

The Metonymy Economy: Cognitive-Affective (Poetic) Social Science

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Introduction

We are currently bearing witness to the mutual interpenetration and becoming-coterminous of poetics and quantitative analysis; this occurrence is considered here from the theoretical perspective of cognitive-affective science. When despair is a major developmental obstacle, rigid valuation schemata enter a flux state and have the potential to be influenced for the better by the transversal grasping for solutions. It is the practice of delimiting and operationalizing novel insights into and beyond causation to drive flourishing and pleasure which brings science and poetry together in their highest form. Percy Shelley, in his *Defense of Poetry*, outlines poetic science (as mastered by epic poets) as the efficient finding of unexpected and incomprehensible solutions. Jean Baudrillard, meanwhile, nearly two centuries later, as a post-Marxist cultural theorist brought poetics back to the center of world events. His theory of omni-metonymy and metaphor nihilism, found in *The Transparency of Evil* (Citation), encapsulates the complex poetics which underlies his more well-known terms of art like implosion, hyperreality, and simulation. In the spirit of bridging the divide between high critical theory, epic poetry, and scientific discourse, Baudrillard is here brought into conversation with cognitive linguistic theories of generative semantics, like that of Lakoff and Johnson, which rely on categories Baudrillard would likely criticize, like the idea of objectively distinct ‘conceptual domains.’ Shelley and Baudrillard advance an ineffable utopian project which casts poesis in the supreme role of proper steering mechanism for individual and collective practices. Their works thus constitute major contributions

toward a poetic cybernetics, which is able to wield rationalism's powerful tools with a wisdom it can never possess. By framing this discussion of the common poetic project of Shelley and Baudrillard within the theoretical framework of cognitive-affective science, this work contributes to a transdisciplinary approach to social theory. We might express this simply as crafting the 'best of both worlds,' scientific and poetic, leading to thought which is inspired as well as rigorous, wise as well as intelligent.

Both poetics and science are well suited to seek out relevant cognitive-affective paradigm shifts—or revolutions in the integrated mental-emotional meta-regulatory systems of individuals and groups—and aggressive adaptation to them. During a paradigm shift, a figure-ground reversal occurs, as things which were taken for granted or considered irrelevant rise to the highest importance. In one major contemporary example, the biosphere, long taken for granted within a myopic Western philosophy of science, which assumed cardinal importance in human life as the processes, that we rely on to live, begin to fail due to economic activities. We can parse the myriad subproblems which constitute the broad problematic of humanity's relationship with the natural-social environment in the 21st century through cognitive affective science's ability to: formalize the poetic, in other words, cognitive-affective, theories laid down by Romantics like Shelley and Baudrillard; provide economics, through transdisciplinary grounding, with the ability to make endogenous formerly exogenous variables, in so doing allowing for the appreciation of deep homologies between social cognition and environmental economics; and facilitate the definition, categorization, operationalization, and refinement of economic/social-cognitive strategies which were previously ill-defined. This paper showcases cognitive-affective protectionism as an example, holding that since the next-level cognitive-affective economy as a whole is one large

infant industry, we must urgently theorize a new cognitive-affective economics of protectionism to outline the cultivation of new forms of capital in nexuses of cognitive-affective schemata.

Shelley's "Poetry," or Cognitive-Affective Science

Poetry is indeed something divine. It is at once the centre [sic] and circumference of knowledge; it is that which comprehends all science, and that to which all science must be referred. It is at the same time the root and blossom of all other systems of thought: it is that from which all spring, and that which adorns all; and that which, if blighted, denies the fruit and the seed, and withholds from the barren world the nourishment and the succession of the scions of the tree of life. (Shelley 360)

The spirit of poetry and science can be simply expressed in the idea of an 'elegant' theory or scientific expression, like " $E = MC^2$," which is so simple and profound as to rise to the status of poetry. Percy Shelley, meanwhile, in his *Defense* raised poetry to the level of science and beyond, making it a proper noun ('Poetry'). The arch-discipline Shelley posited through his 'Poetry' idea we can today justifiably claim to be cognitive-affective science. In crafting words and meter in delivering a deep emotional experience, poetry as such has always demonstrated the illusoriness of any divide between the cognition and affect. Yet in the course of Western scientific development, rationalism pushed aside any consideration of affect for cultural reasons, for example that emotions are not proper to so-called men, an idea having its origins in antiquity if not longer; the world has been forced to bear witness to the appalling consequences for the past several centuries. Jean Baudrillard, such a witness nearer our own time, advanced the project of overcoming the tyranny of the "faculty of calculation" (Shelley 360) by reaching dizzying new heights of meta-cognitive and meta-affective insight. If Shelley anticipated the 'meta-affective

turn,' Baudrillard sees it through. The meta-affective turn currently draws attention for dominating marketing (as in influencing voters' choices through advertisements and crypto-advertisements), yet is quickly spreading throughout the sciences and economics as human social cognition and affective processing are increasingly systematized by algorithmic cybernetics. In advancing a radical poetics—which both criticized those aspects of Marxism which naively reproduced the 18th century rationalism which so bedeviled Shelley and developed compelling theory in a cross-spectrum socio-technological analysis—a reading emerges of Baudrillard (who has typically defied taxonomy) as principally a Shelleyan epic poet, and one of the foremost of our age.

According to Shelley, an epic poet produces work which bears “a defined and intelligible relation to the knowledge, and sentiment, and religion, and political conditions of the age in which he lived, and of the ages which followed it, developing itself in correspondence with their developement [sic]” (Shelley 357). The epic poet is able to do this by perceiving never-before-apprehended pleasurable or utilizable ‘relations of things’—novel patterns of causality and/or interdependence in the world. The poet is then to fashion memorable words and phrases, and produce artworks to express and taxonomize the newly perceived gestalts, rendering them assimilable into common knowledge. Crucially, *all* such common knowledge is for Shelley derivative of some known or unknown poet’s work (citation). A scientist, like Shelley’s poet, also seeks to put words to newly seen patterns in the world. The scientific discovery, as of an element or celestial body, similarly issues a naming right to its discoverer, or else may be remembered through honorific allusion to the discoverer’s name, as in the case of the immortal ‘Copernican revolution.’ These poetic-scientific names enable abstraction and the achievement of ever grander, ever subtler tasks. Shelley then describes the subsequent development of poetic-scientific communities, around the joy of new understanding and expression, leading to the dissemination of

inspired formulations. The function of the inspired turns of phrase, or the notation of scientific discoveries, is in “reduplicating” the pleasure (Shelley 346-7) of those who noticed and named them. Epic poets indelibly alter the future of language, contributing to one great “cyclic poem” (Shelley 355) which resounds up and down the ages. For example, the works of Homer altered history in the care he used to craft his verse and the generations of poets who retold his epic poems and later recorded them. Similarly, scientists in their sensibility and actions alter all future time. Alexander Fleming’s 1928 discovery of penicillin, for example, constituted the actualization of worlds-altering potential by virtue of careful attention paid to an accident that could have simply thrown away, and the dissemination of the isolated discovery by the scientific community to pharmaceutical concerns and doctors worldwide. Notably, Fleming struggled with communication, so that improved poetics could have seen him win the Nobel prize much sooner.

Luckily, the concept of the ‘paradigm shift,’ formalized by Thomas Kuhn, was recognized immediately in its utility for the scientific study of the changing of the ideational guard. Baudrillard generated numerous neologisms in his attempt to perspicaciously capture the paradigm shifts of his time, such as ‘implosion’ and ‘transpolitics.’ These terms are used to express that now, as a result of the shrinking of the world due to communications, and the steady acceleration of engineering technology, there is now no possible delimiting of domains (as taken for granted by Lakoff). This leaves every name, every sign, a metonym for every other, revealing definition in general to be a pseudo-task. Labels never last forever—since there are no real ‘joints’ in the world to ‘carve’—but are merely stepping stones on the way to the next set of terms (themselves also provisional). The most poetic scientists, including many great theoretical physicists like Richard Feynman and Albert Einstein, are equally able to perceive the miracle of science in the operationalization of sentences—scientific formulae and theories—which need not be believed in

dogmatically to have great efficaciousness (citation). They also often speak poetically, acknowledging that any theory will almost certainly be discarded in time and that their ‘great insights’ are at best striking approximations. When scientists, such as these, are not neglectful of affective concerns as they traditionally have been, and research is free from corrupting influence (still not achieved), they cannot help but move into the realm of Shelleyan poetics.

The major danger of such memorable utterances (whether famous poems or scientific theories) is their making possible unthinking repetition which propagates deleterious and tenaciously self-reproducing and -radicalizing social norms. The “integral thoughts” the epic poet delivers to listeners, expressing and taxonomizing “relations of things,” undergo a process of indifferenciation and equivocation, coming to be “signs for portions or classes of thoughts” (Shelley 347). Such semiotic degeneration constitutes the undoing of the epic poet’s work and its mobilization against itself in the habits and customary restrictions left over absent continued sagacious influence. Gravely uninspired expressions, capitalizing on the poetic-scientific genius which allowed for them, reproduce the simulacrum of cultural-linguistic mastery in reiterative and derivative discursive systems (for example, the use of a Bob Dylan song to sell a Coca-Cola and reinforce consumerism). Scientific discoveries, like the constituents of a compound, are always by definition expressible in language, since the whole idea is to establish which empirical phenomena are most widely and regularly perceived. As such, they are also subject to derivation against the spirit of their first use. Alfred Nobel himself wanted dynamite to facilitate world peace, and instead it was widely used for war. Cliché, repressive dogma, and finally weaponization emerge as major threats to the poetic and scientific lineage, and development and survival in general, once technical means (social and mechanical) generated by the long-repeated words of poets—and later, scientists—begin to run amok. Shelley says as much in writing that “[the] cultivation of those

sciences which have enlarged the limits of the empire of man over the external world, has, for want of the poetical faculty, proportionally circumscribed those of the internal world; and man, having enslaved the elements, remains himself a slave” (Shelley 359). Humanity, it seems, must from now on confront our own tools and understandings first of all as threats to our very flourishing, both biological and symbolic. The endgame Shelley describes for this dire game of thoughtless mimesis anticipates even the supposedly unimaginable Holocaust in his vision of the omnicide of out-of-control social algorithms, which he terms ‘social corruption:’

the end of social corruption is to destroy all sensibility to pleasure; and therefore it is corruption. It begins at the imagination and the intellect as at the core, and distributes itself thence as a paralyzing venom, through the affections into the very appetites, until all become a torpid mass in which sense hardly survives. At the approach of such a period, Poetry ever addresses itself to those faculties which are the last to be destroyed [...]. Poetry ever communicates all the pleasure which men are capable of receiving: it is ever still the light of life; the source of whatever of beautiful, or generous, or true can have place in an evil time. (Shelley 354)

Both Baudrillard and Shelley see intrusive bureaucratic apparatuses like today’s political parties, the military, and police as expressions of the overproduction and dissemination of uninspired (and therefore derivative) aesthetic-ethical-scientific material. Within science, as in all art, inquiry is constrained in certain areas due to myopic research parameters motivated by uninspired motivations of power or tradition for their own sake.

The poetic solution offered by Baudrillard and Shelley to this conceptual ossification, drawing on longstanding poetic tradition, is to make “familiar objects be as if they were not familiar” (Shelley 351). This *Entfremdung* (See Note) generated by poetry destabilizes entrenched and auto-regenerative derivative discourses- the ‘internal monolog’ as well as insipid chatter. This conceptual sublimation relies on the capacity of ‘negative capability,’ or tolerance of uncertainty,

propounded by John Keats (citation) and constitutes the sublime proper. What was solid, sublimated in to a gas, then condenses into a poetic nectar in the capturing of “the before unapprehended relations of things and perpetuat[ing] their apprehension” (Shelley 348). The game of seeing new relations, keeping the joy of their apprehension going, falling into cliché and then dogma, only to repeat the process, has defined the state of play in linguistic culture for thousands of years. The manipulation of language ties today’s hypermodern practices (e.g. social media, meme generation, virtual reality) directly to behaviors of antiquity and even earlier ages (ritual dance, oracles and seers, divination). So much is averred by Keith Oatley in “Writingandreading;” he writes that modern computer simulations “are modern instances. For several thousand years, something comparable has been accomplished in human minds” (Oatley 166). The lens of cognitive-affective poetics allows us to see that far from being overwhelmed and in despair at the prospect of an increasingly artificial, simulated world, we ought to recognize that our cognitive-affective universe has long been artificial, and simulated, through the influence of poetry (e.g. transpersonal cognition mediated by linguistic convention). Appreciating this point allows us to approach the techno-future anthropologically, not with overwhelming terror at the state of our apparatuses but seeing that we have reached the point where higher orders of linguistic abstraction and concretization are required.

Social actors are to be understood as attempted poets, whose expressions, although estranged and at times terrifying (from the intelligence agency to the terrorist), are to be parsed amongst “the episodes of the cyclic poem written by Time upon the memories of men” (Shelley 355). The tragedy of society, then, lies in the squandering of so much priceless poetic potential: the propertyless are allowed by dominant institutions (reflective of dominant values, and hence dominant conceptions and linguistic conventions) to simply suffer and die instead of being able to

cultivate their creative faculties, and even the propertied are emotional slaves in Shelley's eyes. The poetic perspective, in Baudrillard and Shelley, zeroes in on axiological skepticism, seizing prevailing standards of valuation in its sights. Another fellow-traveler, Friedrich Nietzsche, termed this the 'transvaluation of all values' in perhaps the most self-conscious attempt, but Shelley has the same idea. He writes of "two kinds of pleasure, one durable, universal, and permanent; the other transitory and particular" (Shelley 358). Most things typically called valuable, like wealth and security, are, for Shelley, second-order pleasures, recalling Jesus' admonition to lay one's treasures in the kingdom of heaven within, where the uncertainties of the world cannot threaten them. Such a project constitutes in essence the attempted generalization of the status of epic poet or scientist, giving each person the authority and ability to give names to their own idiosyncratic empirical observation. For Shelley, Poetry stands qualitatively higher than other projects, because it alone is capable of parsing and overcoming the dominant axiological schemata which find their grounding in reductive epistemological heuristics. This must finally bottom out, as in Shelley's *Defense*, in the critique of prevailing accounts of utility.

Baudrillard's conception of symbolic exchange as "opposed, as a whole" to political economy (Baudrillard 1981: 125). This term puts words to this always personal set of cultural-scientific practices which defy the generalized equivalence which grounds many economic concepts in particular. Baudrillard rejects 'use value; as conceptualized within the mainstream Marxism, as typical of the reductive rationalist tradition Shelley had sought to affectively penetrate in the previous century. In his book *For a Critique of the Political Economy of the Sign*, Baudrillard posits as his first essential task "the extension of the critique of political economy to a radical critique of use value, in order to reduce the idealist anthropology which it still subtends" (Baudrillard 1981: 128-9). Shelley also sought to take his work from the page to the world state,

as did many of the Romantic cadre including Samuel Taylor Coleridge, whose Pantisocracy articulated radical democracy and common property fifty years before Marx, now exposed as derivative of and traitorous to Romanticism and poetry more broadly. With this in mind, we ought to read Baudrillard closely when he writes, in *The Transparency of Evil*, that “[the] possibility of metaphor is disappearing in every sphere” (Baudrillard 2009: 7), due to the fact that disciplines—designed to specialize in one domain of the grand rationalist project of perfecting knowledge through reductionism—

all converge in a transversal and universal process wherein no discourse may have a metaphorical relationship to another, because for there to be metaphor, differential fields and distinct objects must exist. But they cannot exist where contamination is possible between any discipline and any other. (Baudrillard 2009: 7-8)

Here we have the intersection of technological development with the realm of human speech-acts, wherein our development of media and social technologies at a rate far beyond our ability to mindfully organize have left us without any well-defined boundaries of knowledge. Hence “all disciplines as they lose their specificity and partake of a process of confusion and contagion” (Baudrillard 2009: 7).

The new frontier of poetics, accordingly, is metonymy. Baudrillard: “Total metonymy, then - viral by definition (or lack of definition). [...] Today, metonymy - replacing the whole as well as the components, and occasioning a general commutability of terms - has built its house upon the disillusion of metaphor” (Baudrillard 2009: 8). Metaphor fails to be grounded, since we cannot establish two conceptual domains outside of each other. Metonymy, understood as the relation of two subdomains within the same parent domain, is itself radicalized by Baudrillard by

the insight that the one domain of which everything is a subdomain can never be defined (hence even this ascription is not cleanly “true”). The question of numbers of conceptual domains recalls Baudrillard’s critique of the homologous argument over how many sexes there are in the book *Symbolic Exchange and Death*:

The question of the 'total' is absurd here (whereas we can logically ask 'why not six fingers on each hand?'). It is absurd because sexualization is precisely the partition that cuts across every subject, making the 'one' or 'several' unthinkable. The 'two' also becomes unthinkable, however, since the 'two' is already a total (besides, the above dialogue operates on the figure of the 'two,') (Baudrillard 1993: 118).

We can write something similar about conceptual domains, which cut across every subject since each ‘individual’ can be interpreted according to several heuristic frameworks, the choice among which must always be somewhat arbitrary. As such, it is absurd to speak of numbers of conceptual domains.

The nature of conceptual domains is clarified by Gibbs (2003), who brings to light a view of conceptual domains holding them to be provisional and task-specific, hence only meaningful or even existent given a specific situation embodied by specific (types of) cognitive-affective agents.

He writes:

conceptual metaphors may not pre-exist in the sense of continually structuring specific conceptual domains. But conceptual metaphors may be used to access different knowledge on different occasions as people immediately conceptualize some abstract target domain given a particular task. Conceptual metaphors may also simply emerge as the product of conceptualizing processes, rather than serve as the underlying cause of these processes (Gibbs 33).

Gibbs outlines here what may be termed conceptual nominalism, holding that conceptual domains, and hence conceptual metaphors, exist only as ad-hoc practical instruments whose truth value is undecidable and fundamentally irrelevant. Ultimately, we have here a theory of speech which emphasizes the usefulness of language in completing a task, not the idea that the language used ‘means something’ in an absolute sense. This is to say that there are no objective conceptual domains, and that all are used merely to advance given speakers’ perpetually ill-defined plans as meta-cognitively conceived. Baudrillard’s conception of metonymy is relevant for our sciences, which are converging on transdisciplinary and totalizing models like a generalized artificial intelligence. Such a processor has only one, ever ill-defined conceptual domain. As we craft transdisciplinary social theory and poetic science, we will follow ever more closely the model of metonymy, relating one subdomain of our complexly unified cognitive-affective perspective to another, with the ever-present joy at the electric fuzziness of concepts, the magic of the social, symbolic exchange. What remains is the implementation of these insights into meta-cognition/affect: if language is an illusion we use to facilitate tasks, what do we want to do?

Social Sphere, Biosphere

David Hume, early in his *Treatise of Human Nature*, introduced the notion of “the constant revolution of our ideas” (Hume 13) to refer to the constant flux of mental states in the individual mind. This figure of speech has a certain poetic economy in explicating the importance of cognitive-affective approaches for the sciences in general. Since scientific work by definition cultivates paradigm shifts (new theories abstracting from the result from prior theories), it comprises a higher order ‘constant revolution’ in thought. Paradigm shifts proper are homologous to individual development, yet are described as higher order since the invention of guns, for example, exacted a structural revolution in relations structurally affecting all individuals. Paradigm shifts, cognitive and/or affective, are constantly taking place at all scales in the worldscape of the global biosphere/economy, comprising events which create, change, and end social worlds. They are mostly unknown at the time of their occurrence to individuals not immediately present, like the painting of a Van Gogh masterpiece or the discovery of uranium. Trying to see what the next paradigm shift(s) will be requires open-mindedness to new kinds of causality, and to the possibility that many problems are pseudo-problems which stymie thought due to ingrained cognitive-affective norms. Hence, the task of cognitive-affective science is to operate from within a thoroughly situated understanding in seeking to creatively optimize based on deep parameters of social functioning. Breaking into the deep structures of decision-making is *the* major frontier in social theory broadly and economics specifically. Cognitive-affective science can help economists, and all social entrepreneurs, initiate sweeping and beneficial overhaul in social-technological behavior by confronting the task of integrating factors habitually bracketed out of policy analysis on the basis of the technical infeasibility of their study. These can now be returned to, re-evaluating the prospects for accounting for them theoretically, their relevance for given tasks, and the

scientific integrity of previous research, much of it *prima facie* pseudoscientific blanket assumptions of dubious merit, such as *homo economicus*.

Gallup and Nguyen provide an example of how cognitive-affective science can make endogenous formerly exogenous variables, or black boxes, within economic theory. They show the importance of cognitive-affective development for economic flourishing by finding that the higher life expectancy associated with economic growth is driven mainly by reduced child mortality. Child mortality is correlated, meanwhile, with adverse developmental conditions for the very young, such that its absence signals “healthy cognitive development” which “makes children better able to succeed in building their human capital through education, as well as making them more productive throughout their working lives” (Gallup 19). The relevance of cultural inquiry, as part of a cognitive-affective turn, for economics is made clear by research which has “underlined the importance of cultural dimensions to how societies perceive, respond and adapt to climate-related risks. Adaptive behaviors are the derivatives and embodiments of climate-related risk perceptions that include the lived aspects of culture and sense of place” (Chiang and Chiang 132). Given that “actions are always initiated by risk perceptions” (*ibid*), economic models of decision-making are remiss if they are not constructed from a culturally fluent perspective, since risk perception is not neatly determined by individual interests, but rather is mediated by the cultural constructions central to the cognitive-affective personality system of a given individual. In other words,

cultural values are ideological concepts acquired through the influence of the environments in which the local residents reside. They regulate and guide individual behaviors and serve as the criteria for taking an action, helping individuals to develop their ultimate preferred behavioral model or lifestyle (Chiang and Chiang 132).

The broad-spectrum proficiency, or cognitive-affective mastery, required to engage in this work is somewhat akin to what is known as ‘sagacity’ in folk wisdom, and is key in crafting theory equal to present challenges. Through social cognition which draws on these domains and more, we can introduce regulatory measures to achieve a higher order of wisdom in our collective manners (in a firm, for example) than can be reasonably expected for individuals to achieve at this time. Historically, “imaginings of the future are located in their social, economic and political contexts” (Potts 102), hence imaginings adequate to transdisciplinary problems must themselves be transdisciplinary to the utmost in scope and depth. Research projects, cognitive-affective protectionism and the implementation of paradigmatic policies, informed by cognitive cultural theory and cognitive-affective science, are examples of tools possible only through such socially metacognitive-affective behaviors.

The extreme and ever-increasing relevance of metacognition/meta-affect to modern life shows that we are entering a thoroughly cognitive-affective economic environment, where individuals who possess integrated social skills, cultural fluency, and technical expertise (complex competence) are increasingly demanded. Cognitive-affective development is always ongoing, and the most productive workers will be those who are able to complexly adapt to changing working and social conditions. Cognitive-affective impairment is an enormous drag on the world economy, since it by definition prevents the optimal formation of human capital. As Gallup and Nguyen write, “since we assume that human capital affects the absorption of new technology, cognitive impairment reduces growth both in and out of equilibrium” (Gallup 19). In a time when advanced economies are looking for sources of growth any- and everywhere, it is imperative to see how much our economy relies on restrictive cognitive-affective homogenization, and how much economic productivity and growth remains to be unlocked through new economic sectors: the next-

level service economy; generalized cultural anthropology and artmaking; a new education system meant to serve the whole human population; and so on.

Decisive moments of change have been narrowly appreciated in the past, since it took time for the decisive innovation to make actual the potential for change condensed in its advent. Paradigm shifts fundamentally reorient cognitive-affective personality systems on a structural basis, interfacing with structural personal-social logics and affects and engendering the creation, transformation, and dissolution of cognitive-affective communities. Individuals and groups are thus structurally overexposed to influence by outside forces, making it imperative to give each person and group access to world-class cognitive-affective resources, to build resilience in a world which is already challenging enough as it is. The impoverishment, or worse, colonization, assimilation, and genocide, of traditions denied access by heartless and thoughtless higher-order economic systems constitute crimes against humanity, the transversal cognitive-affective economy, in the highest sense. All perspectives ought to be provided with optimal cognitive-affective environment to encourage human flourishing, because these are the same conditions which will unlock new heights of economic productivity. Applying technology and harnessing the power of enthusiastically embraced new social norms requires legitimacy in the dominant authority. Given ongoing equity concerns, this legitimacy can only be attained by penetrating the cognitive-affective personality systems of the powerful and changing their valuation schemata to reflect a more holistic sense of interest than the narrow faculty of calculation.

Cognitive-Affective science gives us the vocabulary to express the true basis of economic functionality, which of course lies in the relationships of human beings to each other and to natural resources which allow for survival and flourishing. On a deeper level, economic choice relies on the production and consumption, as it were, of cognitive-affective states, states of being which

comprise standards of pleasure, success, wealth, and status, be they idiosyncratic or conformist. In short, cognitive-affective science can help economists develop better theories of valuation, such that standards of valuation can be devised which are agreeable to individuals and sub-groups, yet also allow for the reasonable expectation of their continued (or coming) decent survival. Intervention in such highly influential fields as neuromarketing and consumer nudging will be more cognitively-affectively profitable if it is grounded in such a culturally informed perspective. Overcoming dire and time-sensitive challenges amounts to the challenge of changing society and our economy fast enough, and in the proper ways, to avert catastrophe. For it is clear that our economy will soon grow to rely on resources which are now unknown, marginal, or impractical, yet that exist all around us already. As such, a major application of cognitive-affective economics is in the field of seeking out undervalued forms of capital within the dominant economic-cultural value system.

There is no matter more widely or pressingly relevant than the uncertain future of the world economy—and each human’s aspirations as part of it—given the ongoing and acceleration disruption of the biospheric support system, defined by Cairns as “natural capital and the ecosystem services it provides” (Cairns 487). The work of crafting a positive outcome in the face of environmental degradation—and the ever-escalating conflicts presumed to follow due to resource scarcity and habitat destruction—remains in its infancy, though the sense of urgency is growing. A paradigm shift must occur, or is already occurring; in other words, the “urgent need to take action to prevent disastrous scenarios is increasingly recognized” (Rezny 299). However, the cognitive-affective implications of biospheric support system disruption are undervalued. Per Hayes: “this reflects the global discourse, where, in comparison to physical health, mental health in general has been neglected” (Hayes et al. 3). As such, the case remains to be made that making

decisive and large-scale efforts to protect biospheric integrity, whether conservational or of the order of artificial replacement of biospheric support functions, has not only long-term utility but major short-term value in reducing cognitive distress and maldevelopment in the present.

To those who consider environmental economics, the position that “the health and integrity of the biospheric life support system is central to the well-being of humankind” (Cairns 487) is well known. Yet this perspective overlooks the key insight that commercial adaptation has always consisted in finding novel, thus necessarily artificial, means to establish new systems of socius-environment homeostasis, or economies. We cannot lose our nerve at this point, when our technical means are at their most advanced, and think that we must find a way to recreate prior states of affairs, i.e. restore the biosphere support system to a previous state. Natural capital on Earth is destined to fall, yet artificial capital and human capital are set to soar, and further natural capital is available in the vicinity of Earth through the expansion of economic practice beyond the terrestrial realm (the extensive mineral, water, and other deposits of natural resources throughout the Sol system). As such, I disagree with Cairns again that “present preoccupation with economic growth, even after a global financial meltdown, distracts from the main goal of finding the best ways to use scarce resources both to meet human needs and to preserve the integrity of the biospheric life support system” (Cairns 488). Sustainability must be understood as sustaining decent human life, the possibility of happiness, however defined, under rapidly changing economic, social, technological, and ecological conditions: decidedly not, that is, as the sustenance of states of affairs in the biosphere which were necessary before but which now might be replaced by artificial products of human economy. Environmental economics, in leading the charge in engineering humans’ new home on earth, lives up to the origins of economics as the discipline of managing a household (Leshem 226).

Contrary to many approaches, which conservatively focus on preserving something near the present level of homeostasis between human beings, as a species, and their environment, this study presumes that humans' environments will increasingly be products of their economic systems. The transnational economy and the human biosphere will grow to be exactly the same thing (as is clear in the example of human settlement outside of Earth). In adapting to biosphere support system disruption, we ought to abandon the pursuit of a return to some mythic equilibrium for its own sake. As a species, humans have disrupted equilibrium at every turn, using spears, for example, to drive mass extinctions long before the present drama. We now stand at the beginning of the great disruption to which our 'innocent' species-wide tendencies have led us, and it remains to be seen whether any new stable paradigms will even emerge, or whether ceaseless and ever more rapid structural change is the basis for human (and post-human) history to come. The danger of tunnel-vision looms large over the sciences. Focusing on how to solve a certain problem when perhaps it needn't be solved, or can be solved indirectly through a change in focus, can derail efforts substantially and waste precious resources. Such an approach helps us when it comes to considering the economic implications of climate change. For example, when we speak of 'sustainability,' what is it that we seek to sustain? In the end, the primary focus for economists must be the sustained ability of society to produce goods and services in tolerable quantities and qualities for the decent survival of the human species. In this time, when the very survival of humanity is in question, we can't get too attached to things which have until now been constants in human economies. Can we really hope to 'sustain' the ability of humans to rely on rain and springs for water? It seems more likely that our advancing technological means will grow to provide water synthetically (i.e., outside the given 'biospheric support system') to each and every

person on Earth at reasonable cost, and that in general the tendency will be toward and more and more mechanized, artificial habit for humans.

The cognitive-affective revolution allows us to think more deeply into the century's problematic by questioning the basic assumptions of most environmental economics. By embracing, rather than fighting against, the idea that humanity is destroying the current conditions, environmental economics can help shepherd the process which will see all humans live in substantially artificial environments by the end of the century. By steadfastly assuming that we have to save a world like the one we live in, we miss the point that we have instead assembled the tools to build a truly new world, one which will be required to survive the destruction by our economy of its own material basis. So, we will have to make a new material basis, and this is only possible with the acceleration of research and technological evolution made possible by eliminating poverty and generalizing education. In short, the cognitive-affective revolution in economics asks us to recognize that the major growth potential in the coming period is in human capital, and that the basic strategy consists in generalizing behaviors of cognitive and affective education which fuse the business of everyday life with the project of developing and implementing policies which promote flourishing. The basic grand conceptualization of the task is the automation of the biosphere. In the course of development, humanity has decisively destabilized the metabolic basis of our activity. Such crises in the past have always been resolved through the adoption of higher-order solutions. For example, when nitrogen in the soil was running out in the early 20th century, the problem was solved by fixing nitrogen from the air, an entirely novel sort of solution. Similarly, the problem of the environment will not be solved by returning somehow to the established homeostasis of the past hundreds of thousands of years. Instead, humans will engineer an entirely new form of homeostasis, one focused on retaining the desirable

aspects of humanity (e.g. embodied pleasure, imagination, play with others) while accommodating the seemingly unending advance of technological progress.

Cognitive-Affective Protectionism

From a Cognitive-Affective perspective, it is clear that the deciding industries and knowledge bases of the 21st century are not yet in existence, since so much growth remains to be achieved when it comes to raising the cognitive-affective standard of living (measured in indicators of logical reasoning, critical thinking, transcultural literacy, and emotional well-being among the public). As such, the cognitive-affective economy, broadly speaking, is really an industry in its infancy, bringing infant industry theory and protectionism into play as economic theories oriented toward fostering the development of new industries when they are not yet internationally competitive, or rather, viable. While cognitive-affective science is certainly already being used to craft policy, it remains at a subtextual level with respect to the awareness of the broader public, a state of affairs which is particularly detrimental to the positive effects of cognitive-affective development, since raising such development in the individual awareness must lead to metacognition and -affectation on some level. This would constitute success of the cognitive-affective paradigm, since it aims to spur cognitive-affective development, not to increase acceptance of itself as a theory.

The cognitive-affective revolution in economics may be started with the at-cost dissemination of materials which raise the ambient level of cognitive and affective performance among the public, constituting intentional positive externalities for the cognitive-affective cultural-economic environment. As example, such materials may be aesthetic creations, pieces of writing, able to be shared easily, which give people the tools to begin honing meta-cognitive and -affective skills. These should be designed not to force them into any given way of thinking (cognitive-affective

content), but rather to allow consumers to experience themselves on an intrinsically motivated and evolutionarily transformative cognitive-affective journey. This initiative will make use of the extensive databases which exist on the consuming public and be intended to optimize the cognitive-affective state of each individual.

Sadly, current economic thought is locked in a cargo-cult practice of worshipping the dominant icons of the previous century, including the pursuit of transient luxury and blindness to the situation of personal affairs within a broader social, economic, ecological, and cosmological frame. As noted by Young et al.,

Existing institutions and regimes approach the environment basically as a source of commodities exchangeable for money, and not as a collection of valuable functioning systems. The cause of this is inadequate education, based on inadequate understanding, stemming from a woefully incomplete knowledge base. As a result, we are cashing in goods that are finite in quantity, slow or impossible to replace, and perform biospheric functions that support life. The destruction of such goods will diminish our lives, and if it does not eventually extinguish them, it certainly may extinguish the lives of our descendants. (Young

150)

It is left to cognitive-affective science to aggressively shift the discourse on valuation from monetary terms, which reinforce the myriad cognitive biases which led to the thoughtless destruction of the biosphere in the first place, to cognitive-affective terms, so that the true goal of cultivating pleasurable mental states and facilitating cognitive-affective development can come into view. Each of these goals implies the implementation of cognitive-affective protectionism on every scale, as we cultivate our own individual idiosyncratic industries (our own economic behaviors) in concert with the rising chorus of cognitive-affective innovation set to sweep the globe. By seeing the enormous economic opportunity presented by cognitive-affective economics,

the massive ecological problems we face shrink to an imposing, but imaginably conquerable size. Economics as a glorified version of home-building can only truly succeed when “the ends of economic analysis [are] open to an ethical discussion and [...] economic rationality [is] defined in terms of how best to approach the goals that emerge from an ethical framework” (Leshem 236).

Toward Poetic Science

There is a growing sense that either an apocalypse or a new golden age is coming. The means to achieve the artificialization of biosphere support system components disrupted by human economy activity may exist, but unlocking and putting them into place is no small task. Accelerating the pace of cognitive-affective paradigm shifts and disseminating their implications throughout the economy will require raising the productivity of existing workers within science, expanding the workforce of scientific specialists to meet the demand for cognitive-affective labor, and making it possible to overcome, within the broader public as well as within academic disciplines, of bio-cultural tendencies to double-down on established practices and heuristics. Yet only by achieving these tasks can we hope to help conceive and implement the policies which will lead to the continued survival and flourishing of the human species, and such for ourselves as individuals.

This paper has endeavored to show that the theoretical perspective of cognitive-affective science, meaning the honing of cognition through the ruthless questioning of premises, and the development of affective sensibility through socio-cultural practice, has much to offer humanity as it transitions to an ever more mechanized and modelled world economy. Once the rationalist bias against affective sensibility is set aside, the field will truly be open for revolutionary and wonder-producing research. Humans have definitively changed Earth and must now take direct responsibility for the survivability of the biosphere. Embracing this challenge, and setting aside

the idea of returning to the environmental equilibrium of five centuries ago, is central if we are to think creatively enough to apprehend the substantial economic opportunities which lie ahead. This is equally true for our cognitive-affective homeostasis: we won't thrive by pursuing the reinvigoration of last century's concepts, but by finding the new ways of speaking pursuant to our own time. Cognitive-affective economics emphasizes human development, or the development of human capital, as the major goal of economic meta-theory, and hence looks to all fields, from artificial intelligence to cultural anthropology and poetics, to find the artful economic means which will allow for the ever faster development technology and its mindful use. Core to this megaproject is the strategy of cognitive-affective protectionism, which seeks to craft a 'safe space' for novel cognitive-affective schemata to develop, before they can be respectfully challenged by and combined with other novel schemata. The possibilities are endless, once we realize that cultivating cognitive-affective states of all kinds, not merely ones we 'agree with,' or which profit us monetarily, is in our direct personal interest, since we never know out of what sector the next major innovation or paradigm shift might emerge. As such, cognitive-affective economics must seek to nudge the broader public into a higher valuation of mental, emotional, and cultural development, so that accelerating returns can begin to appear. In seeking to drive intrinsic motivation in a varied public, cognitive-affective science must be infinitely adaptive, infinitely inquisitive, infinitely respectful of the unknown sense of different modes of being. In this, it lives up to the poetic sense of Baudrillard's radical metonymy. Everyone is overlooked; everyone should be more catered to, consoled for unappreciated wounds, nurtured in their cognitive-affective development for the good of all. So much was averred by Hayes et al., in writing that "Transformative action—where inequities are addressed, active hope is demonstrated, and communities are mobilized—is the defining opportunity of the twenty-first century to address the climate change impacts on

mental health” (Hayes et al. 10). Such transformative action will be invaluablely aided, I hope to have indicated, by the pursuit of cognitive-affective economics.

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Additions to WC:

1. Something on Lakoff
- 2.