence evoke other impulses which correspond to the other stimuli which in the past have usually accompanied its occurrence" (*ibid.*, 64). These cascades of impulses transform the topography of the brain until its organization is significantly differentiated. Each group of impulses is now its own class, physically distinct from all others. A system of classification has emerged from organic matter.

While classification first differentiates primary impulses, it also differentiates classes from one another. Soon, a complex system has been constructed, one in which each individual stimulus is classified in a dense web of overlapping relationships. These neural webs constitute a map of the connections between stimuli. On Hayek's account, this map represents the relationships between things in the external world, as they are interpreted by the nervous system. One could translate from the physical order of the brain to the order of, say, a landscape, on the same principle that enables people to translate from a map to a landscape every day.[12]

Hayek argues that the systemic relationship between the physical order of the brain and the mental order of the mind is revealed in a fractal pattern.[13] On his view, if the elements of the brain instantiate the same order as the elements of the mind, then the connection between the two must be more than coincidental. Thus, just as neurons classify different wavelengths of light, conscious experience differentiates between red and blue. Similarly, both the brain and the mind are characterized by relationships,

[12] Readers of Wittgenstein and Russell will recognize a "picture" theory in this formula (Wittgenstein 1961).

[13] In a fractal, the same pattern repeats itself at different scales.

and nothing occurs in isolation. To the contrary, novel events encounter "the history of the organism" ([1952] 2020, 191), which is embodied in the classificatory system of the brain. As a result:

> The whole order of the sensory qualities are themselves subject to continuous change. There remains, in consequence, no justification for the sharp distinction between the direct sensory perception of qualities and the more abstract processes of thought; we shall have to assume that the operations of both the senses and the intellect are equally based on acts of classification (or reclassification) performed by the central nervous system (*ibid.*, 228–229).

This unity of principle erodes the Cartesian barrier between the brain and the mind until it seems altogether possible that a physical event could be said to cause a mental event. At the root of it all is analogy, for classification always proceeds through reference to like impulses. As Hayek puts it, "familiar mental entities must always remain the last determinants to which we can penetrate, and we cannot hope to replace them by physical facts" (*ibid.*, 303). By way of example, he notes the necessity of differentiating red and blue by referring to qualities such as warmth, a situation that his contemporaries had "almost completely disregarded" in their strict commitment to sensualist reductionism (*ibid.*, 153). Metaphors are a linguistic expression of the mechanism by which the brain operates.[14] They are all that is available to someone within the frame.

6. Another Analogy

Both *The Sensory Order* and *The Phenomenology of the Social World* are now regarded as pathbreaking works with profound scientific implications (Koppl 2002; Vanberg 2020). What is particularly interesting is that their novel contributions can be traced back to the same aesthetic judgment. This commitment has all the characteristics of an aesthetic judgment because it is a choice between visions that cannot be supported through reference to any objective facts. It is no more true that the world is a collection of objects than it is true that it is a system of relationships. Rather, these interpretive possibilities open up horizons of thought that can only be verified after they are explored.

If Hayek and Schütz adopted the modern vision, they would have analyzed the phenomenal order down into its fundamental components. Once identified, these components could be defined such that a scientist – or a computer, for that matter – would be able to predict in advance the consequences arising from the introduction of a novel stimulus. Such an approach would yield testable hypotheses and falsifiable statements about the future. It would be a scientific expression of the same vision that is evident in *Fanny Tellier.*

Of course, this is not the path taken by either theorist. Just as in Hildegard's *Cosmic Man*, the elements of the phenomenal order – of a world of meaning – cannot be meaningfully isolated from the relationships in which they are embedded. It is a conse-

[14] Douglas Hofstadter argues that, "analogy is the core of cognition," the mechanism by which seemingly disparate ideas are connected (2009). George Lakoff posits that metaphors are the key to making sense of the "embodied mind," which channels thought through the "metaphors we live by" (Lakoff and Johnson 1980).

quence of the process vision: even the scientist is, like Hildegard, within the frame. As a result, their work has a claim to subjective universality. Hayek and Schütz's substantive conclusions are downstream of this aesthetic commitment.

For Schütz, meaning is a matter of analogy, of seeing the state *as* something else. *The Sensory Order* provides a justification of this position in terms of neural events. For Hayek, "the cognitive code is essentially a relational code" (Fuster 2011, cited in Vanberg 2020). The order he describes is "something different from all the individual events taken separately," as it "involves elements plus certain relations between them" (Hayek [1952] 2020, 177). In it, meaning is constituted through relationship.

Unlike Schütz, Hayek does not directly reference Bergson. Yet the notion that stimuli encounter "the whole history of the organism" in the process of classification aligns entirely with Bergson's concept of "thinking with our entire history" – and Hayek seems to agree that only a small part of this thinking is "known in the form of idea." Here we meet Schütz once again and see a physical correlate for his claim that, "the meaning of an action is different depending on the point in time from which it is observed." The pattern of the process aesthetic enables a seamless translation between these theories.

The superficial similarity between these works is scientifically significant because substantive conclusions flow from it. It may seem backwards – are superficial patterns not bottom-up phenomena, after all, the mere appearance of underlying events? The view flows from the modern vision. However, in the process vision, patterns are the underlying events. The tree is no more a bottom-up assemblage of leaves and twigs than the mind is a collection of colors and smells. Meaning – and causation – flow(s) both ways.

7. What Next?

The description of the process vision and its influence in the work of Hayek and Schütz is the first step in a long research project. More philosophical work needs to be done on the nature of the aesthetic judgments that shape scientific inquiry. When Hayek, for example, speaks of the necessity of marveling at the market, he is making an aesthetic claim. The very notion of spontaneous order echoes Kant's definition of beauty as "purposiveness without purpose" ([1790] 2008). Is the appreciation of beauty, then, a necessary condition for good science? And if the appreciation of beauty has a cultural component, how might cultural differences draw researchers to different visions?

When is it best to focus on parts, and when is it best to focus on patterns? Scientific methods help researchers evaluate truth-claims, but if science is wrapped up in aesthetic judgments, a procedure of choice between competing visions is needed. The answer may lie in the problem of the "levels of reality." Schütz considers this problem ([1932] 1967), as do Michael Polanyi (1961) and Arthur Koestler (1967). Hayek, in his failed project "Within Systems and Between Systems," also saw this problem, but was not able to resolve it (Caldwell 2004, 299 – 301). More work is needed to clar-

ify this issue and find some way to evaluate the applicability of the modern and process visions to a particular research question.

The opposition between the modern and process visions brings the problem of meaning into focus. There is no place for meaning in the modern vision, but there are times in which it is needed to explain events. The transition of central and eastern European economies from state socialism to something resembling a market order is one such case. The attempt to explain transition with the tools of modern economics is widely thought to have ended in failure (Stiglitz 1999). How, for example, might a modern economist analyze transition without making teleological judgments? It is equally wrapped up in the levels of reality problem – is transition a political or an economic project?

In addition to these issues, there is a great deal of work to be done in the history of ideas. By revealing patterns of influence and agreement, scholarly work can bear hermeneutical fruit. Which theories express a modern vision, and which thinkers embrace the process vision? In the case of Hayek and Schütz, it is worth asking what the source of their shared commitment to the process vision was. Did it come from Bergson via the Mises-Kreis, was it already present in the works of Menger, or does it reflect some broader Viennese tradition, much like therapeutic skepticism (Dekker 2016)? Perhaps the reader knows.

References

Bergson, H. (1911) 1964. *Creative Evolution*, translated by E. Fee. London: Macmillan.

Boettke, P. 1998. "James M. Buchann and th Rebirth of Political Economy." In *Economics and its Discontent: Dissent in 20th Century Economics*, edited by R. Holt and S. Pressman, 21–39. Cheltenham: Edward Elgar Publishing.

Caldwell, B. 2004. *Hayek's Challenge: An Intellectual Biography of F. A. Hayek.* Chicago: University of Chicago Press.

Caldwell, B. and H. Klausinger. 2022. *Hayek: A Life, 1899–1950.* Chicago: University of Chicago Press.

Dekker, E. 2016. *The Viennese Students of Civilization: The Meaning and Context of Austrian Economics Reconsidered.* Cambridge: Cambridge University Press.

Galtung, J. 1969. "Violence, Peace, and Peace Research." *Journal of Peace Research* 6 (3): 167–91.

Graham, D. W. 2021. "Heraclitus." Accessed April 12, 2024. https://plato.stanford.edu/entries/heraclitus/#UniOpp.

Hayek, F. A. 1945. "The Use of Knowledge in Society." *American Economic Review* 35 (4): 519–30.

Hayek, F. A. 1952. *The Counter-Revolution of Science.* Glencoe: Free Press.

Hayek, F. A. (1952) 2020. *The Sensory Order and Other Writings on the Foundations of Theoretical Psychology*, edited by V. J. Vanberg. Chicago: University of Chicago Press.

Hofstadter, D. 2009. "Analogy as the Core of Cognition." Accessed April 12, 2024. https://www.youtube.com/watch?v=n8m7lFQ3njk.

Hudík, M. 2018. "Equilibrium Analysis: Two Austrian Views." *Cosmos+Taxis* 6 (1–2), 1–10.

Husserl, E. (1936) 1970. *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*, translated by David Carr. Evanston: Northwestern University Press.

Kahn, P. W. 1999. *The Cultural Study of Law: Reconstructing Legal Scholarship.* Chicago: University of Chicago Press.

Kant, I. (1790) 2008. *Critique of Judgment*, edited by J. C. Meredith and N. Walker. Oxford: Oxford University Press.

Koestler, A. 1967. *The Ghost in the Machine.* New York: Macmillan.

Koppl, R. 2002. *Big Players and the Economic Theory of Expectations.* Houndmills: Palgrave Macmillan.

Lakoff, G. and M. Johnson. 1980. *Metaphors We Live By.* Chicago: University of Chicago Press.

Lange, O. 1936. "On the Economic Theory of Socialism: Part One." *The Review of Economic Studies* 4 (1): 53–71.

Laplace, P.-S. (1825) 1994. *A Philosophical Essay on Probabilities.* Heidelberg: Springer.

McCloskey, D. N. 1990. *If You're So Smart: The Narrative of Economic Expertise.* Chicago: University of Chicago Press.

McCloskey, D. N. 2007. *The Bourgeois Virtues: Ethics for an Age of Commerce.* Chicago: University of Chicago Press.

McCloskey, D. N. 2011. *Bourgeois Dignity: Why Economics Can't Explain the Modern World.* Chicago: University of Chicago Press.

McCloskey, D. N. 2017. *Bourgeois Equality: How Ideas, Not Capital or Institutions, Enriched the World.* Chicago: University of Chicago Press.

McGilchrist, I. 2019. The *Master and His Emissary: The Divided Brain and the Making of the Western World.* New Haven, CT: Yale University Press.

Mill, J. S. (1848) 2006. *Principles of Political Economy: With Some of Their Applications to Social Philosophy.* Toronto: University of Toronto Press.

Mises, L. v. (1949) 2008. *Human Action: A Treatise on Economics.* Auburn, AL: Ludwig von Mises Institute.

O'Driscoll Jr., G. P. and M. J. Rizzo (1985) 2016. *The Economics of Time and Ignorance: With a New Introduction.* London: Routledge.

Polanyi, M. 1961. *History and Hope: An Analysis of Our Age.* Unpublished Series of Lectures Presented at the University of Virginia.

Rawls, J. 1971. *A Theory of Justice.* Cambridge: Belknap Press.

Schipperges, H. 1998. *The World of Hildegard of Bingen: Her Life, Times, and Visions*, translated by J. Cumming. Collegeville, MN: Liturgical Press.

Schmidtz, D. 2007. *Elements of Justice.* Cambridge: Cambridge University Press.

Schumpeter, J. A. (1954) 2009. *History of Economic Analysis.* New York: Oxford University Press.

Schütz, A. (1932) 1967. *The Phenomenology of the Social World.*, translated by G. Walsh and F. Lehnert. Evanston: Northwestern University Press.

Scott, J. C. 1998. *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed.* New Haven: Yale University Press.

Sowell, T. (1987) 2007. *A Conflict of Visions: Ideological Origins of Political Struggles.* New York: Basic Books.

Stiglitz, J. 1999. "Wither Reform: Ten Years of the Transition." Presentation at the Annual Bank Conference on Development Economics. Accessed April 12, 2024. https://www8.gsb.columbia.edu/faculty/jstiglitz/sites/jstiglitz/files/1999_4_Wither_Reform.pdf.

Vanberg, V. J. 2020. "The 'Knowledge Problem' as the Integrating Theme of F. A. Hayek's Œuvre: An Introduction to The Sensory Order." In *The Sensory Order and Other Writings on the Foundations of Theoretical Psychology*, edited by V. J. Vanberg, 1–112. Chicago: University of Chicago Press.

Whitehead, A. N. 1985. *Process and Reality: An Essay in Cosmology.* Glencoe: Free Press.

Wittgenstein, L. 1961. *Tractatus Logico-Philosophicus.* London: Routledge & Kegan Paul.