

On Selves and Selfless Discourse

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There is a deep and underlying tension between two equally essential discourses within Indian Buddhist thought, a tension paralleled to a certain extent in psychology and cognitive science as well. One discourse treats the *person* as the autonomous agent of his or her own actions, of karma, and by implication the effective subject of samsara as well as the crucial locus of self-transformation. The second discourse treats even psychological processes as an *impersonal* play of cause and effect and denies the ultimate reality of any agent or subject, which is considered at best either a convenient fiction, as in cognitive science, or at worst the core illusion that keeps one caught in the cycle of compulsory behavioral patterns (samsara), as in most Buddhist perspectives. Though distinct, these two discourses are also closely intertwined, for the second only aims to analyze and describe, theoretically, how cognitive and emotional processes impersonally arise in order to serve, pragmatically, the ameliorative aims of the first—the transformations that *persons* undergo in attaining understanding and freedom from cognitive obscurations and emotional obsessions. Indian Buddhist traditions distinguish these distinct kinds of discourse by the theory of two-truths: *conventional* truths that pragmatically acknowledge and work with notions of persons and things, and the *ultimate* truth that disavows their reality.

This distinction between the two truths in Indian Buddhism—between the personal and impersonal forms of discourse—is essential not only for understanding how Buddhists can analyze personal experience without positing an inherent subject as the enduring locus of that experience, it is also essential for elucidating both where and to what degree Buddhist thought and practice is commensurate with various Western ways of thinking and working with mind, such as psychoanalysis and cognitive science—the two areas most often compared with Buddhism. This distinction clarifies both the challenges and promises of engaging Buddhist ideas and practices with our thoroughly ‘psychologized’ culture. It also sheds interesting, and I believe essential, light on the current and seemingly interminable debates in the West regarding the status of a self in Buddhism. To exemplify all these points, I will briefly outline my own evolving understanding of Indian Buddhist concepts of consciousness (*vijñāna*) in general and the Yogacara notion of unconscious mind (*ālaya-vijñāna*) in particular, noting where they are

similar to or different from psychoanalytic concepts of the unconscious and more modern notions of a ‘cognitive unconscious.’ Ultimately, I will note the advantages of traditional Buddhist modes of analyzing mental processes for bridging both the personal and impersonal discourses of mind.

At the outset of my studies I found it useful to consider the conception of *ālaya-vijñāna* in comparison with Freud’s and Jung’s conceptions of the unconscious, which were similar enough to help, heuristically, in introducing the concept of *ālaya-vijñāna* to Western audiences.¹ I gradually became dissatisfied, however, with the implicit subjectivism informing depth psychology’s conception of the self, for I sensed that the homunculus, “the little man within,” had not disappeared so much as withdrawn. I realized that depth psychology’s conceptions of unconscious mind were unsuitable for expressing the deeply impersonal view of experience, the utter absence of any experiencing subject, that is favored by so much of Indian Buddhism. This aspect of Indian Buddhist thought, I increasingly found, was more easily expressed, again heuristically, by reference to cognitive science, which relies upon the typically impersonal discourse of natural laws rather than the personal discourse of intentional agents.² Cognitive science, though, has its own limitations. It tends to throw the baby out with the bath water, expunging in its impersonal approach the very sense of experience—concrete, immediate, human experience—that it set out to explain in the first place. Thus, like depth psychology, cognitive science also seemed inadequate for conveying *both* the impersonality of Buddhist discourse *and* its essential ameliorative aim: that one seeks to understand how mind works in order to alleviate human ignorance and suffering. In short, there is no current Western discourse, as far as I know,³ that adequately expresses the distinct yet delicate balance that Indian Buddhist thought has forged between personal and impersonal forms of discourse. This absence alone recommends our serious consideration of Buddhist causal discourses.

The notion of *ālaya-vijñāna*, a “store-house” or “home” consciousness, serves as a useful example for this investigation since it is a theory of unconscious mental processes that is described in decidedly impersonal Buddhist terms, yet developed within a context of religious practice (*yogācāra*) explicitly aimed toward the amelioration of suffering. And since it shares more than a passing resemblance to Western notions of unconscious mental processes, it should be of considerable interest to psychotherapists in its own right.

Comparing Conceptions of Unconscious Mind

It is readily apparent why *ālaya-vijñāna* is compared with depth psychology’s notions of unconscious mental processes, of mental processes operating outside of or below our conscious

awareness. Both of these concepts address questions concerning the continuity and influence of underlying mental processes, such as memory and dispositions, that had become problematic within their own philosophical milieus—Abhidharmic analysis and Cartesian subjectivity, respectively. Both of these milieus tended to equate consciousness with immediate awareness,⁴ a narrow conception of consciousness that made it difficult to explain many ordinary mental processes, such as memory and language, as well as extraordinary ones such as hypnotic and meditative trances. How, after all, could we account for the processes subserving learning, memory, or the continuity of one's dispositions if we had to be constantly aware of them?⁵ How, indeed, could we even function if we were? Such considerations were only exacerbated by the radical *discontinuities* in conscious awareness experienced in hypnosis and meditative cessation, interruptions that were cited by psychoanalysts and Indian Buddhists, respectively.⁶ As a consequence, conceptions of continuous yet *unconscious* mental processes arose in both traditions as obvious responses to, as well as natural corollaries with, conceptions of consciousness as necessarily accompanied by immediate awareness.

It was further inferred that unconscious processes must be continuously influencing all conscious ones, even ordinary sense perception, albeit mostly without our knowing it.⁷ Who, for example, could possibly be consciously aware of the underlying processes by which the disparate visual stimuli that impact upon countless retinal rods and cones are processed in multiple areas throughout the brain and synthesized into recognizable forms, processes that we now know are of mind-boggling complexity? Yet we effortlessly see, hear and touch all the time. What we are consciously aware of represents but the tip of the iceberg of all the mental processes that are necessary for even ordinary perception to occur. Both the Buddhist *ālaya-vijñāna* and the modern notion of unconscious mental processes were thus conceived as continuously underlying and influencing conscious mental processes, which in turn influence them—making all ordinary experience a product of an ongoing and inseparable interaction between conscious and unconscious processes.⁸

These unconscious processes thus constitute cognitive activities in their own right, and it is here that our two notions of unconscious mind begin to diverge. Among the unconscious cognitive activities, Buddhists and depth psychologists maintain, are most of the same processes that occur consciously. In the *Yogācārabhūmi*, a fifth-century Yogācāra text, *ālaya-vijñāna* is said to be accompanied by the same five 'mental factors' (*caitta*) that accompany every other moment of mind (*citta*) in the Yogācāra tradition: attention, sensation, feeling, perception, and intention.⁹ Seemingly similar, Jung also claims that unconscious processes replicate conscious ones in that they include "perception, thinking, feeling, volition, and intention, *just as though a*

subject were present” [emphasis added].¹⁰ This latter statement faithfully expresses, I believe, an implicit yet nearly inextricable assumption in most Western thinking: that underlying all experience, whether conscious or not, there must be a distinct subject, a real “someone,” who is the agent of action and the subject of experience.¹¹ This assumption, and the grammatical syntax in which it is enshrined and expressed, demarcate the boundary of useful comparisons between *ālaya-vijñāna* and depth psychology’s conception of unconscious mental processes (and perhaps, for that matter, between most Western and Indian Buddhist psychological discourses). For, we know, Indian Buddhists repeatedly rejected the reality of a substantive subject, an enduring locus of action and experience, considering it a pernicious fiction, a false view (*satkāyadr̥ṣṭi*) that binds beings to the vicious cycle of repetitive behavior patterns (*saṃsāra*) that must therefore be overcome in order to see things as they truly become (*yātham bhūtam*). How, then, in Indian Buddhist terms, do things become? How is there experience without an experiencer?

Impersonal Discourse: Buddhism

For there is suffering, but none who suffers; Doing exists although there is no doer.

Extinction is but no extinguished person; Although there is a path, there is no goer.

*Visuddhimagga*¹²

Though many find the very idea of experience without an experiencer nearly incomprehensible, if not self-contradictory, this way of analyzing experience is arguably the most distinctive feature of Indian Buddhist discourse. It is clearly expressed in the form of analysis favored by the Buddha and generations of his followers,¹³ that of dependent arising:

When this is, that comes to be; with the arising of this, that arises. When this is not, that does not come to be; with the cessation of this, that ceases.¹⁴

Consciousness or cognitive awareness (*vijñāna*) is also analyzed in this way: “Visual cognitive awareness arises dependent on the eye and visible form.”¹⁵ More specifically, a moment of cognitive awareness (*vijñāna*) occurs when an object appears in its appropriate sense field, impinging upon its respective sense organ, and attention is present.

Note the syntax here. In contrast to most uses of the term, East or West, consciousness in these Buddhist formulations is not an active faculty. It is definitely *not*, as Bertrand Russell defines it, “the mental act of apprehending the thing.”¹⁶ As Vasubandhu explicitly states in his *Abhidharma-kośa*:

The *Sūtra* teaches: “By reason of the organ of sight and of visible matter there arises the visual consciousness”: there is not there either an organ that sees, or visible matter that is seen; there is not there any action of seeing, nor any agent that sees; this is only a play of cause and effect. In the light of [common] practice, one speaks, metaphorically, of this process: “The eye sees, and the consciousness discerns.” But one should not cling to these metaphors.¹⁷

To cling to the “metaphors” of agents and actions—as if consciousness were an agent that acts rather than a process that happens—would miss the point. To interpret *viññāna* as an *act* of cognition rather than an *occurrence* of cognitive awareness ignores the syntax of dependent arising, the mode of analyzing awareness favored by the Buddha and his Abhidharmic successors, including the Yogācāra with their concept of *ālaya-viññāna*, as we shall see. While this is by no means the only kind of psychological discourse in Indian Buddhism, it was widely considered, in non-Mahāyāna circles at least, as the supreme or ultimate discourse (Skt. *paramārtha-satya*; Pāli *paramattha-desanā*) in contrast to which conventional talk of people, places, and things was considered expedient at best.¹⁸

The Buddhist dismissal of independent agents and autonomous selves is therefore not so much a proposition about the world as a consequence of its mode of analysis: How do things come to be? Conditioned by what does suffering arise? Conditioned by what does suffering cease?¹⁹ This is all the more obvious when we consider a similar impersonal syntax, and its corollary eschewal of causal agents and experiencing subjects, in modern science.

Impersonal Discourse: Science

Despite the apparent opacity of this approach, we should note that most modern people already think in such impersonal terms in certain contexts: scientific accounts of causality eschew anthropomorphic agents as a matter of course. Pedagogy aside, phenomena that involve physics, chemistry, or even the biological reactions involved in digestion or perception are not analyzed in terms of active agents or directing subjects: masses do not decide to collide, molecules do not choose to cohere, and neural networks do not conspire to fire. Rather, these processes are understood as complex yet predictable results of interactions that occur naturally and automatically, by themselves.

One of the consequences of analyzing human beings in terms of impersonal causality is that it leads scientists to question the very notion of a “unified, freely acting agent.”²⁰ Many cognitive scientists, such as Lakoff and Johnson, reject the assumption that “there is always a

Subject that is the locus of reason and that metaphorically has an existence independent of the body,” on the grounds that “this contradicts the fundamental findings of cognitive science.”²¹ I have therefore found it expedient to use the perspectives, concepts, and syntax of science to convey Buddhist analyses of mind to modern audiences.²² It is a ready-made bridge that avoids certain kinds of misunderstandings.

This “unified, freely acting agent,” though, is not denied because it is difficult to detect, as if all we needed were better or more sensitive tools. It is rejected because it is both unnecessary to and incompatible with an analytical approach that asks *how* things come to be rather than *what* they are. That is, most current scientific approaches to mind, like that of most Buddhists, refrain from positing any central directing agency or experiencing subject, first, because the causal functions commonly attributed to it are considered sufficiently explained by naturally occurring causal patterns, and second, because unchanging or substantive selves cannot play any effective *causal* role within a syntax, an analytic discourse, that focuses upon occurrences rather than agents.²³

These points are clearly seen in the arising of cognitive awareness, which occurs as a result of a multiplicity of conditions,²⁴ no single one of which has the capacity to either unilaterally determine or entirely encompass the form and range of such experience. The analysis of color perception well illustrates this interactionist approach. “Color concepts are ‘interactional’;” according to Lakoff and Johnson,

they arise from the interactions of our bodies, our brains, the reflective properties of objects, and electromagnetic radiation. Colors are not objective; there is in the grass or the sky no greenness or blueness independent of retinas, color cones, neural circuitry, and brains. Nor are colors purely subjective; they are neither a figment of our imaginations nor spontaneous creations of our brains. . . . Rather, color is a function of the world and our biology interacting.²⁵

This mode of analysis not only forsakes active agents. It also avoids both an uncritical realism which assumes an external world independent of an experiencing subject, as well as an idealistic subjectivism which assumes an internal subject independent of experienced objects. This approach, which sees the arising of phenomena as a result of the interaction of multiple conditions, comes surprisingly close to the Buddhist analysis of dependent arising.

This “phenomenological” approach also suggests that the discussion of whether or not there is a self in Indian Buddhism misses a crucial philosophical point: that an analysis of the

interactive arising of experience precludes *by virtue of its syntax alone* any meaningful reference to an unchanging, substantive self.²⁶ Such a self is neither an object of experience nor an entity expressible in terms of dependent arising—since if it were *truly* unchanging it could neither act nor experience, which are temporal occurrences. And since this mode of analysis precludes any causal role for an unchanging, substantive self, to discuss such a self sidesteps the favored form of Indian Buddhist discourse, that of dependent arising.²⁷ And it is favored, we must add, for traditionally practical reasons: as Nāgārjuna explains, “whoever sees dependent arising also sees suffering and its arising and its cessation as well as the path”.²⁸

Exemplifying Dependent Arising: Ālaya-vijñāna

All this though is still propaedeutic, that is, it prepares the ground for more constructive proposals. It behooves us now to demonstrate how experience may be analyzed in such strictly impersonal terms. How, in other words, does our human experience, with all its personal, social, and cultural complexity, actually arise as the mere “play of cause and effect,” bereft of any active agent or experiencing subject? As mentioned above, the favored method of analyzing mind, particularly in non-Mahāyāna Buddhism, was to specify the causes and conditions in dependence upon which consciousness and its associated processes occur. We suggest that it is precisely this *mode of analysis* that, as with our color example above, is able to encompass both the subjective and objective, the individual and the social, without falling back upon the implicit subjectivism of much of modern psychology, on the one hand, nor negating the importance of living, human experience, on the other. As we shall see, this mode of analysis provided Indian Buddhists with the analytic ability to encompass ever enlarging circles of conditioning influences, while still retaining its originating inspiration: it is liberating to see things in terms of their conditioned arising, their impersonal “play of cause and effect.”²⁹

As we have seen, in this mode of analysis consciousness or cognitive awareness (*vijñāna*) is said to arise in concomitance with attention, an unimpaired faculty and its correlative object.³⁰ Cognitive awareness itself is thus neither an act nor a faculty that cognizes;³¹ in Abhidharma terms it is a natural result (*vipāka*) which occurs depending upon appropriate conditions. Although more active mental processes such as attention (*manasikāra*), apperception or recognition (*saṃjñā*), intention (*cetanā*), feeling (*vedanā*), etc. often accompany the arising of cognitive awareness,³² they are not that awareness itself, they are only its concomitants. Moreover, as with the analysis of color above, cognitive awareness is neither purely subjective, for it always requires some kind of object, nor is it wholly determined by those objects, since it equally depends upon the specific faculties of a living organism. It is thus neither an exact

reflection of objective reality, as realists contend, nor the unilateral projection of an independent “mind,” as idealists assert. Rather, awareness is “a function of the world and our biology interacting,” a correlation neatly captured in the expression “visible object.” What else could we see? Cognitive awareness is thus a phenomenon that only arises at the *interface*, the concomitance, of a sense faculty and its correlative object.

This correlation between faculties and objects also underlies the basic understanding of the “world” (*loka*) in Indian Buddhism, which from early on was clearly conceived in relation to human activity, to karma.³³ As the Buddha states in several Pāli texts, “The world (*loka*) has arisen through the six senses [the five sense-modalities and mind],” and “it is in this fathom-long body with its perceptions and thoughts that there is the world, the origin of the world, the cessation of the world, and the path leading to the cessation of the world” [i.e. the four Noble Truths].³⁴ As with the arising of consciousness, a “world” is specifically defined in relation to the faculties and activities of the beings who live in it.³⁵ Like a visible object, the world we live in is an “experienceable world,” inseparable from our experience of it.

This opens the door to a temporal dimension to the arising of the world: if a “world” is defined in relation to the faculties of living beings, then that world changes as those faculties change. And beings’ faculties change and develop over time, like habits, through recurrent interaction with their physical and social environments. The “experienced world” then gradually develops, in both Buddhist and evolutionary thought, in correlation with the “circle of positive feedback” that occurs between forms of cognitive awareness and their accompanying feelings,³⁶ the afflictive activities (the karma) these feelings tend to elicit, and their accumulating psychological and physiological results.³⁷ As Vasubandhu states in the *Abhidharma-kośa*:

It was said³⁸ that the world (*loka*) in its variety arises from action (*karma*). These actions accumulate by the power of the latent afflictions (*anuśaya*); without the latent afflictions [actions] are not capable of giving rise to a new existence.³⁹

In this perspective, our world arises in correlation with our gradually evolving capacities to experience it, which are in turn the result of reciprocally reinforcing patterns of interaction between a number of processes—actions, the afflictions, and their results⁴⁰—not from the causal influences of any single factor.

Note that this analysis has not departed from the impersonal syntax of the dependence arising. It has merely added a temporal dimension by describing how specific “worlds” have come to be in correlation with the coming-to-be of specific kinds of beings. It suggests how the

gradual building up of complex cognitive structures in relation to specific environments, giving rise to a specific world, can come about without reference to any truly independent agency, whether external or internal. It further adumbrates, as we shall see, how we could also conceive of the evolution of cognitively complex worlds, such as our distinctively human world which is dependent upon language and culture, without reference to any unilateral causal agency, whether social or genetic (and thereby avoiding two common forms of modern determinism).⁴¹

These extensions of dependent arising—the relation between forms of cognitive awareness and their correlative worlds, and the gradual evolution of these worlds through processes of circular causality—enabled Indian Buddhists to analyze some of the deepest conditions of human experience without positing substantive experiencing subjects or autonomous active agents. It thus avoids many of the problems plaguing modern thinking, with its vestiges of substances, selves, and essences still entrenched in everyday language.

These points are epitomized in the arising of subliminal awareness (*ālaya-vijñāna*).⁴² Although it appears to depart from earlier Buddhist ideas, it is no more an experiencer, agent, or substantive subject than cognitive awareness is in other Buddhist models. In fact, this “*ālaya*” awareness retains all the characteristics of (*vijñāna*) mentioned above, while adding several others: (1) it is still a resultant (*vipāka*) awareness that (2) “develops and increases” through the accumulating processes of cyclic causality; yet (3) it arises subliminally, that is, below the threshold of conscious awareness, (4) occurring “continuously in a stream of instants”⁴³ (5) depending upon two traditional conditions, the sense faculties and their correlative sense objects, (6) which are now explicitly augmented by the influences of linguistic and cultural experience; and (7) dependent upon these subtle conditioning factors, it arises in regard to a new kind of correlative object: as “an outward perception of the receptacle world whose aspects are indistinct” (*bahirdhā-aparicchinnākāra-bhājana-vijñapti*).⁴⁴

Most of these characteristics are summarized in a short passage from the *Samdhinirmocana Sūtra*, an important text from the second to third centuries C.E.:

In cyclic existence with its six destinies (*gati*), such and such beings are born as such and such a type of being. They come into existence (*abhinirvṛtti*) and arise (*utpadyante*) in the womb of beings. . . .

There, at first, the mind with all the seeds (*sarvabījakam cittam*, a synonym of *ālaya-vijñāna*) matures, congeals, grows, develops, and increases⁴⁵ based upon the two-fold substratum (*upādāna*), that is,

(1) the substratum of the material sense faculties along with their supports

(*sādhiṣṭhāna-rūpīndriya-upādāna*),

(2) and the substratum which consists of the predispositions toward conceptual proliferation in terms of conventional usage of images, names, and conceptualizations.⁴⁶

In short, this form of “subtle” (*sūkṣma*) cognitive awareness (*ālaya-vijñāna*) continuously arises based upon both the living sense faculties and the predispositions or impressions instilled by past linguistic experience, conceptualization, naming, and the like, in correlation with an “indistinct external world.” All of this, however, occurs outside of or below the threshold of conscious awareness, that is, subliminally. *Ālaya* awareness represents, in short, a fully developed yet still deeply impersonal mode of unconscious mentality, based upon which all conscious processes arise.⁴⁷

Language and Consciousness

This inclusion of the influences of language at the subliminal basis of human awareness opens this mode of analysis to influences from our wider social and cultural worlds, that is, to an unbounded arena of intersubjectivity without, we must stress, abrogating the syntax of dependent arising. This intersubjective yet unconscious “arising of the world” comes into being through the interaction of living beings in conjunction with their physical and social environments.

Commenting on the expression “predispositions of speech” (*abhilāpa-vāsanā*), the commentator to Asanga’s fifth-century C.E., Yogācāra text, the *Mahāyāna-saṃgraha*, explains that conscious awareness (*vijñāna*) arises in regard to expressions of selves (*ātman*) and phenomena (*dharma*) due to the special power (*śakti-viśeṣa*) of the predispositions or impressions (*vāsanā*) of conventional expressions (*vyavahāra*)⁴⁸—predispositions, we have seen, that are one of the conditions for the arising of unconscious awareness. (Notice that we do not say: “predispositions existing *within the* unconscious/*ālaya-vijñāna*,” a spatial metaphor that is incommensurate with the dependent arising of *ālaya-vijñāna*.) In other words, the conventional expressions of everyday speech (*vyavahāra*) which delineate a “world” of endless objects and categories, subtly and similarly influence how conscious awareness of those objects and categories arises. They are subtle because the use of language relies upon gradually reinforced habits that, once acquired, operate primarily outside of conscious awareness. And they are similar because human consciousness is similarly influenced by similar linguistic categories—and language could not work if these influences were not similar, if we did not similarly understand words like “cup” or “Careful!” These linguistic influences, of course, only operate intersubjectively, at the interface between faces, since we only learn, use, and understand

language through interaction with one another.⁴⁹

The texts further suggest that insofar as unconscious awareness (*ālaya-vijñāna*) arises conditioned by the subtle yet common influences of language, then—since cognitive faculties and “worlds” are correlative—such awareness arises not only in regard to a world whose “aspects are indistinct,” but also to a world that we largely share in common. Accordingly, Asanga states in the *Mahāyāna-saṃgraha* I.60:

The common [dimension of unconscious awareness (*ālaya-vijñāna*)] is the seed of the shared-world (*bhājana-loka*). The uncommon [dimension of unconscious awareness] is the seed of the individual sense-spheres (*prātyātmikāyatana*).

The commentary elaborates:

[The statement:] “The common [dimension of unconscious awareness] is the seed of the shared-world” means that it is the cause (*kāraṇa-hetu*) of perceptions (*vijñapti*) which appear as the shared-world. It is common because these perceptions appear similarly to all who experience them through the power for results (*vipāka*) in accordance with their own similar karma.⁵⁰

In short, just as the world (*loka*) in its variety arises in accordance with the accumulated results of our activities, our *karma*, so our similar “shared world” arises in accordance with the accumulated results of our similar activities, our similar karma.⁵¹

And what makes these activities similar? Actions that are informed and instigated by similar conditions and similar intentions give rise, over the long term, to similar results, similar faculties, and hence, similar worlds. There would be no shared-world that beings experience similarly,⁵² one of the commentaries explains, without the similar conditions for such shared experience subliminally influencing conscious awareness, conditions represented here by the metaphor of seeds and the substratum of linguistic dispositions. What the texts are suggesting is that language has the special power (*śakti-viśeṣa*) to impart similar influences, due to which similar forms of unconscious awareness (*ālaya-vijñāna*) arise, based upon which perceptions of our shared-world “appear similarly.” In short, we all instinctively jump when someone yells “Fire!” Yogācāra analyses of mind thus consider the intersubjective yet subliminal influences of language as an inseparable aspect, the common aspect, of the arising of our shared-world.

Because this conception uses the particular Buddhist mode of analysis, in which

consciousness results from the interaction of causes and conditions, this model of unconscious mentality is able to easily encompass the influences of shared experiences such as language without recourse to such question-begging expressions as to “internalize this,” or to become “socialized into that”—expressions which imply that intersubjectivity occurs only *after the fact*, only incidental to some aboriginally isolated entity.⁵³ But since in this mode of analysis both interaction and (for humans) intersubjectivity are *constitutive of cognitive awareness in the first place*, language, culture, and social life are readily, indeed already, included in the conditions for the arising of consciousness. There is, in short, no subtle subject implicitly hiding in the shadows, hopelessly, solipsistically, sealed away and waiting, like Sleeping Beauty, for some Prince Charming to appear and waken her from her slumbers. The syntax of the dependent arising of subtle awareness suggests, by contrast, how enthralled we remain to the “ghost in the machine.”

Syntactic Considerations

Yet one may reasonably object that there is still something missing here. And that, somehow, is the “subject” of samsara, maybe not a substantive subject of experience or a truly active agent of perception, but the subject as the totality of the person, what Indian Buddhists call the ‘mental stream’ (*santāna*), which is thought to continue throughout this lifetime and into the next. Without reference to this larger frame—wherein identifiable “persons” are indeed stuck in samsara, actually do practice the *pāramitās*, and occasionally experience awakening—this acclaimed impersonal analysis of mind would be devoid of direction, meaning, or purpose. And *this*, it seems, marks the boundary of useful comparisons between Indian Buddhism and cognitive science. For while their modes of analysis and causal syntax may similarly preclude the postulation of substantive selves or souls, Buddhist analysis at least must still serve its larger soteriological goals.⁵⁴ For all the appeal and analytic power of its impersonal discourse, Buddhist analysis cannot exclude more personalist discourse altogether without simultaneously undermining the very aim of that analysis: the liberation of beings from the repetitive behavioral cycles called samsara.⁵⁵ Personalist discourse, in other words, however otherwise anathema to orthodox Buddhism, provides the indispensable context and articulates the underlying rationale for its impersonal, ultimate discourse, despite their apparent incommensurability.⁵⁶ This tension is reflected in the continuing Western debates over the role of self in Buddhism, epitomized in Jack Engler’s now classic quip: “you have to be somebody before you can be nobody”⁵⁷

This appeal to personalist discourse does not, as I once imagined, stem primarily from ill-advised attempts by well-intentioned Westerners to look for Buddhist affirmations of selfhood

where they cannot be found. Rather, it stems more deeply from the tensions between two equally essential ways of thinking about the relation between agency and causation. It reflects, in fact, much larger trends in classical Indian thought that articulate two diametrically opposed orientations: impersonal versus personal causal models and their corresponding forms of ideal syntax, philosophical justifications, and theological ramifications. I will only briefly outline these two trends, these two orientations, setting them in stark contrast. Such contrasts shed interesting light, I believe, on the ongoing dialogue between Indian Buddhist traditions and Western ways of using and adapting these traditions of understanding and working with mind.

The Sanskritist Edwin Gerow outlines the development of these alternative approaches within the grammatical, philosophical, and religious traditions of India in a densely detailed article entitled “What Is Karma (Kim Karmeti): An Exercise in Philosophical Semantics.”⁵⁸ He begins, of course, with Pāṇini:

For reasons that are never announced, but seem embedded in the syntactic possibilities of Sanskrit, not only are verbal ideas invariably twofold (semantically) but in any given sentence, one or the other must be given <<prominence>> (assertive or topical primordynacy). . . . We call these assertional alternatives active and passive voice. . . . neither is inherently primary in Pāṇinian syntax.⁵⁹

This “delicate optionality” gradually disappeared, Gerow avers,⁶⁰ as the evolving grammatical and philosophical schools took one or the other of these alternatives, the active or passive voice, as paradigmatic of Sanskrit sentences in particular and, by extension, of the structure of reality in general.

The influential school that coalesced around the newer ideas of Bhartṛhari (sixth century, C.E.) advocated the primacy of a very unusual grammatical paradigm, one that combined *both* the passive voice, in which the direct object (called the *karman* in Sanskrit grammar) replaces the active agent (the *kartṛ*) and appears in its stead in the nominative case (e.g., “the rice is cooked by Tanaka”), *and* the intransitive sentence, in which the direct object disappears altogether and its traditional role of marking the result (*phala*) of an action⁶¹ is subsumed by the verbal process (*vyāpāra*) itself⁶² (e.g., in “it rains” or “it happens,” “rains” or “happens” represent both the activity itself and its result).⁶³ These two grammatical forms are combined in the form of passive intransitive sentences where both the agent and the direct object are subsumed within the verbal process alone. The resulting sentences (and for Buddhists, nouns as well)⁶⁴ replace active agents with dummy agents, as in “it rains,”⁶⁵ and then drop the subject/agent altogether, yielding

the nearly unspeakable: “[it] happens.” In this way, Gerow concludes, “activity (*kriyā*) which is [equated with the object] *karman*, and not *karṭṛ* [the agent], is given the status of independent or first principle.”⁶⁶ For Bhartṛhari’s school then, “the <<passive>> impersonal has now become the normative mode of expression.”⁶⁷ And making the short leap, for Sanskritists, from grammar to worldview, Gerow concludes that “the [religious] notion of karma itself is indeed an inescapable function (and *result*) of the passivization or impersonalization of the Sanskrit sentence.”⁶⁸ The sentence, like reality, paradigmatically focuses on active processes alone, free of both agents and objects.

In Gerow’s analysis, these developments are exemplified by two Indian philosophical traditions in particular. The Advaita school, of which Bhartṛhari was an early proponent (a *śabdādvaita*), attributes our samsaric bondage to “an ontological confusion” which identifies worldly agency with ultimate consciousness. To overcome this false identity and thereby become liberated, one must philosophically “disassociate consciousness and agency,” extracting, as it were, the ultimately real agency (e.g., consciousness or *ātman*) from the merely apparent, worldly agency (*prakṛti*). As a result “[g]rammatically speaking, simple assertive propositions involving [real] personal agents are no longer possible” since “it is precisely the [real] <<agency>> of such propositions that has disappeared.”⁶⁹ What remain are either transitive sentences that lack real subjects, but are replaced by “dummy subjects,”⁷⁰ as in “*it* is raining,” or else intransitive sentences that designate only verbal processes, yielding “[it] happens.” In effect, “the <<grammatical>> problem for Advaita is neatly solved by making all sentences with real content <<passive>> (*karmani/bhāve*), in fact <<impersonal>>.”⁷¹

Pride of place for this “impersonalization of the Sanskrit sentence” is, as we would presume, preserved for the Buddhists:

It is likely the Bauddha śāstra that provides us with the most logically satisfying philosophy—one that is in complete accord with the new <<language>>. And this is done by simply . . . denying the need for any <<active>> sentence at all. . . . [since] for the Bauddha, there is *no agent*.⁷²

Gerow thus concludes, “This, it seems to me, is nearly an exact replica (in <<philosophical>> or <<metaphysical>> terms) of the position attributed to the grammarians and to Bhartṛhari,” who therefore “appears once again more kin to the Bauddha, than in fact to the standard (Hinduized) Advaita.”⁷³ In short, the impersonal causal discourse favored by the Buddhists represents an ideal expression of a systematically articulated grammatical/philosophical world view.

The Śaivite scholar David Lawrence, on the other hand, argues that this represents the extreme end of a broad range of Sanskritic grammatical-religious traditions.⁷⁴ He shows how the Kashmiri Śaivite traditions centered around the eleventh-century figure, Abhinavagupta, exemplify exactly the “opposite of the direction of thinking observed by Gerow,” in that they extol the agent at the expense of the object. This is expressed in a thoroughgoing idealism that, for its part, subsumes all the grammatical cases into that of the agent: “The Śaivas’ basic strategy is to reduce all the other categories . . . to the process (*vyāpāra*) of self-recognition internal to the subject/agent,” in this case the absolute agent, Śiva. Thus, in sharp contrast to Gerow’s Advaitan and Buddhist examples, “Abhinava states that some believe that the expression that does not mention the object is the most proper one.”⁷⁵

We have, then, two diametrically opposed ideal grammatical/philosophical discourses which underlie and inform radically divergent religious worldviews:⁷⁶ one in which action subsumes agency and, at times, even objects, and the other in which agency subsumes objects and, at times, even action.⁷⁷ Truly, as Gerow observes, echoing Wittgenstein: “we speak our philosophies along with our grammars.”⁷⁸

A Middle Way?

The existence of such extreme, and opposite, grammatical/philosophical discourses within Indian culture throws the varieties of Buddhist, scientific, and psychological discourses we have been discussing into some kind of relief. Indian Buddhist discussions of selves, like most scientific treatments, strongly favor impersonal discourse. This stems, perhaps, from a search for causal regularities in the world that, to be dependable and predictable, must operate universally, irrespective of differences in time, place, or person. An early *sutta*, for example, declares, “Whether Tathāgatas appear or do not appear, this nature of things continues, this relatedness of phenomena, this regularity of phenomena, this law of conditionality.”⁷⁹ But this is problematic because it requires us to use impersonal modes of analysis to understand, explain, and transform what appear to be personal modes of experience. For such modes of analysis to apply to our experience *as* persons, however, they have to be related to what (we at least imagine) we experience *as* persons. And even if this sense of personhood is ultimately unfounded, as the Buddhists and the cognitive scientists claim, it still remains one of our deepest dispositions and therefore needs to be acknowledged, worked with and understood.

This is one of the major problems with the current state of most cognitive science: it has not yet forged a language, a set of concepts with its associated causal syntax, that can successfully bridge these two distinct kinds of discourse.⁸⁰ Perhaps it will not be able to. Perhaps

the constraints of its impersonal causal syntax require that scientists continue to talk about the regularities of human behavior in ways that systematically exclude the dimension of personal experience, as if we indeed functioned like animals or, worse, like machines or computers.⁸¹ Most reductive explanations of human experience and culture, whether economic, scientific, sociological, or biological, eliminate the subject in a similarly systemic way, such that experience is not so much explained as explained away. We seem to face an unbridgeable gulf between the explanatory and interpretive disciplines.

The Buddhist mode of analysis couched in the syntax of dependent arising avoids these problems, in my estimation, precisely because its discourse is neither purely subjective nor wholly objective, but focuses rather upon awareness as a process of interaction: the consciousness that we directly experience arises with the coming together of the sense faculties *and* their correlative sense objects. The basic unit of Buddhist analysis, consciousness, thus *already* bridges what we typically call the subject and object, whose extreme separation results, among other things, in the opposite forms of discourse designated above as personal and impersonal. By literally changing the terms of the debate, Buddhist discourse suggests one possible way out of these conundrums.

This does not settle the complex question of the status of the self in Buddhism. It does suggest, though, that our questions about the relation between causality and human experience could be usefully couched in different ways. For, it is said, syntax speaks louder than words.

Notes

In the notes below, I have tried to provide abundant references for editions and translations of classical sources. For the sake of efficiency and organization, they are referenced according to the following abbreviations and conventions:

- A *Āṅguttara-Nikāya*. Nyanaponika Thera and Bhikkhu Bodhi, trans., *Numerical Discourses of the Buddha: An Anthology of Suttas from the Āṅguttara Nikāya* (Walnut Creek, CA: AltaMira Press, 1999).
- Abhidharmasamuccaya* Walpola Rahula, *Le Compendium de la Super-doctrine (Philosophie) (Abhidharmasamuccaya) D'Asanga* (Paris: Ecole Française d'Extrême-Orient, 1980).
- AKBh* *Abhidharmakośabhāṣya*. S. D. Shastri, ed. (Varanasi: Bauddha Bharati Series, 1981); Louis de de La Vallée Poussin, trans., *L'Abhidharmakośa de Vasubandhu* (Bruxelles: Institut Belge des Hautes Etudes Chinoises, 1981); Leo Pruden, trans., *Abhidharmakośa-bhāṣyam* (Berkeley: Asian Humanities Press, 1990) (English translation of Poussin's French translation). Cited by chapter, verse and page no.
- ASBH *Abhidharmasammucaya-bhāṣyam*. Tatia, Nathamala, ed. 1976. Patna: K. P.

	Jayaswal Research Institute.
Bh	Hsüan-tsang's Chinese trans. of Vasubandhu's <i>Mahāyāna-saṃgraha</i> , T.1597.
bh	Tibetan trans. of Vasubandhu's <i>Mahāyāna-saṃgraha-bhāṣya</i> , P.#5551; D.#4050.
BHSD	<i>Buddhist Hybrid Sanskrit Grammar and Dictionary</i> . Franklin Edgerton, comp. (1953; repr., Kyoto: Rinsen Book Co., 1985).
<i>Compendium</i>	<i>Compendium of Philosophy (Abhidhammattha-sangaha)</i> . S. Z. Aung, trans. (London: Pali Text Society, 1979); Nārada, trans., Bhikkhu Bodhi, rev., <i>A Comprehensive Manual of Abhidhamma</i> (Kandy: Buddhist Publication Society, 1993).
D	<i>Dīgha Nikāya</i> . L. Walshe, trans., <i>Thus Have I Heard</i> (Boston: Wisdom Books, 1987); <i>Dīgha Nikāya</i> (1890–1911); T. W. Rhys-Davids and C. A. F. Rhys-Davids, trans., <i>Dialogues of the Buddha</i> (London: Pali Text Society, 1899–1921).
D. #	Derge edition of the Tibetan Tripitaka.
<i>Dharmadharmatā-vibhāga-vṛtti</i>	Vasubandhu's commentary on the <i>Dharmadharmatā-vibhāga</i> (P.#5529; D, #4028), attributed to Maitreya. (London: Pali Text Society, 1979).
<i>Kathāvatthu</i>	
M	<i>Majjhima Nikāya</i> . Nyanamoli, trans., <i>The Middle Length Discourses of the Buddha</i> (Boston: Wisdom Publications, 1997); <i>Majjhima Nikāya</i> (1948–51); I. B. Horner, trans. <i>Middle Length Sayings</i> (London: Pali Text Society, 1954–59).
MMK	<i>Mūlamadhyamakārikā</i> . Jay Garfield, trans. <i>The Fundamental Wisdom of the Middle Way</i> (New York: Oxford University Press, 1995).
<i>Miln.</i>	<i>Milinda's Questions</i> . I. B. Horner, trans. (London: Pali Text Society, 1963–64).
MSg	<i>Mahāyāna-saṃgraha</i> . T.1594; P.#5549; D. #4048. Cited by chapter numbers and verse.
P	Peking edition of the Tibetan Tripitaka.
PED	<i>Pāli-English Dictionary</i> . T. W. Rhys-Davids and W. Stede, W., eds. (London: Pali Text Society, 1979).
<i>Pravṛtti Portion</i>	Part of the <i>Yogācārabhūmi</i> . T.30 (#1579) 579c23–582a28; P. #5539 Zi.4a5–11a8; D. #4038 Shi.3b4–9b3. Cited by page number and outline in Hakamaya Noriaki, “Viniścayasamgrahaṇī ni okeru araya-shiki no kitei,” <i>Tōyōbunka-kenkyūjo-kiyō</i> , 79 (1979).
<i>Proof Portion</i>	Part of the <i>Yogācārabhūmi</i> , which is also found in SBh, 11, 9–13, 20; T.31 (#1606) 701b4–702a5; P.#5554 Si.12a2–13b5; D.#4053 Li.9b7–11a5.
S	<i>Saṃyutta Nikāya</i> . Bhikkhu Bodhi, trans., <i>The Connected Discourses of the Buddha</i> (Somerville: Wisdom Publications, 2000); <i>Saṃyutta Nikāya</i> (1894–1904); C. A. F. Rhys-Davids and F. L. Woodward, trans. <i>The Book of the Kindred Sayings</i> (London: Pali Text Society, 1917–30); John D. Ireland and Bhikkhu Nyanananda, trans., <i>An Anthology from the Saṃyutta Nikāya</i> (Kandy: Buddhist Publication Society, 1981).

<i>Samdhinirmocana Sūtra</i>	Etienne Lamotte, ed. and trans., <i>L'Explication des Mystères</i> (Louvain, 1935). Cited by chapter and section.
SN	<i>Suttanipāta</i> (London: Pali Text Society, 1948); Saddhatissa, trans. (London: Curzon Press, 1985).
T	<i>Taishō</i> edition of the Chinese Tripitaka. Takakusu Junjirō and Watanabe Kaigyoku, eds., <i>Taishō shinshū daizōkyō</i> , 100 vols. (Tokyo: Taishō Issaikyō Kankōkai, 1924–1932).
<i>TrBh</i>	<i>Triṃṣikā-bhāṣya of Sthiramati</i> . Sylvain Levi, ed., <i>Vijñaptimātratā-siddhi</i> (Paris: Librairie Ancienne Honoré Champion, 1925).
<i>Visuddhimagga</i> .	Buddhaghosa, <i>The Path of Purification</i> , trans. Nyanamoli (Berkeley: Shambala, 1976).
U	Hsüan Tsang's Chinese translation of Asvabhāva's <i>Mahāyāna-saṃgraha-upanibandhana</i> . T.1598.
u	Tibetan translation of Asvabhāva's <i>Mahāyāna-saṃgraha-upanibandhana</i> . P.#5552; D.#4051.
<i>Yogācārabhūmi of Asanga</i>	Bhattacharya, ed. (Calcutta: University of Calcutta, 1957). Hsüan Tsang's Chinese translation of <i>Yogācārabhūmi</i> . T.1579.

¹ William Waldron, "A Comparison of the *Ālaya-vijñāna* with Freud's and Jung's Theories of the Unconscious," *Annual Memoirs of Otani University Shin Buddhist Research Institute* 6 (1998): 109–50.

² William Waldron, *The Buddhist Unconscious: The Ālaya-vijñāna in the Context of Indian Buddhist Thought* (London: RoutledgeCurzon, 2003).

³ This is an important qualification. I am less familiar with more current thinking on these topics, although it appears that Stephen Mitchell's work in particular suggests something similar: "The most interesting feature of contemporary psychoanalytic perspectives on self is precisely the creative tension between the portrayal of self as multiple and discontinuous and of self as integral and continuous" (Mitchell, *Hope and Dread in Psychoanalysis* [New York: Basic Books, 1993], 115).

⁴ For example, Descartes (*Principles* I, sec. 9) defines: "By the word *thought* I understand all that of which we are conscious of operating in us (tout ce qui se fait en nous de telle sorte que nous l'apercevons immédiatement par nous memes)"; Locke (*Essay Concerning Human Understanding* I, i.8) similarly declared an idea as "every immediate object of the mind in thinking" (Descartes and Locke cited in Richard Rorty, *Philosophy and the Mirror of Nature* [Princeton: Princeton University Press, 1980], 48). Because of such conceptions, according to Rorty, "[i]mmediacy as the mark of the mental . . . became an unquestioned presupposition in philosophy" (ibid.).

Piatigorsky similarly characterizes Abhidharma: "the Abhidhamma does not deal with what is non-conscious, because the Abhidhamma is a 'theory of consciousness,' and the rest simply does not exist in the sense of the Abhidhamma." Alexander Piatigorsky, *The Buddhist Philosophy of Thought* [London: Curzon Press, 1984], 202, n. 17.

⁵ According to Gregory (Richard Gregory, ed., *The Oxford Companion to the Mind* [Oxford: Oxford

University Press, 1987], 162), “For John Locke and many subsequent thinkers, nothing was more essential to the mind than consciousness, and more particularly self-consciousness. The mind in all its activities and processes was viewed as transparent to itself; nothing was hidden from its inner view. To discern what went on in one’s mind, one just ‘looked’—one introspected—and the limits of what one thereby found were the very boundaries of the mind. . . . For Locke, indeed, there was a serious problem of how to describe all one’s memories as being continuously in one’s mind, when yet they were not continuously present to consciousness.” This problem, along with its presuppositions, helped Freud formulate one of his main arguments for unconscious mental processes: “We call a process unconscious if we are obliged to assume that it is being activated at the moment, though at the moment we know nothing about it.”

The Buddhist context is more complex. In contrast to earlier forms of Buddhism, in which consciousness (*viññāna*) had a rich and multivalent range of meanings, Abhidharmic analyses of mind came to focus more and more narrowly on the cognitive processes involving immediate awareness. Thus, one of the major arguments for *ālaya-viññāna* similarly characterized it as continuous, in contrast to those forms of conscious awareness of objects that were momentary and intermittent. *The Pravṛtti Portion* states that though the objects of *ālaya-viññāna* are indistinct (*aparicchina*), it “always cognizes the continuity of the world uninterruptedly,” its object “always exists, yet it functions continuously in a stream of instants.” *Pravṛtti Portion* I.b)A.2–1.b)B.3; T.31.580a9, a15–18; D.4a2, a4–5. Hakamaya Noriaki, “Vinīścayasamgrahaṇī ni okeru araya-shiki no kitei,” *Tōyōbunka-kenkyūjo-kiyō*, 79 (1979): 26. Hakamaya reconstructs this last expression as ‘*kṣaṅka-srotaḥ-samtāna-vartin*’ (55). See also *Samdhinirmocana Sūtra*, V.7.

⁶ Posthypnotic suggestion for Freud is exactly “the kind of occurrence we have in mind when we speak of the existence of unconscious mental processes” (Sigmund Freud, *New Introductory Lectures to Psychoanalysis* [New York: W. W. Norton., 1965], 288).

In Yogācāra texts, both the *Proof Portion* and *Mahāyāna-saṃgraha* (MSg) I.50 cite as an argument for the presence of *ālaya-viññāna* a *sūtra* where the Buddha said that “for one in the attainment of cessation (*nirodhasamāpatti*), consciousness has not departed from the body” (Proof #7, *viññānaṃ cāsya kāyād anapakrānatam bhavati iti*; ASBh, 13.14; T.31.701c24–5; D. 11a4; P. 13b5; MSg, I.50). See Hakamaya Noriaki, “Araya-shiki sonzai no hachi-ronshō ni kansuru shobunken,” *Kamazawa Daigaku Bukkyō-gakubu Kenkyū-kiyō* 16 (1978): 14.

⁷ “Naturally a belief in a completely unconscious mental process, like a belief in a completely unperceived physical object or process, must rest on inference; and this inference will take the form of an argument from causation and analogy” (C. D. Broad, *The Mind and Its Place in Nature* [London: Routledge and Kegan Paul, 1925], 424).

⁸ As Freud declares, “our mental activity moves in two opposite directions: either it starts from the instincts and passes through the system Ucs. [unconscious] to conscious thought-activity; or, beginning with an instigation from outside, it passes through the system Cs. [conscious] and Pcs. [preconscious] till

it reaches the Ucs. [unconscious]” (Sigmund Freud, “The Unconscious” [1915], in *Pelican Freud Library* [London: Penguin Books, 1984], 209).

One section of the *Proof Portion* is entitled “determining the arising [of *ālaya-vijñāna*] by reciprocal conditionality” (**anyonya-pratyayatā-pravṛtti-vyavasthāna*), while *MSg* I.27 states that “these two forms of *vijñāna* [*ālaya-vijñāna* and the traditional six manifest forms of cognitive awareness] are reciprocal conditions” (*rnam par shes pa de gnyis gi rkyen gcig yin te*).

⁹ *Pravṛtti Portion* of the *Yogācārabhūmi* (D. 4a3–5; T.580a12–18): “2.b)A. *ālaya-vijñāna* is linked by association (*saṃprayoga*) with the five omni-present factors connected with mind (*cittasaṃprayukta-sarvatraga*): attention (*manaskāra*), sense-impression (*sparsā*), feeling (*vedanā*), apperception (*saṃjñā*), volitional impulse (*cetanā*) . . . 2.b)B. These dharmas . . . are subtle (*sūkṣma*) because they are hard to perceive (*durvijñānatva*) even for the wise ones in the world.” See also *TrBh*, 19.14–15; *ASBh*, 21.9f.; Hakamaya, “Viniścayasamgrahaṇī ni okeru araya-shiki no kitei,” 71nn. 6, 7; and L. Schmithausen, *Ālaya-vijñāna* (Tōkyō: International Institute for Buddhist Studies, 1987), 389–390.

¹⁰ C. G. Jung, *On the Nature of the Psyche*, in *The Collected Works of C. G. Jung*, vol. 8 (Princeton: Princeton University Press, 1969), para. 383.

¹¹ Alasdair MacIntyre critiques similar assumptions in Freud’s thought: “Freud retains from the Cartesian picture the idea of the mind as something distinct and apart, a place or a realm which can be inhabited by such entities as ideas” (Alasdair MacIntyre, *The Unconscious: A Conceptual Analysis* [London: Routledge & Kegan Paul, 1958], 44). To speak of mental events as *things* that happen *in* the unconscious, he claims, is already “half-way to reduplicating the Cartesian substantial conscious mind by a substantial unconscious mind. The unconscious is the ghost of the Cartesian consciousness” (73)—a ghost, I might add, that still haunts our discourse if not our dreams.

Wittgenstein’s philosophical analysis is surprisingly similar, as Stern observes: “In the *Philosophical Remarks*, Wittgenstein . . . maintains that the subject-predicate grammar of our everyday language has such a firm grip on us that we are usually quite unaware of its influence. Because the grammar of ordinary language has been shaped by the need to successfully manipulate our environment, . . . we usually understand experience in subject-predicate terms: we say such things as, ‘I have a headache,’ and take it for granted that the term ‘I’ refers to a subject, the self” (D. G. Stern, *Wittgenstein on Mind and Language* [New York: Oxford University Press, 1995], 79–80).

¹² *Visuddhimagga*, XVI.90.

¹³ There are many passage in the Pāli texts such as the following: “‘Venerable sir, who craves?’ ‘Not a valid question,’ the Blessed One replied. ‘I do not say, “One craves.” If I should say, “One craves,” in that case this would be a valid question: “Venerable sir, who craves?” But I do not speak thus. Since I do not speak thus, if one should ask me, “Venerable sir, with what as condition does craving [come to be]?” this would be a valid question. To this the valid answer is: “With feeling as condition, craving [comes to be]; with craving as condition, clinging; with clinging as condition, existence”’” (S II.13).

¹⁴ M II.32.

¹⁵ S II.73.

¹⁶ Bertrand Russell gives a most typical analysis of perception: “There is on the one hand the thing of which we are aware. . . . and on the other hand the actual awareness itself, the mental act of apprehending the thing.” (Bertrand Russell, *The Problems of Philosophy* [Oxford: Oxford University Press, 1959], 65).

¹⁷ *AKBh*, ad I.42; Pruden, vol. 1, 118. Buddhaghosa similarly states in the *Visuddhimagga* (XIX, 20): “He sees no doer over and above the doing, no experiencer of the result over and above the occurrence of the result. But he sees clearly with right understanding that the wise say ‘doer’ when there is doing and ‘experience’ when there is experiencing simply as a mode of common usage.”

¹⁸ Those topics of the traditional discourses that were not formulated in, or could not be transposed into, such impersonal terms, into *dharmic* terms, were considered to be merely provisional or conventional truth (*samvrtisatya*), whereas the doctrine as formulated in purely dharmic terms was considered to be the ‘higher doctrine,’ the ‘*abhi*’-dharma, because it is turned toward the ultimate *dharma* (*paramārtha-dharma*), that is, toward nirvana (*AKBh*, ad I.2b. Shastri, 12; Poussin, 4: *tadaya paramārthadharma vā nirvāṇa dharmalakṣaṇā vā pratyabhimukho dharma ityabhidharma*). The *Aṭṭhasālinī* (III, 488) of the Theravādins concurs: *abhidhammo nāmo paramatthadesanā* (as cited in Herbert V. Guenther, *Philosophy and Psychology in the Abhidharma* [Delhi: Motilal Banarsidass, 1959], 2).

The distinction between ultimate and conventional truths or teachings has a long and important history in Buddhist thought. Jayatilleke discusses the earliest meanings of ultimate (*paramatta*) and conventional (*sammuti*) discourse and their relation to definitive teachings (*nītattha*) and interpretive, indirect teachings (*neyyattha*) (K. N. Jayatilleke, *Early Buddhist Theory of Knowledge* [Delhi: Motilal Banarsidass, 1963], 361–68). Although instances of the terms “ultimate” and “conventional” are found in the early texts [S I.135: “Just as much as the word ‘chariot’ is used when the parts are put together, there is the use (*sammuti*) of the term ‘being’ (*satto*) when the (psycho-physical) constituents are present”], they are, Jayatilleke claims, “nowhere contrasted in the Canon” (366), and are used only to refer to “a distinction of subject matter and not a distinction of two kinds of truth” (368). See also *Kathāvatthu*, V.6; *Visuddhimagga*, XVIII; *Compendium*, 6, 11, 81n1, 200n1.

¹⁹ Sue Hamilton puts this nicely: “[S]tating that in seeking to know what you *are*, or even whether or not you *are*, you are missing the solution to the problem of cyclic continuity. . . . *That you are is neither the question nor in question: you need to forget even the issue of self-hood and understand instead how you work in a dependently originated world of experience*” (Sue Hamilton, *Early Buddhism: A New Approach. The I of the Beholder* [Surrey, U.K.: Curzon Press, 2000], 23).

²⁰ Richard Restak, *The Modular Brain* (New York: Scribner’s and Sons, 1994), 120–21.

²¹ Lakoff and Johnson: “The very way that we normally conceptualize our inner lives is inconsistent with what we know scientifically about the nature of mind. In our system for conceptualizing our inner lives, there is always a Subject that is the locus of reason and that metaphorically has an existence independent of the body. As we have seen, this contradicts the fundamental findings of cognitive science” (George

Lakoff and Mark Johnson, *Philosophy in the Flesh: The Embodied Mind and its Challenge to Western Thought* [New York: Basic Books, 1999], 268). Similarly, the brain scientist Richard Restak argues: “Brain research on consciousness carried out over the past two decades casts important doubts on our traditional ideas about the unity and indissolubility of our mental lives” . . . particularly “the concept of ourself [sic] as a unified, freely acting agent directing our behavior” (Restak, *The Modular Brain*, 120–21).

²² These parallels help us, at least heuristically, to more fully appreciate the impersonal model of causality proposed by the Buddhists. This is true for my students, at least, who, after a mere hour’s inquiry into the “dependent arising of things” in scientific terms are usually able to get a good grasp of the basic ideas of no-self, dependent arising, and provisional designation without even hearing these Buddhist concepts. This exercise consists of a insistent inquiry into the causes and conditions that enable the arising of first a river, then a tree, a frog, a human infant, and finally the functioning personality of a human adult, accompanied by such related questions as “who made the river?,” and so on, and “what constitutes the real boundaries of the river?,” and the like. See Waldron, 2002. ‘An End-run ‘Round Entities: Using Scientific Analogies for Teaching Buddhist Concepts,’ *Teaching Buddhism in the West: From the Wheel to the Web*. Hori, V. S., Hayes, R. P., Shields, J. M. (eds.) RoutledgeCurzon, pp. 84-91.

²³ “What is consciousness for, if perfectly unconscious, indeed subject-less, information processing is in principle capable of achieving all the ends for which conscious minds were supposed to exist? . . . [This] draws our attention unmistakably to the difference between all the unconscious information processing—without which, no doubt, there could be no conscious experience—and the conscious thought itself, which is somehow directly accessible. Accessible to what or to whom? To say that it is accessible to some subsystem of the brain is not yet to distinguish it from the unconscious activities and events which are also accessible to various subsystems of the brain. If some particular and special subsystem deserves to be called the self, this is far from obvious.” (Gregory, *Oxford Companion*, 162–163)

²⁴ “Apart from conditions, there is no arising of cognitive awareness” (M I 258). *Milinda’s Questions*: “Because there are vision here and material shape, size, visual consciousness arises. Co-nascent with that are sensory impingement, feeling, perception, volition, one-pointedness, the life-principle, attention; thus these things are produced from a condition and no experiencer is got at here” (*Miln.* 78) [56].

²⁵ Lakoff and Johnson, *Philosophy in the Flesh*, 24–25.

²⁶ Wittgenstein’s attempt to forge a subjectless language entailed similar consequences: “It is because a language designed for the sole function of expressing everything that a subject might experience has no need for a term designating that subject that one cannot refer to the subject of experience from within the phenomenological language. . . . From within, one cannot individuate a subject at all. The metaphysical subject is not an object of experience, but a way of indicating the overall structure of experience. . . . The grammar of the phenomenological language ensures that all statements about experience are expressed in the same—ownerless—way.” (*ibid.*, 84).

²⁷ See note 14 above.

²⁸ *MMK*, XXIV.40. Also; “one who sees dependent origination sees the *dhamma* and one who sees the *dhamma* sees dependent origination” (M I191). And: “Now inasmuch, brethren, as the Ariyan disciple knows the causal relation thus, knows the uprising of the causal relation thus, knows the cessation of the causal relation thus, knows the way going to the cessation of the causal relation thus, he is what we call the Ariyan disciple who has won the view, who has won vision . . . who sees this good doctrine . . . who possesses the wisdom of the trained man, who has won to the stream of the Dharma, who has the Ariyan insight of revulsion, who stands knocking at the door of the deathless” (S II 41).

²⁹ Although this impersonal form of discourse is seldom so strictly defined in Buddhist texts, it is useful to articulate it as an ‘ideal type’ with which to contrast other forms of discourse. We are of course borrowing Max Weber’s concept here: “An ideal type is formed by the one-sided accentuation of one or more point of view and by the synthesis of a great many diffuse, discrete . . . individual phenomena, which are arranged accordingly to those one-sided emphasized viewpoints into a unified analytical construct. In its conceptual purity this mental construct cannot be found anywhere in reality” (Max Weber, *Theory of Social and Economic Organization* [Glencoe: Free Press, 1964], 329–36).

³⁰ M I190: “When internally the eye is intact and external forms come into its range and there is the corresponding engagement, then there is the manifestation of the corresponding class of consciousness.” Traditionally, such awareness arises in six modalities, the five senses plus mind. For the sake of simplicity I will often refer to all of these as “sense faculties, sense objects,” and so on. Unless otherwise stated, this also implies mind and its correlative “mental objects” (translation taken from Nyanamoli, trans., *The Middle Length Discourses of the Buddha* [Somerville, Mass.: Wisdom Publications, 1995], 284).

³¹ This is one reason I prefer “cognitive awareness” to “consciousness.” Consciousness is a nebulous enough term in English, and insofar as it connotes an active agent or faculty, as in Russell’s definition above, it is misleading in a Buddhist context.

³² “Feeling, apperception, and cognitive awareness, these factors are conjoined, not disjoined, and it is impossible to separate each of these states from the others in order to describe the difference between them. For what one feels, that one apperceives; and what one apperceives, that one cognizes” (M I 295; Nyanamoli, *Middle Length Discourses*, 389); terminology altered for consistency.

³³ See Stephen Collins, *Selfless Persons: Imagery and Thought in Theravāda Buddhism* (Cambridge: Cambridge University Press, 1982), 43–45. Also consider the early Vedic sense of *loka* as a multidimensional “world” constructed by human action, particularly ritual action.

³⁴ A II 48; SN 169.

³⁵ “Dependent on the eye-faculty and visual form, visual cognitive awareness arises; the concomitance of the three is sense-impression. Depending on sense-impression is feeling, depending on feeling is craving, depending on craving is grasping, depending on grasping is becoming, depending on becoming is birth, depending on birth, old age, death, grief, lamentation, suffering, distress and despair come about. *This is the arising of the world*” (S II73). [Emphasis added.]

³⁶ Michael Carrithers, *Why Humans Have Cultures* (New York: Oxford University Press, 1992). This is a pattern which the neurophysiologist Terrence Deacon notes “has been invoked by most theories of human cognitive evolution” (T. W. Deacon, *The Symbolic Species: The Co-evolution of Language and the Brain* [New York: W. W. Norton, 1997], 352).

³⁷ “The Elder traced a circle (*cakka*) on the ground and spoke thus to King Milinda: ‘Is there an end to this circle, sire?’ ‘There is not, revered sir.’ ‘Even so, sire, are those cycles (*cakka*) that are spoken of by the Lord: “Visual consciousness arises because of eye and material shapes, the meeting of the three is sensory impingement; conditioned by sensory impingement is feeling; conditioned by feeling is craving; conditioned by craving is kamma [karma]; vision [*chakkhu*, lit.: eye] is born again from kamma”—is there thus an end of this series?’ ‘There is not, revered sir.’ . . . ‘Even so, the earliest point of [samsaric] time cannot be shown either.’” (*Miln.*, 22).

³⁸ This refers to a previous passage in the same text. (*AKBh*, ad IV.1a; Shastri, 567; Poussin, 1: *sattvabhājanalokasya bahudhā vaicitryamuktaj tat kena kṛtam . . . sattvānām karmajaṃ lokavaicitryam.*)

³⁹ *AKBh*, ad V.1a; Shastri 759; Poussin 106: *karmajaṃ lokavaicitrayam iti uktam. tāni ca karmāṇi anuśayavaśād upacayaṃ gacchanti, antareṇa ca anuśayān bhavābhinirvartane na samarthāni bhavanti. ato veditavyāḥ mūlaṃ bhavasya anuśayāḥ.*

⁴⁰ “The mental stream,” Vasubandhu’s euphemism for evolving individuals, “increases gradually by the afflictions and by actions, and goes again to the next world. In this way, the circle of existence is without beginning.” (*AKBh*, III.19a–d. Poussin, 57–59; Shastri, 433–34: *yathā ākṣepaṃ kramād vṛddhaḥ santānaḥ kleśakarmabhiḥ paralokaṃ punar yāti . . . iti anādhivhavacakrakam.*)

⁴¹ William Waldron, “Beyond Nature/Nurture: Buddhism and Biology on Interdependence,” *Contemporary Buddhism* 1, no. 2 (2000): 199–226.

⁴² See Waldron, *Buddhist Unconscious*, for a book-length treatment.

⁴³ The *Pravṛtti Portion* of the *Yogācārabhūmi*: “1.b)B.2. [*ālaya-vijñāna*] always has an object, it is not sometimes this and sometimes that (**anyathātva*). However, from the first moment of appropriation [of the body at conception] for as long as life lasts (*yāvaj jīvam*) [its] perception (Skt. *vijñapti*; Tib. *rigs pa*) arises always having one flavor (*ekarasatvena*) [that is, homogeneously]. 1.b) B.3. It should be understood that *ālaya-vijñāna* is momentary regarding [its] object, and though it arises continuously in a stream of instants, it is not unitary (*ekatva*)” (D. 4a3–5; T.580a12–18).

⁴⁴ *Pravṛtti Portion*: “A1.b)A.2. The ‘outward perception of the external world, whose aspects are indistinct’ (*bahirdhā-aparicchinnākāra-bhājana-vijñapti*) means the continuous, uninterrupted perception of the continuity of the world based upon that very *ālaya-vijñāna* which has the inner substratum as a cognitive support” (D. 3b7–4a3; T.580a2–12).

⁴⁵ This closely parallels passages describing *vijñāna* in Pāli texts, e.g., S III 53; D III 228.

⁴⁶ *Samdhinirmocana Sūtra* V.2. All the Sanskrit terms in this passage are reconstructed from the Chinese and Tibetan.

Schmithausen has reconstructed the Sanskrit of this last phrase as: **nimitta-nāma-vikalpa-*

vyavahāra-prapañca-vāsanā-upādāna, the import of which is well summarized in his definition of the first term, *nimitta*, as: “in this context, objective phenomena as they are experienced or imagined, admitting of being associated with names, and being (co-) conditioned by subjective conceptual activity (*vikalpa*), which has become habitual so that it permeates all (ordinary) perceptions and cognitions” (Schmithausen, *Ālaya-vijñāna*, 357, n.511).

⁴⁷ *Ālaya-vijñāna* is one of the bases upon which the six manifest forms of cognitive awareness arise. The *Samdhinirmocana Sūtra* (V.4–5) states, “The six groups of cognitive awareness (*ṣad-vijñāna-kāya*) . . . occur supported by and depending upon (*saṃnīśritya pratisthāya*) the appropriating consciousness (*ādāna-vijñāna*) [a synonym of *ālaya-vijñāna*].”

⁴⁸ *Ad MSg* I.58; U 397a24–b4; u 266b4–267a1; Bh 336c5f.; bh 168b7f.

⁴⁹ And it appears to be precisely this, our ability to maintain a common object of attention, which is both the prerequisite for and reinforced result of language use, that separates human forms of cognitive awareness from those of our closest primate cousins. The primatologist and child developmentalist Michael Tomasello concludes that “the uniquely human forms of thinking do not just depend on, but in fact derive from, perhaps even are constituted by, the interactive discourse that takes place through the medium of intersubjective and perspectival linguistic symbols, constructions, and discourse patterns.” (Tomasello, *The Cultural Origins of Human Cognition* [Cambridge: Harvard University Press, 1999], 215).

⁵⁰ *Ad MSg* I.60; U 397c12f.; u 267a8–268a1.

⁵¹ Elsewhere, Asanga explicitly states that it is the *common and uncommon actions* of sentient beings that bring about the common (*bhājana-*) and individual worlds (*sattva-loka*) respectively.

Abhidharma-samuccaya (T.31.679b24B7; P. 102b6B8f.: *las thun mong ba zhes kyang byung/ las thun mong ma yin pa zhes kyang byung /... thun mong ba gang zhe na/ gang snod kyi jig rten rnam par byed pa'o// thun mong ma yin pa gang zhe na/ gang sems can gyi jig rten rnam par byed pa'o*). See Schmithausen, *Ālaya-vijñāna*, 491–92 n1302f.

⁵² Bh 337a28ff.; bh 169b5. *de lta bu “i rnam pa can gyi kun gzhi rnam par shes pa med na gang sems can thams cad kyi thun mong gi longs spyod kyi rgyur gyur pa snod kyi jig rten yod par mi gyur ro*).

⁵³ As my perceptive sister pointed out on first hearing the term, perhaps even intersubjectivity itself already implies isolated subjects only subsequently coming into contact.

⁵⁴ As the eminent Japanese Buddhist Nagao observes: “If the doctrine of non-self is treated from merely its theoretical, logical aspect, without religious concerns, the result will be a mere denial of the self in which religious subjectivity tends to get lost” (Nagao Gadjin, *Mādhyamika and Yogācāra* [Albany: SUNY Press, 1991], 8). Similarly, Georges Dreyfus points out that such personalist discourse “provides the Tibetan tradition with the framework that makes a narrative of spiritual progress possible and introduces an element of closure without which the commitment required by Buddhist practices cannot be sustained” (Georges Dreyfus, “Tibetan Scholastic Education and the Role of Soteriology,” *Journal of the International Association of Buddhist Studies* 20, no. 1 [1997]: 62).

⁵⁵ *AKBh* I.3; Shastri, 14; Poussin, 5; Pruden, 1988, 57: “Apart from the discernment of the *dharmas*, there is no means to extinguish the defilements, and it is by reason of the defilements that the world wanders in the ocean of existence. So it is with a view to this discernment that the Abhidharma has been, they say, spoken [by the Master]. . . . without the teaching of the Abhidharma, a disciple would be incapable of discerning the *dharmas*.”

Vasubandhu also states in another of his texts, the *Dharmadharmatāvibhāga-vṛtti*, that there needs to be a (at least some) basis of designation for individuals who have realized Nirvana just as one designates the aggregates of individuals who are said to be coursing in samsara (D. #4028.37b.4: *gor ba'i gang zag la gor ba'o zhes phung po rnam dogs pa de bzhin du yongs su mya ngan las das pa'i gang zag la yang gdags pa'i gzhi yod dgos so*).

⁵⁶ But, as Nagao has clearly stated, unlike the essentialist concept of *ātman*, in Buddhism “the existential subject must be purely individual, historical, and temporal, and not universal and permanent. Existence is opposite to essence. The existential subject must be, by name, anti-universal and anti-metaphysical” (Nagao, *Mādhyamika and Yogācāra*, 8–9).

⁵⁷ Wilber, K., Jack Engler, Daniel Brown, *Transformations of Consciousness*, Boston: Shambala. 1986, 24.

⁵⁸ I wish to thank David Lawrence for referring me to this provocative and his own evocative article.

⁵⁹ Edwin Gerow, “What Is Karma (Kim Karmeti): An Exercise in Philosophical Semantics,” *Indological Taurinensia* 10 (1982): 97.

⁶⁰ Gerow, “What Is Karma,” 98.

⁶¹ Even in standard sentences, the “effect is the result (*phala*) that is understood to occur in the direct object (*karman*)” (David Lawrence, “The Mythico-Ritual Syntax of Omnipotence,” *Philosophy East & West* 48, no. 4 [1998]: 599).

⁶² Gerow describes the process whereby, in the case of intransitive sentences, the object of a verb becomes identified with its result. According to the medieval grammarians,

In every act designated by a verbal root (e.g. <<to go>> or <<to cook>>) are two complementary semantic aspects: a function/process or *vyāpāra*, indicating the change per se, and the fruit, or *phala*, indicating the tendency or end of that change. . . . The two aspects of the verbal action look to different external substrates for their practical realization: whereas the *vyāpāra* is based typically in the agent (*karṭṛ*), or in the examples, in the *cook*, or the *walker*, the *phala* usually finds its substrate or basis in the object of the verb, the *karma*, or in the examples, in the rice or place reached. In this way . . . the *karma* is linked closely to the <<objective>> *phala*, whereas the more internal or processual aspect of the verbal idea is associated with the *karṭṛ*. . . . [But intransitive] verbs in effect have no <<karma>>, no <<external>> [direct] object although they most certainly do have a *phala*; it is precisely this relationship of *karma* to *phala* that defines the class of intransitives (Gerow, “What Is Karma,” 94–95).

⁶³ “The *vyāpāra*, the <<processual meaning>> of the verb, is boldly identified with the verb in its

resultative guise: karman” (ibid., 114).

⁶⁴ This development is paralleled in the Buddhist lexicon in a series of “process-result” or “process-product” nouns, such as *citta*, *saṃskārā*, and *upādāna*, that have long been noted but never adequately explained by Buddhist scholars. The PED, for example, defines *citta* as “the centre and focus of man’s emotional nature as well as that intellectual element which inheres in and accompanies its manifestations: thought. In this wise *citta* denotes both the agent and that which is enacted” (PED 266–267). Edgerton describes *saṃkhārā*, (*saṃskārā*) as “predispositions, the effect of past deeds and experience as conditioning a new state,” as both “conditionings [and] conditioned states” (BHSD 542); Collins similarly describes *saṃkhārā* as “both the activity which constructs temporal reality [*loka*] and the temporal reality thus constructed” (*Selfless Persons*, 202). Rune Johansson has similar observations (*Dynamic Psychology of Early Buddhism* [Oxford: Curzon Press, 1979], 50–51). And, finally, *upādāna* also evinces both an active, affective sense of “grasping, holding on, attachment,” as well as a resultant sense of “fuel, supply, substratum by means of which an active process is kept alive or going.” Together they convey the senses of “finding one’s support for, nourished by, taking up” (PED 149).

These are not peculiar to Sanskrit. The philosopher A. W. Sparkes describes what he calls “‘process-product ambiguity’, i.e., it is used to refer both to the *process* (or, more accurately, *activity*) . . . and to the *product* of that activity” (A. W. Sparkes, *Talking Philosophy: A Wordbook* [London: Routledge, 1991], 76). Participial words such as painting or building often exhibit this ambiguity (or, perhaps more precisely, bivalence).

⁶⁵ “Wittgenstein’s response to these difficulties [of overcoming the subject-predicate grammar of our everyday language] is to suggest that we imagine talking about one’s experiences without using the word ‘I’ . . . [I]nstead of saying ‘I have a toothache,’ one says, ‘There is toothache.’ More generally, in talking about one’s experience, one dispenses with the first-person pronoun and simply states that the experience in question has occurred. The point of the imagined reconstrual is that the new sentences now have a dummy subject and so conform to the subject-predicate conventions of our language, but do not have a logical subject. We are to think of the ‘there is’ in ‘there is toothache’ as like the ‘it is’ in ‘it is snowing’: in both cases something is going on, but there is no subject” (Stern, *Wittgenstein on Mind*, 79–80).

⁶⁶ Gerow, “What Is Karma, 111.

⁶⁷ Ibid., 102.

⁶⁸ Ibid., 112.

⁶⁹ Ibid.

⁷⁰ See note 20 above.

⁷¹ Gerow, “What Is Karma, 113

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Lawrence, “Mythico-Ritual Syntax,” 592–622.

⁷⁵ Ibid., 603, 604.

⁷⁶ “At a fundamental level, the Buddhist division of the world into dharmas of various types may be criticized as a selection, from experience, of categories as arbitrary as any others. And, most basically, it may be that Buddhist descriptions of the world are based on unstated assumptions about, e.g. the ultimate ‘impersonality’ of reality that simply would not be shared by those who select ‘personal’ metaphors, like agency, as a way of understanding things” (Roger Jackson, *Is Enlightenment Possible?* [Ithaca, N.Y.: Snow Lion, 1993], 141).

⁷⁷ “Even [the act of cognition] ‘I cognize this to be blue’ really amounts to ‘I am aware’ [*prakāśe*]” (Lawrence, “Mythico-Ritual Syntax,” 604, citing the *Īśvarapratyabhijñāvimarśini*, 1.5.17, 1:279, of Abhinavagupta).

⁷⁸ Gerow, “What Is Karma, 116.

⁷⁹ S II 20; John D. Ireland and Bhikkhu Nyanananda, trans., *An Anthology from the Saṃyutta* [Kandy: Buddhist Publication Society, 1981], 20.

⁸⁰ This is the impetus behind introducing ‘first-person’ accounts into laboratory experiments, such as discussed by Francisco Varela and Jonathan Shear (Varela and Shear, eds., *The View from Within: First-Person Approaches to the Study of Consciousness* [Exeter, U.K.: Imprint Academic, 1999]).

⁸¹ “There is no lack of highly persuasive books whose objective is to demonstrate why organisms are not what they seem to be—integrated entities with lives and natures of their own—but complex molecular machines controlled by the genes carried within them, bearers of the historical record of the species to which they belong” (Brian Goodwin, *How the Leopard Changed Its Spots: The Evolution of Complexity* [London: Phoenix Press, 1994], x).