

A BUDDHIST MODEL FOR THE INFORMATIONAL PERSON¹

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Abstract

A Buddhist theory of information comports with the recent notion of information ethics wherein information may be included within skillful means (*upāya*). Buddhists reject epistemological-ontological dualism: the conceptual and the non-conceptual are not distinct sources of knowledge. The act of cognition and the cognized object are momentary-together. Any category including information as a substance or as a relation is constructed and as such cannot capture a transcending reality. Information Ethics recognizes a minimalist mental and non-physical ontological commitment, without substance or relations, and a beneficent moral role for humanity. On this conventional level, the informational “entity” includes persons as well as non-persons. Practitioners explore this entity as a contingent construction, in particular under analysis, so as to better understand the products of conceptualization and to thus transform the mind in a virtuous direction. The ramifications of information as skillful means are that we appear as an information entity to others, as they do to us; information entities may appear to be persons, even if they are not; actual persons may be treated as non-personal information entities. Thus,

the informational person is the ethical person in this system of onto-ethics.

Liu (2004) identifies Leibniz as the most promising point of departure for a Western understanding of the model concept of information, one in which the information entity or object surpasses Cartesian dualism and the limitations of the axiomatic concept. Information in the model concept is an abstract particular, or trope, following Leibniz’ transitional understanding of the monad from an individual substance to a relational force. This holographic principle of the monad as “living mirror” joined in logic is analogous to the Neo-Confucian concept *li* as an internal order co-determining the nature and content of *ch’i*. In my proposed computational Buddhism, the key metaphor is between hardware-software and *dharmas-samskaras*. Momentariness is an information structure in which the metaphor takes the shape of experience. The result is a description of simulation as problem-solving sessions in which inner speech conducts a critical rational analysis of reality through the manipulation of information about information.

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In the second section, I examine the Buddhist metaphysics of Abhidharma (specifically as a system of wisdom literature) for applicability of the model of the informational, ethical person. The Abhidharma system contains didactic and erotetic structures residing in that conceptual domain, fostered by a continuous, collaborative construction of its learning objects. I identify and associate the concept

rupa-citta vipra-yukta samskara with information artifacts as embodiments of that teaching in order to illustrate the information object as a skillful object for the informational person. Information about information, or metadata, comprises the method for ensuring a kind of transcendental feedback or conservation of ethical purposes throughout contemporary information services, especially those composing new digital objects.

Keywords: Computational Buddhism, momentariness, personhood, information ethics

Prologue

Early proponents of the information age characterized the new world of intelligent machinery as a territory ripe for exploration and exploitation, as an electronic frontier in cyberspace. The ecological aspect of this metaphor was especially unfortunate given humankind's iniquitous record of despoiling geographic frontiers. Nevertheless, the general sentiment of this period of automation accentuated a revolutionary phase of knowledge discovery preceding and outstripping the more mundane, routine, and hoped-for successful settlement of the virtual spaces of the new privileged electronic communities. Reflecting both the prodigious rapidity of these developments and their unusually hidden and arguably deceptive powers, antagonists of the view variously attacked the computer, its technology, its science, and sometimes all of science. Clear efficiencies in the processing of vast data stores and transaction and communications streams, plus the general progress achieved in formulating systems with which to order and model complex events has muted the intensity of some

fatalistic assessments of information at the societal level.

Most recently, however, the perceived nature of information itself has been criticized at a personal level. Borgmann (1999), for example, has posited information as directly usurping reality as opposed to providing us a basis for or about reality. Similarly, and from a Buddhist perspective, Hershock (1999) characterizes the negative effects of the contemporary information society on its members as a "colonization of consciousness." Introna (2001) argues that this electronic mediation, if considered to be fundamentally arbitrary per Baudrillard, leads to an impossibility of ethics in the information age. Cyberspace becomes a network of "hyperreal effects and representations that come *before* us, but do not *involve* us." [emphasis in original] Introna sees electronic mediation as the destroyer of obligations built through face-to-face experience of each other. The reified information entity dictates the contents of our mental life. Thus, another Buddhist author, Laycock (1994), poses the existence of a kind of digital *samsara*:

“When the world is attended primarily through electronic and print intermediaries, it is quite naturally taken to be given, not something underdetermined and limitlessly responsive, but a thing that is. Moreover, it is a world that mediates or stands between each one of us and all others even as it connects us.”

To the defense of the informational person, Floridi (1999) raises a uniquely responsible and ethically-challenging position, posed more succinctly in reference to the history of Western thought, asserting the emergence of a transpersonal information capability filled with potential devotion and service to humankind:

“an artificial universe which becomes, to an ever-increasing degree, the very environment we inhabit, and whose challenges we must answer. It is a domain as completely autonomous from each of us, as individual minds, as the physical world is, and which, unlike the latter, is capable of infinite growth in extension and complexity....this new environment has been created by the human mind, and since we are totally responsible for its existence, we may also be confident of its potential full intelligibility....at least since the Renaissance the mind has constantly moved away from reality, intentionally constructing and refining its own cultural

environment as an alternative to the world of nature.”

The paper explores a metaphysics of information enriched by a computational view of Buddhism consistent with onto-ethics. To the extent that Floridi has explained the new philosophy of information as borrowing methods from computer science to approach philosophical problems computationally, I believe an applied philosophy of information can return the fruits of these results back to grounding issues in the practices of information technology. With this process we also foster a cross-fertilization between Eastern and Western philosophies, in the larger, intercultural arena.

Part I

In one traditional Buddhist analysis, the authority of teachings has its conceptual source in the teacher, or guru-equivalent. Consider the four dependencies, cited by the 14th Dalai Lama (1982), from the Mahayana-sutra-alankara-karika:

- *of the teacher*: depend not only on the teacher’s person, but on what he teaches.
- *of the teaching*: depend not on merely the sweetness of the words and so forth, but on the meaning.
- *of the meaning*: depend not on the interpretive meaning, which must be understood in a different way, being controvertible since it was taught with a specific intent [or] under a specific circumstance, but depend

upon the definitive meaning.

- *of the definitive meaning:* depend not on a consciousness with dualistic views, but on non-conceptual direct knowledge focused on [sunyata]

In the contemporary situation we are confronted with an ambiguity of information resources. Communications technology makes us more aware than ever of our dependence and reliance on an ordered approach to reliable information. Suppose we make use of the traditional analysis to restate the parameters by which authoritativeness of information resources should be investigated. This suggests a cycle of considerations from the person as authority, an external contribution, to levels of meaning contingent upon a perfection of the mind, an internal attribution. Suppose further there exists a new, informational metaphysics by which we may elaborate the person as information resource and the personal understanding of information. One approach is to study data and algorithm (instruction) as foundational entities of investigation of semantics and learning. Such is the derivation of information ethics (IE) from computer ethics as elaborated by Floridi and others.

In a pre-foundational exposition of IE, Moor (1985) describes a crucial ingredient for the field of computer ethics: the ubiquitous applicability of general-purpose manipulations of logic itself he terms “logical malleability.”

“Logical malleability has both a syntactic and a semantic

dimension. Syntactically, the logic of computers is malleable in terms of the number and variety of possible states and operations. Semantically, the logic of computers is malleable in that the states of the computer can be taken to represent anything.”

This sense of ubiquity, where information is supposed to be capable of taking *any form*, discloses the ramifications of possible worlds in an onto-ethics (Cheng 2004) of information. First, that information may also suit *any purpose*, suggesting a universality which may be either fully intelligible or else wholly threatening depending on its reception. Second, information may acquire in its process of formation an *enhanced status* and pseudo-objectivity. Third, despite this initial mutability, information *may not change*, that is, in the process of manufacturing, a fixity occurs which may not be expected or welcome. The metaphysics of these transformations are subjects of investigation under the rubric of the philosophy of the information “life-cycle.”

At the inception of the computer age, Turing realized that the pulses emanating from his so-called intelligent machinery could not be differentiated *a priori* between instances of content (data) or instruction (meta-data). If the mechanization of thought processes or techniques specifically led to such a conclusion, then, if generalized, this means that information cannot be reduced—it may only be transformed. That is, another metaphysical basis of the philosophy of information is this ever-potential equivalency, evident as well in terms of the complementarity of structure and function.

Thus it is not always clear, when one is dealing with cybernetic inputs and outputs at a certain level of abstraction, what is formally constructing or constructed to the mind.

One long generation of software development has evidenced value judgments implemented within a computer programming environment that is exceedingly complex and only partially knowable even to the programmers themselves. Moor refers to this third complicating factor as “invisibility.” If there existed an underlying digital plenum, then this invisibility would obscure its compositional action and its transformational patterns in information objects would be unclear or seem unsupported. A very young Norbert Wiener (1914) considered such partial knowledge systems from an individual compositional standpoint, questioning the persistence of the self and the nature of identity over time. Wiener understood the infinite complexity of experience to depend upon the lack of self-sufficiency of information objects. He foresaw our right to a formalized doubt for *every* concept, without the duty to exhaustively examine *any* concept; in short, a liberating and not an enslaving relativism. Furthermore, the character of the moment of experience itself, though given as a system possessing coherence in cross-section of time, is also insufficient. In Buddhist terms, this lack of self-sufficiency and system of dependent relations is the *sunyata* of definitive meaning and the dependent-arising of all phenomena. This type of complexity is a fundamental type of informational complexity of the forms of experience. Following Collier (1999) in his

adaptation of Bennett’s notion of logical depth, it is fundamental “in the sense that anything that is complex in any other way must also be informationally complex.”

Within this onto-ethics of information, the class of informational entities includes both persons and non-persons as authoritative resources. Semantic logical malleability, together with description-instruction complementarity, could explain our attribution of authoritative personhood to digital entities, as well as our interpretation of real persons in terms of their informational surrogates. Computational Buddhism also considers the origination and source of control for information entities, the nature of their physicality, their interactivity as momentariness, and the possibility of an informational realism or informational emergentism within an evolved and liberating infosphere. The remainder of this section is a sketch of each of these aspects in brief drawn from the field of computing. Key to this outline is extending Wiener’s notion of the system-moment as an informational structure into the realm of our essential experience of software. An interesting neurological correlate may be found in Brown (1999). The sketches are admittedly terse and incomplete and mostly serve as the context for future elaboration.

Control is the defining notion of cybernetics and the instrument of information systems engineering. Simon (see Cordeschi, 2002) played a key role in equating the person as human organism with the computer program, together as examples of an information processing system for problem solving. Floridi’s LoA’s (Floridi et al,

2004) and other models simulating knowledge processes, such as Lynch (1997) and Sloman (2000), exhibit diagrammatic schemas in which feedback loops channel complex messages. These messages may be described as information objects themselves, per our complementarity notion above. These are not unique at all within computation but offer constructive models for testing against real situations, as simulations or isomorphisms. These control models also share a characteristic time element: a non-linear, branching, and structured temporality of the computational present, one not limited to physical time. In information metaphysics the most important meaning of control is that of the experimental method: an authentic, identifiable versioning of data, as communicated in meta-data, for testing and verification purposes in systems. In interactive and necessarily participatory systems, this requires a continual openness and making explicit and accessible all underlying assumptions and design decisions. Collier's account of algorithmic information theoretic causation suggests a link between a dynamical account of Bennett's logical depth and this computational view of time. Thus, control is of persistence and the change of persistence is the creation of meaningful contexts.

The quantum theory of computation has advanced the idea that information is physical. It seems deserving in turn to consider physicality as informational: as the abstract features of particular instances. Goodman (2004) links the Western concept of physical tropes with Vasubandhu's notion of *dharmas*, citing earlier works by Ganeri and by Siderits. In my reading of Goodman

I would not choose between alternatives in his philological analysis of *dharmas* as either properties or events, but instead regard information, or something like an informational trope, to be both. Information certainly has qualities of both process and thing. The vague boundary between the entities of hardware and software is an instructive case. Another example might be the physical aspect of memory in molecules. Meirav's (2000) criterion for physicality (that a physical object corresponds in a strict mereological structure in relation to the spatial domain it occupies) could be modified towards informationality as a relation for all objects, per Collier. Physicality as informational entails a reappraisal of artificiality in the context of controlled systems of feedback. Cordeschi (2002) propounds five theses for the artificial which may be applied to further discovery of the metaphysics of the system-moment artifact: functional, modeling, representational, mentalist, and explanatory.

Whitehead's notion of actual occasion acquires fresh meaning when interpreted through computational means as a structured present moment, as if Wiener's system-moments were a software model. Its constitution, or concrescence, unites the person with emerging experiences in computational time and the person constructs value or education through the positive selection of data. Such knowledge events are momentary, cumulative, and creative. Whitehead refers to "drops of experience" both as constructed and constructing, transcending the subject-object distinction. Education in this Whiteheadian model is in essence interactive and occurs under an undefined, particular mode of

“wisdom.” The Buddhist correlate is a non-dual wisdom consciousness. The cross-sectional coherence identified by Wiener as persistence of personal identity can be thought of as a network of information objects messaging each other in the infosphere. Possible explanations for informational access and presence with respect to these computational drops (or windows) of experience are propounded by Morin (2004) in his theory integrating inner speech with problem-solving “where the self represents the problem and self-information the solution.” In this sense, some Buddhist meditation, and in our analogy software simulation, may be seen as problem-solving sessions in which inner speech conducts a critical rational analysis of reality through the manipulation of information about information.

Floridi’s (2004b) informational realism (IR) has its precedent in Bateson and Spencer-Brown, what can be termed a “distinction ontology.” Information is all that there is but it is not a substance, it is a relation. IR undermines the usual implications of a substance ontology towards change, in the Western view, and rejects ontological absolutism and commitment to first-order statements outright, like the Buddhists. I suggest that his level of abstraction (LoA) can be viewed as a distinguishable trope. Tropes could be information objects themselves, as dharmas. IR may comport with Vacaspatimisra that “attributes are not something apart from the substance of a thing, but productive imagination constructs them as something different.” (Puhakka 1975) From Floridi and Sanders (2004):

The LoA is determined by the way in which one chooses to describe, analyse and discuss a system and its context. The ‘Method of Abstraction’ is explained in terms of an ‘interface’ or set of features or observables at a given ‘LoA’. Agenthood, and in particular moral agenthood, depends on a LoA. Our guidelines for agenthood are: interactivity (response to stimulus by change of state), autonomy (ability to change state without stimulus) and adaptability (ability to change the ‘transition rules’ by which state is changed) at a given LoA. Morality may be thought of as a ‘threshold’ defined on the observables in the interface determining the LoA under consideration. An agent is morally good if its actions all respect that threshold; and it is morally evil if some action violates it. That view is particularly informative when the agent constitutes a software or digital system, and the observables are numerical.

Tropes are not an uncontroversial philosophical device invented to address problems of compositionality and continuity of identity. The potential affinity of tropes with dharmas has been advanced by Goodman with respect to the momentariness of existents. Dharmas, the fundamental analytic unit of things both physical and mental, precede Abhidharma theory and have two major elaborations with respect to inherent existence. Madhyamaka theory treats dharmas themselves as fully relational,

lacking inherent existence or causal power. Thus all phenomena are composite and momentary identities whose continuity or persistence is real, though illusory. That is, causality is accomplished through networks of relations, through dependent origination. The lack of intrinsic nature, known as emptiness or openness, does not deny causal regularity but itself depends upon it. Perrett (2004) borrows a logical argument structure from the 11th century Ratnakirti, the Master Argument for Momentariness: any simple possessed of intrinsic causal powers must be a momentary entity. This represents the alternative view to Madhyamaka, that dharmas possess intrinsic causal power.

Other possible computational interpretations of trope theory parallel its disparate branches. One might study apparent immanent universals in Buddhist metaphysics and the notion of a single universal instantiated within multiple particulars, per Armstrong. Or a trope-based unity of particulars could be explored as an alternative following Dharmakirti (Mortensen 2004). Perhaps there are precursors to an informational emergentism in the bundle version of tropes of Campbell, in which basic individuals are mereological

bundles of compresent (at least spatiotemporally co-located) tropes. Multiple tropes are always compresent in a given location, or alternately, every trope type requires some requisite number of other compresent tropes. In Simons' nuclear-theory alternative for tropes, a requisite core of compresent tropes may be more essential as kinds instanced together per basic causal laws defining an enduring individual. In Martin's substance-attribute version, tropes, even bundles of tropes, are ontologically dependent entities, accounting for "thisness" or "thinginess" as they are, rather than in their own right. An informational trope theory may associate these variations with differing schools of Buddhist logic, the subject of future work.

In conclusion, the above framework is tentative and meant to indicate a potential computational view of Buddhism. Some features of Buddhist analytical meditation may share characteristics with the simulations and modeling presented in an applied philosophy of information. What portion of *upāya* is informational? The gist of the remainder of the paper observes Schroeder's (2000) finding of pedagogy as metapraxis.

Part II

The world's earliest dated printed book is a copy of the Diamond Sutra (Jin gang ban ruo bo luo mi jing) from 868 CE. In itself this may not be remarkable, although the combination of Buddhist subject matter with pioneering information technology of the day is evident. An extensive and comprehensive wisdom literature is bound to attract inventive forms of expression in

accordance with its importance for civilizations. Confucian written scholarship and Christian typographic scripture are further examples. In the context of the transmission of knowledge, Varela (1999) says "the rediscovery of Asian philosophy, particularly of the Buddhist tradition, is a second renaissance in the cultural history of the West." More specifically, Wood (2004) identifies four key features of a general Buddhist influence on scholarship: an

informed self-creation, an openness and inclusiveness based on compassion, a critical mindfulness, and an attentiveness to others. A Buddhist model for the informational person entails these features within the framework of an intellectual order seeking systematic compassion and an end to the suffering represented by its disorder. The cybernetic ethics of Wiener and information ethics of Floridi operate within this sphere of participatory computing, highlighted by the icon of the message becoming the interactive program. Whether or not personal erudition and cultural education are relatively well-understood in the age of printing; how does the informational model aid us in the practice of building a digital adaptation?

An historical examination of the emergence of this paradigm may be found in Herold's (2003) information continuum conjecture: library information structures and objects share this characteristic intellectual ordering of abstract human works. Library theory can guide information science and technology in the pursuit of new, digital scholarly systems. Consider the traditional path from author to reader, where the author's message is produced by a publisher and later digested, indexed, classified and categorized by a library as a kind of social annotation to the process. The library's effort conserves the original intellectual entity, the conversation of author with reader, and enhances the openness, inclusiveness, awareness, and accessibility of the original work to others, for the work as process. Similarly, Santaella-Braga (2004) proposes a transformation of dialogism into heterologism and the externalization of collective negotiations of

meaning in the communitarian exchange of cyberspace objects. In this type of informational model, software comes to be seen as the external manifestation of inner speech and all of its ramifications. The inner speech of scholarly communication is like a transaction that takes place between individuals, self and others; this interface is brought to a new dimension of intensity in the digital network of relationships.

Derivation of an informational association between the wisdom literature produced by liberated minds and the learning processes and objects for minds seeking liberation comes from Fenner (1995). His systems-cybernetics model of Buddhist Middle Path analysis is based upon what he terms perspectivism and contextualization. Perspectivism acknowledges the contingency of conceptual frameworks attempting to structure these exemplars of natural systems of mental events. Contextualization refers to the influence of cultural, language and philosophical communities on the mediation and interpretation of cognitive and perceptual processes. What Fenner treats as exemplary, the discourse on the perfection of insight (*prajñā*) through the cognition of openness (*śūnyatā*), I suggest be considered as generalized throughout the larger metaphysical system of Abhidharma: instructional as simulation. As Fenner notes: "Meditational texts usually describe cognitive systems....This view, that textual materials describe systems of thought and matter, accords also with how Buddhist scholars understand their texts." Fenner's unique, therapeutic methodology echoes Floridi's early description of an informational model as a "network of

logically interdependent but mutually irreducible concepts.” Fenner seeks “a baseline model, in which the insight into openness is developed gradually over time and in dependence on specific causes and conditions.” It is this “causal continuity” which forms a basis for Floridi’s Method of Abstraction. Also, Fenner’s strategy is reflected in the findings of Christman (2004) on narrativity, particularly when interpreted in unison with the notion of inner speech from Morin (2004) and Langsam’s (2002) model of self-knowledge of thought contents. From Langsam:

“To be related to an object via an act of consciousness counts as having *access* to the object insofar as it enables one to acquire knowledge of the object. It is because consciousness is relational that we can be conscious of, and have conscious access to, the very external things [literally elements of the contents of our thoughts] we are consciously thinking about...we can have conscious access to external things both through perceptually experiencing them and through merely thinking of them.” [emphasis in original]

In this section I explore the concept of rupa-citta vipra-yukta samskara in order to discover how it might contribute to an understanding of the information model, as suggested by Ames (private communication; 2003), and how information plays a role in the pursuit of wisdom.

The Abhidharma presents a detailed enumeration of ultimates such as mental

factors, states of consciousness, and physical elements, among other things, as a logical analysis and exposition of fundamental principles governing the interactions between mind and matter. Some further justification for a Floridian study stems from his characterization of the philosophy of information as *liminal* or “not reducible to some form of externalism (naturalization of information) or internalism (information is in the mind of the beholder)” and *constructionist*, meaning we “neither discover nor invent the world, we design it.” (Floridi 2004a) Although liminalist constructionism is not a tenet of belief about information itself, this balance between extreme views suggests a core of delicate debating points around which informational suppositions about rupa-citta vipra-yukta samskara may be poised. The Sanskrit phrase translates roughly as “conditioned factors that are neither matter nor mind.” As a starting point for discussion, it surpasses Wiener’s statement regarding the nature of information “Information is information, neither matter nor energy” and moves towards Sayre’s (1976) proposal for Informational Realism as a bridging concept between the mental and the physical. Popper’s World 3 is another potential domain of an informational realism.

Stcherbatsky (1962) describes the importance of this phrase as “forces which can neither be included among material nor among spiritual elements.” A force is being interpreted here as “a condition, a fact, upon which another fact arises or becomes prominent by itself.” Stcherbatsky’s Indian Buddhist sources identify fourteen such forces, among them origination, subsistence,

decay, extinction, the force imparting significance to words, the force imparting significance to sentences, the force imparting significance to articulate sounds. A full chart is found below. The ad hoc nature of these elements indicates an information metaphysics made pragmatic through the inclusion of a category of structures of this type. Why? These “forces” are utilized as fact-processing algorithms and are more like abstract tools than absolute states. Fenner reiterates a conceptual analysis or “reasoning” best classically described as Aristotelian predication for which one manipulates these internal discriminations and their elaborations. None of these are ultimates themselves, but conventional entities used experimentally to probe reality.

The 14th Dalai Lama (1966) gives a somewhat difficult, early rendering from the Tibetan context in his expression “heap of volitional formations containing mental-coefficients dissociated from consciousness (immaterial but not associated with)”; the word ‘heap’ is described as group, collection or aggregate (skandha). This is helpful in the sense of rendering the equivalent “forces” and “volitional formations” as a configuration of choices or options. A more “modern” translation from the Tibetan by Hopkins (1983) frames this alternately for us as “compositional factors which are neither form nor consciousness.” The phrase “compositional factors” is quasi-mathematical and again suggests a model, schema, or template through which an analysis is conducted or a processing of facts takes place. In Zahler and Hopkins (1983) we find aggregates defined as “a type of skilful object” S.: skandha, T: phung po;

form, S: ruupa, T:gzugs; compositional factors (limitless in number), S: sa.mskaara, T: du byed; non-associated compositional factors, S: viprayuktasa.mskaara, T: ldan min ‘du byed. They are called compositional factors, according to this authority, due to being factors that allow for the aggregation of causes and conditions and for the production, abiding, and cessation of products. “Rupa-citta vipra-yukta samskara” is of the nature of informational tropes. Like cognitive software (Rescher 2002), its computational aspect is abstract and dynamic, but at the same time particular and static.

The Dalai Lama explains why Buddhist treatises specifically classify all types of phenomena from the point of view of transforming the mind. He emphasizes the goal of impartially exploring the nature of objective reality in order to solve problems, and moreover “to gain a precise understanding of the objects apprehended by the mind. This leads one to investigate whether an object that appears to the mind actually exists in accordance with the way it appears.” (Wallace 2003) Furthermore, the Dalai Lama classifies mental processes that facilitate the pursuit of wisdom as “skillful means,” while those directly involved are called “wisdom.” Under this rubric of the two truths, then, we might interpret rupa-citta vipra-yukta samskara as conventional objects of an informational reality whose ultimate function is the generation of a liberating existence. Harvey (2000) distinguishes three senses for skilful means. The first refers to grouping the first five of the six Bodhisattva perfections under the idea of method, the sixth being wisdom; thus, the union of method and wisdom. The

second refers to the adaptation of teachings or the modification of a teacher's manifestations to the level of an audience. The third type is the compassionate overriding of ethical precepts, a sometimes extreme adaptation of actions to circumstances. It is the second meaning which provides an objective for the employment of informational tropes: the transmission of teaching and method

together. In his comprehensive treatment of skilful objects, Pye (1978) focuses closely on the persistence of Buddhist meaning: the enormously powerful adaptive quality of the teachings includes both the ability to construct provisional means of expression as well as the ability to destroy these when the path has been traversed or the mind transformed. This idea is not limited to Pye's formal topic of Mahayana concepts.

This interpretive schema posits two divisions of 24 factors:

AGENTHOOD: PERSON/INDIVIDUALITY/SENTIENCE

Person	Pudgala	gang zag	so defined because of being designated in dependence upon a collection of form and consciousness. Since a person is neither form nor consciousness but impermanent, it can only be an instance of the remaining category of impermanent phenomena, a non-associated compositional factor
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OTHER: NON-PERSON/NON-INDIVIDUALITY/NON-SENTIENCE

Non-person	Apudgala	gang zag ma yin pa'I ldan min 'du byed	These 23 factors are called 'designations to states' viprayuktasa.mskaara
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Acquisition	Praapti	Thob pa	finding and possessing the increase and decrease of virtues and so forth
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absorption without discrimination	asa.mj~nisamaapatti	du shes med pa'I snyoms 'jug	a lack of the coarse feelings and discriminations associated with the third concentration and below, produced in dependence on the fourth concentration by common beings only. Kelsang Gyatso explains this as a subtle state where the mind is single-pointedly absorbed in nothingness and suppressing gross objects and delusions from arising, yet not making progress towards eliminating subtle objects and delusions, p. 118.
absorption of cessation	nirodhasamaapatti	gog pa'I snyoms 'jug	achieved only by Superiors, in which there is a lack of the coarse feelings and discriminations associated with the peak of cyclic existence (the highest formless level) and below
one having no discrimination	aasa.mj~nika	du shes med pa pa	a person born among the gods in the condition of being without coarse feelings and discriminations
life faculty	Jiivitendriya	srog gi dbang po	designated to the state of living, the base of consciousness and warmth
similarity of type	nikaayasabhaagata	rigs 'thun pa	state or condition of likeness
Birth or Production	Jaati	Skye ba	Four states of characteristics of things:
Aging	Jaraa	Rga ba	
Duration/Non-duration	Sthiti	Gnas pa	
impermanence	Anityataa	Mi rtag pa	
Group of stems	Naamakaaya	Ming gi tshog	Three states of verbal conventions; parsing?:
Group of words	Padakaaya	Tshig gi tshogs	
Group of letters	Vya~njanakaaya	Yi ge'I tshogs	
state of an ordinary being	p.rthagjanatva	so so skye bo nyid	one who has not attained the qualities of Superiors; Vaibhashikas call this 'non-acquisition and do not count 9 final additional factors
Continuity	prav.rtti	jug pa	Non-interrupted state of a continuum of causes and effects

Distinction	Pratiniyama	so sor nges pa	in 3 types: a) particular/general, b) virtues-pleasures/sins-pains, c) causes/effects
<i>relatedness</i>	Yoga	byor 'grel	in 3 types: a) means (collection of tools), b) aggregation (reliance of causes with each other in a collection of causes), c) suitability (each thing's having its own function);
Rapidity	Java	gyogs pa	of the arising of effects immediately after their causes
Order	Anukrama	go rim	serial state of former and later, high and low, etc
Time	Kaala	Dus	states of the past, present and future
Area	Desha	Yul	composite of a place and the persons therein; in Tibetan yul can mean a sphere or region, physical or metaphysical, e.g. cyberspace; infosphere
Number	sa.mkhyaa	Grangs	condition of measure; numerosity?
Collection	Saamagrii	tshogs pa	complete collection of causes and specifically to that completeness; in Tibetan 'tshogs pa' refers to a mass, group, multitude, or an accumulation of things

Recalling that 'non-associated' in our present context means 'not associated with mind or mental factors,' there are also in this larger theory some 49 compositional factors associated with the mind, which together with feeling and discrimination account for 51 mental factors. Lopez (1987) The first 14 have in common with those identified by Stcherbatsky the distinction of being taught as part of the Abhidharma, or philosophical curriculum of Buddhist schools. A question deriving from an investigation of the concept of information within the wider Abhidharma would be the applicability of all abstract objects whose purpose in some philosophical traditions is to provide knowledge necessary for practicing meditators to attain a particular clarity and

state of consciousness, when utilizing these factors as specific objects during special sessions of thinking known as analytical meditation. Lopez notes the mirage-like quality of discrimination, or one's distinction and identification of objects: "An individual's discriminations falsely appear to be self-sufficient possessions of the person due to considering one's own

discriminations to be valid and those of others to be invalid."

With these non-associated factors Geshe Kelsang Gyatso (1993) gives the following outline of holdings by various schools: "the Vaibashikas believe that they find the 'I' to be just the collection of the five aggregates. Some Sautrantikas believe the same as the

Vaibashikas, whereas others believe the same as the Madhyamika-Svatantrikas, that the root mental consciousness is the ‘I.’ The Chittamatrins believe that the consciousness-basis-of-all is the ‘I.’ The Madhyamika-Prasangikas reject all these assertions. They realize that the ‘I’ is merely imputed in dependence upon any of its aggregates....in reality all phenomena, including our ‘I,’ are merely imputed by mind and do not exist from their own side in the least.” p. 14. Thus, the Madhyamika-Prasangikas, or Middle Way-Consequentialists, pose an informational realism based upon imputation. A word about “self.” The Dalai Lama XIV has described this in the understanding of the two truths according to the Yogacara-Chittamatin view: “The existence of an object which is an entity external to the consciousness perceiving it is called self. The absence of that self is called selflessness. And the emptiness of such existence is called emptiness. Therefore, they explain that all phenomena are included within the entity of the mind.”

Finally, Goodman (2004) recounts Vasubandhu’s classification of dharmas to include “non-mental, non-physical caused *dharmas* (*citta-viprayukta-samskāra-s*)”. Vasubandhu asserts an indefinite divisibility of objects, positing from the discovery of no partless phenomena upon investigation that phenomena are dependent-arising. Collier has offered us an interpretation of information as a vehicle for causation, bringing around our circle completely. In the Buddhist view, the object of cognition is nothing apart from the act of cognition, contrary to holding that “the identity of distinct objects—however fleeting and

momentary—is considered to be prior to and the basis for the subsequent conceptual elaboration.” (Puhakka 1975)

Macy’s (1991) intuitive classic describes “mutual causality” within the context of general systems theory, hinting at a possible linkage between cybernetics and, as she puts it, the dharma of natural systems, perhaps dharmas. Griffin (1991) commends Macy for her discussions of the ethical implications of “the mutual co-arising of self and society, doer and deed, means and ends, personal transformation and social action, among other things.” However, he points out that general systems theory does not possess the conceptual tools required for deeper probing of **codependent origination**, preferring in that regard a Whiteheadian-Hartshornean process hermeneutic instead. Griffin helpfully supplies six philosophical explications for “mutual causality” (in opposition to a unidirectional causality) stemming from his critique of Macy, worth summarizing here:

LINEAR

- L1) order descends hierarchically
- L2) single, isolable causes
- L3) events are passive: effect pre-exists in cause
- L4) realism, independent world (actualities)
- L5) only internal relations (including non-actuals)

MUTUAL

- M1) order is intrinsic and self-emanating
- M2) multiple causation, not unipolar
- M3) effects have emergent qualities
- M4) mind-shaped reality
- M5) internal and external relations

A certain reciprocity exists between structure and function in the construction of information objects, and so both structuralist and functionalist arguments will be discussed. Finally, a kinship is struck between arguments concerning the description of reality and the status of objects within the descriptive discourse.

Software repositories of knowledge are designed to be queried in an erotetic method through structured tools. The special system objects collaboratively created as information objects may be known as intellectual artifacts. These are artifacts in an informational sense in which the idea of “work” is preserved. These information objects are assumed to be inherently potential erotetic structures—skilful objects of a kind. Hongladarom (2004) interprets Borgmann as a criticism of the limitations of Floridi’s (2003) information ethics (IE). Floridi (2004) answers the ethical question posed by IE “What is good for an informational entity and the infosphere in general?” The answer is provided by a minimalist theory of deserts: any informational entity is recognized to be the center of some basic ethical claims, which deserve recognition and should help to regulate the implementation of any information process involving it, if possible.” Hongladarom directs our attention to a specific quality of membership in the infosphere, the needs of persons as informational entities with respect to a particular metaphysical aspect of information: its transparency, distinct from Moor’s more negative notion of transparency. Positive transparency is the ready availability of “information about information” throughout the infosphere, a

kind of service which advances the informational health of its members by providing them the means to transform and share local information globally and vice versa. “Floridi’s infosphere should be populated only by those pieces of information that are well represented. That is, the pieces should be arranged in such a way that the mind finds it easy to work on them, such as through the cataloguing system used by libraries (but obviously this is not the only way).”² Cheng’s onto-ethics reaches the same conclusion as Hongladarom as to the critical importance of persons understanding their intellectual environment. If computer ethics is indeed a kind of onto-ethics, then perhaps these rich legacy discourses into the common attributes of persons and non-persons will bear further investigation.

² Herold (2003) describes the historical and emerging importance of metadata as information about information in exactly this regard. Brody (2003) suggests the application of two of Severson’s principles of information ethics, fair representation and non-maleficence, and all that they imply, as “the foundation for [IEEE] engineers’ ethical decisions in [metadata]” Her pioneering examination of metadata ethics covers the entire information life cycle as originally introduced by Floridi (1999).

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- *Also identified as Gungtang Konchok Tenpay Dronme; Konchog Tenpai Dronmey; Gung Tang; Gun-than Dkon-mchog-bstan-pa'I-sgron-me; Gung-thang-pa; rJe Gung thangpa; or as Gonchok Denbay Dronmay.
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