The Emergence of Ethical Norms in Human Systems

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Through the scientific study of human systems, one can model most activity as occurring on physical, biological, psychological and cultural levels where the boundaries occur in biochemical, neurological, and linguistic systems, respectively. The contemporary philosopher of science and religion Philip Clayton in *Mind and Emergence* suggests an additional emergent level of spiritual or transcendent activity, which emerges from mental (and cultural) activity, that in this systems model would capture activity at a fifth transcendent level. *(Clayton, 2004)* The transcendent level captures cross-cultural activities and norms such as those referred to in ethical, aesthetic and philosophical activities as relating to the Greek Good, Beauty, and Truth, respectively. The American pragmatist Josiah Royce suggests in *The Philosophy of Loyalty* that harmony between cultures can occur only when each culture's ideals and cause include Loyalty to Loyalty, a commitment to the principle of commitment and dedication that demonstrates support and obligation to the loyalty of those in opposing cultures to their particular cause. *(Royce, 1908)* Royce argues convincingly that Loyalty to Loyalty not only provides harmony, but also suffices to distinguish the ethical or "true" causes as those that incorporate Loyalty to Loyalty. The cultural characteristic of Loyalty to Loyalty results in the emergent property of cross-cultural harmony and diversity at the transcendent level. Systems theory provides a tool for modeling personal and cultural interactions and the resultant emergent phenomena.

Following Terrence Deacon's three orders of emergence, one may classify ethical systems into those that result in norms of relational properties, asymmetrical constraints, or information-bearing control. *(Deacon, 2003)* First-order emergence includes Kantian systems that depend upon universalization of a maxim of conditions across society. Second-order emergence includes the development of virtuous habits through practice. Third-order emergence includes Josiah Royce's Loyalty to Loyalty where the aspiration and commitment to a principle is to the process of aspiration and commitment itself and results in a topological closure that provides ethical stability to various additional ethical or spiritual norms.

I provide an overview of human systems organized into four scientific levels and how one can organize cross-cultural or ethical systems in a transcendent level. First-order emergence of ethical systems provide relational properties, such as Kant's universal maxims. An ethical system provides an emergent norm to human cultural interactions by providing a stable, though emergent, context by which to interpret the centrality of possible functions and their consequence on subsequent system stability, i.e., ethical behaviors preserve whatever makes the emergent system stable. The practice of virtue in virtue ethics provides the stability of second-order emergence. However, for subsequent emergent systems to develop, such as systems of spirituality, an emergent level requires topological closure and memory as captured by Deacon's third-order of emergence and illustrated by Royce's Loyalty to Loyalty.

Four Scientific Levels of Human Systems

Several researchers have distinguished what simplifies to four levels of inquiry for the scientific study of human systems. Ludwig von Bertalanffy organized scientific disciplines and systems into

four levels in his General System Theory and suggests physical, biological, psychological/behavioral, and social scientific disciplines; his goal for General System Theory was to discover general rules about systems that crossed those four levels. *(Bertalanffy, 1975)* AA Abrahamsen observes that scientific disciplines may be differentiated by specialization of focus and distinguishes four levels of focus: the physical world, living organisms, the behavior of living organisms, and human culture. *(Bechtel and Abrahamsen, 1991)* Arthur Peacocke organizes his eight levels of part-whole hierarchies of nature into Abrahamsen's four levels of focus. *(Peacocke, 1993)* Claus Emmeche and his colleagues also propose four similar levels: physical, biological, psychic, and social though, they do not propose a strict hierarchy because the biological depends only on the physical while the psychological and sociological are interwoven and involve the emergence of self-consciousness and institutions. *(Emmeche et al., 2000) (Emmeche et al., 1997)* For simplicity in this paper, one can model most human activity as occurring on physical, biological, psychological and cultural levels where the boundaries occur in biochemical, neurological, and linguistic systems, respectively.

The physical level describes the mechanistic interactions between particles, atoms, and molecules. It includes the disciplines of physics and chemistry, especially mechanics and thermodynamics, and physical chemistry. The lower aspects of the level involve atoms and their constituents. Many scholars include sub-atomic fields of study such as quantum mechanics, string theory, and quantum gravity as the lowest aspects in this level (though for reasons not discussed here, one might consider those disciplines as comprising the upper discipline of a yet lower sub-physical level.) Other disciplines in the physical level not required for the study of the person include geology, astronomy, and optics. Higher disciplines in the level relevant to human systems include organic chemistry and some aspects of biochemistry. Biochemistry acts as a bridge discipline between the disciplines in the physical level and biological level.

The biological level begins with biochemistry and includes molecular biology, cell biology, and biology of the entire organism, such as botany and zoology. Neuroscience studies the brain from a biological perspective and constitutes the highest discipline within the biological level in that it depends and builds upon the other required biological disciplines. In particular, the discipline of human cognitive neuroscience bridges the biological level with the higher psychological level.

The psychological level describes the behavioral and mental aspects of individual living organisms. In particular, organisms with brains appear to have interesting (psychological) properties correlated with the biological activity of the brain. Some scholars would attribute unique properties to humans based on the phenomena studied at this level, such as intelligence or abstract reasoning, but close examination by comparative psychologists suggest to some researchers that only gradients of properties shared by many animals distinguish humans. For example, some dolphins and higher primates show abilities comparable to human children in self-awareness, communication, and problem solving; even honey bees may have the ability to communicate and generalize; and microscopic worms can learn new behaviors. One of the early goals of artificial intelligence is to create those computational systems with intelligent behaviors (rather than biological systems). It appears that the associative networks of the brain are key to the adaptive behaviors and mental processes studied at this level. However, there appears to be one property developed only by humans—creation of arbitrary, abstract symbol systems, specifically languages.

The cultural level depends upon the interaction of two (or more) organisms with the ability to generate, communicate, and share arbitrary, abstract symbol systems, namely language. *(Deacon, 2003)(Ong, 1982)* From shared language, humans develop a variety of social products in literate societies, including written text, laws, institutions, governments, rituals, drama, art, poetry, and religions. Disciplines in the cultural level include linguistics, sociology, history, cultural anthropology, philosophy, law, mathematics, theology, and all the humanities. Groups of other animals may interact socially and develop properties that no individual organism has, such as systems of dominance relationships and group personalities; and these relational and group properties influence human culture, too. The higher disciplines in the level that study poetry, ritual, and theology, appear to use the shared symbols systems of language to refer to (signify) phenomena, experiences, or other constructs that language does not easily describe, which gives rise to the

question: Do even higher-level emergent systems exist?

Transcendent Level

Philip Clayton suggests an additional emergent level of spiritual or transcendent activity, which emerges from mental (and cultural) activity, that in this systems model would capture activity at a fifth transcendent level. *(Clayton, 2004)* The higher fifth level could contain the ineffable aspects of ethics, spirituality, and transcendence that communities of humans refer to with language. These aspects emerge from interactions between societies of people as properties of relationships between cultures. This level begins with ethical principles, such as justice, and includes constructs noticed in inter-religious dialogue. Although culture can describe the relationships of people within groups, it lacks the systemic power to describe value or purpose to relationships between those groups. Clayton's higher level of transcendence does not fit within the four levels of focus in human scientific inquiry. In addition to occurring outside the realm of natural science, the level also may include what Samuel Alexander calls the emergence of deity, and provides a scientific placeholder for Ian Barbour's limit or boundary questions which facilitate dialogue between the discipline that raises the question and the discipline that explores it. *(Clayton, 2004)(Barbour, 1997)*; Religious studies researchers, such as Steven Katz, indicate that the various states of mystical religious experience appear to be the outcome of epistemological activity, which in turn depends upon culture, though psychologists and neuroscientists who study religious experience typically assume it culture-independent. *(Katz, 1978)* They mistakenly ascribe universality to phenomena that emerges from culture yet transcends it. From a systems perspective, one must denote the system to which various religious and mystical experiences relate, even if one cannot specify any intrinsic properties of that system. Some systems have emergent properties that transcend cultural systems, and this paper describes some emergent systems that form a higher, transcendent level.

Systems theory illuminates modeling ethical and other transcendent relationships from the individual and collective perspective. The individual, at the psychological level, can draw upon cultural systems to describe psychological systems or provide reductionist accounts of lower-level biological and physical systems, but the individual does not have direct access to the phenomena emerging from cross-cultural interactions, thus the ineffectiveness of moral relativism. Without a systems understanding, philosophers and other scholars have traditionally viewed cross-cultural emergent phenomena (and often even cultural phenomena) as absolutes or universals. Systems theory provides tools to model ethical norms while avoiding the modernistic fallacies of relativism and absolutism.

Cross-cultural interactions form systems with their own emergent properties. Some of those properties mirror characteristics of individuals; one can stereotypically say that West African societies are more extroverted than Japanese ones. However, a subset of emergent properties becomes sufficiently "universal" that a different sort of emergence results in an additional level of emergent systems. As no clear, consensual agreement on the distinction between the four scientific levels yet exists, the existence of a separate transcendent level remains indefinite, but I argue that similar emergent mechanisms resulting in the emergence of life, thought, and culture also result in the emergence of ethical norms as an aspect of what is popularly called spirituality.

Is an emergent level required? Although many interactions between cultural systems may result in emergent cultural properties, such as war, which also depends upon at least two autonomous societies, other emergent properties transcend human culture as "universals" that categorize all human cultural systems and can form components of emergent cross-cultural systems.

What humans often label as "universal" are the systems that occur at the transcendental level. A more nuanced account occurs in the work of the contemporary Christian theologian David Tracy, who defines a "classic" as texts, events, images, persons, rituals or symbols that reveal permanent possibilities of meaning or truth. Classics within any religious tradition so disclose a compelling aspect of truth about human lives that one cannot deny them a kind of normative status. *(Tracy, 1981)* The classic refers to a norm that crosses cultures (or historical periods within a tradition) and thus indicates possibilities for cross-cultural constructions.

Although cross-cultural interactions and conformational change emerge from relating cultural systems, the stability and self-maintenance of a transcendent system requires self-sustaining interactions between the emergent qualities or components. Mutual dependence, such as economic dependence arising between the US and China in a global economy, supports a sustainable interaction, and a transcendent system begins to emerge when that system and its components begin to interact with additional systems. Economically (at the cultural level) neither country can do violence to the other without damaging itself, but even that becomes more difficult as each country participates in additional relationships with other countries. A clear example of a transcendent occurs in Royce's Loyalty to Loyalty described later in the paper, but a simple example occurs in dialogue between Christians and Buddhists (or Muslims) when each practitioner recognizes in the other's key "classic" founder an insight to understanding the practitioner's own religion. In sustained dialogue respectful of plurality, one finds a new, cross-cultural (cross-religion) relationship that strengthens the coherence, integrity, and autonomy of each system.

The transcendent level captures cross-cultural activities and norms such as those referred to in ethical, aesthetic and philosophical activities as relating to the Greek Good, Beauty, and Truth, respectively. At every level, systems interact with each other in a complex network of relationships that vary over time. The topology of relationship networks may have their own emergent properties, such as open, closed, self-organizing, cyclic, chaotic, or stable. Some of those graphs of relationship networks may have a form that humans view as beautiful. Many aspects of beauty depend upon human biology—human visual range, structure of the brain's parietal lobe which organizes spatial relationships, auditory range and perception, etc. An experience of beauty that depends only upon biology would necessarily be a cross-cultural experience, and the relative relationships between experiences of beauty would form a norm.

The transcendent level emerges from cross-cultural interactions. The US military has studied what makes an effective unit and discovered that camaraderie and the ability to work as a team greatly impacts unit effectiveness. Other studies have examined suicide bombers who either surrendered or hesitated and were captured. *(Caryl, 2005)* Speculation suggests that terrorist cells become effective through similar mechanisms to other military units with a shared, often ideological vision. A frequent thread among suicide bombers who decided not to act is their reports of seeing a mother and young child. Although each society has strong, intracultural relationships to form autonomous systems, and the interaction between the cultural systems includes high conflict behaviors such as military and terrorist actions, something occurs when a terrorist sees a mother and young child in the opposing cultural system who the terrorist is about to kill. Something surprising, unpredictable, and highly efficacious, i.e., emergent, occurs that transcends the suicide bombing attempt. Perhaps the terrorist training demonized the opposition to an extent that a mother's love was excluded from the terrorist system's shared worldview. Although suicide bombing and military actions can occur between two cultural systems, something emergent happens when some suicide bombers see a mother and young child that breaks down the prior coherence, integrity, and self-maintenance of the system *(Collier and Muller, 1998)*.

Similar phenomena occur in non-violent resistance. Something occurred in the British soldiers when Gandhi's followers allowed themselves to be beaten under British law. In the American Civil Rights movement, an emergent property appeared when US citizens saw blacks beaten by agents of US state, or local governments. Two coherent, autonomous, self-maintaining cultural systems interact at a place of possible and partially expressed violence, yet both systems become surprisingly transformed in a way that one cannot model in either cultural system.

To work by analogy from physical systems, atoms can interact with each other to create emergent properties of temperature or surface tension by bouncing off each other or synchronizing orbiting electrons. Human individuals can interact with each other through conflict to create a violent or litigious society or through empathy to create a harmonious one. Likewise human societies can interact with each other in a closed system, such as a planet, to create a violent, warlike planetary cultural system or a harmonious one.

Something slightly different occurs with covalent bonds, e.g., a sodium and chlorine atom bonding to

form table salt. The atoms share an electron and the electron participates in both atoms. A cultural system may lack a component, such as an individual idea or artifact, that another society provides resulting in a synthesized cultural system. Historical examples include the integration of Platonic thought into Christianity by Augustine, and the integration of Aristotelian thought into Christianity by Thomas Aquinas.

In biological systems, numerous atoms interact in a variety of ways. In some systems, a significant bond transforms the entire system. A phosphorylated protein, a conformational change to a protein structure, formation of a protein complex, passage of calcium ions into a neuron, each have a biological consequence that cannot be modeled from a purely physical perspective. When an individual in a cultural system makes a decision to act nonviolently, that person can transform the cultural system in the same way that a significant covalent bond can change a biological system.

Different types of emergence would occur in different ethical systems. The universalization of a maxim in Kant's categorical imperative results in emergent relational properties, such as happens in thermodynamic systems.

Kant's Universal

In Kant's categorical imperative, one acts as if a maxim, or principle, were to become universal. One might claim that one can cheat on taxes because the government will not be injured by not having such a negligible sum. However, if that maxim were to become universal, and everyone cheated, then the government would go broke. Because one would not want everyone to act by cheating on taxes, it is wrong—the maxim is not universalizable. Kant's attempt to deduce substantive conclusion from formal premises leaves open serious flaws as a sufficient statement of morality. One would not wish everyone to withdraw all their money from the bank, but that does not make closing one's bank account immoral.*(Feldman, 1998)*

Regardless of its usefulness for ethical decision-making, a universalizing maxim becomes a norm for the community that holds it, and thus becomes a property of its culture. When other social systems interact with the community, the property influences that interaction. If a community acts on the maxim "not to lie", then one could classify its interactions with other communities depending upon whether they aspire to that maxim or not.

When individuals aspire to a maxim within a society, these aspirations may amplify across the collection of individuals, dampening individual differences and giving rise to an emergent phenomenon much as the dampening of electron spin differences in iron molecules give rise to an emergent phenomenon of ferromagnetism.

By universalizing a maxim within the culture that aspires to it, the entire cultural system gains that resultant property and any emergent properties that result from an entire system operating in that framework. Truth-telling generally provides a desirable outcome in a society, but a classic critique of its universalization occurs in the context of Nazi extermination of the Jews (or other government-sponsored genocide) where universal truth-telling means the oppressed have nowhere to hide.

John Rawls takes a Kantian approach to ethics in developing a social contract based on a bargaining game. *(Rawls, 1999)* In Rawls' theory, the individuals do not know their position in the proposed system, and that veil of ignorance insures fairness in determining the system. Fair decisions made in positions of ignorance across the collection of individuals, dampen individual differences and give rise to an emergent phenomenon much as the amplification (and synchronization) of water molecules gives rise to an emergent phenomenon of surface tension.

Critics argue against the feasibility of unbiased perspectives *(Wolff, 1977)*, but the amplification of interactions result in an emergent property of "fairness." The criticisms suggest the insufficiency of "fairness" to create a sustainable just society, but do not detract from the emergence of it, albeit under additional, transient circumstances.

Universalizing maxims or interactions can result in properties of cultural systems that lead to

emergent phenomena in cross-cultural relationships. But more complex emergent phenomena require more sophisticated interactions that depend upon interdependence between cultural systems.

Neo-Aristotelian Approach to Emergent Norms

Interdependent systems have the ability to affect each other, and mutual influence can shift the stability, function, and organization of the interdependent systems. Unlike the veil of ignorance between logical individuals proposed by Rawls, interdependent individuals change not only their behavior but also their constitution and identity through interaction. When interdependent interactions close a thermodynamic work cycle, then emergent phenomena may appear. These systems may self-organize or external situations may bring systems into sustainable patterns of interactions that survive the shift of external environment to an unfacilitating or even resistant influence. In interdependent systems, its components constrain their behavioral variability, and the system preserves and enhances its cohesion, integrity, organization, and identity.

Robert Ulanowicz *(1997)* provides a neo-Aristotelian framework for relating that structuring mechanism to emergence. He describes the emergence of order as *centripetality*, a term coined by Newton, where "the autocatalytic assemblage behaves as a focus upon which converge increasing amounts of energy and material that the system draws unto itself." Unlike Newtonian forces, which always act in equal and opposite directions, self-organizing (autocatalytic) configurations impart an asymmetric direction to the behaviors of the systems in which they appear. For Ulanowicz, autocatalytic systems "ratchet all participants toward ever greater levels of performance."*(Ulanowicz, 1997, 46-7)*

Ulanowicz uses a triadic explanation of systems theory attributed to S.N. Salthe to differentiate final, formal, and efficient causation across three levels of emergence. *(Salthe, 1985)* Emerging systems implement the ongoing, structuring mechanism described by Aristotle's formal and final causation. Explanations of emergence emphasize the relationship between efficient causes of the lower level with the concepts of the middle, or *focal*, level. The interactions of the focal level, such as autocatalysis, take on the guise of formal cause. In addition, the constraints that the activity of the higher level places on system behavior appear teleological at the focal level perspective and explain final causation. *(Ulanowicz, 1997)*

The appearance of causation varies depending upon one's perspective of the focal, higher, or lower level. Examining a higher-level system in which the focal system participates, one becomes aware of the purposeful influence imposed on the focal system; the higher-level system provides purpose and end-directed (teleonomic) orientation describable as final causation. The perspective of its lower-level, constituent systems captures the interactions in terms of efficient causation. One may describe the focal level of the emergence relationship in terms of formal causation. Although in a strong emergentist perspective, the three levels would have distinct regularities, from a weak emergentist perspective, one could use any system as a focus, its constituents would comprise the lower level, and it would exist as a component of a higher systems. Thus, the purpose or value of a system depends upon its use in other systems.

The desire to understand purpose and teleology were key factors in von Bertalanffy's and Wiener's theories, but the practical integration and application of their theories have emphasized the theories' analytical aspects, especially under the residual influence of logical positivism and behaviorism. von Bertalanffy wrote:

> We may state as characteristic of modern science that this scheme of isolable units acting in one-way causality has proved to be insufficient. Hence the appearance, in all fields of science, of notions like wholeness, holistic, organismic, gestalt, etc., which all signify that, in the last resort, we must think in terms of systems of elements in mutual interaction.
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> Similarly, notions of teleology and directiveness appeared to be outside the scope of

science and to be the playground of mysterious, supernatural or anthropomorphic agencies; or else, a pseudoproblem, intrinsically alien to science, and merely a misplaced projection of the observer's mind into a nature governed by purposeless laws. Nevertheless, these aspects exist, and you cannot conceive of a living organism, not to speak of behavior and human society, without taking into account what variously and rather loosely is called adaptiveness, purposiveness, goal-seeking and the like. *(Bertalanffy, 1975, 45)*

As the self captures the relational aspects of a person, a systems perspective on the self describes the structural, functional, and purposeful aspects of the relationships that comprise a person's body and interaction with the world.

In particular, the normal function of a system at one level places norms on the function of its constituent, lower-level systems. Biological systems of cells and transport mechanisms provide norms for physical activity of molecule and ion flow. Mental activity as embodied in the brain in action potentials and neurotransmitters, provide norms for the biological processes which participate in the mental activity. Cultural systems of economics, governments, and religious and social institutions, provide norms for individual behaviors. Transcendent properties found in most long-lived human cultures and religions provide norms to those cultures by which to evaluate the culture either from within or without.

For example, one can evaluate: How "Christian" was Paul's early church treatment of women? How "democratic" is America's current participation in world affairs? How "Muslim" are some fundamentalist Islamic agendas? How "Christian" are some fundamentalist Christian agendas? These questions have no meaning unless one can use individual human psychological norms placed by religious or political cultural ideologies as also referring to transcendent cross-cultural norms that one may apply to societies, including the society where the human norm originally developed.

Society gains the emergent property of an ethical norm when individuals in a society aspire to an ethical principle, the relationships within the society support and strengthen these aspirations, and the external environment does not overly hinder or prevent individuals acting upon that principle. The emergent ethical norm provides a standard for behavior that others in the society, who may not personally ascribe to it, have social pressure to conform. The social pressure occurs at the cultural level as it does not reduce to isolated behaviors of individuals, but the cultural norm emerges from and transcends the society.

The emergence of ethical norms at the transcendent level provides a tool for evaluating the centrality of cultural ethical expectations and thus operationally defines the system, without requiring precise boundary representations. Considering the amplifying thermodynamic type effects of emergence, what conceivable effects do ethical principles, amplified within a society, have on cross-cultural relationships? Kant's categorical imperative, where one acts as if the maxim were to become universal, may amplify well within a society by dampening individual behaviors, but it may lead to conflicts between cultures with different universal aspirations. However, virtues in virtue ethics do appear to amplify well within and across cultures.

Virtue Ethics

Virtues arose from ancient Western society as the excellence of athletic, soldierly, and mental strength used by heroes in their actions. For Homer, a virtue is a quality that enables an individual to discharge his or her social role. Virtues were refined as ethical frameworks in Greek Athenian society, and Plato and others viewed virtues and goodness as indissolubly linked with happiness, success, and fulfillment of desire. Plato also viewed virtues as politically as well as socially relevant, and he understood that the virtues themselves were interdependent—the presence of one virtue requires the presence of all virtues. Thus, anciently, the virtues are interrelated characteristics of a person that effect choices between actions. Aristotle refined the virtues into a comprehensive system in the *Nicomachean Ethics*, and is credited as the classic figure in virtue ethics. Aquinas further

organized Aristotle's ethics and synthesized it with Christian teaching. For Aquinas, a virtue is a quality which enables an individual to move towards the achievement of the specifically human *telos*, whether natural or supernatural. Benjamin Franklin applied virtue ethics to utilitarian thought, and for him, a virtue is a quality which has utility in achieving earthly and heavenly success. More recently, MacIntyre has reexamined virtue ethics in a more modern philosophical context. As a working definition for this paper, I consider virtue to be a moral excellence that a person may utilize to make choices in a desire to be (morally) good. *(MacIntyre, 1984)*

Originally defined by Aristotle as eleven virtues in the *Nicomachean Ethics* (courage, temperance, generosity, magnificence, magnanimity, right ambition, good temper, friendliness, truthfulness, wit, and justice), the virtues were later refined by Aquinas in his *Summa Theologiae* based on Plato, Cicero, Ambrose, Gregory, and Augustine as four cardinal virtues: prudence, justice, temperance, and courage. (Aquinas also adds three theological virtues based on St. Paul: faith, hope, and charity.) *(Keenan, 1998)*

Aquinas' four cardinal virtues are related to Aristotle's anthropology. In that anthropology there are four aspects of the soul, and each aspect is perfected by one of Aquinas' cardinal virtues: Intellect is perfected by prudence; Will is perfected by justice; Concupiscible Appetite is perfected by temperance; and Irascible Appetite is perfected by courage. Concupiscible Appetite is the desire for what one wants, such as food, drink, sex, money, power, status, or esteem. Irascible Appetite is overcoming an obstacle that stands between a person and other goods and is related to anger and fear.

Aristotle also examines the aim for some good. In Aristotle's anthropology—unlike many current ones—humans, like other species, have a specific nature and that nature is such that humans have certain aims and goals, such that they move by that nature towards a specific *telos*. Underlying the anthropology (of Aristotle's biology) is his theory of causation which is relevant in its formal causation (questions of essence: Who am I?), *telos* (final end: Who ought I to be?), and efficient cause (How do I get there?). In Aristotle's ethics, the *telos*, or final aim, of a person is the Good. Aristotle argues against identifying that good with money, honor, or pleasure. He gives it the name *eudaimonia* which can only be loosely translated as blessedness, happiness, or prosperity. MacIntyre describes *eudaimonia* as a state of being and doing well in that being well—of being well-favored personally and in relation to the divine. The virtues are precisely those qualities which enable a person to achieve eudaimonia, and the lack of those qualities will frustrate the person's movement toward that *telos*. *(MacIntyre, 1984)*

Because virtue ethics is consistent with Aristotle's theory of causation, virtue ethics approaches ethical issues by asking "Who am I? Who ought I to become? How do I get there?" rather than questions of behavior. "What is my essence or form? What is my telos? What efficient causes are appropriate to change toward that telos?" Behaviors are not as important to virtue ethics as internal motivations and intentions. Aristotle sees that virtue is a state of character concerned with a choice lying in a mean relative to us. The mean is determined by a rational principle as determined by a person of practical wisdom. The two vices are: one that depends upon excess of the state of character, and one that depends upon its defect. For example, courage is the mean between foolhardy and cowardly. Thus, moral virtue is a mean between vices. *(Aristotle, Nicomachean Ethics, II.6, 1106b36-1107a8)*

Following Aristotle, Aquinas argues that the other three cardinal virtues cannot exist without prudence, because we must choose well: Moral virtue requires that the intention be directed toward a good end, and choosing a good end requires using reason. Prudence is required for all moral virtues and is also an intellectual virtue, such as wisdom or understanding. Someone who behaves well in one area of human life acquires a habit, but the habit will lack the essential character of a (moral) virtue unless accompanied by prudence. For example, one may have the ability to face danger, but without prudence, one could just as easily be a villain as a war hero. *(Kent, 2002)*

Although virtues occur in people, one can ask what happens cross-culturally when a society of prudent individuals meets a courageous society and expect a different sort of transformative answer than asking what happens when an efficient society meets an inefficient one. Although an efficient

and inefficient society might find some average efficiency in their interactions, those in a prudent society might recognize the prudence of courage; avoid previously hidden cowardly or foolhardy behaviors as imprudent; become more courageous; and thus the society becomes more prudent. Similarly, some in a courageous society may recognize the necessity of prudence to courage; become more prudent; and the society becomes more courageous.

Another important aspect of virtue is that virtues must be exercised and experienced to be possessed. Aristotle and other ancient Greek ethicists consider virtue to be a habit (Greek *hexis*; Latin *habitus*). For them, a habit is a durable characteristic of a person that inclines toward certain kinds of actions and emotional responses. *(Kent, 2002)*

MacIntyre in *After Virtue* describes a 'practice' which is a coherent activity that intrinsically leads to virtue. More precisely, he defines practice as: "any coherent and complex form of socially established cooperative human activity through which goods internal to that form of activity are realized in the course of trying to achieve those standards of excellence which are appropriate to, and partially definitive of, that form of activity, with the result that human powers to achieve excellence, and human conceptions of the ends and goods involved, are systematically extended." *(MacIntyre, 1984, 187)*

Deacon's Orders of Emergence

Terrence Deacon suggests three orders of emergence describe the topological relationships occurring within and between levels, which he calls thermodynamic, morphodynamic and teleodynamic. *(Deacon, 2003, Goodenough and Deacon, 2003)* First-order emergence, or thermodynamics, includes entropic systems where emergent properties result from the diffusion of energy and difference. Although thermodynamic emergence sounds like it might only occur at the physical level, it actually refers to amplifying and dampening effects that occur at every level. Second-order emergence, or morphodynamics, includes self-organizing systems where propagation and amplification of form and constraint result in asymmetric emergent constraints. Third-order emergence, or teleodynamics, includes selection dynamics in systems where replication of concordance and significance result in transmission of adaptive regulators. Deacon would characterize every boundary between emergent levels, as described in the first section of this paper, as requiring teleodynamic selection operations.

In first-order emergence, properties emerge from interactions between qualities of systems such as shape or energy. The interaction of water molecules generates surface tension or Bernard cells, or the interaction of iron atoms creates ferromagnetic properties. In thermodynamic entropic systems the diffusion of energy and difference result in first-order emergent properties. As described above, first-order emergent properties result from the universalization of a maxim in Kant's categorical imperative or the interaction of Rawl's ideal individuals with certain conditions.

In second-order emergence, morphodynamics, a separation occurs between interactions, such as a symmetry breaking or progression over time. What happens next depends upon what happened before. The formation of a snowflake depends upon the amplification of initial and boundary conditions over time as the snowflake falls. Second-order emergent systems, such as self-organizing or chaotic systems, depend upon their history and the propagation of constraints. In first-order emergence, properties emerge from the interactions, while in second-order emergence, those properties have constraints that propagate. Stable second-order emergent systems often include closed cycles of interactions that provide a basis for response to environmental change. For MacIntyre, virtue emerges from "practices," and virtuous behaviors emerge from certain habits. When one behaves from certain habits in social interactions, those interactions with others demonstrate a pattern, occasionally called virtuous.

In third-order emergence, Deacon's teleodynamics, the interactions gain a memory. Not only is the system influenced by initial conditions and responsive to changes over time, but it also retains information or a memory that regulates or controls behavior and that memory can change and give rise to different tendencies of the system. In biology, genetic instructions regulate the biochemical

processes occurring in a cell. Mutation and selection pressure may modify those genes and shift the tendency or purpose of that system. I suggest in the next section that Josiah Royce's philosophy of loyalty provides one example of third-order emergence.

In terms of temporal process, first-order emergence captures present relational properties, second-order emergence also captures past history, and third-order emergence effects future behavior.

Royce's Loyalty to Loyalty

The American pragmatist Josiah Royce suggests in *The Philosophy of Loyalty* that harmony between cultures can occur only when each culture's ideals and cause include Loyalty to Loyalty, a commitment to the principle of commitment and dedication that demonstrates support and obligation to the loyalty of those in opposing cultures to their particular cause. *(Royce, 1995)* Royce argues convincingly that Loyalty to Loyalty not only provides harmony, but also suffices to distinguish the ethical or "true" causes as those that incorporate Loyalty to Loyalty. The cultural characteristic of Loyalty to Loyalty results in the emergent property of cross-cultural harmony and diversity at the transcendent level.

For Royce, all the virtues can be defined in terms of loyalty as developing virtuous habits requires commitment and loyalty. Though Royce may underestimate the difference between virtues, One can define a principle of choice for guidance that one's loyalty becomes a good, not only for oneself but for all humanity. Because virtuous behavior depends upon loyalty, one can increase the good for humanity by increasing the loyalty amongst everyone. Although one has specific causes to which one commits loyalty, to increase the good among humanity, one should choose one's cause to include loyalty to loyalty, to the extent possible. *(Royce, 1995)*

One can choose causes for personal gain, such as greedy materialism or wealth preservation. One can choose causes for social power, such as oppression of an out-group. One can choose causes by default or indecision based upon external circumstances, such as family or culture of origin, random job or vocational choices, or social pressure. Personal, corporate, or political greed becomes predatory not for intrinsic reasons, but because it thwarts another person's loyalty to survival, sustainability, or family. A cause becomes evil when it becomes predatory and lives by overthrowing the loyalties of others. One discerns harmful causes through their relationship to loyalty itself. When one becomes loyal to loyalty one supports the loyalty of others even if one disagrees with their cause. This promotes harmony, and in interdependent systems, can strengthen one's loyalty to one's own cause. However, because one remains loyal to loyalty one cannot support another's cause to the extent it becomes predatory. Thus, in loyalty to loyalty, one attends to another's loyalty, avoids unnecessary conflict in the interest of harmony, and resists the other's cause to the extent it undermines one's own loyalty to loyalty. This behavior increases harmony in the cross-cultural interactions regardless of the action of others. *(Royce, 1995)*

In Royce's philosophy of loyalty, one commits to honoring the other person's commitment. Although a Christian may disagree with the attributions traditionally ascribed to another religion's founding, such as Mohammed or Buddha, the Christian supports the believer's loyalty to those beliefs. Some cross-religion beliefs conflict, such as when to worship, and others correspond, such as discipleship, and a few appear shared across all human religions, such as compassion, and are presumed universal. However, that "universality" still depends upon the context of the human condition. It seems good to show compassion because people feel pain. If an organism had no sensation, perception or representation of pain, then its social interaction would not likely contain compassion as a response to suffering as its individuals would not know pain and suffering.

Although Royce's more mature ethics built upon his deeper understanding of semiotics, his community of interpretation, and CS Peirce's metaphysics *(Oppenheim, 1993)*, his philosophy of loyalty still provides a basis for appreciating the diversity of emergent ethical systems. Non-violent resistance works in part because the resisters endure the behaviors inflicted by the others due to the other's loyalty to their cause. By allowing the cross-cultural system to smoothly run its course, the detrimental effects of the other's cause become amplified and illuminate previously hidden

consequences that even the others recognize as oppressive. Loyalty by the resisters to the loyalty of others results in a sufficiently stable system to change the regulatory mechanisms of the other culture.

Loyalty depends upon individuals having the ability to choose, and to represent a cause for which they can relate and make choices. Like compassion depends upon the ability to feel pain (and empathize), loyalty depends upon the ability to choose, remember, and act. One could choose loyalty to compassion, beauty, honor, truth, or loyalty. However, loyalty to loyalty transcends loyalty, because it creates a topological closure in the system. The cause to which one ascribes loyalty is loyalty, and the emergent properties can transform cultural systems.

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