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RIGHTING THE NAMES OF CHANGE

I. Introduction

The unity of knowledge and practice has been a central concern of Chinese thought; among Western traditions, it was pursued with particular persistence by classical American pragmatists such as Peirce and Dewey.[1] I shall claim that there is a metaphysics of nature presaged in that most ancient of proto-philosophical texts, the *Yi Jing* 《易經》. I shall argue that there are features of the *Yi* that would be salutary for Pragmatic thought, and features of Pragmatism that would be useful in the recovery and rectification of this ancient classic. In particular, I argue that considerations of evolutionary emergence and punctuated continuity would be helpful supplements to the teaching of the *Yi* 易, even as an updated account of principles of change can help explain evolutionary emergence and continuity. This is a key to understanding the relationship between human and non-human domains and the unity of theory and practice.

The *Yi* is a contentious classic that too often prompts one of two responses: It is either sacrosanct and to be redacted little if at all, or to be rejected as bogus wisdom, even delusory. (Think of Needham, who claimed that veneration of the *Yi* set Chinese science back many centuries, and who asserted that it would have been better for Asian thought if the text had been cast into the sea.[2]) I shall instead press for third response: a program of rectification.[3] I want to know what is true in the *Yi* and am less interested in the otherwise important questions of historical interpretation. The best historical interpretations of the *Yi Jing* will probe the meaning of the text in search of a unity in which principle, cosmology, ethics, and divination braid together in a meaningful whole.[4] I proceed first by arguing for criteria for selection and interpretation, limiting my case to those aspects of the *Yi* pertinent to natural form and the unity of human thought and practice. I conclude by indicating some respects in which the resulting conception is useful for cross-cultural dialogue, focusing on some ways it can usefully engage aspects of the thought of Peirce and Dewey.

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In a series of papers, I have argued that there are *elementary acts of nature* common to mind and matter that are responsible for the formations and transformations evident in human and nonhuman worlds.[5] These include internalizing and externalizing, subordinating and coordinating, segmenting and sequencing, adding and deleting, parsing and sampling, gathering and scattering, nesting and embedding, and others. The wealth of such operations depends on a few primitives called enaction, transaction, coaction, faction, and proaction. These are, by hypothesis, the basic categories of activity in any domain. I recommend an activist, constructivist metaphysics to thinkers concerned with forms and norms in general. My purpose here is to argue that the great forerunner of activity-oriented metaphysics is none other than the *Yi Jing*, and to reconsider one of its most profound strands in light of some recent American thought.

II. Three Criteria of Rectification

Four main strands braid together in the *Yi Jing* as we know it: (1) a system of divination;[6] (2) a cosmology; (3) a permutational approach to possibility; and (4) a metaphysics—or at least the seeds of one—along with a smattering of ethical injunction based on that metaphysics.[7] The oldest part, concerning divination, is also the most credulous. A. C. Graham writes that this strand of the *Yi* is "without philosophical relevance." I concur,[8] and have nothing more to say about it in this place. Cosmology has more philosophical bearing, but it is of primarily historical interest. The system of binary oppositions and permutations (3) is fascinating—this is the part that made Leibniz all tingly—and may be worth probing for insights, but my quarry is the metaphysical part of the *Yi*.

The seminal idea is that there are a few simple forms of change evident in all phenomena; these shape every particular process and offer guidance to those capable of being guided. The forms are not properties or species, as are the forms of the Platonists. They are neither metric nor mechanical, as are the "forms" of the European Moderns. As a group they do not so much classify things that undergo process as processes themselves. Because they are principles of formation and transformation, they are fundaments of natural emergence and human creativity.[9] Moreover, they operate in nonhuman no less than in human phenomena; on this recognition rests a deep appreciation of the continuity of the human world with the rest of nature.

Not every character in the *Yi* fits this description; only those that do are of interest here. My task is not historical but systematic: I want to

know what is defensible and relevant in this ancient classic. Selection is the first task of critical recovery. The second, interpretative, task involves rather more reconstruction and for that reason will prove more controversial. The notion that there are changeless forms of change at the heart of all change, and that we can somehow read these directly off of the natural world, sounds to the European ear terribly metaphysical and dreadfully pre-Kantian. I shall argue that the "ways" at issue function as formative and transformative acts found throughout the natural world and also as operations of mind by which experience is shaped and symbols are constituted. In this way, they are vehicles of transforming experience and constructing a human world of understanding and practice. Before I advance to the more subtle claims, however, it is useful to focus on the metaphysical idea in its more original form.

It is hard to tease out the more purely metaphysical part of the *Yi* (elaborated in its Appendices or "Wings") from the thick tangle of other strands. For one thing, the metaphysical concepts are invoked largely as a sort of interpretation of the structural system or the divinatory part. The binary system of broken and unbroken lines is itself a bone of contention. It may be taken to be internally related to content, so that there must in the nature of the case be eight or sixty-four (or, perhaps, 128) principles of nature, and so that number fifty-six must in the nature of the case be "wandering." On the other hand, the structural system may be taken to be abstract, a priori, and externally related to content. Here the structure is like an uninterpreted system open to all substitution instances so that the concepts may be arrayed flexibly, so long as complementarities are observed.[10]

The structural system begins with the division of an unsymbolized origin into two parts, symbolized by a solid line and a broken line. Once we allow line stacking, there are exactly four double-lined possibilities by permutation, and eight three-lined figures. We can take this sequence to symbolize an order of generation. Neo-Confucians loved this: The supreme ultimate produces two modes (or "forms"), the two modes produce four "models" (or "emblems"), and the four models produce the eight trigrams which produce the sixty-four hexagrams each of which symbolizes a basic mode of change irreducible to other modes of change or their combinations. Graham goes so far as to say, "[T]his system unfolding from an origin unsymbolisable within the system, laying down both how things develop and how one is to respond to them as auspicious or baleful, is the perfect formulation of what Chinese thought understands by the Way."[11]

The hexagram with three solid lines upon three solid lines is interpreted to be a diagram of heaven and that with three plus three broken lines, a diagram of earth. Heaven and earth hexagrams

(*qian* 乾 and *kun* 坤), in turn, are understood to be sources of generativity and receptivity, force and field, respectively. They are opposites in structure as well as meaning, strictly correlative. The more composite diagrams also usually come in opposites, though not always. Peace (*tai* 泰), where the heaven trigram rests on the earth trigram, and standstill (or stagnation *pi* 否) are inversions, mirror images, indefinitely close yet exactly opposite: A quiescence that is open and alert and a languid stagnation are all too easily confused in our minds and in our practice, and the characters exhibit this.

Much of the classic is a grab-bag of such concepts. Much attention is paid to polarities, and the terms of a polarity are not automatically prioritized. There is leading (*shi* 師) but also following (*sui* 隨), approach (*lin* 臨) and progress (or flourishing, *jin* 晉) but also retreat (or withdrawal) (*dun* 遯), increase (*yi* 益) but also decrease (*sun* 損). We find before completion (*wei ji* 未濟—literally, not having crossed over) but also after completion (*ji ji* 既濟—already having crossed), with every suggestion of mutual dependence and equal billing. Starting and stopping, entering and leaving, attaching and releasing appear, without privileging one over the other, without subordinating either in value or being.[12] That is an advantage. I hasten to add that some of these forms function normatively, and when normative role is at issue, privilege is appropriate; I do not want my approval of *descriptive* parity to disparage normative priority. I say a bit more about normativity below.

I propose three criteria of selection.

The first criterion is breadth of applicability. Any candidate principle should be of broad-spectrum relevance, and so should be as pertinent to nonhuman as to human domains. Application in the intended sense implies that the characterization should be direct and literal. According to the first criterion, we should not settle for characters that apply literally to human affairs and metaphorically to nonhuman nature or vice versa. That would exclude characters such as leadership (*shi* 師 [Wilhelm: "Army"]). It is likely that the "ease" connoted by one sense of *yi* 易 may be reconstructed in this way as referring to least-action principles in the broadest sense. It would exclude a character such as "family" (*jia ren* 家人) even though that can be taken to mean "community" in a sense inclusive of biotic and cosmological communities. Swallowing (*yi* 頤) might be reconstructed to mean any active engulfing or incorporation, but that is more of a stretch. It is hard to find any construal at all for humbling (*qian* 謙), biting-through (*shi ke* 噬嗑), or the marrying maiden (*gui mei* 歸妹) that meets this stricture of broad-spectrum relevance. We should not expect that all of the ancient characters of change will survive unreconstructed. Some may not survive at all.

The second criterion is primitiveness. Even among characters of broad-spectrum relevance, some will be more primitive than others, and the principles that are ontologically primitive ought to be primitive in the system characters. Much Chinese thought focuses *life*, but life is rare in the cosmos. It is not good to take our experience with life-processes, particularly with sexual reproduction, as paradigmatic for interpreting the cosmos or its generative sources. Hence, we should have qualms about characters such as sprouting (*chun* 純). Of course there are cases of organismic metaphysics right down to Whitehead, but elsewhere I have cautioned against using categories derived from life-forms and biotic environments as root metaphysical concepts.[13] The use of organismic concepts as ontological concepts is in my view a vice akin to that of idealists who take special features of mind or consciousness to characterize the universe at large. For similar reasons I counsel caution about attending (vigilance or waiting) (*xu* 需), viewing (or contemplating) (*guan* 觀), and camaraderie (or concord) (*tong ren* 同人) as candidate forms.

The third criterion is activity: On the proposal being considered, the most primitive broad-spectrum principles will not be objects or events in the first instance but the forms of activity that go to compose and power objects and events. Limiting (or articulating) (*jie* 節), conjoining (*xian* 咸), gathering (*cui* 萃) and dispersal (*huan* 渙), splitting (*bo* 剝) and joining (*gou* 姤) are paradigm instances of this sort of form.

Because I wish to focus natural principles of formation and transformation, I suggest the use of the criteria of primitiveness, breadth, and activism to rethink the *Yi Jing*. The criteria follow from the purpose. Plainly there are other sorts of characters in the *Yi*. They have their purposes. Those others are not the best candidates, however, for elementary formative acts common to mind and world. Perhaps, then, we shall have to add to the list as well as subtract.

In his recent work on the *Yi*, Chung-ying Cheng admits that we may need to add characters to the list, though on the whole he seems to find the *Yi* satisfyingly complete. He asserts, for instance, that there are eight trigrams because there are eight primary natural phenomena in our experience.[14] I am skeptical about this. He believes that the sixty-four are built up from the eight by means of "natural and logical principles,"[15] suggesting that there is something natural and inevitable in the original list of sixty-four. Chung-ying Cheng to his credit aims to understand the *Yi* as a whole—cosmology, divination, and structure together. Precisely because his approach requires that we keep content and structure tightly entwined, it leads to some results that are implausible from the perspective of rectification. For example, if

we come to believe there is reason to add to the extant sixty-four hexagrams, we would need on Chung-ying Cheng's view to expand the system to 128 characters, in order to preserve the binary system. And since, on his view the size of the character-set reflects the level of detail of explanation, we may need to add a level of 256 characters. It is difficult to see why the manifest of forms must obey such an a priori compulsion.[16]

We need to add characters because whole classes of function and operation are neglected by the classical text. There is, for instance, a comparative neglect of structural operations such as segmenting and sequencing, and adding and deleting. There is omission of some important context-generating operations such as nesting and embedding. These ought to be on the list and ought to appear as primitives if the correlative operations are ontologically basic. We find in nature partialities produced by filterings and samplings and rationings of various sorts that make things to interact through their parts and lend phenomena their aspects. Perhaps the emphasis on wholeness obscures sources of real partiality in nature. An emphasis on balance and equilibrium makes all disequilibria to appear as defective or incidental, whereas in fact some disequilibria are key sources of dynamism and novelty in the world. I speak to some other examples of neglect below. For now, I wish to counsel adding and subtracting characters as our best science and metaphysics require, rather than by a priori demand. A successful sifting along these lines should result in a group of characters that symbolize the simplest ways of formation and transformation that are equally pertinent to human and nonhuman domains. Other characters in the *Yi Jing* may be useful for other purposes, but they would not appear on *this* list.

Call the characters of the *Yi Jing* what you please; I call them characters of change.[17] (For that reason I like to refer to the text as *The Classic of the Characters of Change*.) By whatever designation, the point is that these characters describe the simplest ways of changing, moving, and living. Yin and yang in their integral equipoise of movement and eternal inner circulation show "the" way; the several characters of change show the many "ways" that flow and stow as they ought when they move in accord with "the" way. When they so accord—and they need not—they move with the least effort to the nearest point of balance and harmony in a situation of relationships.[18] We read, "The alternation of Yin and Yang is called the Way. The heir of the Way is called the Good, and fulfilling one's nature is good. Seeing this, the humane call it 'humaneness,' the wise call it 'wisdom.' Ordinary people use it every day without knowing it" (Appendix A4, my translation).

III. Naturalism and the Needham Problem

What coalesced over the centuries into Chinese culture had, from earliest times, a remarkable tradition of quiet observation of nature (*guan* 觀) that culminates in a comprehensive vision of things. The project of rectification will need to test its tendered alternatives by establishing the applicability of its proposed forms of change across all sorts of domains, including those we call "objective" and those we call "subjective." The rectified principles should not apply primarily to material nature and only by metaphorical extension to matters of human subjectivity and culture. Nor should they be categories of subjectivity pertinent in the first place to feeling or perception or thought that are only by a kind of semantic stretch applied to the nonhuman universe. They ought to pertain as literally and directly to the universe at large as to the human estate.

I argued above that some of the traditional characters fail this test. Characters such as modesty (the *qian* 謙 of *qianxun* 謙遜) or family (*jia ren* 家人) or the marrying maiden (*gui mei* 歸妹 [帰妹]) or youthful folly (Wilhelm's rendering of *meng* 蒙), if they apply to the universe at large at all, would do so only by metaphorical extension.[19] Nourishment or need (*xu* 需) something for which one must be patient (*xu* 须) can have a universal import by semantic extension, since all sorts of situations are "fed" with energy and information. But using food to describe the fuel of events is metaphorical in a way that using "gathering" (*cui* 萃) to describe physical aggregation is not. It is essential to the recommended interpretation that "obstruction" and "flow-through" apply to mental blocks and surges no less literally than to rivers or electrical current—even though these are quite different phenomena with different mechanisms. Splitting, gathering, centering, expansion and contraction and the like pertain as much to mental contents and human relations as to material nature.

The first criterion does not require that the meaning of these primitive principles be univocal across domains. Quite the contrary: A diversity of roles and functions is to be expected when principles of transformation are in focus. It is also important that these broad-spectrum characters do admit of semantic extensions; since the operations are transformative, they can alter language as much as anything else. Figural language—metaphors and what not—give ample evidence of *semantic* expansions and compressions and emphases and turnings and inversions.[20] But if we blur the difference between literal and figurative, we shall collapse interpretation and inquiry. It is good to distinguish these, despite their close relationship.

So the first criterion requires that the principles of interest have some literal application in every field in which the relevant changes occur. Call this feature "supercommonality." We will have a genuine, supercommon character only if there is an uncontrived meaning that cuts across the fields of usage. A supercommon character indicates a shared generic meaning; at the same time, it requires us to go to specifics and not rest content with vagaries or suppose that the way "inclusion" functions in one context will be the way it functions in some other. Once again, there is no supposition that every occurrence of expansion or equilibrium will have the same mechanism or the same explanation.

This affords an answer to the Needham problem. There is a twin temptation associated with our ability to intuit supercommon characters of phenomena. The first temptation is to rest content with the notice. We might feel that there is no need for further inquiry once we discern the principle in the phenomenon. This substitutes contemplative appreciation of principle (valuable enough in itself) for detailed experimental work. The second and more subtle temptation entices us to an *associative* thinking, as if correlation were explanation or association were inquiry. They are not. Correlational thinking of the sort that is quite common in Chinese traditions has its uses, but it is no substitute for careful empirical inquiry with well-framed critiqueable hypotheses and multiple communities of inquirers working to put them to the test. Yielding to either of these temptations would violate the corollary to Peirce's first rule of reasoning: *Do not block the way of inquiry.*

Honest thinking about nature is inferential, not associational. Associational thinking can get in the way of the inferential inquiry needed to understand the causal details of nature. That too is a Peircean point. And yet it is crucial to draw correlations between domains if we are to ask after common principles and fit human life into the cosmic web. (To be sure, the sciences do that in a fashion, but knowing that we share our material elements with the stars, that we share 60% of our DNA with fruit flies and 50% with bananas does not suffice to show us how or how far our modes of thought and practice align with first principles.) The key to overcoming the Needham problem is found in the nature of the forms: If the genuine first principles are formative acts that play different roles in different domains, it would not follow that commonality of principle is evidence for commonality of mechanism. Indeed, we *cannot* deduce causes or derive features of phenomena from knowledge of supercommon forms. Supercommonality, rightly understood, restricts the relevance of correlational, associational thinking.

IV. School of Mind *and* School of Principle

At this point, one might wonder if it is human mind—and not nonhuman nature—that is the source of these principles. Perhaps the characters of change are best understood not as candidates for elementary acts of nature but merely as ways we human animals make sense of nature. After all, in the third appendix, we read, "everything that people can do in the world is there." And if we accept that structures are derivative on activities—as implied by the third criterion—we might say that what appear here as primitive activities are really *operations of mind*, where mind is understood not cosmologically but humanly and psychologically. Is nature or mind the permanent homeland of the characters of change?

In favor of the supposition that they are operations of mind we use to shape experience and practice is the fact of personal and cultural variability in the products of our mental operations: Different people use the same mental operations of inclusion and exclusion to establish quite different classification schemes. We segment and sequence, add and delete, sample and weight, relate and situate, balance and prioritize variously to compose quite different orders of meaning. When the forms are supercommon, the operations can and do make for very different psychological and social concepts and categories. Is that not evidence enough that the forms of interest are mental operations merely?

In favor of the natural standing of the characters of change is their applicability. Unless they have a reality apart from human minds, genuine knowledge of real articles would be impossible and the pursuit of natural practice would be in vain, at least on the supposition that realistic knowledge requires some commonality of form between knower and known. Lacking this commonality of form, we would be saddled with an extreme form of idealism and the *Yi*, howsoever rectified, would provide us with a catalog of mental tropes and not insight into nature in itself. Moreover, a long tradition in Chinese thought regarded the *Yi* as proffering a complete list of all the ways (*dao* 道) of the universe. We read, "The *Yi* opens the door to the profusion of natural things . . . it embraces all the principles (*li* 理) of the universe."[21] Such assertions strongly suggest a claim that is both naturalistically metaphysical and realist.

The adequacy Chung-ying Cheng claims for the *Yi Jing* is adequacy to the human condition. He says that the characters of the *Yi* represent reality "at a level consistent with our needs and capabilities of understanding."[22] This posture, which flirts with

idealism, is insufficient for my project and, I believe, to those more naturalistic traditions that take the *Yi* to proffer all the principles of change in nature. Do the characters of change exist in non-human nature and can we know them as they are apart from human involvements? Or are they merely ways we make sense of things? Are they significant in themselves or are they simply instruments for our coping with the world? Chinese thought has no single answer to the question of whether nature or mind is the permanent homeland of the characters of change. Some approaches are more naturalistic than others. Whether the characters of change refer to immanent tendencies of all energy or point to principles onto-logically distinct from (though correlative to) energy is a question that becomes explicit only later in the tradition. I believe that the rectified account handles this longstanding question almost effortlessly.

A resolution to this question that I have explored more elaborately elsewhere is that our brains have evolved so that our minds work with some of nature's most primitive forms of activity (inclusion and exclu-sion, segmenting and sequencing, nesting and embedding, sampling and parsing and so on) in highly flexible forms. These operations that we use to form and transform content are traces of unreconstituted nature. When we experience our ideas and concepts, models and theories, we experience constructs; when we experience the most basic operations we use to compose these, we are in closer contact with a natural inheritance.

Given the proposed rectification, the *Yi* can do justice to the naturalistic aspect of human experience (realistic insight into natural principle) and to its idealistic aspect (the aspect of mind-dependence and variability of construction). The idealistic impulse is satisfied by the fact that the characters of change describe the most basic mental operations by which we form our symbol systems and transform our perception and practice. I say more about sym-bolization in connection with Peirce, below. The realistic impulse is satisfied by the fact that these forms have a natural standing in independence from human involvement. This means we can do justice to a *xin xue* approach and a *li xue* approach to the characters of change in the *Yi Jing*. The school of principle would be right to say that the operations are ontologically distinct from anything *we* do; they are bona fide acts of nature that function even when there is no human *xin* 心 around to know them and use them. On the other hand, the school of mind would be right to say that these operations are mental acts. (In fact, the proposal makes clearer than did the traditional school how the characters of change *are* acts of mind.)

V. Dewey and Peirce Meet the *Book of Changes*

While we may take the "*yi* 易" in the title to stand for all sorts of change,[23] it may refer most particularly to movements of substitution or exchange (the *dong* 动 of *diaodong* 调动). The classic does seem to imply that all is exchange and interflow, that particular changes are best understood to be part of a larger context of interchange; they are transactions of some sort within some larger circulation. In the end, according to the teaching of the *Yi*, all change is interchange, all action is transaction, and all transformation is mutual transformation.[24] This idea should warm any Deweyan's heart.[25]

Dewey is less known for his teaching about "generic traits of existence" such as stability and precariousness that are found throughout nature and culture than for his critique of the "spectator theory of knowing," the Quixotic quest for certainty, the "superstition" of necessity, and his instrumentalist understanding of concepts and logical form.[26] I shall claim that the rectified *Yi* not only provides a fuller picture of generic traits of existence, but also *explains* these traits in virtue of articulating principles that function as sources in ways that ought not to be objectionable to a Deweyan—or at least a reconstructed Deweyan (and what other sort ought one to be?).

Dewey reserved particular animus for those who claimed to metaphysical sources or ultimate origins. This, he believed, was a prime example of philosophical fallacy—succumbing to the temptation to interpret the outcomes of thinking (which are products of constructive problem-solving effort) as if they existed in that same shape prior to and independent of the work of thought.[27] Realistic construal of first principles is rejected; even logical principles are reconstrued by Dewey as particularly useful and especially stable tools of inquiry with no ontological import of their own.[28] Nevertheless, Dewey endorsed in *Experience and Nature*[29] the exploration of traits of existence such as stability and precariousness, plurality, continuity, and transaction. For example, all phenomena have aspects of process and structure; so process and structure taken abstractly would presumably be generic traits of existence.

The trouble is that Dewey's generic traits are inert patterns or properties. They are torpid and essentially idle. To mention structure is not to account for it; to point incessantly to the transactional character of change is not to explain it, since a generic trait is not a principle that does any work or an operation that produces or transforms anything. It seems to me that the forms of activity advocated here are good guides to "generic traits of existence," since the super-common principles are responsible for the features of nature and culture that can be characterized in suitably generic ways. In other

words, Dewey's generic traits are no more than highly abstract representations of the *results* of such operations; the *Yi*, rectified, registers the operations that are responsible for these results. It is because the principles are active and generative that there are such results; it is because their forms are supercommon that the results are *generic* traits found throughout nature and culture.

Dewey was ever alive to continuities in nature and culture, and between culture and nature. His brand of thinking was largely instrumentalist but also evolutionary and genetic; he highlighted features that are emergent in the sense that they are irreducible to what they arise from and yet genetically continuous with what they rely upon. The central case of continuity in Dewey's later *Logic*[30] is the continuity between (1) physical conjunction and separation; (2) biological integration and differentiation; (3) cultural unification and distinction; and (4) logical affirmation and negation (or synthesis and analysis). In this example, operations (4) evolve from operations (3); operations (3) evolve from operations (2). For Dewey, (4) is not reducible to (3) or (2) or (1); (3) is not reducible to (2) or (1). And yet (2) emerges from and adds something novel to (1); (3) emerges from and adds to (2), etc.

This is a marvelous example of a single form of activity facilitating emergence and playing pivotal roles in different fields. Dewey does not claim that there are operations with a supercommon form in evidence here, but it is a natural adjunct to his observation. To find that there is a form of activity or supercommon character in evidence is not only consistent with Dewey's brand of continuity but would actually help to explain that continuity in virtue of the generativity of the formative act and the ability of the form to play different roles in different fields.[31]

There was a lively debate in the 1930s among pragmatists on the question whether reality has "practical character." This is not an issue for Neopragmatists who suppose that philosophy is about "coping," but it was and is an issue for those who wonder about the relationship between nonhuman nature and the concepts and categories by means of which pragmatists make sense of human life—such as action, purpose, community, and habit. The best reply to the question of whether reality has practical character appeals both to the characters of change and to the genetic continuity that results when they guide change and emergence.

What distinguishes the field of practice is a stress on action, habit, context, exchange, and purpose. We may focus these as narrative categories such as character, point of view, intent, situation, and plot—or dramatic categories such as actor, perspective, motivation, scene, and action. These are domain-specific articulations sourced in

the same basic forms of act. They are emergent from, yet irreducible to, biological categories such as organism, stimulus-response, need, behavior, and environment. In physics, the primitive forms of act yield particles and their properties, forces and interactions, and fields of the kinds studied in that domain. In psychology the same formants are determined as persons and actions, contexts and relationships, intentions and perspectives. There are *transitions* from particle to organism to agent, from attractor to need to functional purpose to conscious intent, from physical field to biotic environment to historical context. These transitions exhibit the kind of continuity that is in evidence when the characters of change prompt the large-scale transformations we call emergence. It is a punctuated continuity, brooking distinction as well as genetic relationship.

We have here another example of emergent continuity, explained with reference to primitive forms of activity. Historical or hermeneutical contexts are irreducible to biotic environments, which are not reducible to physical fields; yet contexts are continuous with environments and environments with fields.[32] It is an error to explain the details of persons in concepts special to subatomic particles, or to describe particles in terms pertinent to organisms. The continuities provide evidence for supercommon character, but it is an error to invoke these in any empirical description or explanation. The *Yi*, howsoever rectified, is not biology, not physics (and not cosmology in that sense), but its principles are the fundaments of metaphysics of nature and metaphysics of mind and metaphysics of meaning.

Nonhuman reality does not have "practical character," but practical character is not foreign to it. It is a mistake to project categories special to human practice onto nature at large. Rather, "practical character" is emergent from and continuous with evolutionarily earlier strata of existence. Human life is continuous with the rest of nature to the degree that it exhibits distinctive ways of using the same primitive forms of act. In other words, there is between the world of human practice and nature at large a punctuated continuity, induced by natural transformative acts. These examples are not found in Dewey, but they are extensions of the idea of genetic continuity that Dewey advocates. I believe that the *Yi* could profit from this notion and that pragmatism could profit from the idea that primitive natural acts are sourcing it.

Peirce shares with Dewey an emphasis on evolution and continuity, though Peirce lades his notion of continuity with many more dimensions, finding ways within it to integrate individuals and laws,[33] generalities and infinitesimals, actualities and possibilities, and much else besides.[34] It is not my purpose to explore the details of Peirce's fabulous and snarly theory. I want merely to suggest that the rectified *Yi* is

as useful an adjunct to Peirce as to Dewey. Peirce, despite his quirky brilliance and conceptual inventiveness, is closer to mainline Western habits of systematic speculation, so the quest for principle is not so alien to him. I want to suggest how the *Yi*, suitably rectified, can further Peirce's inquiries into principle, continuity, and his quest for a universal semiosis.

Dewey interprets Peirce correctly on the emergence of sign functions in general and language in particular.[35] He writes, "[I]n the course of cosmic or natural evolution, linguistic behavior supervenes on other more immediate and, so to say, physiological modes of behavior, and that in supervening, it intervenes in the course of the latter so that through this mediation the latter regularity continuity generality become properties of the course of events, so that they are raised to the plane of reasonableness."[36] Having spoken to evolutionary growth and genetic continuity above, let me say just a little about semiotic.

Peirce is well known for a highly systematic sign theory that dovetails with his logic of relations and his three categories (in form, the three are: monadic, dyadic, and triadic relations; in substance, they are: spontaneous singular immediacy, insistent oppositional particularity, and mediating purposive rationality). Signification or semiosis occurs whenever something stands to someone in some respect.[37] Though the Peircean semiotic of icons, indices, and symbols is dynamic and evolutionary, Peirce does not appeal to forms of activity in his account. I proposed above that the characters of change function as operations of mind. In this function they contour perception and shape thought, providing means of mediation and articulation wherever mind works. The aspects and contexts, the transactions and purposes of signification may not be focal; indeed, these typically remain in the background, shaping our significations, often without our recognizing it. Hermeneutical traditions recognize this. So does Peircean semiotic.

If it is true that our concepts are generated by mental operations that sample and sequence, focus and frame content, and if the variable classification schemes evident in human cultures are a result of different patterns of inclusion and exclusion, dividing and branching, coordinating and subordinating, and so on, then an account of signification that highlights these formative operations would provide a useful supplement to Peircean semiotic. If I am right that the seeds of such an account are to be found in the *Yi*, then this account can serve as a bridge between Peirce and the *Yi*. For despite all the systematics, Peirce did not satisfactorily account for the activity of symbol production and its cultural variability, nor for the ways signifieds (I mean the targets of signification) are able to be signified. The approach

ventured here can help by showing how elementary acts of nature that compose the real articles of the world are used by us as operations to compose our signs and symbols. How this goes in detail is a project for another occasion.[38]

Hardly anyone in Occidental traditions has worked with characters of change or forms of activity as fundamental concepts or categories, or has understood them to be basic metaphysically, cognitively, linguistically, hermeneutically, or semiotically.[39] I urge it. I have outlined several ways in which the thought of Peirce and Dewey's might help to expand the account of change in the *Yi Jing* by making it more evolutionary, more naturalistic, and less symmetrically associative. The largely complementary accounts of evolutionary continuity offered by Peirce and Dewey can, in turn, usefully be supplemented by the *Yi*. The rectified account affords a natural supplement to universal semiosis. It offers an amplified roster of generic traits of existence and moreover has a way to help to explain the occurrence of these traits through the operation of the formative acts. It provides a way to account for the punctuated continuity that is in evidence in evolutionary emergence. Peirce and Dewey were thoroughgoing evolutionists who were nevertheless able to resist, in their different ways, biological and physical reductionism. The tradition of the *Yi* can learn from this. In concert, the two traditions can help us to find continuities without reduction, and help to root down to the sources of interpretation and symbolization without neglect of empirical inquiry. We can then think well about change but also, in life, can learn to change well since the characters of change can guide feeling, perception, and action.

VI. Normativity and Action

Pragmatism has been remarkably alive to time and change, the precariousness of actual pattern, and the need for continuous human effort to develop and sustain achievement in the arts and sciences. It has been, on the whole, insufficiently alert to principles that call for stillness and serenity in the midst of change, principles that can ground thought in the deeper strata of reality with which life may be aligned. The problem of life is how to change: How to be with oneself and others when everything is moving, in ways that are easeful, oriented, centered, grounded, and harmonized. A rectified *Yi* can point us in the right direction.

Actual patterns of change need not be harmonious, least of all in the human estate; how then can a metaphysical principle function normatively without necessitating harmony or goodness? I say more

about this elsewhere;[40] the rough idea is that elementary acts of nature shape phenomena so that there can be action only on the condition of at least the possibility of a path of least action; there can be movement only on the condition of at least the possibility of ease of movement; there can be a relationship only on the condition of at least the possibility of harmony. Harmony is better than disharmony, though sometimes what seems disharmonious is the medium of a better harmony; effortless action is better than strained striving, though sometimes effortlessness requires strenuous training; peace is better than strife, and a peaceful way to peace is best, though not always available. Because human beings use the formative acts flexibly, we are particularly prey to illusion and error, tension, strife, and disharmony. Fortunately, that same flexibility affords us ways of self-adjustment, so that we may respond resourcefully and spontaneously, once we learn to move and live in alignment with the most basic principles of change.

Life-changes reveal and make use of unchanging principles. The answer to the problem about change, in its aspect as the problem of life, is to learn to ally oneself with the supercommon principles of all change. When we align ourselves with the changeless principles of all change, we have more—not less—flexibility and responsiveness than if we do not recognize these principles or if we acknowledge them in thought but fail to align ourselves to them in practice. This alignment lends us access to a still point in the midst of transformation that is so often talked about and so seldom elucidated. It lends us fresh access to the natural means of harmonization, centering, grounding, and easeful action. These are human extensions of natural forms of harmony, least action, and so on that are evolutionarily continuous with nonhuman forms. We glimpse here the emergence of human normativities from natural normativities. Once we find ways of living in alignment with supercommon principles of change, we can live more genially with ourselves, with others, and with the natural world.

Our most basic means of change are, I have argued, not products of our own making. Though the human world of meanings is a human product, our creative transfiguration of ourselves and the cosmos is due entirely to our flexible use of primitive forms of activity at the heart of all natural process. Our use of these forms of transformation is distinctive: emergent from yet evolutionarily continuous with non-human examples of the same supercommon forms. We can use these forms for well or ill. We may be helped to use them well by identifying the forms and their associated norms. The *Yi Jing* has historical pride of place in this project.[41] The classic needs recovery and rectification so that the idea at its heart can once again inspire the reverence and wonder it roused for so long for so in so many people in so many

Chinese traditions. That will take some doing. Though I have argued the need for rectification, the classic must be credited with launching an approach to nature that is important and plausible and that no thinker in European or American traditions ventured until recent times. This is the idea that the genuine metaphysical primitives are supercommon forms of activity that go to compose all phenomena: physical, biotic, experiential, symbolic, cognitive, and otherwise. Knowing these forms can put us in touch with real fundaments of nature. Indeed, meditative appreciation of these supercommon forms is an ultimate terminus of knowing. Orienting our practice to these principles can help us to adjust more spontaneously and appropriately to the changes we encounter in life. Therefore, thinking and practice share common root principles. On these points—if only on these points—the *Yi Jing* got it remarkably right.

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Endnotes

1. Peirce, notoriously, began after 1905 to speak of his own work as "pragmaticism" to distinguish it from what Dewey and (especially) James and others were doing. "Pragmatism" here includes pragmaticism.
2. See Joseph Needham, *Science and Civilization in China*, vol. II (Cambridge: Cambridge University Press, 1956).
3. There is a large literature about the meaning of "rectification" and whether it implies anything about truth. Roger Ames and Chad Hansen and others insist that it has no consequences for truth in any metaphysically loaded sense of that term. I endorse the view of May Sim, who generously credits me on this point. See May Sim, "Ritual and Realism in Early Chinese Science," *Journal of Chinese Philosophy* 29, no. 4 (2002): 495–517; and *From Master to Master* (New York: Cambridge University Press, 2006), chap. 3.
4. Speaking as an unapologetic metaphysician with an interest in theory of meaning, value, and interpretation, I find the work of Chung-ying Cheng exemplary in this regard. See, for instance, Chung-ying Cheng, "Philosophy of the *Yijing*: Insights into *Taiji* and *Dao* as Wisdom of Life," *Journal of Chinese Philosophy* 33, no. 3 (2006): 323–33; and "Inquiring into the Primary Model: *Yi Jing* and the Onto-Hermeneutical Tradition," *Journal of Chinese Philosophy* 30, nos. 3–4 (2003): 289–312. Needless to say, I do have disagreements with him, some of which will be noted in due course.
5. See my "The Generation and Destruction of Categories," in *Categories: Historical and Systematic Essays*, ed. Michael Gorman and Jonathan Sanford (Washington, D.C.: Catholic University of America Press, 2004), 238–67; "Wittgenstein and Philosophical Signification" (PhD diss., Vanderbilt University, 1991); and "Platonism in the Means of Construction" (paper presented at the 1998 Meeting of the Central Division of the American Philosophical Association and 1998 Meeting of the World Congress of Philosophy, August 10–16, Boston).

6. Carl Jung suggested that a randomizing procedure combined with highly general, psychologically relevant ideas can elicit illumination from the unconscious mind. (See his foreword to the Bollingen edition of the *I Ching*, trans. Richard Wilhelm and C. F. Baynes [Princeton: Princeton University Press, 1967].) Graham suggests that the *Yi* is useful for divination because of its "free" or "unrestricted" correlation. This is, roughly, the idea that the system with the loosest connections is the system closest to chance. On my view, the advantage of divinizing with the *Yi* would be that one has not merely a random generator, but also a set of "supercommon" ideas that may help one to perceive likenesses and make connections across the most diverse domains. I do not want to endorse practices of prognostication, but rather to admit the psychological utility of certain maximally general ideas.

7. Inevitably, "metaphysics" is a contentious term. If it means reason's fruitless search for the unconditioned terminus to series of conditions of appearances, then surely the *Yi* is not metaphysics. If one means a mode of thinking that privileges "representation" and "presence" (and eventually, subjectivity and will), then again, not. If one means a science one degree more abstract than mathematics and two degrees more abstract than natural science, it is still a stretch. But if it means any study of first principles or basic categories or concepts that apply to everything, then this aspect of the *Yi* is metaphysics.

8. See A. C. Graham, *Disputers of the Dao* (La Salle: Open Court, 1989). For an alternative view, see Chung-ying Cheng, "Inquiring into the Primary Model," 299–303.

9. I argue against blurring the difference between natural generativity, emergence, and human creativity, using some work of Roger Ames, in "Creativity: A Telling Transition" (paper delivered before the 2003 Meeting of the Society for Asian and Comparative Philosophy, May 27–29, Asimolar, CA).

10. Or it may be that this sequence describes a generation rule for producing the series of diagrams; that is, it may be merely a meta-symbolic rule, or rule of syntax, in which the names are mentioned but not semantically used.

11. Graham, *Disputers of the Dao*, 362.

12. That is, these terms are not *automatically* privileged in their *metaphysical* meaning. How this culture might be so alert to correlativity, coordination, equalization, balance, and equal prioritization in metaphysics, and so one-sided and patriarchal in practice is a nice question.

13. See DeMarco, "Generation and Destruction of Categories."

14. Chung-ying Cheng, "Inquiring into the Primary Model," 296.

15. Ibid., 297.

16. Take a scientific case as an analogy. Say I have compiled a list of ninety natural chemical elements and I have relied upon a structure for those ninety; perhaps I am a Trinitarian and take three times three to be of importance and so the table must be in multiples of nine, the number of perfection. Say I believe I have discovered a 91st natural element and then a 92nd. Since I have made a fetish of the structure, I believe I *must* move to a chart of ninety-nine, or worse, 180. This last seems an apt analogy for what Chung-ying Cheng requires. Welding content too tightly to the a priori structure leads to implausibilities.

17. I also lean heavily on the language of form. A number of authors have connected the forms of change in the *Yi* with Platonism. Leibniz and Father Bouvet spoke of Plato and Pythagoras in reference to the *Yi* (see Franklin Perkins, *Leibniz and China: A Commerce of Light* [Cambridge: Cambridge University Press, 2004]). In more recent times, Yu-Lan Feng and Wing-Tsit Chan have made the connection. Even Graham, who declares that there is "no place for universals" here, admits that the comparison with Platonic forms has point. The primary disanalogy with Platonic forms is that the changeless forms of change are not species or properties or proposition correlates but, as I render them, forms of *activity*.

18. This is my understanding of the Dao. It has in its favor a clear-cut alliance of actuality and normativity that makes the Dao neither into a mere ideal nor into a hegemon which ensures that everything is always actually harmonious and easy.

19. Chung-ying Cheng argues that even with characters that seem at best metaphorically connected with nonhuman nature, one can find a naturalistic meaning in virtue of the

structure of the character itself. For example, he (e-mail message to the author, September 30, 2008) uses the example of *guimei* whose character 帰妹 depicts thunder over lake. He offers this as evidence against my claim that many of the characters of the *Yi* are insufficiently literal across human and nonhuman domains, as the rectification requires, since the elements of the compound character *do* refer to nature. This really does not help, however. If I may be forgiven a tendentious example, the fact that "fairy" (*xianzi* 仙子) has a mountain in its character does not mean that "fairies" exist or that the character as a whole is true or nature-referring. Hence, this gambit is insufficient for my purpose, though it may well be sufficient for his.

20. I say more about figurative language in light of the transformative acts in chapter 4 of "Wittgenstein and Philosophical Signification," and "Imagination, Reason, and Reality" (in preparation).

21. See Yu-Lan Feng's *Short History* (New York: Free Press, 1997), 168–69, for an alternative translation.

22. Chung-ying Cheng, "Inquiring into the Primary Model," 298.

23. There are three main characters for change at stake: *yi* 易, *bian* 变, and *hua* 化. *Bian* may be used to refer to seasonal and calendar changes, while *hua* is used to refer to atmospheric phenomena such as rain and thunder and wind. Change is variation in general, *bianhua* 变化 but change is also the *bian* of *gaibian* 改變 and *zhuanbian* 转变: a turning or shifting. *Bian* may be incidental alteration, as when we alter a shirt, or say to a friend "You've changed!" without any implication that she has changed into something *else*. *Hua* may imply conversion or influence, or transformation, as when we say that ice changes into water, or dough into bread. The term *yi* may mean change in general but often it connotes ease of movement and simplicity of adjustment, which is a "flow" idea (the *yi* of *rongyi* 容易). It may also suggest persistence of pattern, constancy, or invariability. Scholars wrangle over which is meant in the text, or, if all are meant, which is primary among the three. I see no reason to take sides; indeed transformation, ease, and constancy combine naturally in the recommended approach.

24. I worry about these symmetries for roughly Whiteheadian reasons. Similar concerns are voiced in reference to some Buddhist thought by Steve Odin. See *Process Metaphysics and Hua-Yen Buddhism: A Critical Study of Cumulative Penetration vs. Interpenetration* (Albany: State University of New York Press, 1982). These worries are elaborated in my claim, below, that (time- and content-asymmetric) evolutionary considerations are needed to supplement the account of change in the *Yi*.

25. See Joseph S. Wu, "Causality: Confucianism and Pragmatism," *Philosophy East and West* 25, no. 1 (1975): 13–22.

26. I do not agree with Gale that Dewey's claims about the generic traits of existence are the result of a "mystical" postulation; they are not even the result of a transcendental argument about what the world must be like in order that inquiry be possible. See Richard M. Gale, "The Metaphysics of John Dewey," *Transactions of the Charles S. Peirce Society: A Quarterly Journal in American Philosophy* 38, no. 4 (2002): 477–519. Shook is closer to the mark. See John Shook, "Dewey's Empirical Naturalism and Pragmatic Metaphysics," *Transactions of the Charles S. Peirce Society: A Quarterly Journal in American Philosophy* 40, no. 4 (2004): 731–42, in which Shook correctly describes Dewey's generic traits as obtaining equally in experience (or culture) and nature, and suggests that they are features of observable pattern.

27. According to Dewey, the known object is a fresh product with new functions, new relations, and a new significance that makes it more useful (i.e., more intelligible and controllable) in the web of human life. Since the act of knowing reconstructs the object—at least its meaning and use for us—then any philosophical attempt to read this eventual object back into nature as it exists apart from human involvements is naïve.

28. I follow Sleeper in taking Dewey's *Logic* to present logical operations instrumentally as having no ontological import. See R. W. Sleeper, *The Necessity of Pragmatism* (New Haven: Yale University Press, 1986). There are no logical objects for Dewey. I say more about this in "Questions between Deconstruction and Reconstruction" (paper presented before the 1999 Meeting of the Metaphysical Society of America at Boston College, Boston).

29. John Dewey, *Experience and Nature*, rev. ed. (La Salle: Open Court, 1986).
30. John Dewey, *Logic: The Theory of Inquiry* (New York: Holt, Rinehart and Winston, 1938).
31. It is not consistent with Dewey's insistence that the constancy of such operations precludes their referring to real existence, or with his diagnosis of this sense of constancy. When we isolate an operative function in our minds, it seems to be just itself as itself, iteratively, forever, but this is an illusion. See John Dewey, *The Quest for Certainty* (New York: Putnam, 1980), 130; and Dewey, *Logic*, 408. Dewey is thinking of logical operation, but I believe he would apply the diagnosis to my claim.
32. I say more about this in "Fields, Environments, Contexts" (paper presented before the 2002 Meeting of the International Institute for Field-Being at the Eastern Division of the American Philosophical Association, December 2002, Philadelphia).
33. Peirce argued that laws of nature evolved and are evolving. Laws have no reason for being unless they are capable of such development. See Charles Hartshorne and Paul Weiss, *The Collected Papers of Charles Sanders Peirce* (Cambridge: Harvard University Press, 1931–35), 1.348 [1903]. This reason-for-being is ethical and ultimately aesthetic.
34. Critics of Peircean continuity need to remember that synechism is about habits. (Peirce hears the "echein" in synechism.) For Peirce, individuals are temporary habits of nature; laws too are habits that evolve; the master law of the universe is the tendency to take on habits that spread and generalize. This cosmic tendency involves real randomness because of infinitesimals, and real generality because of a disposition to purposive growth. Synechism is hence the "one law of mind." Mind in this sense runs the universe since the law that governs habit-taking and habit-spreading is the law of all—even matter is mind "hidebound with habits." Thanks to the synechism, intellect is *continuous* with feeling, and culture (signs and symbols) *continuous* with nature. James to the contrary, Peircean continuity does not run everything together, since it is only modally that everything is continuous. Actualities are continuous with each other not because they fail of resistance or insistence but because of the common necessities grounding them and the mantle of possibility surrounding and permeating them. Peircean continuity above all is a principle of modal intercalation. Because law, actuality, and possibility involve continuity each in its own way, all things swim in a continuum of indeterminacy and uncertainty according to Peirce. Fallibilism and the impossibility of total inexplicability are hence *consequences* of the synechism.
35. Dewey was notorious for misunderstandings of Peirce. See, for instance, "The Pragmatism of Peirce," *Middle Works* (Carbondale: Southern Illinois Press, 1976 [1916]), 10:71ff. which, as Sleeper notes (Necessity, 222), reads his own view into Peirce in part by entirely neglecting the synechism. My belief is that after having worked out the details of his later *Logic*, Dewey came to understand Peirce better and to have more of an appreciation of him, not least because the *Logic* is so close to Peirce in signal respects.
36. John Dewey, "Peirce's Theory of Linguistic Signs, Thought, and Meaning," *The Journal of Philosophy* 43, no. 4 (1946): 85–95, at 91–92.
37. In reference to Peirce's categories, a sign is a first that stands in a triadic relation to a second in such a way as to be capable of determining a third. The determination allows that third—the interpretant—to stand in the same relation, or even a more adequate relation, to the same object. As "third," an interpretant (emotional, energetic, or final) is capable of determining a third of its own and so on for interpretants without end. Moreover, as third it is capable of having the *relation* of the sign to its object(s) as *its* object. Hence, it is capable of determining a third to *this* relation and so on without end: Thus the endlessness *and* endwardness of Peircean semiosis.
38. In "Wittgenstein and Philosophical Signification," I argue that the formative acts function as "signitive operations" in "Philosophical Semiotic" (paper presented before the 1993 Meeting of the Society for the Advancement of American Philosophy, March 1993, Vanderbilt University, Nashville); these operations usefully supplement Peircean semiotic. A focus on structure leads us to patterns of inclusion and exclusion, forking and branching, nesting and embedding, and so on issuing in tree structures, radial structures, webs, etc., in our patterns of signs. A focus on operations takes us

rather to a "general form of signification." Here I wish merely to suggest in a very preliminary way how a general theory of signs might add something to Chinese thought *and* how the *Yi* can supplement such a theory. The bridge is the idea that the forms of activity in a rectified *Yi* function as mental operations that we use to articulate signs of all kinds.

39. In "Generation and Destruction of Categories," I make brief remarks on Martin Heidegger, Nelson Goodman, Wolfgang Köhler, Gregory Bateson, and René Thom as thinkers who have invoked some selection of the forms of activity under one or another construal, none of which I find adequate.

40. In "The Form of the Good: An Update" (paper presented before the 1991 Mountain-Plains Philosophical Conference, Colorado State University, Fort Collins, Fall 1991), and "Attractors to the Good" (paper presented before the 2006 Meeting of the Metaphysical Society of America, University of Southern Maine, Portland, March 2006) now in revision for publication, I elaborate the implicit normativity of the primitive principles, which account for the structural, functional, normative, and ideal attractors that define norms for the respective forms.

41. This may seem, again, presumptuous, not least because the criteria of selection come from an external source (the author's favored metaphysic) rather than from the classic itself. Still, somewhat sheepishly, I admit that it was only after nearly two decades of claiming originality for the idea of "elementary acts of nature" common to mind and nature and theory and practice that I realized—at first to my chagrin and then to my amusement—that this may be among the *oldest* ideas in philosophy.