The confluence of humanomics and neuroeconomics on economic cooperation

RAVI K. ROY[1]
Southern Utah University
and W. Edwards Deming Institute

MOSTAFA DELDOOST
University of Warsaw

RYAN M. YONK
American Institute for Economic Research and Universidad Francisco Marroquín

I. CONCEPTUAL FOUNDATIONS: SYNTHESIZING HUMANOMICS & NEUROECONOMICS THROUGH SHARED MENTAL MODELS

Douglass North asserted that "The process of sustained economic growth that historians believe began between 1750 and 1830 radically altered the manner and standard of living of Western men and women." And Deirdre McCloskey (2016, 2021) claims that all of this was caused by the spread of bourgeois ideas and free markets. Indeed, entrepreneurial thought and free markets continue to drive economic development worldwide. While traditional neoclassical economic models are highly useful for describing and analyzing what markets *do* and *how* they function, they lack a causal explanation of *why* they operate as they do. Human beings cause markets to work. Entrepreneurial drive and initiative originate in the human head. Human beings formulate ideas and muster the ingenuity to bring them to fruition, often by cooperating and collaborating (co-laboring) with others.[2]

The purpose of this paper is to investigate the interrelationship of the 1) ideational, 2) moral and 3) neurobiological foundations of economic cooperation. We proceed on the basis that the mind and the *brain* are distinct, but inextricably connected, phenomena. Although they are different, they coexist in the human head. Therefore, when studied, these phenomena should be conceptualized accordingly. In the words of Caroline Leaf (2021), the human *mind* and *brain* are "characterized by a triad of thinking, feeling, and choosing. When you think, you will feel, and when you think and feel, you will choose. These three aspects always work together."[3] We suggest that human cooperation and collaboration involve 1) "shared intentionality" (sometimes known as *we* intentionality), 2) "shared learning and knowledge," 3) empathy (fellow feeling), and 4) "social contagion." Accordingly, we synthesize insights from the emerging areas of *humanomics* and *neuroeconomics* to explore the philosophical and cognitive causes underlying economic cooperation. Centering on the human mind, humanomics incorporates aspects of moral philosophy, social learning, and experimental analysis to examine the causes of human behavior. Centering on the brain, *neuroeconomics* studies the neurobiology underpinning human behavior. We employ Arthur T. Denzau and Douglass C. North's (1994) "shared mental Models" (SMM) framework as a conceptual bridge between the two areas of humanomics and neuroeconomics to analyze the ideational, moral and neurobiological foundations of human cooperation (see *figure 1*).

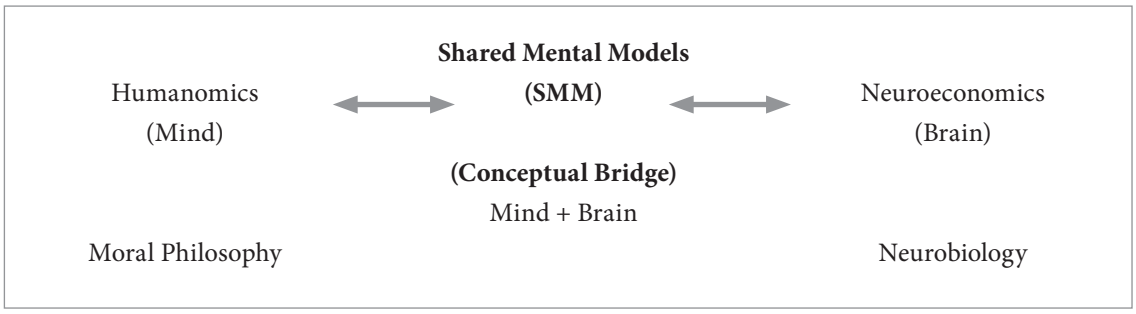

Figure 1

Let us continue with a brief conceptual explanation of the ideational, moral, and neurobiological foundations of human behavior. *Ideational foundations*: The ideas we hold in our heads inform our conceptions of what is rational and what is not. Our ideas are not formed in a vacuum, but rather, reflect the cultural and environmental social contexts in which we live and operate. We never see the world as it *is* objectively. Instead, we perceive it through cognitive filters or what Denzau and North (1994) refer to as *mental models*. In its *2015 World Development Report* entitled *Mind, Society, & Behavior*, The World Bank Group reveals that:

> Mental models include categories, concepts, identities, prototypes, stereotypes, causal narratives, and worldviews. Without mental models of the world, it would be impossible for people to make most decisions in daily life. And without shared mental models, it would be impossible in many cases for people to develop institutions, solve collective action problems, feel a sense of belonging and solidarity, or even understand one another (pp. 63-64).

The mental models that human beings use to interpret reality are neither axiomatic nor universal as traditional neoclassical MAX-U approaches often assume. Instead, mental models are cognitive constructions that reflect our highly varied human experiences. Human behavior is, in part, a reflection of the moment and environment in which it occurs, reflecting the current temporal, spatial, and environmental context. Human conduct, on the other hand, comprise past actions that have helped shape one's character (Wilson 2025). When examining the reasons why particular social systems develop, operate and evolve—especially questions centered on why markets work— one must consider both human behavior and human conduct.

2) *Moral foundations*: Human beings share ideas, experiences, and feelings with others. They often demonstrate feelings of respect and empathy towards one another. In his 1759 masterpiece, *The Theory of Moral Sentiments*, Adam Smith suggested that human beings possess *dual natures*. The first is self-love and the other is fellow feeling. Self-love manifests when it advances and protects *one's parochial interests*. Fellow-feeling (often operationalized a empathy) manifests when one demonstrates concern for the interests of family members, neighbors, and even strangers. Those "dual sentiments," which exist simultaneously in our heads, underlie our desire to cooperate and indeed, collaborate (co-labor) with one another. The emerging field of humanomics emphasizes the importance of ideas, moral sentiments, cultural norms, and cooperative behavior in driving productivity, wealth, prosperity, and overall well-being. The writings of Adam Smith, Vernon Smith and Bart Wilson have been advancing the study of humanomics to redirect the focus of economic inquiry on ideas, emotions, norms, values, and social phenomena that motivate human behavior. According to Bart Wilson (2024), "[t]he origins of our actions—ideas—do indeed matter. They make us human. Moreover, they make the principles of economics—trade, the division of labor, and property—possible." Wilson continues, "As a positive science, the study of economics can classify the moral sentiments that prompt human beings to act, the meaningful actions that human beings take, their

values, and the purpose of their actions" (p. 36). Accordingly, Wilson suggests that "[w]e can [and indeed should] be twenty-first century students of Adam Smith who study economic activity in both its origins and consequences. Meaningful economics is a science of economics that retains the human mind" (p. 37). According to Wilson, the humanomics framework "puts human feeling on an equal footing with knowing, thinking and wanting, which makes economics all at once ethical, psychological, sociological, and anthropological" (p. 41). Wilson (2024) emphasizes that if economics is to remain relevant to our lives, it must rediscover the whole human being.

3) *Neurobiological foundations*: Neuroeconomics is a multi-disciplinary area of research that draws on insights from psychology, neuroscience, economics, and anthropology to explore the neurobiological causes of human cooperation and collaboration. Research by Van Bavel, Pärnamets, Reinero, Packer (2022) explores "How neurons, norms, and institutions shape group cooperation"; Houser and McCabe (2009) study experimental neuroeconomics and cooperative behavior in a game-theory setting; Paul Zak studies the role of the oxytocin on morality, trust and cooperation in the lab and the real world; Deldoost, Khosrowabadi, Kamiński (2024) explore the underlying neuropsychological processes associated with social contagion and how it influences economic cooperation. By drawing together concepts from humanomics and neuroeconomics using Denzau and North's conceptual SMM framework, we hope to gain improved understanding of why human beings cooperate in free market systems to the extent that they do.

This paper builds upon three related research projects published by Denzau, Roy, and Minassians (2016) and Roy and Denzau (2020, 2024), which examine the connections between humanomics, mental models, and social cooperation. Earlier work conducted by Deldoost (2024) and Yonk (2024) independently supplements Roy's reaserch. The authors' collective contributions are synthesized to provide fresh conceptual insights on *why* markets work. In section II we examine the limitations of MAX-U by exploring markets as cognitive constructions hat stem from our human nature as social creatures; section III explores the "The confluence of the humanomics of 'the mind' and the neuroeconomics of 'the brain' on social cooperation in the market"; section IV explores the neuropsychological influence on social contagion and conformity and trust on social cooperation. We conclude by examining how humanomics is making a transformative contribution to the field of public choice.

II. MARKETS ARE COGNITIVE CONSTRUCTIONS DRIVEN BY HUMAN SENTIMENTS

Until the 1930s, the economic study of human behavior encompassed moral and normative dimensions. The rise of positivist thought in economics, which was solidified by Lionel Robbins, Paul Samuelson, and Gary Becker, among others, marginalized the study of ideational and moral causes of human behavior (McCloskey 2021; Wilson 2024). Consequently, modern economics largely ignores the fundamental "human" element in its causal analysis by reducing the study of human behavior to utility functions that measure our preferences and choices in relation to resource scarcity. Bart Wilson (2024) lucidly explains that "Lionel Robbins shifted the focus of economics from the study of wealth or economic welfare to examining how individuals make choices under conditions of scarcity. It was a long road from 1932 until his definition of economics achieved near universal acceptance among economists. But by the bicentennial of the publication of Adam Smith's *An Inquiry into the Nature and Causes of The Wealth of Nations*, scarcity had clearly supplanted the nature and causes of the wealth of nations as the fundamental problem of economics" (p. 29).

Contrary to the assumptions of MAX-U, humans are not robotic utility maximizers. The concept of MAX-U, so revered in traditional economics, is "erected upon the granite of self-interest" (Stigler 1975, p. 237). Contrary to popular myth, the concept of "self-interest" itself was not promulgated by Adam Smith (Wilson 2024). Adam Smith astutely observed that human beings are social creatures who seek meaning in their lives by making connections and building bonds with others. Traditional neoclassical economic models tend to understate the complexities shaped by cultural and moral influences on human behavior. Smith and Wilson's humanomics approach suggests that human beings engage in a process of self-reflec-

tion and cognition that evaluates not just whether their utility was maximized but whether their behavior was deemed, in Smithian terms, to be "praiseworthy" by others. Such social approval-seeking behavior, as we shall see, is embedded in social *conformity* and *contagion*. Smith describes that process of cognition as "the man within the breast," "The Impartial Spectator." Vernon Smith and Bart Wilson's laboratory experiments reveal that what individuals view as appropriate ways of behaving are both context-dependent and often constrained by the bounds of propriety.

Through their experimental analysis, Smith and Wilson (2019) came to realize that "human feeling, thinking, and knowing about what a good action is also maps outcomes onto actions" (p. 63). Moreover, MAX-U's one-size-fits-all notion of universal rationality does not account for wide variations in human norms and cultures. Culture, a phenomenon that is a characteristic of human societies, encapsulates norms, notions of fairness, familial and societal obligations and shapes group identities (Tomasello 2009). All those concepts affect human behavior and must be accounted for in meaningful and relevant economic analysis. Smith and Wilson (2019) conclude that the assumptions economists hold regarding the predictive power of Max-U models are insufficient and suggest that something more is needed. While traditional neoclassical, positivist-based approaches have furnished us with an abundance of models in the MAX-U vein, they have offered little in the way of meaningful theory-building, resulting in the advancement of economics as an observational *human* science (Wilson 2024).

At its core, MAX-U models often misconstrue what markets are ontologically. Markets are much more than revealers of relative scarcity and instruments of price signaling. Although among the important roles they serve, markets are fundamental builders of social capital. They bring people together and, in doing so, act as a societal glue. Without them, democracies and even other systems would collapse. At their core, markets are cogtnive constructions shared (mental models) that extend from human propensities that are internal to the mind and the brain. Successful voluntary market transactions reflect cooperative social behavior that is embedded in *shared intentionalities* aimed at positive-sum outcomes.

Legitimate and sustainable economic agreements (market equilibriums) are reached through a "meeting of the minds" between buyers and sellers, producers and consumers, entrepreneurs and investors—humans in any case. Markets are complex social processes that promote social learning, discovery, and innovation in ways that best facilitate human flourishing and prosperity. They are dynamic systems of an emergent order that reflect properties of both human rationality and sociality. Woven into market processes, therefore, are elements of both predictability and spontaneity. While exhibiting periods of stability, they are frequently characterized by ubiquitous novelty and uncertainty that are sometimes punctuated by periods of great instability and even devastating crises. Innovations and breakthroughs in human knowledge and understanding about the world, therefore, cannot be planned with any reliable precision. And yet, making practical use of such knowledge is impossible without intentional thought and deliberate action. Learning and knowledge creation are advanced most effectively when humans interact and, indeed, transact with other human beings. Through social engagement and market transactions, human beings often (though not always) arrive at positive-sum outcomes. Indeed, failure (which can be painful and costly) on both the personal and collective levels is essential for social learning. The experience of pain and suffering often causes humans to fundamentally change or alter their beliefs and patterns of thought, leading to new ways of doing things— behavioral change. The desire to avoid further pain and suffering often cause people to learn from past mistakes, resulting in mental model shifts and scientific revolutions— paradigm shifts. Again, all of this happens in the human head.

Ideas, McCloskey (2016), argues, are what drive human beings to prosper. The ideas espoused by enlightenment thinkers helped transform people's understandings of the meaning and purpose of what human beings ought to do with their lives. The so-called Great Enrichment (McCloskey 2016) was characterized by a radical shift in shared mental models. That said, meaningful economic inquiry should be devoted to understanding *why* that shift occurred and *why* the spread of bourgeois ideals has continued to transform the human condition across the continents, most notably in places like India and China over the last four decades. During the Scottish Enlightenment, scholars like Adam Smith understood

correctly that successful market arrangements were the result of human capacity for moral agency, forming complex thoughts and ideas, and developing sophisticated ways of communicating them to others. Accordingly, they focused on the values, thoughts, and feelings that motivate human action. Economies exist because human beings think and communicate with one another in unique ways. Frank Knight (1997/1924) asserts that: "the relationships between people differ greatly from the relationships between inanimate objects, and thus a different approach to their study is necessary" (p. 483).

MAX-U models ignore much of this. Therefore, it is hardly surprising that they are unable to account for much of human cooperative behavior in the real world. According to Wilson (2024), "[w]e need meaning-making feelings, as against the screw-you machinery of noncooperative game theory, to understand the economics of human intercourse" (p. 41). Indeed, Kevin McCabe, Stephen Rassenti, and Vernon Smith (1998) reveal that cooperation occurs with much greater frequency than the standard models tend to predict. When exploring why markets work, researchers must accurately conceptualize our dual natures. In his essay on "The Two Faces of Adam Smith", Vernon Smith (1998) explains that: "[t]hese views are not contradictory if we distinguish impersonal market exchange and personal exchange" (p. 2). Vernon Smith's (1998) experiments found that behaviors in both settings stem "from a self-interested propensity for exchange in markets and friendships" (p. 2). Accordingly, Vernon Smith and Bart Wilson (2019) suggest that "while neo-classical analysis works well for studying impersonal exchange in markets, it fails to explain why people conduct themselves the way they do in their personal relationships with family, neighbors, and friends."[4] Moreover, Smith and Wilson (2019) found that we often exhibit feelings of empathy and engage in cooperative behavior in many impersonal (anonymous) interactions, including financial ones. Feelings of empathy cause humans to connect emotionally with one another and help forge social bonds between them. The bonds are forged through contagion, conformity, and interpersonal trust, which, as we will explain, are the foundations of cooperation and what *enables* markets to function and operate effectively. Smith and Wilson's work is compelling because it provides us with an epistemological foundation for testing Adam Smith's belief that human cooperation stems from our ability to reveal concern for ourselves and others simultaneously. Therefore, social cooperation appears to be a function of both rational self-interest and human empathy. While other species exhibit social connections and behavior, human beings appear to be rather unique in their ability to exhibit fully evolved moral sentiments. The sentiments that underlie human cooperative behavior stem from the interplay between human biology and culture. Understanding *why* this is the case requires a more profound exploration of the foundations of human decision-making (Wilson 2024). One must account for philosophical, behavioral, and neuropsychological phenomena.

III. THE CONFLUENCE OF THE HUMANOMICS OF "THE MIND" AND THE NEUROECONOMICS OF "THE BRAIN" ON SOCIAL COOPERATION

Human beings have a perpetual desire for both personal and social betterment, both on a material level and an existential one. Indeed, something is embedded in our heads that causes us to desire to better ourselves and improve our surroundings, often desiring the same for others. Human beings exhibit both biological and psychological propensities for social connections that animate learning, listening, teaching, and passing on cultural norms, practices, and beliefs. Such behavior is often carried out intentionally to help others flourish. Human beings share their emotions and desires with others through complex communication, both verbal and written. Techniques, such as storytelling and a persuasive form of speech known as "sweet talk", have proven to be particularly effective in bolstering economic activity. According to Deirdre McCloskey (2016), nearly a quarter of national income is generated as a direct result of "sweet talk." McCloskey (2021) reminds us that Adam Smith "spoke often of 'the faculty of speech' and did consider meaning in all his writings" (p. 9). Written and oral speech enables humans to bargain, negotiate, reach settlements, find economic equilibriums, and even collaborate to achieve common aims and purposes. Persuasive speech, often ignored in the so-called "dismal science," is a vital component in the economy.

McCloskey (2021) shares Adam Smith's own words with us in support of her assertion: "The offering of a shilling which to us appears to have such a plan, is in reality offering an argument to persuade one to do so as it is for his interest" (Smith 1978, 1982/ 1762–1763, 1766. Report of 1762-3 vi. 56, p. 352).

Bart Wilson (2024) suggests that if economics is to remain relevant, we must start by posing interesting questions that focus on *why* human beings seek to enrich their lives by making choices they believe will add meaning and purpose. Indeed, our penchant for creating value and ascribing meaning to people, relationships, things and events is what makes us "human" and therefore, should be placed at the center of economic inquiry. That conclusion is not new. Adam Smith (1776) believed that human beings are social creatures who seek to add value to their lives by engaging, and indeed exchanging, with others. Smith (1776) argued that human nature is imbued with a "certain propensity" to "truck, barter and exchange one thing for another" (p. 25). Bart Wilson suggests that it comes from within. We agree wholeheartedly. Accordingly, we argue that that propensity is the result of the confluence of two inextricably related phenomena that co-exist within our heads—namely the mind and the brain.

If the mind and the brain are to be treated as distinct yet interrelated phenomena, then it would be useful to draw on insights from two distinct, often discrete, emerging areas of study—namely, neuroeconomics and humanomics. Neuroeconomics synthesizes aspects of cognitive neuroscience (a branch of neuroscience and psychology) and economics. Vernon Smith and Bart Wilson assert that human beings are moral agents and, therefore, values are at the core of economics. Deirdre McCloskey (2021) points out, however, that an exclusive focus on the brain that ignores the role of the mind in attempting to understand human behavior is akin to trying to comprehend "Jascha Hefetz violin playing by a closer and closer study of his arm muscles" (p. 23). Thus, it might appear on the surface that the two approaches offer mutually exclusive explanations. However, Zak's work explores how the biochemistry in our brains' immersive experiences and sharing these experiences with others through storytelling is highly complementary with humanomics. Let us now examine the conceptual connection between the neural and cognitive processes that social contagion and conformity influence on cooperative behavior and decision-making.

IV. THE NEUROPSYCHOLOGICAL INFLUENCE ON COOPERATION

Historically speaking, studies on how neural mechanisms affect decision making have been limited. In recent times, however, growing numbers of studies have begun investigating biology as a contributing factor to social conformity and contagion and how these social phenomena are related to what Adam Smith referred to as "fellow feeling" (sometimes referred to as other regarding sentiments.) The growing field of humanomics explores the human consciousness as well as the desires, aspirations, and temporal awareness that are generated within the human mind; neuroeconomics studies the connection between social interaction and biochemical reaction within the brain; mental models are a conceptual heuristic that synthesizes cognitive (brain) science and human social psychology (mind) to explain how humans process ideas, feelings, and experiences to interpret the world around them; they are internal (to the mind) representations of external realities. Humans process a wide variety of sensory data that is accumulated from our daily interactions and experiences, that are processed in our heads through cognitive filters or mental models in ways that help us formulate interpretations.

Paul Zak's groundbreaking work examines how the sharing of cognitive knowledge contributes to voluntary forms of cooperation. His findings suggest that human beings are natural cooperators because fellow feelings, or empathy, are woven into our neurobiology. Studies utilizing advanced neural imaging technology disclose that the ventral striatum part of the brain is stimulated in a manner that causes a sudden release of oxytocin when individuals exhibit altruistic social behavior. Zak has identified oxytocin as "the trust molecule." Zak's research is inspired directly by Vernon Smith's experimental work on moral sentiments, which explores the connections between morality, empathy, and interpersonal trust. Zak suggests that human empathy (fellow feeling) and trust (belief in others) are causally connected. The more people believe they have in common, the more likely they are to empathize with one another and, in turn,

develop deeper trusting relationships. Denzau and North (1994) note that: "[i]ndividuals with common cultural backgrounds and experiences will share reasonably convergent mental models, ideologies and institutions. Individuals with different learning experiences (both cultural and environmental) will have different theories (models, ideologies) to interpret that environment" (pp. 2-3). In other words, people with common backgrounds and those who engage in mutual experiences often develop emotional bonds that lead to sympathetic perspectives or similar ways of thinking. Common experiences help shape shared understandings and meanings in particular ways; they help cultivate SMMs among groups of people. Building social connections can cause people to think differently about costs and benefits associated with cooperative behavior. When we empathize with others, we tend to seek mutually beneficial outcomes. The cost-benefit calculus tends to change from one in which individuals attempt to maximize their self-interest exclusively to one in which both parties consider the interests of others as well.

Zak argues that if empathy allows us to connect with others, then sufficient levels of trust must be developed between participants. Effective communication is an essential element in the trust-building process and in helping participants "get on the same page," reaching shared understandings and meanings (shared mental models) over aims, goals, and purposes. Initiating dialog or sharing information and feelings involves risk. Reaching consensus and devising mutual strategies and approaches to address shared problems and concerns requires a willingness to listen and share our ideas and beliefs with others. In so doing, we expose who we are and make ourselves vulnerable to others.

Zak has been studying the powerful influence of personal storytelling and shared immersive experiences in creating interpersonal empathy, in ways that contribute to cooperative behavior. Accordingly, Zak's work in this area is highly sympathetic with Deirdre McCloskey's analyzis of the imprtance "sweet talk." Zak (2014). When we share our personal experiences with others, we are, in essence, entrusting them with a part of ourselves, we expose our emotions, beliefs, and identities. Such demonstrations of "trustworthiness" trigger the release of the oxytocin molecule, which we referred to earlier. This empathy-causing molecule, also known as the "trust molecule" or the "moral molecule," enables us to connect with others, including strangers, on an emotional level. Zak (ibid.) asserts that stories help place us in the lives of other people in ways that change our brain chemistries. In the workspace, developing personal connections and associations helps boost empathy for others, which in turn can add meaning to the tasks we perform and deepen a sense of common purpose among teammates and business partners. Data gathered over the course almost two and a half decades by Zak reveals that a shared sense of added meaning to the work that individuals experience when collaborating with others in pursuit of a common purpose can lead to higher performance and better results. In other words, when human beings "make work personal," productivity (under the right conditions) can be increased.

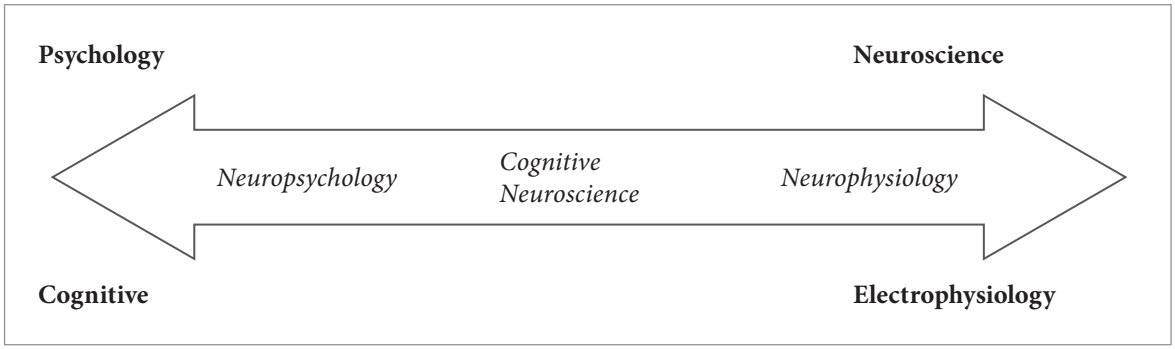

Figure 2. Cognitive-electrophysiology spectrum modified source. Cohen, 2014

Recently, neuroeconomic science has begun to study how social conformity and contagion influence cooperation. Social contagion is a complex and multifaceted area of research that explores how neurological processing, interpretation, and responses to social information and social influences affect how individuals comprehend their social environments (Frith & Blakemore 2006; Hunt et al. 2012; Parr 2010; Pfeiffer et al. 2013; Rote and Smetana 2011; Shany-Ur and Rankin 2014). Conformity and contagion are two types of social influence that are very similar (Wheeler 1996). Both involve adopting beliefs, feelings, values, and behaviors that align with the opinions of others. Consequently, both have a profound impact on shaping various types of social behavior (Levy 2008; Xie et al. 2016; Zheng et al. 2021). In a paper entitled "Exploring the Neuropsychological Basis of Behavioral Contagion During Learning about Another Agent's Social Preferences: Evidence from an ERP Study," Deldoost et al. (2024) sought to better understand the functions of imitative behavior in humans as well as explore the underlying neuropsychological processes associated with social contagion. Using real-time EEGs, Deldoost et al. identified specific neural patterns that emerge during moments of social contagion, providing a clearer understanding of how conformity influences decision-making at the cognitive level. They found that social contagion led to a significant number of participants changing their personal preferences. The block diagram in Figure 3 illustrates the preprocessing of raw EEG data and calculating ERP steps. Deldoost et al. (2024) observed a P300 component in the midline and right posterior areas of the brain during the time window of 200-350 milliseconds following the presentation of a stimulus. The scalp map distribution provides evidence that the temporoparietal and parieto-occipital regions of the brain are critically involved in processing information, specifically related to conformity and other-regarding information.

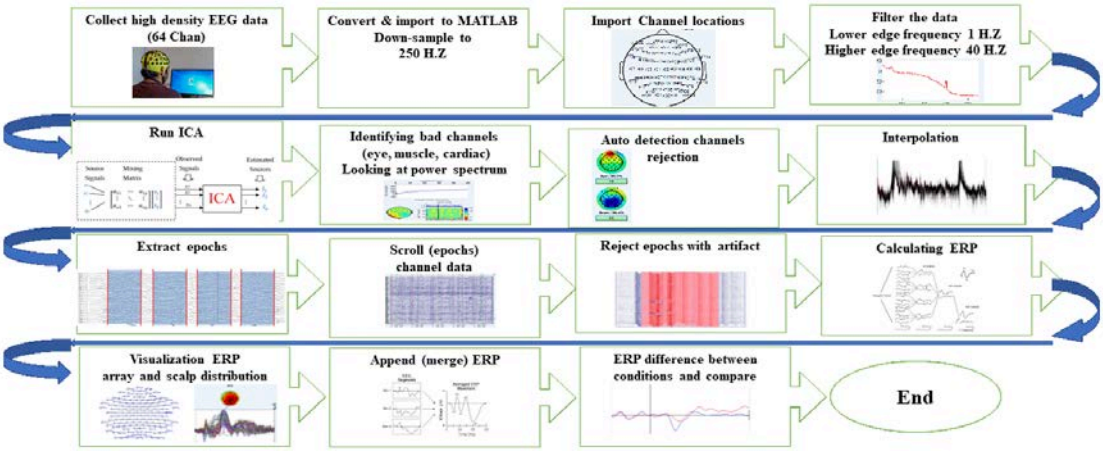

Figure 3. EEG/ERP data preprocessing pipeline

It appears that social cooperation is woven into the DNAs of our brains. Accordingly, human biological propensities to make social connections leading to cooperative relationships seem to be a contributing *cause* behind why markets work in ways that successfully bolster economic productivity and innovation, which, in turn, enables humans to flourish.[5] Human behavior reflects both rational self-interest as well as moral sentiments (empathy or fellow feeling). By indulging both human desires and behaviors, free markets can facilitate social cooperation that, in the right institutional and environmental environments, can lead to human flourishing. When humans voluntarily cooperate through free market exchanges, they face potentially costly risks. Such risks, however, are often mitigated by human sentiments of trust and trustworthiness. The process is greatly assisted when human beings form shared identities and develop common purposes that are based on shared social experiences and stories. Exploring the connection between humanomics and neuroeconomics allows us to test the veracity of (a) Adam Smith's beliefs regarding human moral sentiments and social cooperation (b) provide clear, repeatable scientific evidence

that accurately describes human behavior (in the lab and in the real world) by reflecting the interplay between rationality and sociality.

V. CONCLUSION: CONTRIBUTIONS TO *BETTERING* ECONOMICS AND PUBLIC CHOICE

Emphasizing the importance of humanomics need not imply a wholesale rejection MAX-U. That said, it is essential to note that Max-U models are often incomplete because they tend to overlook or discount the impact of varying cultural contexts on outcomes. (Denzau and North 1994; Denzau, North, and Roy 2006, 2007; Denzau, Minassians, and Roy, 2016; Roy and Denzau 2020; Smith 2003, 2020).

Recently, a group of public choice economists, political scientists, and political economists came together to honor Nobel laureate Vernon L. Smith and his colleague Bart J. Wilson's joint contribution to humanomics. A special issue of the *Public Choice* journal was published in March 2025, emphasizing the idea that "economics needed to reclaim an appreciation for insights of the arts and culture" (Schraeger 2021) to make the "dismal science" more meaningful and relevant to the human experience. This special issue featured the works of Vernon L Smith, Michael C. Munger, Diana Thomas and Michael Thomas, as well as Jordon K. Lofthouse and two of the present authors, just to name a few.[6] Collectively, the participating authors outline an empirical and normative research program that emphasizes the virtues of free-market capitalism and how they are interwoven with the public choice research agenda. In doing so, they presented a compelling and convincing argument for why economics must incorporate the study of human meaning, understanding, and experience into its methodological analysis if it is to remain a relevant and important area of inquiry that serves the greater good.

Exploration in this vein continues. Roy and Yonk are commissioning a special symposium of papers devoted to humanomics from researchers representing different disciplines—political science, economics, history, philosophy, computer science, and various other fields—that explore the importance of emphasizing the protection and expansion of human values in AI systems and models. Contributors reflecting a broad array of disciplinary backgrounds and perspectives will explore the use of W. Edwards Deming's System of Profound Knowledge (SoPK)© (1994, 2000) as a conceptual framework for studying how AI models can be improved. Current research suggests that there is a pressing need to enhance AI relevance for effective human-AI collaboration. Deming's SoPK involves using an interdisciplinary framework that synthesizes insights from philosophy (theory of knowledge), statistical variation, systems theory, and psychology to help uncover the deeper causes behind *why*, thereby enabling better achievement of dynamic innovation and breakthroughs in human knowledge and understanding. Perhaps, without realizing it, systems thinkers like Deming were trying to teach us the art of humanomics.

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NOTES

1 Corresponding author: royr@suu.edu

2 Michael Tomasello asserts that collaboration (co-labor-ing) is a unique form of human social behavior that is distinct from mere cooperation. When people collaborate, they work together in pursuit a joint goal or aim. The goal or aim is shared mutually in the heads of the collaborators. Collaboration involves shared intentionality, sometimes known as "we" intentionality.

3 (https://www.mindbodygreen.com/articles/difference-between-mind-and-brain-neuroscientist).

4 From abstract that appears in Smith and Wilson 2019.

5 The claim that free markets work effectively has been well-studied and documented (Faria & Montesinos 2009; Roll and Talbottm 2003; Lawson, Murphy and Williamson 2016; Esposto and Zaleski 1999).

6 The Full Special Issue can be found here: https://link.springer.com/article/10.1007/s11127-024-01222-9