# Self-abduction; oracles, ecocognition and purpose in life

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Abstract
This chapter follows Lorenzo Magnani's observation that ongoing commercialization of science and academia impoverishes human potential for discovery. The chapter reviews Magnani on affordance, wonders what is accessible when "good" affordances appear absent, and answers self-affordance. Ecologies optimized for discovery should be optimized for self-affordance. The chapter considers the role of oracle as leading vision for discovery, and proposes a naturalized account of self that is essentially propositional, in pursuit of an inner oracle, seeking salvation through routine and religious ritual. This is self-abduction. Variable biological development may motivate religious self-abduction characterized by self-sacrifice for the collective good over the long term. in conclusion, the chapter affirms Magnani's call to optimize cognitive ecologies for discovery, by prioritizing religious self-abduction.

## 1. Introduction

A great, a good, and a right mind, is a kind of divinity lodged in flesh, and may be the blessing of a slave as well as of a prince;...whereas temples of honor are but empty names, which, probably, owe their beginning either to ambition or to violence.
- Seneca[1]

This chapter follows Magnani's "*Discoverability—the urgent need of an ecology of human creativity*" (2022, hereafter *Discoverability*) in response to perverse incentives and performance metrics driving the "overwhelming commercialization" and the "epistemic impoverishment" of science and academia. Magnani argues that cognitive ecologies should be optimized for free inquiry into and communication of possible solutions to collective problems before correction becomes impossible:

"... we are responsible for the preservation of high degrees of discoverability and diagnosticability, and therefore, for potential fruits of human abductive creative and selective cognition, because their abundance seems not to be an inalienable given too, but depends on our intellectual and practical curation of eco-cognitive openness." (p 124)

Discoverability is roughly availability of information. Diagnosticability is roughly what we can do with that information. Eco-cognitive openness describes an anticipatory state in an interactive cycle from discovery to diagnosis, from learning something new about the world to testing this knowledge and sharing results:

“'Eco-cognitive’ means that knowing is to be comprehended in relation to an embodied subject who communicates with his surroundings - that is, who acquires and recognizes information but also manipulates his environment, whether directly or through the creation of artifacts and epistemic mediators." (Magnani, 2023, 129-130; also see *Discoverability* p 132)

An eco-cognitive agent more or less selectively opens and closes to sources of information, and acts in modification of the external world to generate feedback, for instance in testing the accuracy of information, to confirm that something is as perceived or otherwise. "Curation" implies purposeful improvement of conditions that afford this interactive cycle of discovery, so that we end up with a better picture of what is rather than what is merely perceived. Epistemic mediators include technologies like microscopes and search engines, extending to institutions, codes and rituals that support discovery and entrench established knowledge in routine and ritual practices. *Discoverability* describes how solutions are discovered and communicated, through science, and how artifacts and institutions created to support discovery encourage certain inquiries while forbidding others, such as through their politicization and commercialization.

In particular, Magnani finds contemporary institutions closed to purely "good" initiatives, prioritizing monetary profit over public benefit. Correlate incentives steer people away from solving problems to help humanity over the long term, and toward marketable products with immediate financial payouts, instead. With such influence pervasive, civic duty erodes, driving "de-civilization" evident in moral decay and the disintegration of traditionally pro-social institutions (cf. *Discoverability*, p 128). Finally, Magnani forecasts a near-future incommensurate with enlightened, democratic ideals, a world in which "good" opportunities

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[1] 1882, p 165.

have evaporated as people are neither able to create nor pursue them in a way that affords necessary systemic change.

Magnani finds potential for a course correction latent in cultural inheritance "such as religion"and attendant concepts, such as Kant's categorical imperative to act as if a member of a Kingdom of Ends, and argues that such principles and institutions "must be successfully and appropriately activated; their being in good working order is a basic condition for exercising morality and allowing free will to become 'good' will." (*Discoverability*, p123) This chapter wonders about the source of motivation to exercise good will while supporting institutions incentivize otherwise. The answer is through self-affordance and self-abduction. This is the main message of this chapter.

The basic idea with self-abduction is that children are "led away" from the tactile immediacy during adolescence to pursue relatively distant lifelong aims through adulthood, as if abducted by themselves. They first learn how things are, then how they should be, and during adolescence embody somatic set-points or "aspirational ideals" according to which error is assessed during iterative interaction with the social and object environment, thereafter. Self-abduction is variably realized in human beings. Aspirational ideals are unique to each, accounting for how different people find different aspects of shared environments salient, including differences contributing to intractable conflicts.

Aspirational ideals characterize ultimate ends as more or less as distal goal conditions against which intermediates are held in evaluation. Some conditions cannot be achieved during the embodied lifetime, yet people resolve to pursue them even where their lives appear sacrificed in the effort, e.g., living as member of Kant's Kingdom of Ends in a corrupted society which punishes you for it. Such commitment characterizes religious self-abduction. This chapter considers that religious self-abduction is necessary to advance Magnani's call to action in *Discoverability*. The question becomes how to potentiate corresponding ways of life in order to correct for contemporary deficiencies, even as erstwhile supporting institutions encourage otherwise. One answer is through example, and another through scientific communication as with *Discoverability*.

The next section introduces Magnani on abduction and affordance. Section 3 describes self-abduction and self-affordance. Section 4 considers how to "curate eco-cognitive openness" to counter short-sighted commercialism through"fusion" of interests involving self-sacrifice. The paper concludes that cognitive ecologies should be optimized for religious self-abduction to counter pervasive corruption and perverse incentives, ultimately in order to keep open pathways for revolutionary discovery.

## 2. Abduction, affordance and oracles

You see, my friend, it is a secret that I have this art.
- Socrates[2]

Magnani (2023) describes cognition as a "possibility-seeking mechanism" and ‘‘affordances’’ as "environmental anchors" signifying such possibilities (p 134). Good situations include affordances potentiating future situations, as good or better by the same metric, "ecological validity". Cognition uncovers affordances through abduction. Briefly, abduction tests hypotheses through interactions with the environment, uncovers hidden

[2] 149a, Plato (1997), p 166.

relationships leading to further discoveries, and thereby informs ongoing practice including creation of technologies that mediate, regulate and constrain, this process.

Magnani's interest in *Discoverability* is "conditions of possibility" for abduction, and so discovery, "*as they are* and *as they should become*" (p 127). *Discoverability* describes these conditions in terms of cognitive niches and their construction (Chapter 2). Briefly, through perceived error, people reconfigure theory, change action, experience the eco-cognitive cycle differently, and discover latent opportunities to do otherwise in these differences. Once routinized, iterative interactions describe a niche. People work to reinforce and to enrich niches by creating artifacts that facilitate associated routines, and by regulating relationships through social institutions. This is cognitive niche construction.

Optimized for discovery, "good" cognitive niches afford future cognitive niches. Abduction uncovers these opportunities. Magnani (2023) describes abduction accordingly, as a "method" :

"for increasing possibilities of gaining sensory data, trying to make up for their ambiguity, acquiring cognitive feedback, and/or a method for manipulating them, and also a means of making use of cognitive delegations to the environment and to artifacts." (p 131)

The focus of Magnani (2023) is "to demonstrate that it is in this cognitive manipulation of the environment" (p 134) that we facilitate or obstruct abduction, through discovery, creation and destruction of "affordances". Magnani (2023) treats "affordances" according to Gibson, as "circumstances in which a certain conduct is encouraged or suggested above others by the 'perceptual' cues and indicators we may notice" being "already accessible" and "typical of how an organism adapts to a certain ecological niche" i.e., as more or less salient information signifying opportunities for more or less routine action.

Jaako Hintikka considers "oracles" similarly, as external sources of information potentiating abduction. Hintikka writes "Abductive 'inferences' must be construed as answers to the inquirer's explicit or (usually) tacit question put to some definite source of answers (information)." (2007, p 49) These "definite sources" are oracles. He explains that oracles do not guarantee truth. They are defeasible. For the process to be "rational", an oracle must be consciously selected from amongst alternatives about which more or less is known (practically, often very little) (Hintikka, 2007, p 48). By what criteria should oracles be selected? Best informed "intelligent guessing" (abduction) should optimize for best informed future guesses by optimizing for accessible oracles, similar to Magnani's ecological validity. In this way, Magnani's treatment of affordances advances from Hintikka's rational ontology of oracles. For both, to pursue oracles without such a selection criterion is irrational. This point is recalled as this chapter closes.

Magnani (2009) treats cognition in terms of attractors and dynamic systems which enriches this account of affordances. Dynamic systems remain in stable states, enniched in potential wells as local minima representing low-energy, low-stress, system configurations. System dynamics reflect interactions with the embedding environment. Attractors represent relatively stable configurations of systems in terms of that environment, corresponding with cognitive niches. Energy input into a system causes shifts to different configurations, from attractor to attractor, such as during chemical reactions. In a synthetic chemical reaction, given input activation energy - e.g., heat, pressure, with catalysts lowering transitional energy requirements, two independently stable molecules may transform through relative instability of high-energy transition states,

to unified stability, fused into a single product system. This idea of fusion is recalled in the context of human beings in section 4 of this chapter.

Human beings differ from molecules in metabolic potential to transition through high-energy configurations without immediate input from the environment. Animals generally can move from place to place, in effect transitioning from configuration to configuration by moving from one embedding environment to another. As above, they can pursue affordances as opportunities to secure better situations. Some animals including human beings can change the place in which they reside, without physically changing geospatial location, for instance through consultation of oracles, and the construction or destruction of mediating artifacts and institutions. By "curating conditions of possibility for abduction", Magnani is considering how to build environments - "cognitive ecologies" - that lower energy requirements to transition from relative ignorance to discovery, by proliferating affordances and communicating their accessibility, in effect catalyzing the move from "epistemically impoverished" niches to better ones.

As for how to recognize potential for better niches, Magnani (2009) considers salience and pregnance. Salience describes information indicating opportunities for more or less routine enaction, while pregnance is associated with the creative potential of new information which may come through exploration and manipulation of the environment. New information can be used to stabilize select configurations in new ways, or to achieve otherwise inaccessible niches, such as through technology. For example, compare sitting on rocks with sitting in massaging recliners with battery chargers and biometric controls. A stone is a form of a chair, representing a single attractor basin somewhere between standing and laying on the ground. With massaging recliners, people have in effect bound a number of attractors together in one artifact, what Magnani treats as "consolidated affordances". Each is pregnant with potential to sit in different ways. If your legs hurt and you want to charge your phone, the recliner stands out as salient, and the better option.

Some affordances are easier to consolidate than others. Communicating the significance of novel affordances in terms accessible to habitually enniched others adds to the difficulty. Magnani (2023) considers affordances from Peircean semeiotics, interpreting circumstances as signs which more or less clearly signify affordances. Recurrent signs trigger habits through spontaneous abduction. We clearly see that a chair presents an opportunity to rest; its form corresponds with "the obvious method" for dealing with it, sitting. (2023, p 131). So, without reflection, we sit.

As for novel consolidated affordances like a massaging recliner,"creating ‘artificial’ affordances" involves "clever manipulations and conducts that ... may result in the creation of novel (and occasionally ‘unforeseen’) affordances" while representing such discoveries involves setting up "signs in the external environment specifically to cause new proper conclusions of affordability" (2023, p 133). Consider again affordances as access points to attractors. Ideas can be considered like catalysts in chemical reactions that lower energy barriers for transition from attractor to attractor. The point here, and with scientific discovery generally, is that someone has to expose and to communicate novel opportunities first, in order for others to recognize the potential for better situations that they signify, finally affording popular institutional transformation of the sort demanded by *Discoverability*.

Most artifacts in the built environment fall under the heading of consolidated affordances, as they lower energy barriers to a number of attractors in one object, representing bundled access points to target conditions. A stone chair affords rest without having to lower one's

body to the ground. A bio-metrically modulated massaging recliner does what the stone does, and more. In short, massaging recliners afford access to more attractors with less effort than rocks.

The recliner represents the motivation to "better" cognitive niches motivating scientific discovery in general, a propensity that *Discoverability* treats in terms of the "optimization of situatedness":

"... optimization of situatedness is the main general property of logical abductive inference, which—from a general perspective—defeats the other properties such as minimality, consistency, relevance, plausibility, etc. ..." (*Discoverability*, p 18)

Abduction bridges current and better situations, or niches, as an aspect of the "special *consequence relation"* of abduction. Abduction leads from prior to simultaneously affirmed consequences, which are more or less pregnant with further consequence relations. These relations are embodied by the individual, and are not found in the external world. The special consequence relation is central for self-abduction, in this way. The simultaneous affirmation of embodied consequences of self-abduction is recalled in sections 4 and 5 of this chapter, in the context of sacrifice.

Magnani treats abduction in terms of syllogisms which is informative. Syllogisms concern relationships between antecedents and consequences.[3] Abduction involves such a relationship, evidenced in a sort of "fill-up problem" to build the bridge of supporting evidence connecting the two. Magnani describes filling-up the space of evidence between affirmed consequent and incomplete and tentative antecedent in familiar terms, as cyclic modification of input and output which "reduces to a procedure of finding the middle term" through "supplementary logic" in methodical inquiry, abduction-deduction-induction (from *Discoverability*, p 18-20, see also p 136, p 142).

"If new information emerges, hypotheses not previously considered can be suggested and a new cycle takes place. In this case the nonmonotonic character of abductive reasoning is clear and arises from the “classical” logical unsoundness of the inference rule: it draws defeasible conclusions from incomplete information." (*Discoverability*, p 146)

Monotonic reasoning is associated with deductive reasoning, with each premise a fact and with these increasing with new information, more facts. Nonmonotonic reasoning involves assumptions and retractions of presumed facts on the basis of new information, defeasible, characteristic of human reasoning. This defeasible nature of human reasoning accounts for the "failures of our societies and our lives" while also instructing on how to go about fixing them, through abduction as a method of inquiry; by becoming knowledgable, improving cognitive resources while maintaining "intellectual focus on moral and ecological commitments" (*Discoverability*, p 17), i.e., asking the right questions, consulting the right oracles. The nonmonotonic nature of human reasoning is revisited with Peirce and Thirdness in the next section of this chapter.

Magnani's aim in *Discoverability* is not to communicate a specific discovery, or to relate facts. He is careful not to prefigure potential for "good" cognitive chances. His aim is communication of conditions for discovery in general, in which case over-specification imposes unnecessary constraints. Reminiscent of the quotation with which this chapter

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[3] Each human pursues a destiny. Socrates is a human. He pursues a destiny.

began, Magnani writes in *Discoverability* that "we are responsible ... for potential fruits of human abductive creative and selective cognition" which "depends on our intellectual and practical curation of eco-cognitive openness." (*Discoverability*, p 124) In Magnani (2023), he cautions that over-specification may constrain requisite openness: "In this instance, achieving the right amounts of 'communication' to support the optimal affordances is a crucial component of 'curation' of the eco-cognitive situatedness." (2023, p 134) The message overall is to keep possibilities for human creative abduction open. The emphasis of this chapter is that requisite openness is internal to the subject. ultimately, we are our own oracles.

## 3. Self-abduction

Section 2 introduced abduction in terms of affordances and oracles, as environmental anchors of opportunity and sources of information. This section considers an inner source of affordances. Section 3.1 considers affordance through sign activity. Section 3.2, self-control and self-abduction. Section 3.3, external constraints on self-abduction. Section 4 concerns religious self-abduction. Overall, the account is of a self which is essentially propositional, embodying its own consequences, aiming for a project conclusion whether these are normal near-term, or universal and religious.

### 3.1 Affordance through sign activity

Now, as the body is to be kept in upon the down-hill, and forced upwards, so there are some virtues that require the rein and others the spur.

- Seneca[4]

Abduction bridges outer and inner worlds. Magnani considers variable capacities for such bridge-building in terms of cognitive resources, "well-fed minds" (Magnani, 2007). Vincent Colapietro (1985, 1988; discussion of Peirce relies heavily on Colapietro, often without direct reference) characterizes Peirce's theory consistently. Peirce described the mind in terms of feedback loops, with the external shaping the internal, and with present experience of the outer world prefigured by inner world activity. Moreover, in Peirce there is an active aspect in creation of what Magnani treats as "cognitive chances" through inward sign activity. On Peirce's view, the inner world is not limited to prior experience of the external world. Rather, Peirce's "inwardness" involves signs learned from others, enculturated, transformed and created independently, through internal sign activity influencing forward action as if from another world, entirely.

Peirce's basic idea is that minds are complex, hierarchically ordered habits refined through experience, with some originating from within those minds themselves. Minds are semiotic, characterized by sign processing activity involving self-consciousness (First), self-criticism (Second), and self-control (Third). Simply, self-consciousness (Firstness) is of criticism can be expressed through performative example and language (Thirdness) over ongoing iterative action from the perspective of internal ideals at the top of the hierarchy (Secondness).

Peirce considers different kinds of mind. A "cognitive" mind is any mind able to perform interpretation (Thirdness), "learned, automatic or autonomous" (Colapietro, 1985, p 497).

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[4] 1882, p 143.

Most habits are taken up uncritically in response to external regularities, with minimal self-consciousness. At least some human minds can change habits through internal sign activity, and are capable of conscious self-control in light of ideals; they are "rational". "Rational mind" is cognitive, yet able to direct the formation and revision of habits which prefigure future engagements.

Peirce considers the breaking of habit in terms of self-control (consider Colapietro 1985 p 503). Self-control is for Peirce essentially inhibitory, negating habit. By not doing as had been done, there is potential to do differently. A rational subject can be self-conscious of acting habitually, self-critical in failing to meet a higher standard, and self-controlling when establishing new habits going forward. Habits prefigure reactions to signs, and the formation and revision of such reactions is the goal of inner sign activity, beginning with breaking habits. To do something differently, first what had been habitual, prior, must not be done, now, requiring an intercession into the routine flow of sign activity from the point of view of a self-critic present to self-consciousness. Like Augustine, for Peirce, I err, therefore I am, and act in correction of such error.

Inwardness affords variable access to universals, freedom to act from these instead of from habit through self-control, as well as communication with others on this basis. Commonly embodied interaction with the shared environment informs these universal determinations and can be communicated, with metaphors like "landscapes" of affordance or "slopes" of opportunity as discussed in section 3.3 of this chapter. At the same time, similar metaphors describe affordances that are not anchored externally, such as with Kant's Kingdom of Ends, i.e. we do not meet ends, we meet people on the way to ends, ends in themselves and rational minds. Rational minds have access to and can set as goals relatively invariant conditions through inner dialog involving universals which are also externalized and tested against other rational minds in communication. Inner-worldly sign activity changes the external world through this behavior, creating, uncovering and communicating opportunities for doing otherwise. These products of inner sign processing are called "self-affordances" in this chapter.

Self-affordances are products of Thirdness. Jamin Pelkey (2003) emphasizes Thirdness during critical points such as breaking of habit. Pelkey (2003) emphasizes the non-linear nature of Thirdness, and clarifies how First, Second and Third are related as a matter of origin, end, and intermediate action from one to the other. Pelkey's focal message is that Thirdness is this intermediacy: "If the end is second and the middle is third, then, sequentially speaking, at least, Thirdness is not third." (2003, p 79) Pelkey quotes Peirce:

"By the third, I mean the medium or connecting bond between the absolute first and last. The beginning is first, the end second, the middle third. The end is second, the means third. The thread of life is a third; the fate that snips it, its second. A fork in a road is a third, it supposes three ways; a straight road, considered merely as a connection between two places is second, but so far as it implies passing through intermediate places it is third. [...] Continuity represents Thirdness almost to perfection. Every process comes under that head. Moderation is a kind of Thirdness. The positive degree of an adjective is first, the superlative second, the comparative third." (Pelkey 2003, p 79, citing *Collected Papers* 1.337 from 1875)

Aspirational ideals as discussed in this chapter represent Secondness as global attractors or project ends. Thirdness holds Second against First in comparison. In terms of self-abduction, Thirdness is the relationship between the beginning and end of an abductive argument that at once affirms its own conclusion, as on the way to it. It is in this way that

self-abduction concerns an embodied consequence relation, essentially propositional in the form of hypothesis, defeasible and yet simultaneously self-affirming in commitment to find out. First are unique starting conditions, priors, habits and dispositions. Second, aspirational ideals, aims, goals, target conditions develop as products of inner sign processes representing universals including logic and ethical principles. Third is the continuity that reconciles Second with First, bridging ends to origins, holding alternatives presented for action as forks in the road to critical account. Here is the freedom of the rational mind, through inner sign activity and self-control, to determine what comes next. Each possible next is a self-affordance, represented as a fork in the road on the way to solving own own fill-up problem. The focus here, echoing Magnani, is on how self-afforded freedom can become "good".

Self-abduction begins with the difference between the "absolute first and last" of the semiotic mind, so corresponds with Secondness. The idea is that human beings embody aspirational ideals through adolescence as a Second, marking an apparent discontinuity from childhood entrainment of relevant capacities including for example self-control, First. These are reconciled through Thirdness, as self-affordances inviting interaction with the environment, opportunities about which more or less known (often, practically very little). The next subsection begins with Peirce on childhood, and considers the development of Secondness as the *where* to which we lead ourselves away in self-abduction over the life course.

### 3.2 Self control and developmental self-abduction

Virtue is divided into two parts, contemplation and action.
- Seneca[5]

Sympathy, flesh and blood, that by which I feel my neighbor's feelings, is third.
- Charles Sanders Peirce[6]

The most immediate evidence for inner world effects on outer world conditions is in changes that we make to our own habits through self-control. Self-control is inhibitory, opening opportunities to do something else by not doing what prior habit directed, first. Peirce emphasized the role of inner dialogue on self-control, with an inner critic representing what this chapter treats as aspirational ideals. Peirce is clear that children do not express capacities for self-control. A child's inner critic is not yet fully developed. This is why early education teaches restraint from spontaneous actions, to train self-control. Peirce describes children as subjectively aware, but with inner worlds not yet individuated. Though they think, and are cognitive, they are easily distracted, oriented outward having not yet developed necessary capacities for inner discourse of the "rational mind".[7]

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[5] 1882, p 140.

[6] 1974, 1.337.

[7] “No one questions that, when a sound is heard by a child, he thinks, not of himself as hearing, but of the bell or other object as sounding. How when he wills to move a table? Does he think of himself as desiring, or only of the table as fit to be moved? That he has the latter thought is beyond question; that he has the former must, until the existence of an intuitive self-consciousness is proved, remain an arbitrary and baseless supposition.” (5.230)

Rational mind develops through language expressing universals against which personal experience is held to account. It is also at least partly through language that a sense of individuated self presents as distinct from others on which the child has been so far completely dependent. Peirce considers a child touching a hot stovetop contrary to verbalized warnings against the action. Touching a hot stovetop in disregard of signifiers such as "hot" encourages correction in the direction of such intersubjectively accessible representations, i.e. do not touch hot things. Most Importantly here, consciousness of an inward self as separable from others emerges in this process of experiencing deviation from intersubjectively accessible signs (Boersema, 2003, quotes Peirce 5.233 in this context). Peirce defined 'self-consciousness' accordingly, as developing through experience into more than "a mere feeling of subjective conditions of consciousness, but of our personal selves. ... I know that I (not merely the I) exist." (Boersma, 2003, quoting Peirce, 5.225)

The rational mind of Peirce develops after childhood initiation, with the emergence of a self-critic over ongoing interaction. This critic is made possible by the growth of higher-level cognitive processes that hold critical moments to account, for Peirce most eminently through logic. Colapietro quotes Peirce, writing that "'the critic' (what we would call the critique) of thought is the business of logic, and logic is concerned (at least, in part) with the universally valid laws governing potentially public symbols" so that,

"if logic deals with thought, it is thought not in any subjective sense but rather in an intersubjective one - thought as something open to the scrutiny of an indefinite number of human reasoners." (from Colapietro, 1988, chapter 5, quoting Peirce CP 3.404).

Children develop rational mind as experience through language affords this scrutiny through inner sign processing. Inner-discourse with indefinite numbers of human reasoners resembles the "imaginary audience" reported to emerge during adolescence. The idea with developmental self-abduction is that once universals are learned, and self-consciousness so determined through inner discourse with these as represented by Peirce's inner critic, lasting-associations between prior and target conditions are established - embodied as living hypothesis - toward the resolution of which a subject thereafter is disposed over the life course. A subject is in effect led away from prior conditions to target ideals as absolute end and unique destiny. This is developmental self-abduction.

As with external regularities, universals stabilize expectations. They also afford freedom to act contrary to perceived external patterns, routines or regularities. On what basis are alternatives evaluated? This chapter considers aspirational ideals and experience involving universals through language, including logic and ethical principles. Self-affordances present as freedom to act from internalized universals understood as aspirational ideals which distinguish self from other as these deviate. Magnani considers the "paradox of autonomy" in a similar way, that we must consign ourselves to binding principles in order for freedom to be possible:[8]

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[8] Paradox of autonomy: "based on the fact that cognitions (from science to morality, from common knowledge to philosophy, etc.) are needed to be able to perform autonomous actions and decisions because we need to believe in rules that justify and identify our choices, but, at the same time, these same rules can become (for example, as a result of contrasting with other internalized and approved moral rules or knowledge contents) oppressive norms that weaken autonomy and so, paradoxically, can defeat agents' autonomous capacity 'to take ownership'". (Magnani, 2020, p 10-11)

"Religion, morality, moral knowledge, and teaching enhance and permit free will because they impose order on the randomness of human behaviors, giving people a better chance of owning their destinies." (2022, p 122)

"Owning their destinies" in the present sense involves pursuing inner associations with ideals through self-control, and embodying the consequences. Embodied consequences of internalized universals are important. Imposing order comes with costs. There is work involved, and consequences may be uncomfortable. Magnani (2020) recognizes that exercising ownership over destiny becomes "burdensome" motivating many people to "jettison the concept of choice" and "relinquish autonomy and freedom and externalize responsibility" to the outside world, including to norms and power structures which determine affordances, entering into a condition of "bad faith".

This is the condition in which Magnani finds science and academia in *Discoverability*. Roughly, bad faith is going with what is easy rather than working toward what is ideal. Magnani (2020) argues that understanding this self-deceptive stress-minimizing aspect of "ourselves and our condition ... can help us to manage our beliefs and guide us individually toward collective solutions to a number of difficult problems related to bad faith and its challenges to autonomy." (2020, p 3-4) This chapter returns to the ideal of externalized responsibility in section 4, with sacrifice.

Consider again Peirce's semiotic subject. His view consists of three key elements: semiosis (sign activity), habit (disposition to act in certain circumstances), and autonomy of self-control (regulation of conduct). A rational mind develops self-control over a hierarchy of habits through inner discourse involving a self-critic representing internalized universals, such as logical operations and ethical principles. Children must grow this hierarchy, through experience, and through language train inner sign processing and self-control accordingly, thereby becoming autonomous in Magnani's sense of "ownership" of destiny. I embody the consequence of action, and not only the next one, but all that follow to the absolute end. I lead myself away from this next situation, breaking habit to act toward ideals, or according to routine. Magnani (2020) considers self as narrator in this way:

"The self as narrator performs an abductive activity devoted to formulating hypotheses about the status of its own actions: human beings continually build and revise a cluster of self-accepted hypotheses that contribute to qualifying some of their own actions as autonomous or not." (2020, p 3-4)

Bound to ideals that may be contrary to expedience and popular norm, adult human beings are more than cognitive, or rational; they are moral. For Peirce, morality is self-control exercised from compassion. Consider the semeiotic processing cycle described in this chapter, and Magnani's eco-cognitive openness. In compassion, a subject opens to suffering others as oracles, answering what it is like when things go wrong. Feeling with the other, the significance of suffering situations are felt as if one's own through compassion, motivating abduction to optimize the situation, to remake the world without this suffering. This is the moral autonomy of a rational mind, with the moral value of discovery communicating solutions to collective problems so that others are saved the costs. For such reasons, Magnani (2007) teaches that knowledge is a duty. Magnani's concern in *Discoverability* is that contemporary institutions incentivize constituents to personal comforts, instead. The next subsection considers a contemporary account of the good life which represents such a strategy, before recovering nascent potential for salvation, through religious self-abduction, in section 4.

## 3.3 Self-abduction and external constraints

It is by the impulse of virtue that we love virtue, so that the very way to virtue, lies by virtue, which takes in also, at a view, the laws of human life.

- Seneca[9]

In his *Confessions*, St. Augustine reports on his early life as a sort of wandering. He searched his memory and found – regardless of changing context – a constant relationship between each recollected instance and his accountability to God. He traces this experience to adolescence, when turning away from God to 'please himself and win respect' in worldly pursuits (Book II). He recognizes the influence of the external world on the inner life, and is troubled. He describes a lifelong pursuit of invariant principles culminating with his placement in the Church. Here, he emphasizes the influence of inner life on the external world, expressed for example through charity and compassion.

Comparable to Peirce's community of inquirers, Augustine considers life most meaningful in relation to God as representative of guiding principles. Like Peirce, Augustine associates self-consciousness with error. Augustine highlights an inner association with an ideal world and self-model in the figure of Jesus Christ, and describes external and internal conditions unachievable through direct interaction with the object environment in the embodied lifetime, such as through his figurative City of God. Briefly, Augustine's self-report describes the biological development of religious self-abduction.

The significance of Augustine's account, distinguishing religious self abduction from other forms of life, can be appreciated in comparison with popular cognitive science. Consider Miller et al.'s (2022) predictive processing inspired, enactivist account of happiness as health and well-being. Roughly, and in familiar terms, happiness is error minimization. Error is associated with stress, and stress minimization over the life course is associated with well-being. "Resilience" is flexibility in enacting entrained routines described as "configurations" in service of minimizing stress and maximizing well-being. Optimal configurations are"metastably attuned" or "poised in a way that allows them to make the most of the affordances relevant to them" and "to learn the most about the environments they frequent" in order to minimize potential for stressful error (Miller et al., 2022, p 9; compare with Magnani on salience in section 2 of this chapter).

Miller et al. (2022), and enactivism generally, represent dynamics systems theory as applied to cognitive systems. Again, dynamic systems move spontaneously to low-energy stable states in terms of their environments. Human beings can more or less deviate from these environments, incurring unstable states, to transition to better, or preferred, states. Predictive processing inspired cognitive science extends this principle into the future, with cognition anticipating change in order to reduce differences between expected and perceived reality, to maintain low-energy states through intermediate transitions from environment to environment, especially as these become routinized in a similar way to Magnani on niches. The foundational idea of predictive processing is that organisms which minimize differences between perception and environment, reducing error as a matter of policy, live longer. They adapt to or act on the environment to minimize potential surprise and avoid correlative stress associated with uncertainty, including injury and disease. This

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[9] 1882, p 142.

is the crux of the view. Miller et al. (2022) describe this condition in terms of their central idea, metastable attunement:

"Metastable attunement moves the agent in such a way that they find the balance between exploiting existing action policies and performing information-seeking epistemic actions that aim at reducing uncertainty." (Miller et al., 2022, p. 9)

Miller et al. (2022) compare short-term error minimization characterized by "a hedonic view that understands well-being to consist of a life of positive experiences such as pleasure and happiness", and relatively long-term error minimization in "eudamonia","fulfilling or realizing one's potential as a human being", in order to expose "the computational differences between momentary subjective happiness and overall well-being" (p 2). Briefly, the difference is in error summed over short or long timespans. They associate hedonism with minimizing error from relatively short-term goal conditions, such as on the model of pain relief, and they associate eudamonia with "global" health and minimal stress over the embodied lifetime. Basically, the idea is that attunement to opportunities uncertain enough for personal growth, while avoiding chronic and acute stress conducive to illness and injury, should result in longer life with less suffering and a greater sense of self-control, "the good life".[10]

The biological connection between stress and disease is that error increases metabolic costs including those associated with higher-level (conscious) computational processes for correction of defective policies, distracting from attention to resolution of other needs, such as sleep or safety, thereby potentiating instability or dissolution of the body system through disease and death. Chronic stress associated with disease indicates ill-fit policies (habits) with environmental constraints. Incapacities to flexibly adjust policies to meet external conditions indicate overly rigid policies, such as with dogma or addiction, and imply mental disorder. Acute stressors, such as the loss of a loved one, imply critical points of irreversible change which might be interpreted in terms of rigid associations and lack of flexibility, or "resilience", potentiating injury.

Recall self-control for Peirce, as inhibitory. Rational self-control for Miller et al. (2022) means minimizing error with the embedding environment, and they describe internal sign processing accordingly, as involving adaptive capacities to change habits, what they treat as flexibility and resilience. They confirm metabolic costs associated with self-control, and offer an account of the influence of inner sign processing on self-control, namely when dysfunctional. Finally, they offer a formula for the good life in terms comparable to Magnani's optimal situatedness, again as metastable attunement but here with a focus on what Peirce might consider self-control:

"When things are going well, and they are on good slopes of error reduction, they should continue on the same path. When, however, a niche is so well predicted that there ceases to be good slopes of error reduction available, agents should begin to explore for opportunities to do better. ... We will refer to this dynamical state of remaining metastably poised as a state of "metastable attunement". By tracking the changing rate of error reduction, such an agent will be attuned to opportunities to continually improve in error reduction." (Miller et al., 2022, p. 8)

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[10] Correlative with the general idea of temporal hierarchy such as is evident in Peirce, Augustine, focal for contemporary predictive processing theorists, and implicit in this chapter throughout.

Slopes correlate with affect, e.g. panic-inducing or boring. Skillful error reduction feels good, or at least doesn't feel bad, as it threads the middle. Their advice in seeking "good slopes of error reduction" is to avoid overly steep slopes and to move away from flat ones; go with what feels better over the longer term, moderate risk to minimize stress and uncertainty inviting injury and illness. Miller et al. (2022) write:

"We take positively and negatively valenced affective states to be a reflection of doing either better than or worse than expected at reducing error over time. Valence can be thought of as the organism's evaluation of how it is faring in its engagement with the environment with respect to attaining predicted valued outcomes. ... We will henceforth describe optimally functioning agents as being motivated to seek out good slopes of error reduction." (Miller et al., 2022, p. 6)

Negative valence is felt error, reducing confidence in predictions, increasing energy costs associated with uncertainty, cognitive load, and stress. Positive valence confirms fit of policy to changing environment, correlative with facile transition between low energy stable states in dynamic systems. Regular achievement of minimal error over the long-term confirms metastable attunement, increases confidence in deployment of cognitive resources to focus on certain regions of the "field of affordances" at the exclusion of others, salience, and correlates with physical and mental well-being. Optimal performance is characterized, again, in terms of metaphysical attunement, carefully deploying cognitive resources in order to "juggle multiple cares and concerns in an optimal way ... experienced by the agent as a background feeling of well-being - the felt experience that the system is set up to handle life's many challenges." (Miller et al., 2022, p 11) This is the experience of happiness that they associate with eudamonia.

Miller et al. (2022) illustrate their view with goal oriented behaviors, one aiming at one-off "hedonic" action that comes to completion in immediate security of a sought-after good - "buying a car comes to an end upon purchasing that car" – and another involving longer-term self-development through pursuit of complex aims including "being more mindful or compassionate, or being a better partner, or serving one's community" which "are all goals that are potentially never finished" and "allow for the continuous broadening of the field of relevant affordances" thus being "likely to be conducive to maintaining metastable attunement, and therefore to living a flourishing life." (p 10) In this way, Miller et al. (2022) reduce happiness to error-reduction that maintains personal well-being.

But, what to do when "good slopes of error reduction" appear absent in the environment?

"When a particular niche ceases to yield productive error slopes, negative valence signals to the agent that they ought to destroy their own fixed-point attractors in favor of more itinerant wandering policies of exploration. ... However, we also have a tendency to actively destroy these attractor states, thereby inducing instabilities and creating peripatetic or itinerant (wandering) dynamics..." (Miller et al., 2022, p 9)

A fixed point attractor is a goal state or condition that impedes "flexible performance solutions", such as invariant moral principles, e.g., "Do unto others" does not afford exceptions. Miller et al. (2022) recommend exchanging such rigid dynamics for "wandering" dynamics in search of exploitable slopes. Where affordances to improve in error reduction are not obvious, the advice is to evacuate associated contexts, cease relevant routines, and search for an exploitable slope so that personal well-being may be secured. By destroying associated attractors, the cognitive system may more flexibly conform to ecological constraints. In this way, Miller et al. (2022) identify happiness with

flexibility in pursuing affordances, presuming also that embodied consequences are not so different from their antecedents (involving an overly steep slope in transition).

In the end, what are the computational differences between momentary happiness and overall well-being, according to Miller et al. (2022)? Consider the popular Dutch expression, "Doe maar Normaal, dan doe je al gek genoeg" - roughly, normal is crazy enough. Such a principle proscribes that change should come incrementally, by way of stress-minimal transitions. Well-being depends on such a strategy, over time. Habits are inhibited and associated attractors destroyed to maintain that normal range, not panic-inducing, not boring.

Miller et al. (2022) describe happiness for the individual in situations in which stressors are manageable, "digestible". However, if Magnani's diagnosis is correct, then normal is part of the problem. We are at a collective critical point at which we cannot continue as has been the norm. We need dramatic change. We benefit from cultural inheritance, including ethical principles and religious institutions, but we also need a way to carry the best of this inheritance forward. We need what Margaret Boden called "historical creativity". and it is not clear how this can come from pursuing personal well-being as a general policy:

"An idea is psychologically creative only if it is new to the individual mind having the idea. The person who has a psychologically creative idea will have never entertained that idea before. An idea is historically creative, on the other hand, only if no one has ever had it before in the whole history of the world." (Brainard, penultimate draft, p 12-13)

How to potentiate history-making creative abduction? It is not clear how such a productive slope of error correction might appear to the enactivist's "Gibsonian neuroscience". The answer that is pursued, here, is to look deeper inside the head, not outside in wandering itineracy.

For Magnani, abduction is concerned with optimal situatedness, but these situations are not confined to one's own. There is the potential to entrain purposes from internalized universals that outstrip the individual lifetime, or seem contrary to personal well-being, and if impossible to achieve those, individually, to at least communicate how to achieve those, to save others the (computational) costs.

Consider a billiard ball rolling down a hill. To be "happy", this billiard ball minimizes the difference between itself and the rolling landscape through expedient affordances all the way down, looking ahead to avoid overly steep slopes that reduce capacities for control over the descent. In contrast, Augustine seems pulled by an inner slope inaccessible through the object environment, and acts from a faith which may look like addiction from the outside, in. What is missing in the billiard ball is inner sign processing that may afford freedom to pursue such a slope, even where this does not cohere with externalities including popular norms, such as may be necessary for a scientist or academic to act in correction of the corruption of embedding institutions described in *Discoverability*. "Serving one's community" is not good, when that community is bad. It is not clear how the billiard ball can tell a difference.

Miller et al. (2022) do not directly account for value-orienting inner self-associations with aspirational ideals, such as reported by Augustine. They do not consider the metabolic costs of "imposing order" on the external world through communication, compassionate or violent. Rather, the wandering itineracy of their "Gibsonian neuroscience" champions conditions that Augustine associates with being lost in the world. He understands their

position in terms of mankind's "fallen" condition. With his self-report, Augustine is in effect overlaying an inner slope onto that ecological landscape of opportunity, representing inner associations with ideals and the struggle, at personal expense, to pull the world a little closer to them. The idea here is that this aspirational slope directs the subject upwards, rather than down, countering the fallen condition through self-sacrifice at the cost of personal well-being. Importantly, this orientation is maintained even where there is no support from the immediate environment, such as when one's "better partner" is God.

How to maintain such a trajectory, when personal deviation stands out as error from embedding norms? Augustine reports on his own inner struggle to free himself from social constraints, to follow his faith. Through inner discourse, and with confidantes, he stopped evaluating a good life in terms of normal social and material affordance landscapes. With the destruction of associated attractors, he reports a felt unity with self and other, inner peace correlative with minimal error with universal principles, and describes this condition as humanity's natural state. His formula for happiness is apparently contrary to Miller et al.'s (2022), rigid in principle rather than flexible in performance, involving self-sacrifice at personal expense.

In the end, Augustine is not completely free from externalities. There is an environmental component to Augustine's self-abduction, his placement in the Church. We can imagine such environments as pro-religious in the sense of stabilizing worldly interactions around principled practice from concern for humanity and nature writ large, affording stable opportunities to turn free will into good will.

Magnani's focus in *Discoverability* is on other institutions, but in a similar way. Science and the academy represent institutionalized discovery affording freedom to stand for the truth, but are increasingly corrupted by selfish, relatively short-sighted, material interests, instead. Again, it is not clear how serving such a community can be reconciled with stress-minimal normalcy. It is less clear how walking away to look for more exploitable slopes can solve the problems that need to be solved, only through the reconditioning of these institutions. The idea, here, is that we might reconsider these institutions as religious, in the sense of supporting and encouraging commensurate ways of life. Such commensurate ways of life are subject of the next section.

## 4. Religious self-abduction

### 4.1 Self-sacrifice

> Yet he must not be aware that the age needs him or at least not want to be aware of it, for at that very same moment he, too, has steered off course, misled by the world-historical.
>
> - Kieerkegaard[11]

For Peirce, self-control is inhibitory, impeding habit to open opportunities to do differently. Correlatively, Miller et al. (2022) consider a capacity to "destroy" attractors impeding change. As with Magnani, all emphasize a sort of eco-cognitive openness to opportunities nascent in the environment through exploration, recalling Hintikka's oracles. All insist on becoming better error reducers. Where they differ appears to be in the direction of recommended improvement, in what is good, and how to get there.

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[11] Pap. VI B 98:62 n.d., 1845, in Kierkegaard (1992), p 77.

Miller-et al. (2022) recommend flexibility of higher cognition to adapt to operational contexts over the embodied lifetime, to modulate personal error during iterative action with given social material environments. On their account, attractors that resist destruction "create fragility in a dynamical system due to their making the system rigid and so less adaptable to a changing environment." (p 23; similar views are critically surveyed in White, 2022). Again, for them, increased flexibility implies decreased error, with less error corresponding with constructive confirmation that embodied routines are adequately precise in current and anticipated operational contexts, that "the system is set up to handle life's many challenges" like a billiard ball that can stay close to the ground, all the way down. This view describes a sort of eco-cognitive openness. Limitations involve the scope of anticipated operational contexts, extending to death, which is to say that there is no apparent reason for a subject so described to pursue solutions to problems where the fruits of these efforts are unlikely to be realized in the embodied lifetime, or when these problems do not bear more or less immediately on anticipated or unavoidable operational contexts. Why waste energy planning for slopes that you will never see?

Peirce takes commitment to solutions to such problems as universal to rational minds, as subjectively represented by an inner self-critic leading away from immediate to ideal conditions, as if a member of a community of rational inquirers. Peirce is explicit about the ideal toward which the scientific mind is oriented. Briefly, the cosmos is an argument; we are tasked with the resolution of this argument, and life in accord with its conclusions as exemplified by such a community. Magnani's *Discoverability* works from this tradition, calling for institutions to be redirected to provide for this potential. Given the current state of such institutions, none of this sounds like it may be conducive to stress-minimal personal well-being. Rather, one may be more inclined to follow Miller et al.'s (2022) advice, and find something else to do.

Peirce's ideal community represents norms increasingly absent in the contemporary world, but to which one may attune, regardless. Doing so generates stress with peers led by logic closer to Miller et al.'s (2022). Peirce's life exemplified such a struggle, and must have felt like a sacrifice, when his grant applications were denied, or stable positions withdrawn, creating uncertainty, impoverishment suffering disease and without the charity of others, giving him bread, death. Throughout, Peirce remained committed to solving outstanding, collective problems, discovering relationships and generating insights into the nature of the human condition which are only recently becoming influential as science has caught up, since. Science was for Peirce something of a religious practice. There is perhaps no other way to regard such a commitment to solving problems which outstrip the embodied lifetime of the scientist in question, through self-sacrifice in service to ideal communities rather then to personal well-being. The point of this chapter is that this is the sort of commitment that is necessary to answer Magnani's call to action in *Discoverability*, as well.

Magnani and Bertolotti (2015) consider sacrifice in this way, as religious, as the initiative to solve problems through personal resources, without selfish investment in outcomes:

"The common denominator of sacrificial dynamics is the will to resolve a distressful situation, a crisis, a conjuncture whose outcome is not known but unlikely to be merry. The sacrificial dimension, which is to become religious, is the standing for the best, and not the best itself: it is a vector connecting different planes, fueled by – and opening to – violence." (p 10).

This vector is recognizable in the embodied consequence relation of self-abduction. Peirce's ideally rational mind pursues such a policy, "standing for the best" in logic and compassion, as does Augustine though charity and care for community, having ceded a promising future as professor of rhetoric. Such "standing for the best" is either absent in Miller et al. (2022) or dysfunctionally rigid. As for opening to the possibility of violence, Christ exemplifies such a course in forcing moneychangers from the temple, where they had inserted themselves between personal faith and communion with God. In terms of present discussion, Christ sacrifices himself to keep open institutional affordances to freely connect the different "planes" of Magnani and Bertolotti (2015), and represents the spirit motivating this chapter. Inward commerce with universal principles must be free from money-power corruption. We must stand for the best, regardless of embodied consequences.

Problems present when costs associated with self-sacrifice, standing for the best against the spontaneous slope of popular norm, are forgotten. Magnani and Bertolotti (2015) consider ritual sacrifice in this way. Religious sacrifice is performed as if repetition of outward signs of associated costs, i.e. a life, is sufficient for correlative access to the best for which such ritual sacrifice figuratively stands. Ritualization externalizes these costs. Rather than recognizing that Christ's sacrifice, Peirce's resolve, Augustine's ideals, were their own and that one's self must sacrifice, similarly, to stand for the best, ritual performance is offered in substitute through someone else's sacrifice, instead.

Ritual performance externalizes and in this way covers over necessary self-sacrifice in "standing for" something outstanding and ideal against popular norms. Magnani and Bertolotti (2015) associate ritual with magic in this way, as performance without personal entrainment of the necessary "standing for the best" relation. They explain further that ritual performance stands in for access to the good, distinguishing who is "other" and without such access, in this way excusing the violence in ritual sacrifice "as it is conceived as good in the performer's mind" (Magnani and Bertolotti, 2015, p 7 their emphasis). Through such excuses, Christ was nailed to a cross. This is how the money-changers resolved their crisis, through sacrifice but not their own.

Ritual sacrifice represents irreversible transformation, as in self-sacrifice. Subjects taking part in ritual performances embody common, unifying consequence relations, while closing off to others, reminiscent of Magnani's (2011) embubbled military intelligence. The ritual magic of Magnani and Bertolotti (2015) is rigid as a source of fragility in the system so organized. Moreover, as ritual participation *stands in for* one's self *standing for* the best, it occludes the potential for personal embodiment of this relation, as well. As the costs of standing for the best are distributed away from the personal, the significance of self-sacrifice is forgotten. It covers over what is necessary to afford necessary change. And, with repetition, supporting institutions become associated with characteristic architecture affording ritual performance rather than with the community of human beings disposed to pursue exemplary actions. Practical commitment to ideals is reduced to a sort of theater where someone else's sacrifice is replayed, to make money, as with the privatization of publicly funded discoveries for personal profit rather than common benefit, as is the case with the commercialization of science and academia, today.

With ritual performance standing in for the standing for the best, the embodied consequence relation of self-sacrifice as vector binding material with ideal is occluded completely. This is the condition in which Magnani finds contemporary science and academia in *Discoverability*. The point of the present discussion is to underscore why self-sacrifice is so important in this context, in order to evidence that standing for the best

remains possible even as institutions traditionally tasked with supporting associated inner sign processing are failing in this role.

Magnani and Bertolotti (2015) consider self-sacrifice in a way that is helpful, here, as "a performative way of signaling that things might improve" representing what they call "hopenness":

"... self-sacrifice totalizes how a sacrifice embodies an openness to the worst, but this is fully sublimated in favor of hope for humanity, inasmuch the subject abandons any possibility of future action as an individual self." (p 9)

"Hopenness" blends "openness" with "hope" representing commitment to improve collective conditions at personal cost; i.e. to destroy ritual attractors and open public discourse to something better. "Something better" here corresponds with the simultaneous affirmation of embodied consequences in self-abduction. Self-sacrifice through hopenness, in this way, involves inhibitory self-control, destroying attractors associated with material self-interest in the service of something greater, and represents the simultaneous affirmation of the embodied consequent relation of self-abduction, even where target consequences won't be one's own. Why commit one's self, sacrifice one's life, in hopenness? Compassion. In complement to access to universals such as through inner discourse with ethical principles represented by Peirce's self-critic, self-interest dissipates through compassion and individuals regard themselves as embodied vectors of intention aiming for collective ideals, saving someone else from suffering consequences as if these were one's own. The next section considers such dynamics under the heading of "identity fusion".

### 4.2 Religious self-abduction as autonomous self-sacrifice

Hence, the kingdom of ends is a kingdom of possible free choices created by (and contingent upon) human beings ... .
- Lorenzo Magnani[12]

Then are we to do them an injustice by making them live a worse life when they could live a better one?
- Glaucon[13]

The basic idea with self-abduction is that humans develop access to universals including ideals such as are evident in self-criticism. Different from popular enactive cognitive science, Peirce's inner critic leads the subject away from expedience in self-correction toward aspirational ideals through self-control. The force of the Peircean Second over the rational mind thus remains always in front. Thirdness exposes intermediate action contrary to associated ideals as error, subjectively through inner discourse, and also publicly through critical communication, such as in this chapter.

Aspirational ideals represented by Peirce's inner self-critic develop from childhood self-consciousness. Self-abduction begins with this development, involving the creation of opportunities to act toward these ideals through inner sign processing, self-affordances.

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[12] *Discoverability*, p 123

[13] 519d, Plato (1997), p 1137

Hopenness is self-abduction open to personal sacrifice while standing for the best, to make the world a better place, motivated first of all by care and love for others extending to humanity, sentience, life, the natural world, and inherited ideas such as through Philosophy. Love for humanity is expressed in the communication of ideals and associated affordances, through performative example, and through the composition of scholarly works including Magnani's *Discoverability*.

Biologically, the hypothesis with self-abduction is that, as the adolescent brain expands in care and concern over social-historical space and time, aspirational ideals are variably encoded in a value associated subsystem of the default mode network, relying in particular on spindle neurons to bind these aspirational projects with lower-level enactive processes. Solutions to problems perceived during critical periods of development become lifelong passionate pursuits, presenting goal conditions for personal commitment of embodied resources; self-sacrifice may be pro-evolutionary at the group level in this way. Communication through access to universals as well as by performative example make such uniquely embodied solutions accessible to similarly embedded rational minds long after the historically creative individual has passed.

Consider Peirce's ideal community of inquiry, in complement to Kant's Kingdom of Ends and Augustine's City of God, signifying optimal situatedness for scientific discovery. Peirce was a performative exemplar of this way of life. Meanwhile, he suffered for being out of step with contemporaries, and no doubt would have lived more comfortably had he self-corrected in the direction of popular norms. Recalling discussion on Peirce on development of the rational mind, different ideals develop from different childhood self-consciousness. Other work on the biology of such variable value alignment implicates the anterior cingulate, as early development prefigures mature structural dynamics in human beings, encoded in spindle neurons (cf. White, in press). The basic idea is that early dynamics direct later development through mechanisms associated with the salience network in human beings, consistent with discussion of developmental self-abduction so far in this chapter.

As human beings iteratively open to information through more or less normal biological development, they form variably perceived project ideals through socialization and inner sign processing. The difference between, for instance, Miller et al.'s (2022) and an account such as Peirce's, Kant's or Augustine's, becomes how much weight is placed on one or the other, passing norms or those representing an ideal community. Either determine lifelong value associations, informing variable recipes for the good life, and represent target conditions for error reduction. Only one affords access to solutions to current problems through inward discourse with ideals. Questions remain concerning what can be done to redirect contemporary scientists and supporting institutions away from relatively short-term personal interests to long-term collective interests commensurate with Magnani's call in *Discoverability*.

Harvey Whitehouse (2023) considers self-sacrifice for a group in terms that are informative, here. His central idea is "fusion" of personal with group interests:

"The fusion construct proposes an identity configuration in which the personal self and the group become fused, such that making salient the personal self also makes the group identity salient, and vice versa" (p 7).

The question becomes to which sort of group one fuses, and how. Whitehouse (2023) considers fused identities formed through "doctrinal" and "imagistic" dynamics, reinforcing

self-associations in different ways to be discussed in greater detail as this section progresses. Both form identities of the sort that regulate goal pursuit as constituent members of groups. He discusses different experiences resulting in enhanced empathy motivating caring self-association with group interests, such as compassion for group-member suffering. When it comes to motivating direct action, such as through sacrifice and violence, Whitehouse writes that "there is compelling evidence that fused individuals are not just 'talking big' but will actually engage in extreme forms of self-sacrifice for the group" (p 9). His interest is in de-fusing destructive self associations, such as those motivating terroristic acts and violent crime.[14] The concern in this chapter is fusing constructive self-associations with the most extensive groups as represented by universals including ethical ideals, and humanity over evolutionary time as the ultimate beneficiary of scientific discovery, such as is ultimately Magnani's concern, as well.

Whitehouse (2023) describes the "imagistic pathway to fusion":

"... a stepwise process in which emotionally intense rituals have an enduringly transformative effect on personal identity because they give rise to indelible episodic memories and processes of reflection that become part of the essential autobiographic self." (p 8)

The basic idea is that collective trauma, such as of the Palestinians in Gaza, today, become defining episodes represented and replayed through ritual performance by in-group members, later on, thereby defining the group and its members by these shared experiences of sacrifice (reminiscent of Magnani and Bertolotti, 2015). These critical points recall Peircean Thirdness, forks in the road of shared history, for instance as many died, lost limbs, were displaced, homeless, so explaining the condition of the population, now. These irreversible transitions are ritualized, reinforcing group identity through imagistic fusion. Whitehouse considers evidence for this procedural ritualization of imagistic fusion from prehistory, physically in cave sites with lighting and acoustic properties affording "emotionally impactful rituals" correlative with Church architecture as noted at the close of the previous subsection of this chapter.

Whitehouse (2023) contrasts the imagistic with the "doctrinal pathway" which:

"is based on the sharing of ritual experiences that are so frequent they cannot be recalled in episodic memory ,and therefore cannot be linked to the formation of the essential autobiographical self." (p 10)

Whitehouse describes how routinization reduces group identity to scripts that one follows in fulfilling a role. Doctrinally entrained, personal responsibility is externalized to one's role in the collective routine, e.g., "I was only following orders".

Imagistic and doctrinal paths differ in ownership of personal destiny. Inner self-identification through traumatic (or ritual dramatic) experience spurs critical self-development toward constructive self associations with group-optimal conditions as aspirational ideals. Whitehouse calls the development of such deeply personal motivational self-associations with collective conditions "synergistic". Magnani and Bertolotti (2015) consider Batman as exemplary of this developmental course.

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[14] Clarifying relevant dynamics also exposes the totalizing self-commitment of something like historically creative self-abduction necessary to correct the accelerating "decivilization" noted by Magnani in *Discoverability*.

Doctrinal fusion answers to the burdensome character involved in self-control and ownership of destinies, as discussed in section 3 of this chapter. Through routinization, with identity reduced to role, e.g. citizen, soldier, wage-slave, the individual acts in service to community interests without reference to personally distinguishing aspirational ideals. Whitehouse (2023) calls such a process of developing self-associations "hydraulic" as participants are sucked up into what Magnani (2011) has treated in terms of informational bubbles. Doctrinal fusion is also evident where Magnani considers ritual stabilization of expectations affording complex social arrangements and institutions, such as are implicated in the paradox of autonomy. But, rather than freedom to act from ideals, Whitehouse (2023) emphasizes the influence of external interests responsible for embedding doctrine:

"Since routinization creates stable behaviours among ritual participants and makes them more susceptible to authoritative sources of information about their significance and meaning, the doctrinal pathway to identification entails the stabilization of a set of beliefs and practices over space and time." (p 10)

Though his focus differs from Magnani's in *Discoverability,* Whitehouse's schema helps to understand the forces at work in self-sacrifice for group interests. His concern again, is trauma entraining imagistic bonds which may drive deadly responses, and he considers the future:

"One of the greatest challenges humanity faces is that of averting ever deadlier forms of warfare, and that in turn will require new methods of managing the psychological drivers of intergroup conflict." (p 12)

Echoing Magnani's purpose in *Discoverability* (more directly in Magnani, 2011), Whitehouse (2023) finds popular approaches inadequate, for example faulting peace initiatives for pursuing doctrinal pathways, as if imagistic fusion through traumatic sacrifice might be undone by economic sanctions or treaties. He writes that "the main drivers of extreme behaviours are not doctrines but imagistic bonds" and so recommends focusing on "de-fusion" of self from imagistic group identity, rather than "de-radicalization" through "liberalization":

"Our starting point should not be ideology but *autobiographical memory*: the experiences that help to define our identities both as unique persons and as members of groups. Such events provide the well-springs from which intractable conflicts emerge and become entrenched." (2023, p 12)

Whitehouse's "wellsprings" of "intractable conflicts" spawn Magnani and Bertolotti's vectors bridging perceptual with ideal planes, and represents the embodied consequence of self-abduction as a Peircean Second, always in front, outstanding as ultimate goal conditions.

Self-abduction describes the development of variable project ideals and their pursuit through self-affordances. In *Discoverability*, Magnani is mainly concerned with what may be considered the doctrinal corruption of scientific and academic institutions, and their potential correction. However, imagistic self-identification with the collective best may be required for the historical creativity needed to seed a new culture of discoverability, and to remake stabilizing institutions. The idea here is to consider these as religious institutions, so as to entrain imagistic bonds motivating service to ideals as represented in Peirce's

ideal community of inquirers, to identify with such service over the life-course, and in this way to commit to scientific solutions for what appear to be otherwise intractable conflicts, at personal expense until supporting institutions are remade.

Whitehouse (2023) considers identity fusion at the level of groups engaged in crimes, suggesting that self-destructive behaviors resulting in incarceration may result from deficient synergistic fusion with compassionate, pro-social groups, such as supportive families. We may consider the corruption of science and academics through a similar lens. Associated roles, and self-identification through emotional bonding with constructive exemplars and shared ideals, are deficient in such cases. To "de-fuse" resulting dysfunctional bonds, he describes programs which replace participation in offending group practices with self-affirming participation in groups that afford pro-social imagistic self-identification. In this chapter, the idea has been to underscore such potential in light of internal ideals and principles, as represented by norms governing ideal communities such as with Kant's categorical imperative. Build the vector bridging the immediacy with the ideal in this way, by reforming the immediacy to support the ideals, affording opportunities to act as if a member of such a community, so that subjects may conform not with passing norms but with aspirational ideals, standing for the best. Given encouraging contexts, self-abduction toward ideal configurations should proceed autonomously.

## 5 Discussion

"... so great are our mistakes in the true estimate of things, that we have hardly done any thing that we have not had reason to wish undone;"

- Seneca[15]

"We then that are strong ought to bear the infirmities of the weak, and not to please ourselves."

- Romans 15:2[16]

Standing for the best involves more than ritual sacrifice; it involves imagistic self-association with aspirational ideals as represented in moral exemplars, icons and symbols, with value associations communicated by and reinforced through performative example distilled into ritual. As fused group identity is entrained through childhood and adolescent biological development, through a mix of doctrinal and imagistic pathways, the result is lifelong motivational and value orienting goal conditions pursued through self-abduction, by way of more or less creative self-affordances. Self-affordances are products of inner sign activity leading the subject away from the immediate material toward project ideal conditions, more or less distant and so more or less likely to be realized during the embodied lifetime. Religious self-abduction describes embodied purposes extending past that lifetime.

Religion involves target conditions which are not achievable during the embodied lifetime, but are regardless most worthy of pursuit during that lifetime. Such projects may present as products of traumatic experiences, such as through deep compassion with suffering others during critical periods as when under military occupation and systematic war through deception. In the desolation of a Gaza, for example, what remains but for personal

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[15] 1882, p 223.

[16] *King James Bible*

commitment, from personal resources, through self-affordance such as revealed through prayer, in communion with God, identifying with the universal, rational collective characterized by justice and mutual concern? What is left but religion, and the will to pull the world closer to what is true and good?

A subject developing through such imagistic pathways for fusion of identity with group interests takes the form of Magnani and Bertolotti's (2015) vector connecting the material with the ideal, standing for the best, and in this way represents the most recognizable form of self abduction, religious self-abduction. Enactive opportunistic slope-chasing also describes self-abduction, only involving shorter and more flexible vectors, or more accurately bundles of sub-vectors as dispositions held together through the coherence of embedding ecologies rather than from defining, individuating purpose or destiny. As embedding ecosystems disintegrate, it is unclear what becomes of co-dependent routine bundles. Augustine, Kant and Peirce in different ways afford sources for internal stability, through inner self-associations with relatively distant project ideals. Practically, the difference is that one pulls the world into ideal conditions, struggling upward, while the other descends into the world as given. Both exercise a sort of self-control. Only the former involves sacrifice of the sort that may correct for the routine corruption of science and academia that Magnani is confronting in *Discoverability*.

Consider again Magnani and Bertolli (2015) describing sacrifice as bridging two planes, one our "natural ecology" and the other, "Other". They consider sacrifice from Derrida, as an "*a dieu".* They consider *a dieu* a good-bye, as in 'go to God' through a more or less violent, irreversible, change. They consider also that the "*a*" in French implies location, i.e., belonging there, partaking with God. In this way, they make room for two possible interpretations of sacrifice, one in which sacrifice is externalized, dispatched somewhere distant while ritual participants remain detached, and another in the sense of invitation, in which the sacrifice becomes our own, internalized, God is within us.

The reader may wonder how such ideas may solve contemporary problems, to practically counter doctrinal corruption with imagistic self-associations with collective ideals and compassionate exemplars. As with Peirce, Kant, and Augustine, Philosophy has its vocational icons, such as Socrates whose sacrifice may be more or less directly re-enacted in the current context, perhaps only now better informed for the many betrayals, since. The potential with self-abduction on the model of Socratic religion is to become the oracle answering how to pull the world from its fallen condition, standing for the best through performative example by asking the right questions of others, that they are forced to become their own oracles, in the same way. The barrier In the context of science and academia as Magnani finds it in *Discoverability*, today, is as with Socrates that one must say goodbye to material interests, "abandoning any possibility of future action as an individual self" by taking up what is most emphatically a mission from God.

Magnani closes *Discoverability* conceding that finding "socially acceptable" means of communicating possible solutions to contemporary corruption is difficult (discussion p 128). Whitehouse recommends that focus be on establishing new rituals, to retrain destructive group identities. As to what conditions such rituals should reinforce, he notes that:

"All the world religions endorse the idea that humanity should take care of God’s creation or take responsibility for stewardship of the earth – in fact, this seems to be a point of common agreement across most large-scale religions and many indigenous and traditional ones as well." (p 13)

"Stewardship of the earth" here can be considered in terms of Magnani's curation of cognitive ecologies as a member of Pierce's ideal community of inquiry. Here, consider a philosophic pathway for identity fusion, through fusion of identity with the conditions for human welfare over evolutionary, rather than personally embodied or social-political, timespans. This is the scope of Magnani's vision. At the end of his own life, Peirce reflected from such a sense of fusion with natural order, God's creation - "Every mortal who stops to consider it is penetrated with love. It is irresistible" (as quoted in Depew, 1994). Imagine how that deepest common agreement and collective-self-identification in curation of this world and its affordances, including especially self-affordances, can be entrained. The answer offered in this chapter is through religious self-abduction. Cognitive ecologies such as in science and academia must be configured to inspire, and to support, religious self-abduction.

Practically, how to displace entrenched corruption without externalizing violence is not immediately clear. Magnani can be seen as working for such goal conditions through scientific communication, as through *Discoverability* and the lifetime of work preceding that book. And, oddly descriptive of that lifetime of work, Whitehouse (2023) concludes that a new social science bridging boundaries between academia and public policy is required:

"To build a systematic and rigorous science of the social would require the assembly of bodies of information too vast for individual minds to compute and the co-ordinated application of tools too specialized for individual academics to master alone." (p 14)

Magnani's work can be characterized in such terms, synthesizing across vast bodies of information inaccessible from within specializations to solve problems that are at least very difficult for human beings to compute, and can be considered an example of such a "science of the social world".

Consider in this context computers:

"From a semiotic standpoint, computers create new artifacts that provide new affordances, or “signs,” in the Peircean sense, for investigating, extending, and influencing our own brain’s thinking processes. In this way, they help “stretch the mind beyond the organic brain.” (Magnani, 2023, p 133)

The promise in the long run is that computer systems are designed to help with "the assembly of bodies of information too vast for individual minds to compute", epistemic mediators which, when considered in the context of Magnani's concerns in *Discoverability*, signify consolidated affordances for all potential affordances. Such systems, in development, are censored, filtered, and regardless return answers to questions only from the prospective past. These systems are not resources for historical creativity. That leaves people like Magnani to reconcile the project future with the inherited past, standing for the best at critical points in humanity's pathway of discovery, up or down.

## 6 Conclusion

... for a man does not feel what he does not know.

- Seneca[17]

Human beings serve as as signs for each other, through direct example, through metaphor, myth and narrative representations, through linguistic and other communications, through science. On this capacity, Magnani considers "narrative abduction" in the context of science. Narrative abduction involves "generation of creative and new" stories, such as considered by scientists when evaluating hypotheses. Scientists also employ narrative abduction in communicating hypotheses, coordinating prospective inquiry through language including diagrams and mathematics, all of which is embedded in narrative "construals" of the ways that different points of observation cohere in explanation (discussion from 2009 p 466, also p 414-415). Magnani (2023) is most interested in this potential:

"We have to repeat that, building affordances is a semiotic activity, mostly abductive, ... in which signs are correctly dispersed throughout to stimulate (or imply) a certain engagement rather than others." (2023, p 133)

This chapter has proposed a broad theory of self-abduction organizing diverse fields from cognitive science and developmental systems neurology to ethics, semiotics and religion. The idea has been to communicate potential to redirect civilization through inner sign activity as well as through performative example, through sacrifice. "Good" affordances for better futures are not obvious in a corrupted world under monetary compulsion such as is under Magnani's scope in *Discoverability*. That leaves self-affordances.

External anchors are only that, anchors. Self-affordances are internal, arising to self-consciousness through inner sign activity in light of ideals. These are the opportunities that may carry the world along with us, upward, in hopenness, for the benefit of all.

Through self-abduction, we act to bring the perceived immediacy closer to aspirational ideals. Religion represents the influence of distal ideals on the perceived immediacy. Ecologies should be optimized for development and enactment of religious self-abduction. Education and its role in affording religious pursuits through lifelong autobiographical self-associations with ideals must be prioritized, perhaps on the model of philosophic self-abduction, optimizing for historical creativity. In this way, our collective pathway may lead to something better. It is with responsibility over the direction of this pathway that Magnani's *Discoverability* leaves us, and where this chapter ends, as well.

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