

TOWARD AN AESTHETIC EPISTEMOLOGY: TRANSFORMING
THINKING THROUGH CYBERNETIC EPISTEMOLOGY AND
ANTHROPOSOPHY

By Seth T. Miller

A Dissertation Submitted to the Faculty of
the California Institute of Integral Studies
in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy in Transformative Studies

California Institute of Integral Studies

San Francisco, CA

2014

I certify that I have read TOWARD AN AESTHETIC EPISTEMOLOGY:
TRANSFORMING THINKING THROUGH CYBERNETIC EPISTEMOLOGY
AND ANTHROPOSOPHY by Seth T. Miller, and that in my opinion this work
meets the criteria for approving a dissertation submitted in partial fulfillment of
the requirements for the Doctorate of Philosophy in Transformative Studies at the
California Institute of Integral Studies.

Craig Chalquist, PhD, Chair
Department Chair and Professor, East-West Psychology
California Institute of Integral Studies

Robert McDermott, PhD
Department Chair and Professor, Philosophy, Cosmology, and Consciousness
California Institute of Integral Studies

Søren Brier, PhD
Professor, Department of International Business Communication
Copenhagen Business School

© 2014 Seth T. Miller

Seth Miller
2541 SE 75th Ave
Portland, OR 97206

2/14/2014
Bradford Keeney, PhD

Dear Bradford,

I am completing a doctoral dissertation at the California Institute of Integral Studies entitled "Toward an Aesthetic Epistemology: Transforming Thinking Through Cybernetic Epistemology and Anthroposophy." I would like your permission to reprint in my dissertation the following article, in full:

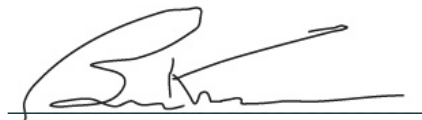
Miller, S. T. (2011). *An esoteric guide to Spencer-Brown's Laws of Form*. *Circulus: Journal for Creative Transformation*, 1(1), 105–159.

The requested permission extends to any future revisions and editions of my dissertation, including non-exclusive world rights in all languages, and to the prospective publication of my dissertation by ProQuest through its UMI® Dissertation Publishing business. ProQuest may produce and sell copies of my dissertation on demand and may make my dissertation available for free internet download at my request. These rights will in no way restrict republication of the material in any other form by you or by others authorized by you. Your signing of this letter will also confirm that you own [or your company owns] the copyright to the above-described material.

If these arrangements meet with your approval, please sign this letter where indicated below and return it to me. Thank you very much.

Sincerely,
Seth Miller

PERMISSION GRANTED FOR THE USE REQUESTED ABOVE:

A handwritten signature in black ink, appearing to read 'BK', written over a horizontal line.

Bradford Keeney, PhD

Date: 2/16/2014

Seth T. Miller
California Institute of Integral Studies, 2014
Craig Chalquist, PhD., Committee Chair

TOWARD AN AESTHETIC EPISTEMOLOGY: TRANSFORMING
THINKING THROUGH CYBERNETIC EPISTEMOLOGY AND
ANTHROPOSOPHY

ABSTRACT

The complexity, subtlety, interlinking, and scale of many problems faced individually and collectively in today's rapidly changing world requires an epistemology—a way of thinking about our knowing—capable of facilitating new kinds of responses that avoid recapitulation of old ways of thinking and living. Epistemology, which implicitly provides the basis for engagement with the world via the fundamental act of distinction, must therefore be included as a central facet of any practical attempts at self/world transformation. We need to change *how* we think, not just *what* we think. The new epistemology needs to be of a higher order than the source of the problems we face.

This theoretical, transdisciplinary dissertation argues that such a new epistemology needs to be recursive and process-oriented. This means that the thoughts about thinking that it produces must explicitly follow the patterns of thinking by which those thoughts are generated. The new epistemology is therefore also phenomenological, requiring the development of a reflexivity in thinking that recursively links across two levels of order—between content and process. The result is an epistemology that is of (and for) the *whole* human being.

It is an enacted (will-imbued) and aesthetic (feeling-permeated) epistemology (thinking-penetrated) that is sensitive to and integrative of material, soul, and spiritual aspects of ourselves and our world. I call this kind of epistemology *aesthetic*, because its primary characteristic is found in the phenomenological, mutually fructifying and transformative marriage between the capacity for thinking and the capacity for feeling.

Its foundations are brought forward through the confluence of multiple domains: cybernetic epistemology, the esoteric epistemology of anthroposophy (the spiritual science of Rudolf Steiner), and the philosophy of the implicit as developed by Eugene Gendlin.

The practice of aesthetic epistemology opens new phenomenal domains of experience, shedding light on relations between ontology and epistemology, mind and body, logic and thinking, as well as on the formation (and transformation) of identity, the immanence of thinking in world-processes, the existence of different types of logic, and the nature of beings, of objects, and most importantly of thinking itself and its relationship to spirit.

Keywords: anthroposophy, autopoiesis, cognition, cybernetic epistemology, distinction, epistemology, esotericism, logic, recursion, Rudolf Steiner, second-order cybernetics, spirituality, thinking

Acknowledgements

The seed for this dissertation came to me as a feeling of stepping toward a newly perceived horizon on my meeting with cybernetic epistemology, which I was amazed to only have encountered at the PhD level. My heartfelt thanks and appreciation go to Bradford Keeney for drawing its distinctions performatively with life and spirit—as it should be.

This work owes much of its existence to the numerous stimulating conversations I had with Jeff Falzone over Facebook, which is apparently good for something other than procrastinating. His serious playfulness is matched only by his command of both anthroposophy and the work of Eugene Gendlin, and I have no doubt that he can get a felt-sense of the role he played in bringing forth the ideas presented here. I honestly can't think of anyone better suited to converse with about them—so if, dear reader, you find yourself in confusion, I direct you to him.

I would not have survived this process without the great help and support given by members of my PhD cohort at CIIS. Monthly Skype meetings with Don Arispe, Nancy Kresin-Price, Lisa Kendall, Maureen Dolan, and Charles Silverstein (and occasionally a few others) in particular have kept me focused on the light at the end of the tunnel. I'm proud to have you as life-long friends.

It takes a special kind of person to deal with three such diverse realms as anthroposophy, cybernetic epistemology, and process-philosophy, and I am lucky to have three of them on my committee. My deep thanks go Craig Chalquist, Robert McDermott, and Søren Brier, whose many helpful comments and suggestions have helped make this work much better.

I am also grateful to Rudolf Steiner, Eugene Gendlin, and Dennis Klocek—not just for their inspiring ideas, but for enacting them in a way that exemplifies the principles put forth in this dissertation.

Finally, but most importantly, my gratitude goes to my wife, Josette, who supported me throughout the process even when I didn't know where it was going or when I would get there. Her faith in me means the world.

Dedication

This work is dedicated to the Divine Sophia, the deep wisdom of and for the evolving human being.

*The innermost being of the world awakens in my thinking.
My thinking sleeps into the outer being of the world.*

*The World Soul dreams in my feelings.
My feelings dream into the Soul of the World.*

*The outermost being of the world sleeps in my willing.
My will awakens in the innermost being of the world.*

TABLE OF CONTENTS

Abstract.....	v
Acknowledgements.....	vii
Dedication.....	viii
List of Tables.....	xi
List of Figures.....	xii
A Big Picture.....	1
Introductory Context.....	4
Why Anthroposophy?.....	8
Why Cybernetic Epistemology?.....	15
The Need for a Transdisciplinary Approach—A Frame for Frames.....	20
Distilled Recapitulation.....	26
Conclusions.....	27
Theoretical Tools.....	35
A Preliminary Note Concerning First and Second Orders.....	37
Anthroposophic Considerations.....	45
Goethean beholding.....	47
Spiritual science, material science, and developing capacity.....	51
Developing new sensory capacities.....	54
A wider context for epistemology.....	58
Methods and content in recursion.....	60
Higher-order sensing.....	63
Cybernetic Epistemology.....	73
Academia and Esotericism.....	75
Esotericism from a Different Perspective.....	80
Thinking at the Edge.....	86
Purposeful Confusion.....	94
Epistemological Conundrums.....	97
First- and Second-Order Epistemologies.....	100
Calibration and Self-Calibration.....	103
The Unknown and Unknowing.....	107
Validity.....	110
Unnaturalism.....	119
Observing the Observer.....	124

Structural Coupling and the Observer	134
The Character of Thinking.....	141
A Fundamental Recursive Pattern	146
The Role of Distinction	152
An example of the fundamental pattern in education	159
Distinction as both epistemological and ontological, and the limits of knowledge.....	163
Distinction and reality.....	167
Thinking, feeling, and willing.....	170
Distinction, space and time	175
Logic, distinction, and inverting modus ponens.	176
More than one kind of thinking	180
Logic as an activity of thinking	181
Levels of logic.....	182
Eugene Gendlin's Process Philosophy	199
Through the Subject/Object Dichotomy	205
Reversing Thinking	208
Aesthetic Epistemology	216
Including feeling in thinking.....	218
Gendlin's implying and Bateson's mind.....	219
Traversing Jacob's ladder	223
Feeling thinking and thinking feeling.....	232
Summing Up.....	245
References.....	250
Appendix.....	261

LIST OF TABLES

Table 1: Different Orders of Logic	191
Table 2: Qualitative Changes Between Orders of Logic	192
Table 3: Applications of Orders of Logic	193
Table 4: Complementary Ways of Seeing the Total Human Being.....	234
Table 5: The Seven-fold Human Being	239

LIST OF FIGURES

Figure 1: Non-recursive (linear) methods are not modified by the content they create. Copyright 2014 by Seth T. Miller.	61
Figure 2: Anthroposophical training, and other esoteric epistemologies, explicitly place method and content in recursive relationship so that the content modifies the method, which then allows for the creation of new types of content as the method changes. This is the process behind the creation of “higher” sense organs—see below. Copyright 2014 by Seth T. Miller.	62
Figure 3: 1 st Order: Non-self-reflexive. Copyright 2014 by Seth T. Miller.	103
Figure 4: 2 nd Order: Self-reflexive. Copyright 2014 by Seth T. Miller.	103
Figure 5: 1 st Order epistemology. Knowledge disconnected from the process of its generation Copyright 2014 by Seth T. Miller.	104
Figure 6: 2 nd Order epistemology. Knowledge created explicitly connects with the way it is generated. Copyright 2014 by Seth T. Miller.	104
Figure 7: 1 st Order: Tends toward technical innovation. Copyright 2014 by Seth T. Miller.	105
Figure 8: 2 nd Order: Can yield paradigmatic shifts. Copyright 2014 by Seth T. Miller.	105
Figure 9: 1 st Order: Process kept independent of content. Copyright 2014 by Seth T. Miller.	106
Figure 10: 2 nd Order: Process changes in response to content. Copyright 2014 by Seth T. Miller.	106
Figure 11: 1 st Order: Unknown as potentially known content. Copyright 2014 by Seth T. Miller.	109
Figure 12: 2 nd Order: Unknowing as potentially transformative process. Copyright 2014 by Seth T. Miller.	109
Figure 13: 1 st Order: Content-focused. Copyright 2014 by Seth T. Miller.	110
Figure 14: 2 nd Order: Process-focused. Copyright 2014 by Seth T. Miller.	110
Figure 15: 1 st Order: Validation reflected by its content. Copyright 2014 by Seth T. Miller.	111
Figure 16: 2 nd Order: Validation as ongoing content-process recursions. Copyright 2014 by Seth T. Miller.	111
Figure 17: 1 st Order: Observer split from environment. Copyright 2014 by Seth T. Miller.	112
Figure 18: 2 nd Order: Observer and environment are mutually constituted in one process. Copyright 2014 by Seth T. Miller.	112
Figure 19: 1 st Order: Truth is objective and “out there.” Copyright 2014 by Seth T. Miller.	117

Figure 20: 2nd Order: Truth is a way of relating process and content.
 Copyright 2014 by Seth T. Miller.....117

Figure 21: 1st Order: Knowledge produced as “pieces.” Copyright 2014 by
 Seth T. Miller.....118

Figure 22: 2nd Order: Knowledge produced as “wholes.” Copyright 2014 by
 Seth T. Miller.....118

Figure 23: A simplification of the Enlightenment view of the subject-object
 relationship, in which a subject views an object from outside, as
 independently from the object as possible. Copyright 2014 by
 Seth T. Miller.....125

Figure 24: A Goethean view of the subject-object relationship. 1: The subject
 takes on an objective character specific to the mode of
 engagement with the phenomenon, 2: the object takes on a
 subjective character, ceasing to be "merely" an object, allowing
 for 3: a space of “subjectivity-objectivity” where the subject and
 object are experienced as a complex unity. The subject both
 changes and is changed by the object. Copyright 2014 by Seth T.
 Miller.....126

Figure 25: A cybernetics of description following Heinz von Foerster. There
 are two different observers involved in any description; observer 1
 is the describer, and observer 2 is the one to whom the description
 is directed. Copyright 2014 by Seth T. Miller.....127

Figure 26: (Self) description. In this case the two observers from the previous
 figure are constituted by the same system. Copyright 2014 by Seth
 T. Miller.....129

Figure 27: A cybernetics of (self) description. Observer 1 simultaneously
 describes herself in every description to Observer 2, who remains
 a key part of the complex web of relations unfolding. Self and
 other are both necessary aspects of the situation. Copyright 2014
 by Seth T. Miller.....130

Figure 28: Goethean beholding. The other as other becomes incorporated into
 the self of the observer, simultaneously as self and as other.
 Copyright 2014 by Seth T. Miller.....131

Figure 29: The recursive web of self and other. Each observer participates
 directly in the becoming of the other and in their own becoming.
 Copyright 2014 by Seth T. Miller.....132

Epistemology is too important to be left to epistemologists!

A Big Picture

All living beings enact epistemologies. This is true of the simplest single-celled organism no less than for a human being. To enact an epistemology is to make distinctions that serve as the basis for the organism's interaction with the world. For an amoeba such a distinction may be of the presence or absence of a particular chemical, the balance of which is important for its continued functioning. For a human it may be much more subtle, for example the conscious distinction of those to whom one owes emotional allegiance, or the unconscious distinction of variation of facial characteristics away from symmetry. In every case, the primary act of distinction, whether consciously recognized or unconsciously assumed, yields consequences for the possible next steps that the organism can take. Epistemologies give the context for an organism's actions in the world by distinguishing that world *for it*, and thus the possible responses to that world. The world and the organism are thus mutually (that is, recursively) constructed *for each other* through the enactment of the organism's epistemology.

Despite the omnipresence of the role of epistemology (not as a philosophical field of study but as an enactment of the conditions of living) in the both the most mundane and most sublime moments of life, the vast majority of people today are unaware of its importance. We are used to acting without reflecting on the epistemological distinctions implicit in our actions, and we often tacitly presume that others share our epistemologies. This leads to all sorts of minor and major problems, from simple issues of misunderstanding between

family members to seemingly intractable global political issues dependent upon differing distinctions between cultures. We need look no farther than to the native populations of America and its white colonizers for an example of how the destruction of whole civilizations is implicated in the differing epistemological assumptions of the cultures involved.

We cannot recognize a difference without the basis for making a distinction appropriate to that difference and the realm in which it occurs. To recognize differences of color we must have a sensory organ system (our physical eyes and brain at the least) developed in such a way as to be sensitive to the domain of light. To recognize differences in how distinction occurs, we must develop a cognitive system (a system of *thinking*) that is sensitive to differences in the domain of epistemology. Doing so allows us to avoid unconsciously continuing to enact the epistemologies (and associated problems of living) that we have individually arrived at through circumstance. We can become reflexive about our epistemologies, and this means developing a new epistemology that is reflexive, and which has the explicit feature of being designed to change itself. Embodying a consciously reflexive (or recursive, self-looping) epistemology is to enact a different way of being in the world. It is to recognize explicitly that every action, every thought, and every feeling that rises within us is accompanied by distinctions that carry forward epistemological consequences into the world, changing it. It is also a recognition that the world reflects those distinctions and recursively informs the very processes by which they arise, changing us.

This relationship, and its consequences, spans all domains of human existence and action, but remains hard to perceive, challenging to think about, and difficult to modify. Human beings, like the world (and as a part of the world), are complex and subtle, dynamic and evolving, and diverse on multiple scales. How we distinguish—not *what* we distinguish—plays a more central role in the unfolding of the life of the planet, including our own, than perhaps any other single aspect of our existence. This is to say that epistemology, re-contextualized, re-envisioned, and recursively enacted, is an important key to humanity’s future, both on the largest scales and the smallest. All of our potential as individuals and as a globally connected society is integrally bound to the way we reflexively transform our epistemologies—or not. As Richard Tarnas, a cultural historian specializing in the development of Western-style consciousness has written, “the pivot of the modern predicament is epistemological, and it is here that we should look for an opening” (Tarnas, 1993, p. 422). This opening is one that looks towards a humanity that is capable of consciously developing itself with a greater epistemological subtlety.

These claims may seem grandiose, but they are warranted. This dissertation outlines issues involved in recontextualizing epistemology so that we can become more directly responsible for how we place ourselves into the world, and how the world recursively lives through us. The kind of epistemology advocated here is what I am calling *aesthetic*; it is an epistemology that arises when the domain of thinking is not considered in isolation, but is developed through recursive contact with both affective (feeling-oriented) and volitional

(will-oriented) domains. Most specifically, aesthetic epistemology is meant to be an epistemology of (and for) the *whole* human being: an enacted (will-imbued), aesthetic (feeling-permeated), epistemology (thinking-penetrated) that is sensitive to material, soul, and spiritual aspects of ourselves and our world. This vision of an integral epistemology cannot be realized wholesale, but can only develop through the careful, loving attention of individuals in the context of actual living. It is not an idea that resides only in thinking, but is—to the extent that it *is* at all—an impulse that also lives through our will and reverberates in our feelings. This must be made clear at the outset, because this dissertation can only approach such an ideal, and must work with (and stretch) the boundaries of the form provided by the academic protocols of the day. To do the topic justice requires more than is feasible in this context, and to that end the communication of ideas is only a starting point, a theoretical outline that indicates what is beyond its own form to realize.

Introductory Context

The framing of epistemology as aesthetic needs some preliminary explanation. The recontextualization will take place as a consequence of the meeting of two unlikely streams of thought, mediated by a third. The first stream flows from second-order cybernetics and cybernetic epistemology; the second flows from anthroposophy. These two domains are not obviously compatible, and no a priori claim is made as to the potential results of their meeting. From one perspective, this work is in large part simply an exploration of the meeting of

these two fields, as far as it can occur through the limited facilitation of my own thinking and experience.

Both cybernetic epistemology and anthroposophy examine what it means to be a knowing being, but from vastly different contexts and backgrounds, and with correspondingly different terminologies, concepts, and goals.

Anthroposophy is an esoteric path of development (a path of esoteric and spiritual knowledge) designed to awaken what is spiritual in the human being to a wider and deeper spiritual cosmos (Steiner, 1924-25/1998, p. 13). Cybernetic epistemology is a sub/over discipline of cybernetics—a formal way of discussing processes and methods of change (Keeney, 1983, p. 8)—that explores the ways in which observers and observations recursively constitute the evolution of knowing systems; it examines recursive links between *observed* systems and *observing* systems. As cybernetic historian Andrew Pickering (2010) states, the cybernetic image of epistemology “is one that emphasizes creativity and the appearance of genuine novelty in the world (both human and nonhuman)” (p. 154).

The key link between the realm of cybernetic epistemology and anthroposophy is not simply in some amount of commensurability of their respective ideas, although this certainly occurs and will be outlined to some extent in this dissertation. Rather, what is at least as important is *the way in which* their respective ideas are formed, elaborated, and recursively placed into enactive contexts which can *make an epistemological difference*. This is quite in line with the already-stated idea, which stands as a mantra repeated (and enacted, to the extent possible in such a format) throughout this whole dissertation: *not simply*

what, but also how (Keeney, 1983, p. 17). Support for this view is drawn from the philosophical work of Eugene Gendlin, and his approach to the relations between experiencing and the creation of meaning (Gendlin, 1962/1997), and his process-oriented ideas built upon that model (Gendlin, 2004). Gendlin's work can act as a bridge between cybernetic epistemology and anthroposophy—and ultimately itself stands as an example of an aesthetic epistemology—by offering a way of thinking about thinking that is strongly rooted in the phenomenology of thinking while also offering a conceptual, process-based model of experiencing that gives a way of contextualizing the epistemological act.

My goal is to outline and draw attention to a way of viewing that supports and extends current forms of transformative inquiry, both personal and social. I do not want to simply claim that some specific view or other needs to be adopted, but rather explore how the content of any particular view and the *way* of viewing are always in recursive interaction and thus mutually co-creative. It is a meta-level inquiry as well as an inquiry into the particular content of anthroposophy, cybernetic epistemology, and Gendlin's process philosophy. Success requires sensitivity not only to content-level (the “what” – which will be noted later as *first-order*), but also to the process-level (the “how” – contextualized as *second-order*). A conflict diamond mined in Africa and a diamond synthetically produced in a lab may be equivalent at their basic content-level, but differences at the process-level have significant consequences. The same pattern holds for *our ideas*. There are many ways to arrive at the content of an idea such as “ $1 + 1 = 2$ ”, but differences in *how* we arrive at such thought content can also have

profound and lasting consequences. In most domains of life it is usually taken for granted that it is enough to simply gain the appropriate content for a given context. I aim to demonstrate that developing a capacity to perceive and work directly with the process-level of thinking is not only important but central to the advance of epistemology.

If we view inquiry not simply as a means to gain previously unknown information but as a recursive attempt at transformation through consciously-directed vulnerability toward a specific phenomenon, then to inquire is to become “soft” or inwardly open to a particular domain of experience precisely so that the phenomena we encounter there as a part of our inquiry can have the potential to transform us, to change us in some way. We must yield something of ourselves in order that we become adequate to the subtlety and range of possible manifestations of a phenomenon. Inquiry can thus become deep if we do not attempt to restrict its potential effects only to our thinking, to a change in ideas only, but rather allow it to work also on our life of feeling and of willing. But this kind of deep inquiry is an *active* process. The *way* we seek, and just *how* we become soft, is integral to both the type and content of any experiences that result, *and thus strongly influences any actual transformation* that arises from the inquiry. This deeper kind of inquiry is equally about the process of knowing as it is about the knowledge gained, and this applies doubly when the inquiry is the domain of epistemology.

In this way, epistemology is viewed not as an abstract discipline that concerns itself with potential truth value of propositions on the basis of justified

true belief about an external world, but is rather taken to be a creative, experiential, and experimental *act*. Epistemology is performative and participatory, a lived and living process. It is the process of the *generating* of the known, not the known itself, which can never be fully abstracted from its origins. Epistemology, in this sense, can therefore never be fully described by the known. In its knowing, epistemology always exceeds what it knows. As Bradford Keeney, a cybernetic epistemologist says, “any position, perspective, conceptual frame of reference, or idea is a partial embodiment of a whole we can never completely grasp” (Keeney, 1983, p. 3). Exploration of theoretical support for this notion forms part of the core of this work.

Why Anthroposophy?

Anthroposophy (literally “human wisdom”) is a spiritually¹ and scientifically oriented worldview first formulated by Rudolf Steiner in the first decade of the 20th century, which has seen continuous development and application since that time. Owen Barfield (1970), a profound voice for anthroposophy in America, viewed anthroposophy as a modern reconfiguration of the perennial philosophy, the “primordial tradition” devoted to wisdom concerning the nature of the universe and the place of the human within it, but in a “form determined by its having risen again, from the psychological and spiritual eclipse of the scientific revolution” (p. 21). It draws deeply from Western

¹ The spiritual world for Steiner is the world that can be revealed to experience through the development of human capacities beyond those offered by naturally-given organs of sense perception (Steiner, 1920/1997a, p. 19). See the section “Higher-order sensing” below for discussion.

traditions, including Theosophy, Rosicrucianism, and esoteric Christianity (McDermott, 2009), as well as from Western philosophy and especially the scientific works of Goethe. Importantly, it is a modern path for the transformation of consciousness through the development and integration of three main human capacities: thinking, feeling, and willing. At its core is a spiritually oriented epistemology that draws upon insights from Goethe's artistic-phenomenological method, developing them further in a modern, scientific context.

Of course epistemology has advanced considerably since Steiner's time in many ways, for example in elucidating with greater and greater detail correlations between the way we perceive the world and the physical and chemical configuration of the brain. This modern goal of reducing human consciousness to material systems, however, is both profoundly in error even while it yields useful and important results. The error lies in its inability to successfully integrate the wide phenomenological domain of human experiencing on its own terms. Reductionism of this kind is like a one-trick pony: no matter what occurs in experience, no matter how profound or objectively transformative, the assumption is that physical events are their sole causal basis.

Steiner offers an alternative epistemology which does not eschew the reality of first-person experiencing, but rather shows how it can be transformed through definite procedures (such as meditation, study, and characterological development). This transformation, esoteric in nature, allows consciousness to recognize, include, and provide an accounting of itself as an observer in the act of

observing. This is in stark contrast to the reductionist view that wishes to minimize or even exclude the observer in favor of *observations*, which are generated in such a way as to remove all influence from the (implicitly tainted) observer. In the ideal reductionist view it would be possible to obtain the *results* of observations *without the observer*.

Put in this way the paradox of such an attempt seems obvious. Heinz von Foerster, a central figure in the development of second-order cybernetics, recognized the same problem and made it clear that science needs take into account the activities of the observer in carrying out any observation (Foerster, 2003), a central tenet of second-order cybernetics.² This insight was at the very core of Steiner's epistemology more than half a century earlier; the observer—or more rightfully the activity of observing—is the very linchpin that holds together in a transformed unity the subjective and objective, the material and spiritual, the self and the world. The esoteric epistemology of anthroposophy, with the transformation of the spirit at its core, provides a rich ground from which to respond to the modern trend that seeks to reduce consciousness to materiality. Steiner's spiritual monism can be approached not from the perspective that the material world is somehow less than the spiritual, but rather that materiality is a mode of manifestation of the spiritual world under particular (cosmic-

² And of course Kuhn's (1970) seminal work, along with the much earlier insights coming out of the development of the "measurement problem" in quantum mechanics can be mentioned in this connection. Outside of the realm of modern science, we can see the deep exploration of these thoughts far back in the Vedic tradition, for example in the Mandukya Upanishad (Nikhilananda, 1995). Thus the insight wasn't particularly new, but it did find a new context in which its integration could play an important role; in particular it served to counterbalance the mechanically-oriented direction of first-order cybernetic thinking.

evolutionary) circumstances. Thus all that the material sciences discover about the material world is not some kind of pure illusion or *maya*, but a valid description of its operation. The major caveat is simply that the laws thus discovered are not taken *outside* of the context of their observation, but are rather dependent upon it. Thus, the laws of the material world are taken to be inseparable from the ways in which they manifest to the observer. The direction of modern science has been to reduce observer-effects as much as possible. We are reaching (and may have already passed) the point at which this approach can go no further in a philosophical direction, except to apply the same protocols in increasingly complex ways to new domains. Anthroposophy, on the other hand, takes the fundamentally different tactic of diving *into* the observer—not so that we get lost in sentimentality or subjectivity, but so that through disciplined thinking we explore the very processes that *allow for* subjectivity in the first place.

Steiner is perhaps the most important least-known figure of the 20th century. The breadth and depth of his work is vast, and almost unparalleled in Western thinking. In order to place him alongside a figure of comparable talent we would have to speak of someone on the order of Aristotle, who explored a vast array of territories from a relatively unified perspective, opening up whole new fields of inquiry in the process. Gary Lachman (2007), in his popular study of Steiner, can therefore write that he “was a ‘universal man,’ a creative thinker who was one of the last to apply his considerable mind and remarkable intuitive

powers to the whole spectrum of human experience” (p. xviii). I agree with the sentiment of Owen Barfield (1970) when he says that he has

become convinced of this: that the future of civilisation depends, more than anything else, on its willingness or unwillingness to make of that legacy [of Rudolf Steiner] the kind of use which its nature demands—a use different in mode but not less abiding than the use that was made by an earlier age of the legacies of Pythagoras and Aristotle. (p. 9)

In relation to the tasks I set in this dissertation, I wish to point out some of the key reasons for the inclusion of anthroposophy that together paint a picture of how thoughts from over a century ago can still find not only relevance to contemporary epistemology but do so in a way that leads to its transformation, such that it becomes capable—even worthy—of the depth and complexity of the world and our delicate place in it. These key reasons are as follows:

1. The exploration and application of anthroposophy has proven fruitful in a wide variety of domains since its inception, including education and remedial education, medicine and health, psychology, agriculture, architecture, drama, social renewal, religious renewal, finance, and more.³
2. Steiner gives a detailed and explicit logical accounting of the methods of his epistemology (Steiner, 1894/1964, 1892/1981, 1924/1988b), meant to be understandable without special esoteric training or

³ It is worth noting that the widely diverse practical applications of anthroposophical wisdom arise in large part from individual and collective efforts undertaken freely, independently from centralized authority. This embodies a key anthroposophical principle of allowing human beings to develop in freedom, and not on the basis of institutional dogma. The number and diversity of applications indicates that many people find great intrinsic value in working out of anthroposophy, which could not (and likely *should* not) survive except through the actual living initiative it continues to inspire in many who meet it.

knowledge, requiring no more than “ordinary logic and an unbiased sense of truth” (Steiner, 1909, para. 4).

3. He does so in full knowledge of the scientific thinking of his day, explicitly discussing his way of thinking (not just *what* he thinks) in the context of modern physical science (Steiner, 1920/1983, 1922-23/1985, 1921/1991a, 1883-97/2000b).
4. Anthroposophy, as a path of knowledge, specifically aims to address fundamental epistemological questions, but in a way that takes into account an expanded view of the human being and cosmos (particularly Steiner, 1920/1997a). This is in contrast to much of current epistemology that seems quite content with a level of abstract thinking not only disconnected from contexts of actual living, but which is also unaware of the extent that this is so, or what possible alternatives there might be. Simply, most current epistemology is *not* esoteric or participatory in nature.
5. Steiner’s (1922/1994) particular conception⁴ of the human being as differentiated through the distinction of physical, life (etheric), astral (soul), and ego (“I”) principles gives a subtle conceptual language that

⁴ Most esoteric traditions make some kind of distinction between physical and non-physical aspects of the human organization. Steiner utilized the language of the distinctions that were common in his time and context, and which had been popularized through the Theosophical movement, in order to communicate with his audience. At the same time he explicitly spoke from his own direct experience (as any esotericist would). Steiner never dogmatically parsed the human being only according to one scheme, but utilized multiple, overlapping ways of speaking about the complex organization of the various so-called subtle bodies of the human being, including nine- and seven-fold schemes, according to the specific topic and audience.

situates the human within phenomenological and spiritual contexts, and makes available an esoteric platform on which epistemological questions can be addressed in ways that are not possible from purely exoteric knowledge domains (as in philosophy, material sciences, postmodern anti-narrative stances, or psychology).

6. Integration and development of the aesthetic, feeling capacity forms a key component of Steiner's epistemology. According to Steiner, epistemology is complete only when it also takes into account the capacity not only for thinking, but also for feeling and willing. This predates recent research in cognitive science and philosophy that points to the need to incorporate both feeling (Damasio, 1999; Gendlin, 1962/1997, 1998) and activities of the will, which appear under the more modern terms enaction and embodiment (Chemero, 2011; Lakoff & Johnson, 1999; Rosch, Thompson, & Varela, 1992; Rowlands, 2010; Stewart, Di Paolo, & Gapenne, 2011).
7. Despite the vast number of very specific concepts Steiner explores with respect to non-material realities, when taken as a whole his mode of description embodies the method of double or multiple description, a "manner of search" to which Gregory Bateson was led after fifty years of practicing science (Bateson, 2002, p. 81). For Bateson (2002), this method

[combines] information of different sorts or from different sources, ... [resulting] in something more than addition. The aggregate is greater than the sum of its parts because the combining of the parts is not a simple adding but is of the nature of a multiplication or a

fractionation, or the creation of a logical product. A momentary gleam of enlightenment. (p. 80).

Before Bateson, Steiner (1910) indicated that such a method is particularly important for developing more subtle modes of perception:

“Therefore in rising into the higher worlds we must realize the necessity of not being satisfied with one standpoint only” (para. 18).

This is because “the world cannot be rightly considered from the one-sided standpoint of one single conception, one single mode of thought; the world discloses itself only to someone who knows that one must look at it from all sides” (Steiner, 1914/1991b, p. 39). This method utilizes abductive and inductive reasoning through higher-order comparison to elicit new knowledge (Hui, Cashman, & Deacon, 2008).

8. Lastly, and perhaps most importantly, anthroposophic epistemology elucidates the conditions for its own realization, making explicit its links between method and content (see especially Steiner, 1894/1964).

Why Cybernetic Epistemology?

Cybernetics has gone through many phases of development, originating from the multidisciplinary Macy conferences between 1946 and 1953 and subsequently influencing disciplines ranging from anthropology, sociology, psychology, psychiatry and linguistics to biology, mathematics, artificial intelligence, cognitive science, and engineering (Heims, 1991). Central to cybernetics are the related concepts of feedback, circular causality, distinction, and teleological, or goal-directed behavior.

In part because of its transdisciplinary origins, the field of cybernetics did not fully establish itself as an independent field of study in its own right. The trend was to take the universal cybernetic principles and apply them back to problems in a specific domain of inquiry. As this was all happening after WWII and during the time when the basic principles of computing and information technology were being established, much of the work in cybernetics was immediately applied to those realms. The focus on engineering solutions, artificial intelligence, and related “hard” disciplines largely co-opted the term cybernetics (and led to the colloquial application of the prefix “cyber” to all such endeavors). However a second, more “soft” set of applications was also being developed in what came to be known as *second-order cybernetics*.

Second-order cybernetics, a term coined by Margaret Mead, was formulated in light of the recognition that a proper study of cybernetic principles *must also include the application of cybernetic principles to that study*. In other words, second-order cybernetics is the cybernetics of cybernetics, which is to say it is the recursive study of recursive systems. The cybernetics that became popularized (and well-funded in universities) around A.I., engineering, and computing was largely first-order in nature, with a central interest in controlled systems in which the goal of the system is set for it by some outside agency (as is the case in a thermostat, where the user sets the desired temperature). But the central ideas of cybernetics also inspired the study of autonomous systems: systems that set their own goals, or second-order systems. This direction of study was pursued beginning more explicitly in the 1960s and 1970s under the domain

of second-order cybernetics, which took up the study of patterns by which autonomous systems self-regulate. The basic principles of first- and second-order cybernetics are the same; the difference is in the way that the principles are applied. Second-order cybernetics de-emphasized the more mechanistic metaphors common in first-order cybernetics and focused instead on autonomy, self-organization, cognition, and the role of the observer (Heylighen & Joslyn, 2001).

A central insight of second-order cybernetics is the necessary inclusion of recursive processes in knowledge generation. This yields the insight that no knowledge can be considered complete without including a description of the knower. That is, knowledge and knowers, observations and observers, thoughts and thinking, are in a recursive loop—the process of knowledge generation is inextricably linked to the actual knowledge produced. This recursion takes its most obvious form in the recognition that the study of any system depends upon the description of that system (and thus the particular distinctions we make which allow us to define the system). More simply: our perceiving changes our knowing which changes our perceiving.

While for *practical* purposes, limiting assumptions of most “hard” sciences reduce the need to explicitly include second-order considerations (as in most engineering applications, but notably *not* in quantum mechanics), the situation is more complex when considering the issue of knowledge generation in a more fundamental way. Second-order cybernetics attempts to understand the process of understanding. It seeks patterns of relations that are operative in any

context in which learning and knowledge generation occur, independently of scale or any particular material dynamics. Because of this focus on patterns of knowing, we can call second-order cybernetics *cybernetic epistemology*, or *recursive epistemology*.

Specifically with respect to this dissertation, cybernetic epistemology offers:

1. Recognition of the nature and importance of the fundamental act of distinction for any knowing process (L. Kauffman, 2002; Keeney, 1983; Spencer-Brown, 1972; Varela, 1975).
2. Recognition of the equally fundamental role of circularity in knowing (Foerster, 2003, especially chapter 9, *Cybernetics of Epistemology*).
3. Clear conceptualization of the distinction between first and second-orders, and practical support and validation from real-world applications, for example in brief therapy (Fisch, Watzlawick, & Weakland, 1974; Watzlawick, 1978).
4. Formal exploration of recursive patterns and their relation to how knowing happens (Maturana & Varela, 1980; Maturana, 1988b).
5. A language of change that is relatively discipline-independent, and which can help ground and broaden the less formalized notions found in anthroposophy.
6. Exploration of fundamental issues concerning conceptualizations of cognitive processes (Maturana & Poerksen, 2004; Maturana & Varela, 1980; Maturana, 1978, 2012).

7. A basis for the unification of epistemology and ontology.
8. Support for a shift from object-oriented ontologies towards a relational, process ontology (Bateson, 2002).
9. A non-esoteric grounding for a different understanding of the term “being,” that is likewise relational.

The Need for a Transdisciplinary Approach—A Frame for Frames

The current academic model supports the strong division between disciplines. As so many *non-academic* systems of knowledge generation follow the same implicit structure (notably in politics and business), the effects of the structure are felt—even projected and imposed—world-wide. The way in which television ads are produced, statements are made on the news, decisions are made in the boardroom, policies are formed, and money is allocated to this or that cause all embody (often without awareness) and carry forward epistemological distinctions based on habits that formed in the historical evolution of academic disciplines. This structure is one that, through increased specialization and professionalization, supports the erecting and subsequent defending of often arbitrary or semi-arbitrary boundaries between different ways of knowing. It supports polar (not multivalent and diverse) groupings based on abstract categories, and obscures both the complexity and subtlety of lived experience (usually in service of maximizing a single, sacred variable, such as profit, esteem, and so forth). Of course it also produces a wealth of knowledge, but the knowledge generated is generally of the kind that doesn't even recognize that it is valid to speak of different kinds of knowledge, and does little to integrate itself into wider contexts beyond its own constructed domain.

The damage done by the essentially medieval approach to knowledge spread by academia is well-expressed by Bruce Wilshire (1990) in his book *The Moral Collapse of the University*, in which he proposes that nothing less than “rethink[ing] what it means to be a human being” (p. xxiv) will serve a large-scale

epistemological transformation to more healthy practices. When current knowledge structures go to great lengths to avoid “contamination” by alternate modes of knowing (intuitive, aesthetic, esoteric, etc.), they tend to embody “a refusal to mix a stance with other views (and evidence) which are palpably relevant to it” (Wilshire, 1990, p. 161). This leads to what Wilshire (1990) calls “veiled purification rituals” (p. 161), which exacerbate differences to keep the discipline *pure*.

In a wonderful bit of ironic circularity a study by John Ioannidis (2005), published in *PLoS Medicine*, indicates that “most current published research findings are false” (para. 1). Ioannidis doesn’t seem to recognize the humor of his own publication, but nevertheless makes the claim that an important part of improving the situation requires looking at the *totality* of evidence, mirroring Wilshire’s claim from an entirely different disciplinary background. Implicitly, this means that a more integral understanding of what constitutes “evidence” is needed, and that the sciences (for one) have largely failed in this arena, in large part because of the way that most modern sciences admit as evidence only a very limited set of experiences that have both their beginning and ending in outer sense perceptions upon which external measurements can take place. Other forms of experience that do not rest upon outwardly directed sensing, such as meditative states, are discounted as possible generators of valid knowledge in part because of their intractability to outer measurement techniques. They are labeled (potentially with derogative connotations) “merely subjective,” and explanations for these

subjective experiences are sought in outer sense-perceptible phenomenon such as the selective activation of particular brain areas.

The question “what constitutes evidence?” goes to the heart of this inquiry, and it forms a sub-context for all the epistemological investigations herein. The question acts as something of a litmus test for a given discipline: how it is answered tends to reveal its particular underlying epistemological assumptions and commitments. A transdisciplinary framework can be helpful in precisely this kind of situation because it attempts to mitigate the inherent blindness of an individual discipline’s epistemological framework by integrating it with a wider diversity of epistemological possibilities—including possibilities of alternate modes of knowing. As Basarab Nicolescu (2008a), theorist of transdisciplinarity, notes: “when our perspective on the world changes, the world changes” (p. 9).

Transdisciplinarity is thus concerned not only with the integration of multiple sources of data but of diverse epistemological stances, and recognizes that how we look changes what we see. It is a framework through which to view knowing; it is a meta-discipline (Nicolescu, 2008b). It gives the injunction to replace the abstract idea of a *totality* of evidence with that of an interconnected multi-valence of evolving evidence, always subject to inherent limitations, modifications, and conflicts. It should go without saying that any question can be approached from multiple angles and with different ways of knowing. Transdisciplinarity helps bring to light the need to address this diversity directly and in full consciousness. By doing so, we can begin to recognize fundamental

epistemological patterns present in the particular ways that each of us lives as situated (and disconnected), complex (and simple), and subtle (and gross) knowing beings.

By bringing into focus differences (and complementarities) between ways of knowing, transdisciplinarity helps us confront more directly the assumptions embodied in our own living, while also sensitizing us to the potential benefits and challenges offered by alternative assumptions. This is far better than either willful or naïve ignorance, but requires significant investment. It is not enough to note the connection between *what* and *how*. We must also embody their recursive relationship. Such a recursive process is facilitated by integrating across boundaries while still utilizing what is provided by the distinctions necessary to maintain the very boundaries. Transdisciplinarity is not simply a set of ideas that one can think; it must be enacted if it is to exist at all.

The current study utilizes transdisciplinary principles to weave together a number of fields that bear on the attempt to bring forth a complex, recursive epistemology that can meet current and future kinds of challenges (personal, social, physical, ecological, political, spiritual) that all knowers face with increasing rapidity. Most importantly in this regard are the three axioms of the methodology of transdisciplinarity, as delineated by Basarab Nicolescu (2010):

1. The ontological axiom: There are, in Nature and society and in our knowledge of Nature and society, different levels of Reality of the Object and, correspondingly, different levels of Reality of the Subject.
2. The logical axiom: The passage from one level of Reality to another is ensured by the logic of the included middle.

3. The complexity axiom: The structure of the totality of levels of Reality or perception is a complex structure: every level is what it is because all the levels exist at the same time. (p. 24)

These axioms support the framework for a recursive view of epistemology. The ontological axiom makes a distinction between levels of Reality—Reality being “that which resists our experiences, representations, descriptions, images, or even mathematical formulations” (p.25)—and a corresponding distinction between its simultaneously subjective and objective characters. The logical axiom supports the link between these distinctions and allows for their crossing: “it allows us to cross two different levels of Reality or of perception and to effectively integrate, not only in thinking but also in our own being, the coherence of the Universe” (p. 31). Lastly, the complexity axiom supports the unity of Reality in a web of interrelatedness of difference. We will see later how the cosmology, epistemology, and ontology of Rudolf Steiner presage, extend, and are modified by these axioms.

Recent advances in cognitive science, specifically with respect to a movement towards views of cognition that are embodied, embedded, enacted and/or extended also yield important avenues toward an aesthetic epistemology by refocusing attention on the way in which cognition cannot be viewed as separate from the way it is realized in a body which interacts as an agent with its environment in which it is embedded (see Clark & Chalmers, 1998; Clark, 2008; Jonas, 2001; Lakoff & Johnson, 1999; Rosch et al., 1992; Rowlands, 2010; Stewart et al., 2011; Thompson, 2007). This work follows on the insights of Merleau-Ponty and his desire to replace the Cartesian “cogito” (the thinking substance that was distinct from extended substance, i.e. matter) with the

intersubjective body-subject that is existentially inextricable from the perceptive world with which it is engaged (Merleau-Ponty, 2005).

The philosophical work of Eugene Gendlin (1962/1997, 1998, 2004) brings out the phenomenological importance of the implicit in the way cognition unfolds and the useful concept of the “direct referent” and the process of “directly referring.” The work (in cybernetics and beyond) of Gregory Bateson (1972, 1991, 2002), Humberto Maturana (1978, 1988a, 1993, 2004), Francisco Varela (Maturana & Varela, 1980, 1992; Shear & Varela, 1999; Varela, 1999), Evan Thompson (2007), Brad Keeney (1981, 1983, 2005), Heinz von Foerster (1995, 2002, 2003), Søren Brier (2003, 2008a, 2008b, 2009), Ranulph Glanville (1975, 1995, 2004), Louis Kauffman (L. Kauffman & Varela, 1980; L. Kauffman, 2002, 2005) and Stuart Kauffman (1990, 2009), among many others, highlights the importance of recursive operations for knowing systems, the inclusion of the knower in the known, and bring to the fore philosophical issues concerning constructivism and cognition, semiotics, logic, pragmatic realism, and levels of order. George Spencer-Brown (1972) points to higher-level patterns of logic and the importance of distinction as a fundamental act. Lastly, the still largely ignored extensive work of Rudolf Steiner on this topic (1918/1947, 1894/1964, 1920/1997a, 1892/1981, 1920/1983, 1924/1988b, 1883-97/1988a, 1921/1991a, 1922/1994, 1919/1996c, 1910/1996a) complements and extends all of the previous contributions by embracing a domain generally viewed as anathema in academia: the “esoteric,” but in ways that are largely compatible with the central epistemological elements from cybernetic epistemology. Steiner’s explication of

the spiritual aspects of the human being and the world around us make his contribution truly transdisciplinary.

A secondary aim of this study is to make apparent the ways in which careful integration of “spiritual work” (esoteric development, as well as esoteric concepts, after the manner of Steiner) with traditional academic scholarship is not only fruitful, but serves as a much-needed *integral* calibration process missing in so much of current academia.

Distilled Recapitulation

[[The following discussion both summarizes *and extends* the claims that have been made up to this point. It is meant to indicate key concepts *and* how they develop and lead to other concepts. They are not yet fully explored but are rather only indicated or suggested. They are addressed more thoroughly later in the text, but are presented here in preparation for that later elaboration. This method (of distilling what has come before and re-presenting it in a way that also develops it further) is utilized as a cognitive parallel to the pattern of recapitulation that Steiner discusses repeatedly in his spiritual cosmology (Steiner, 1920/1997a) where it forms a basic fractal pattern (operating in the same way across multiple scales) by which the cosmos evolves. The double brackets are employed as a method to draw attention to process-level indications, second-order relations, or to meta-comments on the text. Their usage is intended to help orient (*calibrate*, in the language of cybernetics) the reader’s attention to the *way* that the ideas are being developed.]]

The following major points should be taken as the frame for the content of the dissertation:

- To live is to enact epistemologies.
- We need to develop an epistemology that is compatible with a holistic view of the human being, inclusive of our thinking, feeling, and willing capacities (i.e. that is not solely oriented to thinking processes alone).
- Cybernetic epistemology, anthroposophy, and Gendlin's philosophy of the implicit provide concepts and tools helpful in developing such an epistemology.
- An *aesthetic* epistemology can be described as one which attempts to utilize recursive connections across multiple levels into patterns of knowing that are more suitable to the complexities and subtleties faced by humanity and individuals, specifically by integrating thinking with feeling. Or equally, aesthetic epistemology re-thinks thinking to be not "only" thinking, but a transformed thinking.
- Transdisciplinarity, as a meta-frame, addresses fundamental concerns about integrating information and methods across disciplines in ways commensurate with the development of an aesthetic epistemology.
- How we know and what we know form a fundamental epistemological recursion.

Conclusions

An artist performs multiple studies—sketches—of important subjects before rendering a finished painting. Similarly, the numbered points below are

studies of ideas. Most studies are discarded or considered less worthy of scrutiny than the paintings that emerge from them. If we remain mere consumers then we will likely value only the most polished and finished expressions. But the studies are the space in the unfolding of artistic process in which the artist and subject meet, struggle, and mutually define each other. It is in this engagement, before any finished work is yet possible to achieve, or even conceive, that what is most valuable actually *occurs*. In many ways finishing the work can be conceived as primarily a technical process of fixing that occurring into form—the “occurred.” The finished product may be incredibly beautiful and polished, and can be shown to the public, but the very polish that draws viewers can also present a challenging barrier to engagement with the work on a different level. In a finished work the process by which the work is created is often concealed, forgotten, even actively suppressed. I want to get at the *occurring of thinking*, and to discursively address patterns in that occurring. Therefore, rather than sweep away all artifacts of the process of thinking, as if only the final *result* of thinking is valuable, I am deliberately including the following conclusions (a term meant almost ironically) that outline some of the central ideas this dissertation addresses, offered in the spirit of working hypotheses and recommendations for thinking. The web of connections in this dissertation is thick; these are the places where multiple strands meet, forming nodes that can be distinguished separately but which serve to reinforce the whole. By stating these ideas preliminarily, and without much context or supporting argumentation, I hope to generate a questioning, even critical attitude in the reader. The statements are meant to be indicative and

challenging, not definitive, all-inclusive, or absolute. The reader is asked to hold these ideas on a mental back burner on a low simmer, as it were, and to let their flavor slowly change and mix as the contexts in which they are later addressed become more fully explicit.

This lesson is most valuable for any study of epistemology because it reminds us that knowledge isn't simply out in the world to be had, found, discovered, or worse, wrested forcibly from the hands of nature in the style of Francis Bacon. It is disingenuous to the depth of the relation between the human as a knowing being and the hyper-complex (natural, human, multi-layered, interpenetrating) environment to assume that we can speak simply of "facts of the matter," when every such fact is inextricably linked to the various processes out of which it crystallizes, and which can render the same "fact" with infinite variability, newly.

Said more simply: because what we know limits our knowing, the greatest danger for epistemology is *what we already know*. A central task for epistemology today is for it to become more awake to higher-order processes already at work within it. It must reverse (and re-verse) its direction, focusing not primarily on what it is possible to know (a first-order epistemology), but on the process of knowing itself (a second-order epistemology), which strangely means to engage in a process of *unknowing*. Epistemology must become more explicitly recursive.

The following "conclusions" are mere sketches, provisional artistic studies that call for full treatment and integration in a finished painting. The point is to

invite the reader, to engage with a process of seeing how your knowing *changes* as more context is provided. I expect these points to be revisited more than once. All agreement or disagreement at this point is secondary, and even problematic for the kind of attention I am attempting to engender: an attention that I refer to as *aesthetically open*. This work can only be successful as a kind of dialogue; we are here together in the flow of ideas.

1. It is possible to speak about a fundamental epistemological pattern, a pattern that describes the way knowing happens. This pattern has the geometry of a vortex: a recursion formed out of the meeting of the inclusive polarities formed by a differentiation, a distinction. This pattern sets up, is, and simultaneously crosses the polarity. It both actualizes and potentializes simultaneously; it is the dynamic between the centric and the peripheral, archetypally expressed through (as) cognition. One way of naming this pattern is to call it the distinction between levels of order, and the recursion between them.
2. Processes of knowing and the knowledge such processes generate are in recursive relationship; each modifies the conditions of realization of the other.
3. The pattern of this relationship is between two levels, arbitrarily N and $N+1$. Knowing happens across the boundary between these arbitrary levels.
4. Knowing is a function of the nature of beings; beings are always also knowings, “knowings-in-action.” Fundamentally, epistemology (knowing)

and ontology (being) are inseparable in that they have a single, unified source. This is exactly analogous to the situation described by the complementarity of particle-wave theory in quantum physics. While in our single experiments we can best describe physical reality as either manifesting as wave-like or particle-like (but not both), we assume that in some important and intrinsic way these two ways of manifesting flow from a single, unified source. That is, whatever physical reality is, it isn't *either* wave-like *or* particle-like, but something that allows it to be both in ways that correspond to how we probe it.

5. Knowing flows from cognitive activity and occurs wherever cognition occurs. Cognition is properly an activity of all autopoietic systems (at least). Such systems can be considered knowing beings. Differently stated: autopoietic systems are the realization of cognition.
6. Knowledge is generated by knowing beings out of the contexts in which they autopoietically unfold. Knowledge is situated, relative, and always subject to change as the knowing being and contexts change. This does not make it “merely subjective” or unworthy of the appellation “truth,” but rather makes us think differently about these concepts.
7. Knowledge is always a construction—but just as materialism and idealism are a false polarity, so too the polarity between realism and relativism, between objectivity and subjectivity, is a false one, in the sense that it is an oversimplification of the depth of experiencing.

8. Because knowing happens in the recursive connection between beings and their autopoietic contexts, knowing is autopoietically potent; knowing can fundamentally change the evolution of the knowing being; knowing is an integral part of the unfolding of evolution.
9. Human beings are the most diverse knowing beings, and are in the best position to explicitly take advantage of the recursive link between knowing and evolution through conscious, willful direction of attention.
10. Spiritual-esoteric philosophies and practices of self/world-development exemplify a leading edge of the actual exploration of this recursive link.
11. Anthroposophy, as a modern spiritual scientific epistemology, provides some of the keenest insights into how this recursive link between knowing and evolution can be utilized, specifically towards an integrative transformation of feeling with thinking.
12. The human being's thinking capacity sits at the "turning point" of our evolution: it forms an inner threshold that when crossed (newly, every day), marks the difference between unconscious and conscious evolution; but this is only a first step.
13. This conscious evolution revolves around thinking's potential to realize itself freely. This freedom in thinking, the freeing of thinking from its own actual personal and evolutionary past, yields great capacities for meeting the personal and world challenges of the day.
14. A change in worldview is necessary if we are to change the world; anthroposophy, cybernetic epistemology, and related disciplines, when

integrated, can offer much in this direction, from a unique, robust, non-dogmatic and flexible but direction-giving standpoint. An important aspect of this kind of change in worldview I am calling aesthetic epistemology.

15. Aesthetic epistemology is an epistemology that utilizes esoteric, phenomenological, and second-order cybernetic techniques and insights to consciously develop capacities that integrate feeling and thinking in recursively potent ways.
16. The developing of a more complex, integrated, and subtle feeling capacity (not simply emotional capacity) may be the single most important skill for initiating pragmatic, resilient, and flexibly sensitive transformation.
17. Developing this feeling capacity requires a heightened attention to actual ongoing experiencing (as it happens, not as a memory), to the activity at the boundaries, membranes, and peripheries of systems, to second-order processes, and to the real and functional linkage between first and second-order processes.
18. An important step towards an aesthetic epistemology is taking to heart the shift from knowing to knowing about knowing, from distinguishing to distinguishing our distinguishing; it is a step from first-order processes to second-order processes.
19. This step is a meta-step, a utilizing of recursive connections between levels of order to change the stairway we are ascending at the very

moment we place our feet, newly. It is a meta-knowing about meta-patterns, and is the core of transdisciplinarity.

20. The complexity, global interpenetration, and speed of today's world calls on us to no longer work within the boundaries of uncritical, undeveloped, non-recursive epistemological contexts and methods; epistemological evolution must be a central facet of any practical attempts at self/world transformation. Epistemology is everybody's business.

This dissertation will be successful if it:

- Communicates the key outlines of and relationships between the main ideas.
- Invites a change in the way readers engage with the text, prompting actual utilization of second-order/first-order recursions and distinctions.
- Gives readers incentive to pay regular attention to conscious development of epistemology, to question *how* they know, and to engage with the direct and immediate experience of how their knowing occurs.
- Sparks in readers an inwardly potent experiencing of the actual occurring of their thinking in new ways.
- Opens dialogue about bridging academic and esoteric work, and indicates the importance of esoteric work in general as a big “missing piece” of modern life and of knowledge generation in particular.

Theoretical Tools

Broadly speaking, this dissertation is a theoretical exploration which utilizes hermeneutic, general analytic, and synthetic thinking. It is hermeneutic to the extent that I am reading “into” and interpreting some difficult texts, notably by Steiner, although this is true of all the texts under discussion. The goal is not simply to re-present the ideas found in the references, but to analyze critically and take them further in the (new) context provided by all the others. This necessitates selection, filtering, and discarding, all of which occur on the basis of my particular interpretation of the texts. Thus it is also synthetic in that from the chosen resources I attempt to build a picture that newly emerges from them, but which is not simply contained already within them.

At the same time I am adding another layer of complexity to all of the above tools through the methodological integration of the principle of recursion. The situation is somewhat unusual. Imagine having the purpose of building a home, and utilizing a hammer for the purpose. But now imagine that the hammer has an unusual feature: the use of the tool changes the tool *as it is being used*. Every swing of the hammer changes the hammer, thus changing also what kind of effort is needed to swing the hammer, the results of the swing, and ultimately the shape of the whole house. In this work the normal separation of the tools, their usage, and what results from their application is brought into relation in a significant way, with a complex looping that keeps each aspect sensitive to the others while allowing each to be distinct. This is what thinking does when it

examines itself not only as an object, nor only as a subject, but in a third (higher order) way (see the section on “Observing the Observer”).

This work is undertaken in the spirit of a *creative inquiry*, as described by Alfonso Montuori, which is a style of inquiry that supports the exploration/creation of this third way. Creative inquiry is a process which

involves the constant questioning of our own assumptions as well as those of others, which suspends immediate judgment, the obliteration of differences, and hierarchical classification. [The] aim is to approach all positions lightly and playfully, with an openness which permits ambiguities, complexities, uncertainties, and the widest possible range of ideas to arise. (Montuori, 1998, p. 25)

A creative inquiry is a kind of meta-frame for inquiry, not really a method with specific protocols and procedures. It is a re-orientation of thinking at a wider level, making it sensitive to epistemological diversity, and which attempts to move beyond dialectical and oppositional thinking to a more dialogical and relational thinking (Montuori, 1998, p. 21). Creative inquiry is meant to be “a way of going into the phenomenon itself” (p. 23), an approach which meshes well with the Goethean methodological elements discussed below. This is a kind of inquiry that looks at knowledge as a capacity (p. 28), rather than as a set of facts or bits [[this distinction employs the second-first order difference and relation]]. This approach fits naturally with the meta-framing aspects of transdisciplinarity, which provides similar supportive theoretical frameworks for this dissertation.

The nature of the topic under consideration demands that the tools used are recursively applied. The whole work must (attempt to) take its own advice and close the loop between its methodology (as content) and its actual application as a method (process) to itself as content (recursion). It is thus important to bring

forward explicitly specific methodological contributions from anthroposophy, cybernetic epistemology, and Eugene Gendlin's philosophical work.

A Preliminary Note Concerning First and Second Orders

Please bear with me as I introduce the difficult concept of the difference between first and second orders through the use of a joke. Two cows are in a field, chatting about the day's events. One says to the other: "You know, Bill, I've noticed that you don't seem nervous about this mad-cow disease that's been going around. Aren't you worried about catching it?" Bill says, "What? Why would I be worried?" Sally flashes Bill a perplexed look. "Well, because if you get it you go crazy and die! How could this not worry you? What's your secret?" Bill laughs and gives Sally a knowing look, whose face drains of color when Bill says, "Oh that's easy! I'm a helicopter!"

Is Bill crazy? Because each cow arrives at their respective knowledge through different contexts, the answer depends upon whom you ask. With respect to the central point of this dissertation, the difference between Bill's and Sally's perspectives can be usefully understood in terms of a first- and second-order difference. This particular distinction between levels of order will come up repeatedly, and I will elaborate and demonstrate it in multiple, overlapping ways. Ultimately, it is through exploring the recursive relationship between levels that will prove the most insightful, but this will only be laid out more explicitly later.

For now, it is enough to note that Bill is crazy only to Sally, who has access to a wider context for Bill's statement that he is a helicopter, but that Bill does not experience himself as crazy. If Bill says simply "I'm a cow," then he is

stating an obvious truth, and nothing would be amiss about this observation (within the assumed context of the joke, where it is a given that cows can think and talk and speak to each other, of course). In such a case presumably some other explanation for Bill's nonchalance is needed, and there would be no joke. At the first-order level, the difference between "I'm a helicopter" and "I'm a cow" is merely one of content; the form of the statements are equivalent, being straightforwardly denotational in type. But Sally can note a context for the statement that is (apparently) unavailable to Bill. This context is that Bill's answer at a second-order level *demonstrates* the opposite of its first-order content; Bill is caught in a performative contradiction—but only by Sally. What Bill *means*, within the context of the joke, by saying "I'm a helicopter" is that he is *not* crazy (presumably because helicopters can't get mad-cow disease). This is the first-order level of the interaction, the content. But Bill does not see that this first-order content is in contradiction with the second-order level, the process level, which embodies implicit assumptions about the context in a performative way. The difference between Bill and Sally is that Sally can see the performative contradiction, while Bill is ignorant of it. In other words, for Bill the first and second-order levels are conflated, confused, or collapsed, and he is left with an inability to distinguish their difference: in such a collapsed frame the disjunction between the saying and the doing is missed. If he could make this distinction, then like Sally, Bill would note that when saying he is a helicopter, which in Bill's mind means he is not crazy, the statement actually demonstrates the reverse, that Bill must be crazy.

The result? From a perspective that is sensitive to the difference between first- and second-order levels, Bill is crazy because he cannot see that he is crazy (without getting in to a deeper analysis of what this problematic term means). The correlate is that Bill would not be crazy if he could see that he is crazy (which is Sally's situation with respect to Bill). Do you sense a paradox here? The paradox arises because as a general rule we are not in the habit of noting the way in which first- and second-order levels of a given situation are in *recursive* relationship. When these levels remain undistinguished, we can easily end up with what Gregory Bateson (1972, p. 206) called a “double bind,” a situation where two messages are given from two different levels in a mutually contradictory way, and which cannot be directly addressed or recognized from within the situation. Sally can make this distinction between levels of order, and thus determines that Bill is crazy. You too can make this distinction, otherwise the joke isn't funny. But what is more important is that the joke isn't funny unless we *also* put ourselves in Bill's shoes. What makes the joke “work” is our ability to see *both* perspectives, and to sense the paradox embodied in Bill's statement that he is a helicopter. As Gregory Bateson indicates, it is precisely the paradox that forms the basis for the humor (Bateson, 1952).

While this joke exemplifies the difference between first- and second-order levels [[this difference is a first-order level of the joke in the context of this dissertation]], the more significant point is that we are all both cows and helicopters [[this is a second-order level of the joke in the context of this dissertation]]. The situation of Sally and Bill, taken together, is a perfect

exemplification of the current human epistemological dilemma: we humans have the capacity to see beyond our current epistemology, but lack the habit of doing so. Additionally, there is something implicit in the joke that fulfills a very important esoteric tenet: that the potential to transform our perspective (from crazy to sane [[first order]] or out of the crazy/sane duality altogether [[second order]]) is facilitated best through contact with some being whose perspective is other than our own, not just in terms of its content, but in its second-order level, the level of the process, of the coming-into-being. In other words, it is through encountering and engaging with *someone else's* world that our own is changed. Bill won't convince himself, by himself, that he is not crazy; there is nothing in the world of Bill-as-helicopter (the first-order level) that necessitates any shift away from this perspective. What would benefit Bill is not just information about the fact of a second-order level to his situation, but engagement with the second-order level in a performatively significant way. This is a subtle point, but is worth explicit repetition: it is not enough to have first-order knowledge of the second order; *what invites lasting epistemological transformation is a recursion between first-order knowledge of the second order on the one hand and the second-order performance of that knowledge on the other.* The second-order performance/engagement of the first-order knowledge (knowledge that is about the second order!) is what closes the loop between the two levels, and which yields new capacities for seeing and being. In general we need help in achieving this, and a big part of the help is found first in simply *making the distinction* between first and second orders.

A further comparison can be made, this time using a haiku from Rolf

Nelson (2008):

Haiku's are easy
but sometimes they don't make sense
refrigerator

Like the previous joke, this one is included for two reasons. The first (-order) reason is that this joke succinctly exemplifies the first- and second-order difference. Take the following modified haiku:

Stepping through lilacs
feet seeking new horizons
refrigerator

Not really funny—incongruous perhaps, but not funny. Why? Because the original version has the virtue of explicating a second-order context as a first-order content (the first two verses), and then performing that first-order content in a second-order way (the whole haiku and the last verse in particular). In other words, it sets up and utilizes the difference between first and second-order levels in a recursive way. The modified haiku lacks the second-order context and thus remains like Bill the cow, confused but without an avenue out of the confusion. This is what recursion between levels offers: a way out of the confusion... to a higher-order confusion.

But I mentioned two reasons for including this haiku. The second (order) reason has to do with the fact that the previous analysis of the haiku kills its humor. An explained joke is not really much of a joke at all, just a sort of logic puzzle. “Getting the joke” is more than understanding it from a conceptual standpoint, but involves an embodied context beyond the logic of the joke that must be directly experienced to be effective. When we “get the joke” we *feel* the

humor experientially: it is a process that includes our bodies and our minds, as well as our life of feeling.

What is the importance of this? The same basic principle holds for understanding in general. The current work is itself a kind of joke: there is something to “get” (a reaching for new experience, an opening towards an unknown, a readiness to be different), but the getting cannot occur through pure explication. What’s worse, the very explication can preclude the getting, because it biases the frame towards (solely) cognitive understanding. I take this situation to exemplify, quite literally, a kind of intellectual violence, just in the way that explaining a joke, by shifting the frame towards cognition alone, destroys its humor and renders the whole thing flat. I am therefore well aware that in writing this dissertation I am constantly torn between what for a comedian would be the delivery of a line and the explanation necessary to make the delivery successful. As Tolkien (1965) notes: “He that breaks a thing to find out what it is has left the path of wisdom” (p. 339). What is being “broken” is a process. In the case of the joke, the naturally flexible and flowing context that facilitates the getting of the joke is halted when attention turns towards the underlying facts that form the bedrock upon which the very getting of the joke implicitly stands. By forcing attention to what there is to get about the joke, how the joke can be gotten is interrupted in a way that not insignificantly modifies the future potential for its getting. This is like a Heisenberg uncertainty relation between the logical explication of a joke and its humorous effect.

The paradox of the situation is not a cause for despair, however, but rather points out a path forward in just the way we need. Indeed, the breaking of processes in order to yield facts is the all-important first step towards developing an epistemology amenable to aesthetic integration. The problem arises when the breaking (analysis, dissection, formation, concretion, delineation) is not followed by a corresponding re-engagement, even a resurrection, of the data thus produced. We must bring the data forward into a new process, the character of which is quite different than what was possible before the halting that yielded the data in the first place. In this sense, this dissertation is a halting, and it is also a resurrecting.

Too little attention is paid (in academia as well as in daily life) to second-order processes. Generally, even when higher-order phenomena are taken into account, this is done in a first-order *way*, and thus often without awareness. This dissertation is an attempt, in part, to highlight the existence of, and the need to better understand and utilize, both the *distinction*, and the *recursive link* between lower and higher-order processes. I speak about the difference between first and second orders by referring to the more general concept of the difference itself, regardless of the specific “level” involved. In this way the idea of orders N and $N+1$ is utilized to indicate a specific *qualitative* difference between possible modes of description/interaction/becoming.

Importantly, this utilization shows up in both the way that I personally work to generate and refine the ideas for this dissertation, as well as in the methods I use to communicate them. For this reason, and because *how* processes unfold (versus the specific content that those processes yield outwardly) holds the

central place of importance, special care must be taken about this most delicate aspect. It is delicate because the “how” of a process, its second-order (N+1) nature, refuses, despite all our best efforts, to be fully rendered into a first-order (N) form. Indeed, the tendency to reduce second-order process to first-order content is a great blindness of the modern era, playing a crucial, if unrecognized, epistemological role in countless real-world dramas (see the section on “Epistemology’s Fundamental Problem”). For this reason an important part of my method of communication involves the utilization of analogies and metaphors in an attempt to mitigate this tendency and to point repeatedly “back” to the second-order level.

As an example, no one would expect that a musician, upon verbally delineating to a pupil how each note of a piece is played, would solicit a successful performance from the pupil, no matter how complete the explanation. Obviously what is required of the pupil is actual practice: the rhythmic repetition of a process of trial, error, awareness, and correction. And what if the musician is attempting to instruct the pupil in the art of improvisation? Here descriptions become even more problematic: something needs to be positively indicated to the pupil without forming it exactly, without rendering it into a static prescription that collapses a second-order process only into a first-order bit of data. A whole set of new ideas, new language, and new ways of communicating must arise between the musician and pupil that serve to elicit a higher-order change in a way that does not also block its unfolding. The musician must, in a very real way, improvise the teaching of improvisation. The same is true in epistemology when what is at stake

is not merely a description of some epistemological idea or another, but the solicitation of an actual epistemological shift: a change in thinking, not just a change in thoughts about thinking. Instead of the ends justifying the means, the means also justify (and change) the ends, *because the means are recursively linked with the ends*; they are mutually self-generative.

Because of this link, it will not be enough if this dissertation serves only to describe its contents: it must try (as much as possible) to enact them, and to do so in a way that can potentially elicit its contents *and its processes*, not merely as ideas in the reader, but as generators of new activity, as thresholds that must actually be traversed in order to experience the content in its fullness. This necessitates occasional departure from a more straightforward academic style, and asks a lot of the reader. It is a conscious choice to structure this dissertation in a way that can support this potential depth of interaction between text and reader, knowing that this may lead to some confusion and tensions that might seemingly be avoided with a more direct style. This is mentioned to provide the necessary context for discussion of the specific theoretical tools utilized for this dissertation.

Anthroposophic Considerations

Cognition in general is inertial. In a physical system, an object needs an outside force to effect a change in its velocity—objects like to do whatever they are already doing. So too epistemologically: it is very economical for cognition to continue itself through already generated ideas and established patterns. But just as an outside force in a physical system can effect a change in an object, so too in an epistemological system an idea can be newly generated, or an old one changed,

through the application of an *inside* force, which then changes the *pattern* of the unfolding of further thinking. The methodology of this dissertation employs practices derived from anthroposophy and cybernetic epistemology that I believe will be helpful in generating and directing such an inner force.

Anthroposophy, more than anything, is itself a *method*, comprised at its core of complexly interrelated sets of prescriptions for various actions (in particular see Steiner, 1918/1947). It is unique in that its prescriptions arise from an integrated view of the spiritual and physical nature of the human being, rendering its suggestions (they are only ever such) potentially effective on multiple levels (rather than, for example, applying only to a material level, or only to a psychological level). It is important to keep in mind that the kinds of statements that are made from an anthroposophical perspective about this or that idea, method, or observation occur within a background of multiple larger and alternate contexts which themselves are not explicitly present in the statement. This is true, in actual fact, of all communication, but the delicate and often difficult nature of anthroposophical ideas renders these contexts more vitally important as carriers of meaning, which when missed or misconstrued can lead to concepts that are quite misleading. The concentration in anthroposophy on the inner levels of the human being only serve to exacerbate this issue. The way to clear up potential confusions cannot be found solely through outward observations in the way that similar confusions can in the case of physical sciences (i.e. through normal sense-perception). Indeed, one of the reasons why anthroposophy has so much to offer when it comes to epistemology and its

transformative potential is that it has had to contend with these kinds of subtleties in an explicit way as it distinguishes itself from material science while continuing to build on the strict processes of thinking that science has developed.

Anthroposophy strives for a kind of inward development, flexibility, and resilience specifically suited to meet potential areas of confusion in a way that does not collapse them into forms that perpetuate the inertial cognitive structures already present in thinking, but serves to take one further than one had been before. It resolves confusion by allowing us to ask better questions.

Goethean beholding. A number of anthroposophically inspired practices are a part of the method by which ideas in this dissertation are generated and developed, for example the technique of Goethean-style “beholding” applied to concepts. Steiner’s own epistemology relied heavily upon Johann Wolfgang von Goethe’s phenomenological investigative practices (Steiner, 1883-97/1988a, 1924/1988b), which served as a rich soil from which Steiner could elaborate new ways of working with percepts and concepts (especially as indicated in Steiner, 1894/1964).

Goethe (1966) has an enigmatic statement: “The ultimate goal would be: to grasp that everything in the realm of fact is already theory. The blue of the sky shows us the basic law of chromatics. Let us not seek behind the phenomena – they themselves are the theory” (p. 432). He recognizes that the appearance of a phenomenon and the way we think about that phenomenon are recursively and complexly intertwined. He recognizes, moreover, that the human being (as a whole—not as a disconnected conglomeration of separate sensory capacities) can

become an *organ of sensation* commensurate to a specific phenomenon so that one's theory-making becomes an expression of the phenomenon itself in relationship to the specific observer. This kind of phenomenology is participatory, morally-responsive, holistic, and dynamic (Robbins, 2006).

Goethe (1995) indicates that “there is a delicate empiricism [German: *zarte Empirie*] which makes itself utterly identical with the object, thereby becoming true theory” (p. 307). The delicate or gentle empiricism refers to the epistemology of the observer as a transformative mediator between subject and object (Goethe, 2010). The “objects” are the sensed phenomenon, and the “true theory” indicates a special state where the epistemological process of the observer is tuned to the phenomenon in such a way that the arising of thoughts in the observer become a kind of speaking on behalf of the phenomenon. This technique has the effect of massaging attention across the subject-object boundary employed as a default structural pattern in normal day-waking consciousness as it exists today. This is a strange mode of being that is neither simply subjective nor simply objective, but which shares characteristics of both while avoiding being simply an addition of the two states. Such a subjective/objective mode is an appropriate position from which to formulate theory that is commensurate with *both* the complexity of the phenomenon *and* the complexity of the observer. In other words, for Goethe, “theory” has a very different meaning than we might normally be familiar with, particularly if our acquaintance is primarily through scientific contexts.

The application of the technique to outer phenomenon leads awareness more fully to the sense of the *whole* of the phenomenon, to its essence. This term *essence* is not meant to indicate some metaphysical unchanging or absolute reality, but rather points towards higher levels of *patterning*, relations of higher order. The notion of *higher* is complex, having both epistemological and ontological connotations. The term *essence* thus carries a meaning more like *essential conditions* (for the appearance of the phenomenon) (Zajonc, 1987) instead of *essence* as referring to some independently existing nature or being.

For Goethe, and Steiner in an expanded way, the application of this method of beholding can result in coming into contact with a level of patterning that serves to connect all the *possible* manifestations of the phenomenon (similar to what Gregory Bateson would call “the pattern which connects,” (Bateson, 2002, p. 7)). This is what Goethe calls the *ur-phenomenon*, or *archetype*. For example, the archetype at work in the world of plants, as discovered by Goethe in his morphological investigations, is the *leaf*, and in the realm of color the archetype is the meeting of light and dark in a given medium.

This dissertation takes epistemological cues from Goethe. The “object” of my study, however, is not of the type that presents itself to the normal external senses, but is rather the very epistemological processes at work in the kind of subjective/objective state that Goethe indicates, and which Steiner describes more fully. Goethe’s phenomenology involves an intense process of rhythmically directing attention to a particular phenomenon in all its contexts (appearances). The goal of the technique is to move (structure, unfold, live through, develop)

one's awareness towards expanded, heightened, flexible states that allow it to inwardly mirror to itself in an exacting manner the essential nature of the phenomenon under investigation. This technique of exact inner picturing of the movement and unfolding of a phenomenon under a variety of conditions is originally meant to be applied to outer sensory phenomenon, but the technique can also be used more subtly with concepts taking the place of the outer phenomenon. This is the way it is undertaken for use in this dissertation. In Steiner's terminology, again following Goethe, *percept*, which normally refers to experiences garnered on the basis of our normal sensing capacity (sight, touch, and so on), can also refer to what comes into experience "through the spirit" (Steiner, 1894/1964, p. 108). One of the main thrusts of his epistemology is the explication of the way that thinking is a spiritual activity, and how concepts, and the capacity of thinking, are properly spiritual in nature (Steiner, 1894/1964, 1922/1994). It is therefore appropriate to take concepts and the activity of their origination as the object of study, in particular because this move explicitly recognizes and directly incorporates a recursive method compatible with cybernetic epistemological reflection. Part of my goal is therefore to enter into a way of relating with these processes such that my thoughts *about these very processes* flow from the subjective/objective space that Goethe describes as constituting the processes themselves. As a self-reflective/recursive dissertation, I don't simply utilize methods for attaining this goal in the background, as if the methods and goals could be separated, but continually weave in discussion and exploration of the method itself in the text as appropriate. Spoken of in another

way, a part of the aim of using this method is to attempt, as much as is possible given the circumstances, to try to come into greater connection with an archetype of thinking by applying the method as a method (second-order) *to itself* (as a content, first-order).

Spiritual science, material science, and developing capacity. The key to anthroposophy, also known as spiritual science, is its methodology. Just as in the case of outer, materially oriented science (including not just the actual material sciences like physics, but all sciences which use the same basic methodological approach, briefly outlined below), all the results of spiritual scientific research stand or fall on the basis of the details of the methods used to arrive at the results. These methods are informed by the wider methodology of the research program and the discipline in which the research takes place. In other words, the protocols for research are tuned to the particular type of phenomenon under scrutiny, with the goal of molding the protocols so that they are appropriately sensitive to all the important conditions necessary to follow the phenomenon completely. This is simply to say that different domains of research need different protocols to be effective, and protocols for research in one domain may be inelegant or even destructive when applied to another domain. Below, anthroposophy is briefly compared to material science. I hope that their contrast elicits a context in which both their similarities and differences can become meaningful.

Materially-oriented science develops protocols sensitive to differences in the material realm, relying, for example, upon measurements of physical states by

material devices like thermometers, spectrometers, voltmeters, calorimeters, and so forth, or by immediate sensory perception. Spiritual science likewise develops protocols sensitive to differences proper to the realm in which its phenomena appear: the spiritual realm and particularly the spiritual aspects of the human being. But whereas material science does not admit of even the existence of a non-material world (energy is still considered to be a completely physical phenomenon, as Einstein showed in his famous equation), spiritual science recognizes the interdependence of the spiritual and physical worlds (Steiner, 1920/1997a, pp. 119–120). Its protocols are thus designed to work with this interdependence, and to help create sensitivities that allow the spiritual and material aspects of phenomena to appear distinct. As a result, the nature of their interdependence can be the subject of investigation.

Materially-oriented science projects its sensitivities *into material devices* which become proxies for human sense capacities. Advancement in material science proceeds in large part through the creation of new and more refined material instruments which reveal more subtle aspects of the material world to human senses that are not themselves directly capable of sensing the differences; they extend human sensing by proxy. Spiritual science, on the other hand, concerns itself with the creation and refinement of the human being's sense-capacities directly, as they can develop *in situ*. This is a profound difference, the consequences of which should not be underestimated. It is principally the epistemological consequences of this difference which is the current work explores.

From this perspective, it is possible to make an important distinction. In the case of material science, as previously noted, measuring devices are externalized extensions of human sensory capacities. Their primary functionality is to bring into the human sensory domain what normally lies outside of it, or to refine detection within the human sensory domain. The whole point of measuring devices is that they are sensitive to differences not available directly to human sense organs. We functionally extend the breadth of our capacity of sight, for example, through detectors that are sensitive to frequencies of light outside the range of the eye itself, as is the case with infrared or ultraviolet light. We functionally extend the depth of our sight when we use microscopes, telescopes, or CCD cameras to augment the ability to see within the already available sensory domain, but with greater accuracy than is possible with a naked eye.

But this augmentation of human sensory capacity through technology does nothing to *develop* human sensory capacity itself. The creation and utilization of measuring devices abstracts the living process of observing and externalizes it, objectifies it, and limits it to smaller and more refined domains, precisely so as to be sensitive *only* to a particular set of differences to the exclusion of all others. A device that measures length would be considered poor if it gives different results based on the color of the object it was measuring. Similarly, a device that measures color would be equally poor if its results change based on the length of the colored object. The abstraction of sensory capacity into devices made for the purpose opens up a grand toolbox for thinking, by which thinking can interact with the world in new ways—but with a price. The processes of thinking that can

now be realized (i.e. technology) on the back of the externalization and objectification of our sensory capacities has real epistemological consequences. The human being *as a whole* tends to become marginalized, turned into an object, and disconnected with the same living processes that gave rise to the possibility of viewing ourselves in this way in the first place. The senses *as a whole* can be seen as “merely” subjective, and not a reliable basis for gathering “real” data about the physical world. In this view we should depend entirely on “objective” mechanical measuring devices that are not prone to errors of physiology. This devaluation of the technologically un-augmented human being is not the only place where human capacity is found wanting. An extrapolation of this tendency can proceed even to the extreme position in which human consciousness and thinking itself is taken to be epiphenomenal, a kind of epistemological mistake that is to be explained away by its reduction to a closed system of purely material events, as in eliminative materialism. However, as we shall see later in the section on the nature of thinking, such positions are inadequate because they do not take into account the phenomenological reality of thinking which even provides the basis for the thought that thought doesn’t exist.

Developing new sensory capacities. Anthroposophy provides a strong correction to this type of a-human tendency in epistemology. Rather than offloading human sensory capacities onto material devices in service of abstract thinking (or, increasingly, integrating such devices directly into our physiology), anthroposophy calls for a continued development of human sensory capacities themselves in a way that is integrated with not just what is currently the case with

respect to our development (our present limits), but with a vision of the potential wholeness of the human being in the context of a wider spiritual world. Here, Steiner's own words give the appropriate context for this position. The following lengthy lecture quotation (Steiner, 1905, para. 1) is intended also to give a sense of his particular style of thinking and the mode of delivery common to his spoken lectures:

It may well be said that the anthroposophical conception of the world is distinguished from any other we may meet because it can satisfy to such a great extent the desire for knowledge. In the present time we so often hear that it is impossible to gain knowledge of certain things—that our capacity for knowledge has limits and cannot rise above a certain height. On becoming acquainted with modern philosophical research we constantly hear of such limits to knowledge, especially among those schools of philosophy which owe their origin to Kant. The understanding of anthroposophists and of those who practice mysticism is distinguished from all such doctrines through never setting limits to man's capacity for knowledge, but rather looking upon it as capable of being both widened and uplifted. Is it not, to a certain extent, the greatest arrogance for anyone to regard his own capacity for knowledge, from the point at which it stands, as something decisive, and then to say that with our capacities we cannot go beyond definite limits of knowledge? The anthroposophist says: "I stand today at a certain point in human knowledge, from which I am able to know certain things and not others. But it is possible to cultivate the human capacity for knowledge, to heighten it." What is called a school of initiation [such as exists within anthroposophy] *has as its essential aim to raise to a higher stage this human capacity for knowledge* [emphasis added]. So it is quite correct if one from a lower stage of knowledge says that there are limits to his knowledge and that certain things cannot be known. One can, however, raise oneself above this stage of knowledge and press on to a higher stage, so that it becomes possible to know what at a lower stage was impossible. This is the essence of initiation, and this deepening or heightening of knowledge is the task of the initiation schools. This means raising man to a stage of knowledge to which nature has not brought him, but which he must acquire for himself through long years of patient exercise.

The further development of human capacity in the spiritual science of anthroposophy is thus a complement to material science, a compatibility about which Steiner (1923/1995a) was adamant, indicating that it

lays claim not only to being free from hostility toward scientific thinking and the scientific sense of responsibility of our times, but also to working in complete harmony with the most conscientious scientific demands of those very persons who stand on the ground of the most rigorous natural science. (p. 218)

Steiner (1923/2007) even states that “modern initiation science [anthroposophy] has to take its start from a natural-scientific approach, not from natural science itself, but from a natural-scientific method—for this is the only method that will satisfy people in the foreseeable future” (p. 62). Material science works out of an epistemology that (whether it aims for this explicitly or not) tends to objectify human capacity, while spiritual science works out of an epistemology aimed at the continued creative development of human capacity.

Spiritual science begins this process by addressing the development and transformation of current sensory capacities, based on ideas which Steiner developed as he was editing the scientific works of Johann Wolfgang von Goethe in the 1880s. Steiner was convinced that it was possible not only to refine the usual sensory capacities given to humans in the course of normal life, but to awaken new ones:

There are those who believe that with the limits of knowledge derived from sense perception the limits of all insight are given. Yet if they would carefully observe how they become conscious of these limits, they would find in the very consciousness of the limits the faculties to transcend them. The fish swims up to the limit of the water; it must return because it lacks the physical organs to live outside this element. Man reaches the limits of knowledge attainable by sense-perception; but he can recognise [sic] that on the way to this point powers of soul have arisen in him—powers whereby the soul can live in an element that goes beyond the horizon of the senses. (Steiner, 1924-25/1998, p. 14)

Specifically, the new capacities are meant to be suitable for perception in a domain that is hidden to the normal senses, and thus can be called supersensory

capacities, and their domain of activity the spiritual world. The method by which these new sensory capacities can be developed is a central aspect of anthroposophy. Just as the physical senses are built out of the substances and forces of the physical world through the formation of physical sense organs, “the spiritual world, with its spirit substances and spirit forces, builds up a spiritual body in which the ‘I’ is able to live and to perceive spiritual realities by means of intuitions [in thinking]” (Steiner, 1922/1994, p. 53). The terms *spiritual world* and *supersensory* need to be dealt with carefully,⁵ as the connotations are rich and diverse. For the moment it is enough to simply make the distinction between the normal sensory capacities that are naturally developed in a healthy human being in the course of life (those that have the material world as their primary domain of activity) and sensory capacities which are *not* naturally developed in the course of life but can be awakened through a concerted effort according to certain general protocols (such as those that form the methodological thrust of anthroposophy, most clearly laid out in Steiner’s 1918/1947 book, *Knowledge of the Higher Worlds and its Attainment*), and which have as their primary domain of activity a world hidden to the normal senses—a domain which can be called the spiritual world. Because the aim of developing supersensory capacity is to make perception possible in an otherwise hidden realm, the path by which this can occur is properly said to be esoteric in nature (from the Greek root ἔσω meaning

⁵ Steiner himself notes: “Obviously, the terms ‘spirit substance’ and ‘spiritual body’ are contradictions in terms if taken literally. They are used here only to direct our thoughts to the spiritual entity that corresponds to the physical human body” (Steiner, 1922/1994, p. 53).

within/inner), because it depends upon the way that inner transformations allow the inner nature of the outer world to become part of the domain of perception.

The tradition of developing higher or spiritual senses has been part of esoteric and religious practices the world over, beginning most directly with shamanism but also including not only various strains of Hinduism, Buddhism, and Taoism in the East, but the Western tradition of alchemy and the mystics Jacob Boehme and Meister Eckhart. Uniting with, understanding, or devoting oneself to the Divine almost always involves some kind of transformation of the human being beyond the boundaries of the normal senses. While Steiner, along with Europe as a whole, was influenced by the 19th century's re-discovery of Eastern wisdom, particularly through the vehicle of Theosophy (Lindenberg, 2012) (Steiner was for a time the head of the German section of the Theosophical society, which itself borrowed directly and heavily from the East), Steiner was always adamant that he never spoke in order to recapitulate ideas of a perceived authority, but rather only communicated what he himself had been able to experience directly (Steiner, 1925/1999, pp. 257–258).

A wider context for epistemology. How does this connect to aesthetic epistemology? It does so by virtue of the particular methods involved in this kind of esoteric training which call for a deep integration of the three primary domains of human capacity: thinking, feeling, and willing, or cognitive, affective, and volitional. The awakening of new sensory capacities, according to Steiner, takes place within a cosmological, evolutionary, and historical context (see Steiner, 1904/1987b, 1920/1997a, 1923/2007) which uniquely situates the various

possibilities open to human development. It is far beyond the scope of this work to address the vast details provided by Steiner concerning these contexts, but it is important to mention because Steiner's own epistemology can only be fully appreciated in their light. The most important aspect to note here is that, because the human is a continually developing being, considered from a cosmic-evolutionary-historical perspective, what is immediately possible for human beings today is different than at other times, just as what is immediately possible for a child is different than what is possible once the child develops into an adult. The methods of anthroposophical esoteric training are likewise situated with respect to these contexts, and are precisely oriented toward developing those capacities that are on the leading edge of what is possible for present humanity—with the explicit goal of transforming humanity further.

Steiner's epistemology provides the central philosophical pivot of the anthroposophical esoteric path, described as a path of knowledge (Steiner, 1924-25/1998, p. 13). This is a path that respects and builds upon the kind of clear and exacting type of thinking that has shown its greatest potential in the creation of the modern sciences. But the knowledge at which it aims is not mere intellectual or technical knowledge, it is a different *type* of knowledge—knowledge of the spiritual worlds and of humanity's place in them—and it therefore must be gained by a different type of activity than that which produces intellectual or technical knowledge. This is why anthroposophic epistemology aims at an activity of knowing that integrates the cognitive, affective, and volitional. It is just this kind of integrated knowing activity which is commensurate with the awakening of

supersensory capacities, and thus the potential for creation of knowledge from within the spiritual realms. The path of anthroposophy, then, can be properly discussed as a path of esoteric epistemological training aimed at the actual, lived transformation of one's epistemology. The goal is to become knowing beings such that our activity of knowing arises through the integration of human thinking, feeling, and willing in the context of a cosmic, evolutionary, and historical perspective that includes the ever-present, changing reality of spiritual worlds.

Methods and content in recursion. The key aspect of the anthroposophical path of knowledge with respect to the limited focus that this work must take is demonstrated in the way that it explicitly connects its methods with its domains of activity—that is, in the way that it connects the *how* with the *what*. Here a recursive loop is in operation: the methods (protocols, processes of knowledge generation) are specifically designed to change in a dynamic way based upon the content (data, knowledge, observations) they elicit. We will see later how this type of relation is more formally describable with the language of second-order cybernetics.

This recursive relation operates in contrast to methods that are designed primarily to generate new content in ways that don't also change the way the knowledge is produced. In such cases the enaction of the method, and the subsequent generation of new content by virtue of that method, does not explicitly pressure changes in the method itself (see Figure 1). Non-recursive methods are essentially linear in operation, consisting of protocols designed to be independent

of the particularities of the content that they produce. This can be a great strength and has been utilized very successfully in the physical sciences.



Figure 1: Non-recursive (linear) methods are not modified by the content they create. Copyright 2014 by Seth T. Miller.

On the other hand most, if not all, esoteric epistemologies are non-linear. Indeed, this can perhaps be taken as a defining characteristic, such that a key aspect of esoteric epistemologies lies in their ability to make an effective recursive link between method and content (see Figure 2). In other words, esoteric epistemologies can be described as those epistemologies in which the methods of knowledge generation are designed—even optimized—to allow for the distinction of just that type of content that carries the quality of inviting changes in the very methods by which its content is produced. This linkage forms the basis for understanding *how* new domains of knowledge become available through methods of esoteric training (see “Higher Order Sensing” below).



Figure 2: Anthroposophical training, and other esoteric epistemologies, explicitly place method and content in recursive relationship so that the content modifies the method, which then allows for the creation of new *types* of content as the method changes. This is the process behind the creation of “higher” sense organs—see below. Copyright 2014 by Seth T. Miller.

How we carry out research limits the possible observations that can result.

This is, indeed, the *point* of using a particular method of inquiry: to reduce the possible observations to a more manageable set. A most explicit demonstration of this occurs in the famous two-slit experiment in quantum mechanics. The choice to set up the experimental context for the detection of the wave-like nature of a quantum system *will* reveal wave-like phenomena, while setting up the context to detect for particle-like nature *will* detect particle-like phenomena. This link from methods to content holds in *all* cases, however. Stated generally, how one asks a question limits the domain of possible answers. Or as Jeff Falzone puts it, “a question is an assumption that hasn’t put on its pants yet” (personal communication, June 20th, 2011). On the other hand, the observations that result from a particular method provide feedback about the effectiveness and utility of the methods used to elicit them, potentially leading to changes in the methods.

Anthroposophical epistemology strongly exhibits this recursive quality. Steiner takes great care in his presentation of various injunctive steps for those who wish to pursue an esoteric path of knowledge such as anthroposophy. For example his six “basic exercises” (Steiner, 1918/1947), control of thought, control of will, equanimity, positivity, open-mindedness, and inner harmony, are “basic” because their successful implementation provides the very content for experience upon which *later* injunctions are based. The content in this case is noted as a manifest change in characterological disposition which Steiner notes is specifically influenced by our life of feeling (Steiner, 1894/1964, pp. 125–126). In other words, the six basic exercises (method) are designed to elicit a particular constellation of experiences (content) the character of which is of just the type to allow for the possibility of later exercises to successfully yield new domains for experience. We thus have the recursion: method → content → method. In essence, this type of approach can be thought of as an epistemological training, where the goal is not simply to create new knowledge (even knowledge of “higher worlds”), but to develop new *capacities* of knowing which lead to new options for both sensation and action which *continue to develop those new capacities*.

Higher-order sensing. The perspective I take in this dissertation is one that embodies major elements of an anthroposophical worldview in general—though certainly not in all specifics—and this informs the way I approach the creation of this work. As indicated, anthroposophy is already strongly based in an extension and modification of the scientific work of Goethe, as developed initially by Rudolf Steiner. Yet Steiner brings to Goethe’s methodology a series of

spiritual considerations strongly influenced by perennial philosophy,⁶ the hermetic traditions, and Rosicrucian wisdom, among others. These aspects are developed anew within a modern context meant to be capable of coevolving with outer science, and is thus considered to be a “spiritual science,” because its underlying logical principles are in agreement with those of outer science. The difference lies not so much within its empirical method (although it utilizes the more “gentle” empiricism of Goethe), but in the domain of experiences within which such methods can be applied. For this reason, spiritual science, or anthroposophy, is characterized by its founder as “a path of knowledge, to guide the Spiritual in the human being to the Spiritual in the universe” (Steiner, 1924-25/1998, p. 13).

Anthroposophy presents methods for awakening and utilizing forms of perception that can be called supersensory (Steiner, 1918/1947). Like our more “normal” senses of sight, hearing, and so forth, these “higher” senses also provide

⁶ It should be noted, however, that despite many similarities a major difference between perennialism and anthroposophy lies in the latter’s deep acceptance of a cosmic-evolutionary view, while the former maintains a more static view in which the same basic “perennial” truths are re-discovered and contextualized newly as cultures change. Anthroposophy takes a more radical stance in which the underlying spiritual contexts that provide the source for truths identified in perennial philosophy themselves change, yielding different truths throughout time. As an example: at one time (according to the anthroposophical view) the cosmic-evolutionary historical context was such that the teaching of the external world as illusory made sense, given the overall spiritual-developmental conditions of humanity at that time (around the time of the Rg Vedas). However, the situation has changed since then, and this teaching does not serve humanity in the same way that it did ancient peoples. Rather, anthroposophy seeks to develop human consciousness in a way that allows it to recognize the reality of the lawfulness present in the external, material world. This philosophical difference has important consequences: rather than seek to escape the suffering of the (illusory) world, suffering is recognized as an avenue for proactive transformation—of both the self and the world.

a relational bridge between systems. Put another way, both types of sensing serve as modes of relation that carry qualitative information about the environment in which a system is operating. The sensory capacities of a system are closely tied to, and in many ways commensurate with, what we can call the system's epistemology, which refers to the structural ways that information processing yields potential differences within the system (such as motor activity or the generation of a mental image). Said exactly but perhaps cryptically, we could say that what a system distinguishes distinguishes its distinguishing. [[It may be worth noting here the first/second order recursion embedded in this statement. The first usage of *distinguish* is first order, the second usage is second order and acts back upon the first, turning it into a new, slightly different, third usage, thus forming a closed but evolving loop, a sort of transformative spiral. This is an instance of the "vortex pattern" mentioned in the "conclusions" section, and it will crop up again and again.]]

The difference between the normal senses that we are all familiar with and the supersensory capacities that Steiner mentions can be traced in part to the relative difference in the level and quality of consciousness required for their appearance. The normal senses are essentially given as a product of the past: human phylogeny (genetic history), ontogeny (individual history), and contextual embedding within a complex and evolving present environment, which provide the necessary ground for their appearance. For this reason much of normal sensory life takes place at various (and changing) levels of consciousness, a vast majority of which never rise to awareness. The "hard-coding" of sensory

channels into our physiology, a benefit of the entire history of the evolution of our species, results in very efficient mechanisms by which differences at a given sense organ's (or organ system's) functional periphery are selectively dampened or amplified. This dampening and amplification relies upon various levels of local feedback loops that do not require input from all higher order levels of the system, sometimes even eliminating the need for information transfer with the brain at all. Circulation, digestion, and regulation of body temperature are examples of bodily processes which involve sensation at levels below that of normal conscious awareness. What is important to note for the purposes of this dissertation is that the development and functioning in the human being of normal sensory capacities can occur in large part without the benefit or requirement of higher-order mental processes of attention. They are developed automatically in the normal course of living.

A unique time arrives in the evolution of a species when it becomes possible for attention to be directed not only to sensory events, but to the attention itself. In other words, when attention becomes recursive, this opens up a higher-level feedback loop between sensation and attention that can benefit from the cybernetic principle of "calibration," whereby a lower order process is modified by a higher order input that changes the boundaries of operation of the lower order process (Bateson, 2002, chapter VII). Valentin Turchin, an influential early cybernetician, calls this kind of shift a *metasystem transition* (Turchin, 1997, especially chapter 3). An example of calibration is in the cybernetic system of a simple thermostat. The feedback loop which keeps the temperature of the room

within certain bounds is calibrated by an agent who adjusts the sensory threshold of the feedback loop by setting the dial to the desired target temperature.

Calibration is an interaction between higher and lower order levels of a system.

The feedback loop that keeps the temperature oscillating around the target value does not also change that target value; a higher-order calibration *of the feedback loop's lower-order operation* is needed.

I propose that the “higher senses” are built out of and can be described by this process of calibration. Higher senses do not arise “naturally” in the sense that the presence of any set of outer circumstances is sufficient for their appearance. Something more than an outer *de facto* context is required. The higher senses are not “given,” but they *can* be actively developed. This can occur through the introduction of a second-order recursive process by which the human being becomes an active participant in sensory life, which is a way of saying that it requires becoming conscious of our senses in a higher-order way (cybernetic calibration)—not by merely experiencing their effects, but by entering into the process of their arising. This is a cybernetic conceptualization of the process that in anthroposophy is called the “transformation of the astral body” (Steiner, 1904/1987b, 1922/1994). This is a process, closely related to the integral picture of human and cosmic development, by which humans transform that part of the soul that is outwardly bound up with normal sensory perception, and inwardly bound up with sympathy, antipathy, and desire in general.

One way in which we can engage with this process of transformation utilizes the capacity for feelings to become an aesthetic mirror that reflects the

quality of the processes unfolding in our sensory life towards our conscious thinking capacity. This is a basic tenet of aesthetic epistemology. Developing such an aesthetic capacity is subtle, but forms the basis in consciousness for the appearance of new senses of equal (and successively greater) subtlety. The forming of the higher senses takes place in consciousness as an activity of consciousness, but not solely in thinking. Unlike normal senses, these higher senses are awakened only when engaged through conscious will activity. This mutual working of the will and thinking is what links this process to spiritual development. In another example of the importance of recursion, we could say that the process of forming the higher senses is itself a form of higher sensing which feeds back into the very process that gives rise to it.

What is important for this context is primarily the distinction between the types of sensory capacity available to the human being, and that the higher senses are very much like normal senses, but which have a different epistemological and ontological genesis and therefore engage with different sensory realms that can be termed “spiritual.” This issue of higher and lower orders of sensing plays an important role in bridging cybernetics and anthroposophy. To speak of the formation of new (spiritual) organs of sensation, although potentially seeming more far-fetched when approached from the context of anthroposophy, is less so when considered from the more functionally-oriented domain of cybernetics. Indeed, Gregory Bateson himself, in speaking about the holistic nature of even simple self-corrective systems such as a steam engine with a governor, has no qualms about calling the governor “essentially, a sense organ” geared towards

sensing the difference between an actual and ideal running speed (Bateson, 1972, pp. 315–16). He even states, with a bit of a twinkle in his eye, that a “dynamic pattern is a sort of unlocalized sense organ. Ha!” (Bateson & Bateson, 1988, p. 198), indicating that thinking about sense organs is to think about *how* patterns of difference are detected, organized, and made recursive within a given system. With this kind of shift away from a purely ontological picture of sensory organs, it becomes possible to see how sense organs need not be limited to those systems that are organized to detect only differences in the domain of the physical world.

The spiritual organs that anthroposophy seeks to develop are explicitly *not* physical, but are of a “soul nature” (Steiner, 1917/1996b, p. 8). From a practical perspective what this means is that we are initially inattentive to what is occurring in our soul in just the same way that we are normally inattentive to our experiencing during times of sleep. That is to say, we only have a dim or dreaming awareness of what occurs at a soul-level. For this reason we cannot perceive directly—without some kind of training or normal life-experience that facilitates the functional equivalent of the same—either the existence or operation of the spiritual organs of sensation in question. What is required to become aware of the developing spiritual sense organ is its *use*. Steiner (1917/1996b) discusses this difficulty in the following way:

The soul becomes conscious of possessing the individual spiritual organs themselves, however, only to the extent that it is able to use these organs. For, these organs are not something at rest; they are in continuous movement. And when they are not in use, one also cannot be conscious of their presence. For them, therefore, perceiving and being used are synonymous. (p. 12)

The process of gaining awareness of a spiritual sense organ exemplifies the fundamental epistemological pattern: the distinction between levels of order and the recursion between them. The operation of the sense organ (second-order) constitutes its existence as an explicit content of consciousness (first-order). This is the recursive movement from second- to first-order. But awareness of the sense organ feeds back into the actual operation of the sense organ, allowing for the possibility of its continued development. This is the complementary recursive movement from first- to second-order. Both movements occur simultaneously.⁷

Steiner spent much effort explicating how development of supersensory capacities allows one to contact in successively more direct ways the spiritual aspects of the universe (Steiner, 1918/1947, 1920/1997a), which he characterizes as the relations between spiritual beings (Steiner, 1912/1992), of which the human is only one among many. Beyond normal, modern, day-waking thought processes, Steiner characterizes higher forms of thinking activity which he calls Imagination, Inspiration, and Intuition (Steiner, 1920/1997a, chapter 5). These terms indicate successively penetrating modes of experiencing the spiritual aspects of the world. They are technical terms playing a central role in Steiner's work, and will be explored more directly below as they characterize stages of cognition as it progresses esoterically.

I am personally sympathetic to the broad outlines of the anthroposophical view, especially in terms of its underlying principles and methods of self-

⁷ For a more detailed description of the process of awakening to one's spiritual organs of perception, the reader is directed to Steiner (1917/1996b), especially the first chapter. For a description of *how* to accomplish this, see Steiner (1918/1947) and Steiner (1920/1997a), especially chapter 5.

development. Anthroposophical *knowledge* (distinguished from the activity of *knowing*, i.e. epistemic and methodological aspects) is similar to exoteric scientific knowledge: it is amenable to falsification, but by the very method that gave rise to the original fact. In other words, the method that yields new knowledge also includes protocols necessary for its potential falsification (Steiner, 1920/1997a, especially chapter 1). This means that just as in order to judge the validity of normal scientific knowledge one needs explicit awareness of how that knowledge was produced, so too the potential falsification of anthroposophical knowledge rests on the ability to account for the methods by which that knowledge is created. The importance of anthroposophical wisdom is therefore not found so much in its communicated knowledge as in its explication of the processes that lead to new knowledge—and even better, a recursive refinement of those very processes.

In regards to anthroposophical *knowledge*, I take an open-minded but critical view; many anthroposophical “facts” indicated by Steiner are either likely or certainly false. Anthroposophical ideas about the world are subject to change and revision, just as in the case of ideas from normal science. At the same time, I have found many of its ideas, and more importantly, its actual effects on my own ability to think and perceive, to be both useful and compelling. Work with them has changed my life quite profoundly. It is worth quoting Steiner in regard to the tendency towards dogmatism that inevitably arises around figures of his caliber. Steiner consistently warns against this tendency, appealing over and over to each individual’s own capacity for unbiased thinking. Here is a typical example:

Much that I have said today can be substantiated only by means of occult investigation. Yet I beg you not to give credence to these things because I say them, but to test them by everything known to you from history, and above all by what you can learn from your own experience. I am absolutely certain that the more closely you examine them, the more confirmation you will find. In this age of intellectualism, I do not appeal to your belief in authority but to your capacity for intelligent examination. (Steiner, 1911-12/2000a, p. 43)

In terms of the spiritual aspects, I believe that it is not useful to codify or otherwise fix a relationship to the spiritual world, and such is the case in the formation and evolution of this dissertation as well. This is an area in which care must be taken, both in the handling of the term “spiritual,” with its extremely wide variety of potential meanings, and because of the generally poor relationship between academic and spiritually oriented circles. All that can be done is to prepare oneself for the spirit by opening up repeatedly to its potential appearance, remembering that how you get there is what you get. But just because of this, it is important to be clear about the “how *I* get there” aspect of the process, and to give the reader some background indications of how I go about this “how.”

Essentially I am attempting to *take on* the standpoints of the two main fields of anthroposophy and cybernetic epistemology as a kind of phenomenological experiment; I want to see what happens when they meet in me. All my initial work in this area indicates that there are particular relationships between the two that can be fruitfully explored, and which help outline a perspective that I am calling an aesthetic epistemology. I attempt to not only speak *about* epistemological ideas but to *enact* them to the extent possible given the format, both as a methodological basis for the research and as actual “data.” In the language of Charles Tart (1972), it could be said that I am attempting to

construct, as I go along, a “state-specific science” whose express purpose is transdisciplinary reflection on the very state in question.

Cybernetic Epistemology

I also take cues from cybernetic epistemology, specifically building upon ideas from Gregory Bateson, Heinz von Foerster, Francisco Verala, Humberto Maturana, George Spencer Brown, Søren Brier, Lois Kauffman, and Bradford Keeney, among others. The approach to knowledge outlined in general by such figures is broadly constructivist, but I steer clear of “absolute relativism” and solipsism. Relations are identified as more primary than facts (being of a higher order), and facts are construed in the context of their relations in a causally recursive way. Facts change relations that change the facts, and knowing about this process brings forth a higher-order level of interaction with both facts and processes, which this dissertation attempts to exemplify in both its structure and content. This perspective can be categorized as one of higher-order cybernetics (beyond first-order cybernetics). Within this view, recursive feedback loops are seen as essential aspects of complex systems, which can be characterized, following Bateson, as epistemological systems, or *knowing* systems (Bateson, 2002). Such an epistemology can be described as *relational*, in that the behavior (and thus potential transformation) of complex systems is strongly linked to *differences*; differences are, in turn, the basis for any relation. A difference is what a distinction makes. The character or quality of a relation is understood to actively help bring forth difference, forming a recursive loop and closing the epistemological cycle. Yet this cycle is not completely closed; it is always open

precisely because it relies upon difference. Difference acts as the bridge by which a complex system becomes contextualized internally by what it differs from externally, i.e. a relation beyond itself is always required for its own constitution.

The seeds of this *kind* of view in cybernetics can be seen at least as far back as the Star Cybernetics of Francisco Varela's *Not One, Not Two* (1976). There, Varela (himself working from ideas of Gordon Pask and Gregory Bateson) develops several concepts which yield both content-oriented and methodological starting points for the present work, including:

- recognition of the need to move beyond a Hegelian dialectics of opposition (p. 64).
- introduction of multiple nested levels to contextualize any opposition at a higher level, where it is viewed as a complementarity within a larger whole (Star Cybernetics, and levels of reality in transdisciplinary thinking) (p. 65).
- explicit recognition of the fundamental complementarity of being and knowledge (of ontology and epistemology) (pp. 66-67).
- indications that the “central concern” is one of a paradigm shift, not a simple re-organization of current modes of understanding and being (p. 66).
- bringing the observer forward as a fundamentally important aspect of the new paradigm (p. 65).
- movement towards processed-based treatment of mind (p. 66).

- the key inclusion of responsibility, flowing naturally from recognition of the relationship between ontology and epistemology (p. 66).

All of these insights support the notion of an aesthetic epistemology.

Academia and Esotericism

The term esoteric is a difficult one, having many overlapping and imprecise meanings, many of which are intended for and understood by select groups. [[Here is an instance in which a first-order content carries the signature of its second-order nature. The meanings of the term *esoteric* are themselves esoteric, that is, the definition applies to itself, recursively.]] Derived from the Greek root ἔσω meaning within/inner, it commonly refers to knowledge that is restricted to small groups. While the term is often used to mean “difficult to understand” (ex: “particle physics is an esoteric field”), this colloquial meaning misses a deeper historical context in which esoteric knowledge is of the kind that is specifically developed through *initiatory* processes, where a more advanced teacher guides an initiate to greater realms of knowledge (Faivre, 2010).

Initiatory knowledge counts as “inner” knowledge in two ways, one first-order and the other second-order. The first-order nature of esoteric knowledge refers to the *content* of the knowledge, which is explicitly about the inner nature of the universe and the place of the human being within it. This is not a knowledge of surfaces but of depths, and thus requires (and facilitates) a different kind of seeing in order to fully grasp. This brings us to the second (and second-order) way that initiatory knowledge is “inner”: it refers to the fact that without undergoing the direct experiences that initiatory processes are designed to elicit,

esoteric knowledge can easily be either misunderstood or even used in harmful ways. Indeed, small groups historically form around specific initiatory processes as a way of guarding, curating, and controlling the particular esoteric knowledge revealed by those processes, from ancient Egyptian and Greek practices onward. Anthroposophy is definitively esoteric in both of these senses, and is therefore a part of the wider academic study of esotericism, to which this work hopes to contribute.

The study of esotericism has only fairly recently been legitimized in academic circles, starting with the foundational work of Frances Yates (1964/1991; 1972/1986) in the 1960s and 70s and continuing with the more contemporary work of Antoine Faivre (Faivre & Hanegraaff, 1998; Faivre, 1994, 2010) and Wouter Hanegraaff (Broek & Hanegraaff, 1998; Hanegraaff, 1999, 2006), who have devoted much effort to identifying and navigating through the particular challenges raised in the study of esoteric systems. A brief exploration of major aspects of the study of esotericism will help set the stage for presenting how and why I take a non-standard approach (from the perspective of traditional academics) to the study of both anthroposophy and cybernetic epistemology. In the spirit of recursion between content and method, instead of treating the esotericism solely as an object of study I also utilize (without explicitly pointing when I'm doing so) esoteric principles as a basis for the way in which new content is presented. That is, I approach the topic of the esoteric both from an emic and an etic perspective—or rather, from a perspective that has elements of both but which does not necessarily admit of the usefulness of that distinction.

Antoine Faivre's (2010) approach to esotericism as "forms of thought" (p. 13) is perhaps the most influential, in which he finds four central and two secondary characteristics that he feels defines esotericism. The four central characteristics of esoteric thought include 1) attention to universal correspondences and the interdependence of all phenomena, 2) the idea of nature as a living organism, 3) the importance of imagination as a tool of knowledge that accesses various mediations between levels of reality, and 4) the experiential nature of transformation that accompanies the previous three points. The two secondary points are 5) the practice of concordance, in which various differing traditions are seen as multiple expressions of a single, deeper unity, and 6) an emphasis upon how esoteric teachings are transmitted throughout history and from one person to another, including processes of initiation and the master-pupil relationship (Faivre, 2010, pp. 12–13).

Arthur Versluis, founding editor of the journal *Esoterica* and founding president of the Association for the Study of Esotericism characterizes Faivre's methodology as "a strictly historicist approach seeking primary definitive characteristics of esotericism" (Versluis, 2002, p. 3), which he views as an impossible task. The fact that he also sees continuing the historical approach as necessary highlights some of the difficulty in the academic treatment of esotericism. Pointedly, Versluis draws attention to the omission of the concept of *gnosis* in Faivre's list of characteristics. Gnosis is a term referring to knowledge of or direct perception of hidden or esoteric aspects of the cosmos (cosmological gnosis) as well as direct spiritual insight into complete transcendence

(metaphysical gnosis) (p. 2). Versluis sees gnosis as central to esotericism and cites Faivre's desire to separate mysticism from Western esotericism as a mistake. This difference between Versluis and Faivre has repercussions for the way I approach the esoteric, as I wish to draw attention to—and utilize—a distinction between the study of esotericism and esoteric study in a different way (see the next section, "Esotericism from a Different Perspective" below).

Wouter Hanegraaff (1999), who sees a need for more academic treatments of esotericism, gives five different meanings of "esoteric," summarized as follows:

- 1) A generic term used in publishing for various writings that loosely span the paranormal, New Age spiritualities, magic, and so on.
- 2) An adjectival term applied to knowledge, predicated on the difference between initiates and non-initiates.
- 3) Reference to the perennialist or Traditionalist notion of the transcendent unity of all religions.
- 4) A near-synonym of *gnosis*, referring to experiential and largely symbolic, non-discursive modes of knowing.
- 5) A historical term referring to a complex of interrelated currents and traditions from the early modern period up to the present day founded in syncretistic Renaissance hermeticism (p. 3–4)

The only point that needs to be made here is the connection Hanegraaff makes between symbolic, non-discursive modes of knowing and *gnosis*. It is perhaps part of the unique contribution of Rudolf Steiner to Western esotericism

that he continually refuses to become “mystical” about his epistemology, i.e. he refuses to dissociate it from wakefully clear thinking processes. In fact, Steiner’s main epistemological thrust is to *strengthen* thinking, not dodge or subvert it (Steiner, 1894/1964). In other words, Steiner meets head-on the challenge of both *thinking the spirit* and *thinking spiritually*, which is not seen as incompatible with the more traditional methods of *gnosis* but rather is a modern extension of them. This is largely due to Steiner’s insistence that what has been developed by human thinking in the processes of exoteric science, with all its associated clarity, holds also for esoteric science (a term important enough to be used in the title of one of his most significant works).

Kocku von Stuckrad (2005), head of the Department of Comparative and Historical Study of Religion at the University of Groningen, adds a final layer to this discussion by stressing that it is not enough to view esotericism in a historical light, but rather should be seen as a more basic structural feature of Western culture. Von Stuckrad’s approach is more functionalistic and postmodern:⁸ “instead of asking what esotericism is and what currents belong to it, it is more fruitful to ask what insights into the dynamics of Western history we might gain by applying the etic concept of esotericism” (p. 80). Most importantly for this context, von Stuckrad’s survey of literature on Western esotericism leads him to make the distinction between two basic dimensions of esoteric discourse: claims of higher knowledge and ways of accessing higher knowledge (p. 88). I will

⁸ Thus, “‘Esotericism’ as object matter does not exist; ‘esotericism’ is a construction of scholars who order phenomena in a way that they find suitable to analyse [sic] processes of Western history of culture” (Stuckrad, 2005, p. 88).

utilize this distinction in connection with the difference between first and second levels of order in a different way below. Von Stuckrad (2005) additionally takes the view that the universalist tendencies in esotericism's claims to higher knowledge makes any kind of relativism "the natural enemy of esotericism" (pp. 88-89). This tension between the relative and universal is very important, and will later play a role in the discussion about the nature of cognition in second-order cybernetics in the context of the esoteric thinking, where the goal will be not simply to make the distinction between relative and universal so as to fall on one side or the other of the line between them, but to make the distinction precisely in order to exacerbate the tension at their mutual boundary as an esoteric practice that transforms thinking.

Esotericism from a Different Perspective

Aside from von Stuckrad's distinction between "claims" and "ways," the previous definitions deal with esotericism as a content. I wish to treat esotericism primarily as a process (second-order), whose content is derivative. Dealing with the esoteric primarily as a content is a serious mistake if this is the only approach made. It may fit well within the content-oriented circles of academia, but glosses over the deeper issue at stake that arises when considering esoteric studies not as studies *about* esoteric ideas but rather as the actual engagement with esoteric studies as a method, an approach, a way of transforming one's own being and thinking. Academia has largely avoided this problem by compartmentalizing through the etic (outsider) vs. emic (insider) distinction. This distinction is important because it is itself made from the etic perspective (from the outside) in

academia, but is *also* emically made within various esoteric disciplines as a *primary* point: that the study of whatever the content of the esoteric system may be, its study cannot be complete if only approached from the outside, and requires *participation* with some methodology (second-order) which is more primary than the content (first-order). In other words, academia makes the emic vs. etic distinction largely as a way of bracketing out emic (and implicitly credulous or suspect) approaches so that they can be etically treated as a form of data for the purposes of scholarship (as exemplified for example in the work of Olav Hammer (2001)). However, the *very same distinction* is made from within esoteric traditions as a way of making the exact opposite point: i.e. the need for direct engagement with second-order esoteric processes of knowledge generation as the basis for any claims to esoteric knowledge. Process, methodology, and injunctive protocols are, from this perspective, more central to esotericism than any particular esoteric belief or idea.

This is why esoteric content is spoken of as “revealed”—it is experienced as an uncovering or unveiling of some content previously unavailable to experience precisely because of the lack of following the particular methods that sensitizes one to the new experiences. This is also why another central feature of esoteric disciplines is almost invariably some kind of initiatory process coupled with mentorship. The mentorship is not to provide some specific content or communication of dogma, but is rather almost completely about the process-level, the methods, the next steps appropriate to a particular student and circumstance. It is just this that naturally leads to the distinction of initiation not as an external

marking of the reception of some specific “esoteric” knowledge, but as the taking up of new protocols for thinking, feeling, and willing. In short, initiation signifies—and is designed to facilitate—an actual lived transformation in the student’s experience.

My approach is to re-orient, or re-couple, talk about the esoteric with the context of its second-order nature, and to make *this* relation more primary than any particular esoteric content. This is in complete agreement with the whole thrust of this dissertation as a pointing-out and utilization of the distinction between first and second-order levels and the recursion between these. I posit that this relationship between levels can be seen as the “core” of esoteric discipline: the content is in recursion with the methods of its discovery. This approach does not obviate others, but is complementary to them, and is one that, if it is lost, turns esoteric studies into a form of paleontology, seeking to uncover the past in favor of attempting to develop further from the present. Taking an esoteric approach to the study of esotericism is precisely what keeps it from being ossified, objectified, dogmatized, or otherwise killed into some particular form. However, the consequence of keeping such a study alive means precisely that any particular esoteric content, in order to remain *living*, must be amenable to its own transformation. To refuse change is the equivalent of death; in esotericism as in life. The process is therefore messy, like life. But like life, it is juicy, open-ended, recursive through higher-orders, and is much more exciting than the unrealizable perfection of some set of unchanging first-order content that is suitable only for museums. The challenge, therefore, is (as always) about

developing a harmonious balance between the outer vs. inner styles of approach. Clearly both are necessary, being complementary, revealing and concealing differently according to their practice.

Furthermore, I hold that the distinction between first and second orders and their recursion is something of an esoteric “key”—because if one takes seriously the *content* (first-order level) of this idea (the distinction between levels of order and their recursion), one is inevitably drawn *beyond the content* to its second-order level, its coming-into-being, its enactment. In other words, the nature of this *particular* content is such that it includes within itself the key to its own overcoming as *only* content. Said differently: this content is its process. This unusual situation is what makes this particular content esoterically potent. Rather than normal esoteric injunctions (e.g., meditate on X to experience Y), which are not directly recursive (the injunction leads to experiences that don’t directly reveal the nature of the injunction itself, but rather reveal other experiences; i.e., the injunctive tool—as a content—is used to prepare one to experience some further content, not itself), this particular content (the distinction between levels of order and their recursion) operates as an injunction that serves to reveal *itself* further. This difference is the same as that between autopoiesis and allopoiesis; autopoiesis utilizes the distinction between first and second orders and *crosses* that distinction through a recursion, while allopoiesis stays (to itself) only at the first-order level. That is, autopoiesis produces the conditions for the production of itself, and in so doing actually produces itself, while allopoiesis produces something other than itself. Thus, when this content is the subject of meditation

(i.e. “taking it seriously), it opens itself up like a flower, revealing its inner nature as a higher-order process. In this way an interesting and direct *experiential* link is made to the important concept of autopoiesis in second-order cybernetics: meditation on the distinction between levels of order and their recursion yields not an abstract understanding of how a system produces the conditions for its own production, but actually yields this production (ontology) and its understanding (epistemology) in actuality for this particular case. But here we are not talking about a biological or mechanical autopoiesis, but an autopoiesis *of thinking, by thinking*. This is what makes this particular content an *esoteric* key; it depends entirely upon the free activity of its own realization as such. That is, only the first-order aspect can be given etically; the second-order level must be experienced emically or not at all—but the first-order level is *precisely* the injunction to do just that. The content of the idea serves as an invitation to its autopoietic realization as such—as a second-order process of coming-into-being of itself as content.

So what is the point? The point is that this particular content connects central aspects of second-order cybernetics and esotericism, and does it not abstractly but directly in experience. This validates Ashby’s sense that “*The truths of cybernetics are not conditional on their being derived from some other branch of science. Cybernetics has its own foundations.*” (Ashby, 1956, p. 1). To be self-founded is to be founded only out of the free capacity of human thinking to make a distinction and follow the consequences of that distinction with as much awareness and thoroughness as possible. This self-supporting nature of

cybernetics is just what lies also at the base of esoteric practices, which depend not on pre-established knowledge for their success, but rather depend only upon what experiences become available in the course of their actual practice; their enactment creates the necessary space for the success of the enactment.

This is simply another way of indicating that esoteric practices are aimed at the creation of sense-organs which have as their domain the space of distinctions created by their use, which is simply another way of saying that esoteric practice is transformative. But with the help of cybernetic epistemology we can see something about *why*. Second-order cybernetics is the recursive study of recursivity; it is both content and method; it is the distinction that entails itself; it is autopoietic in the domain of thinking. Cybernetic epistemology (the center of second-order cybernetics) is therefore not simply an exoteric branch of study—even one that illuminates the realm of the esoteric—but is (using the term in the way I describe above) properly *esoteric* itself. That is, its study invites transformation because of the way it embodies the “key” esoteric principle of the distinction between levels of order and their recursion. This is why it is possible for a figure like Bradford Keeney, who is both a modern-day shaman of sorts and a cybernetic epistemologist, to recognize that “In the most important matters of our lives, cybernetic epistemology joins hands with the spiritual truths of the world's great religions. . . . I believe that cybernetic epistemology joins us with the sacred traditions and helps us be oriented in everyday life” (Keeney, 2005, p. 383). This statement is not the result of a whimsical desire to connect spirituality

with cybernetics, but rather arises from their intrinsic, deep, and principled connection.

Thinking at the Edge

Let us step out of the previous process for a moment, and note that there is a problem with the thoughts being developed so far: they are wrong; or rather, the concepts presented here are neither complete nor absolute. They provide a model, a crutch for thinking to transform itself further—it is this “further” that is the real object of the model. Other models exist and might be better, or work better in different contexts. This holds for the entire content of this dissertation, which is provisional, exploratory, and experimental (it is living), but not necessarily of lesser import because of this recognition—indeed I take the stand that it is *precisely* the explicit inclusion of this process-level (normally hidden or at least sanitized in academia) that carries this work forward in a way that may allow it to become more than “merely” first-order in the actual experience of the reader. The theoretical (and practical) framework through which this work is developed does not assume a goal of finding “the right answer” to any given problem, but rather takes up a search for and implementation [[the search is also the implementation]] of processes that actually attempt to transform thinking. This is in distinction to processes that lead to the creation of new knowledge in ways that structurally and systematically serve to re-generate the limits of the paradigm (usually by avoiding them) from which the knowledge is produced.

To continue the previous theoretical language [[it is important to be aware that this is what is occurring; the theory is being used to develop the theory,

recursively]], this is a move from a first- to second-order level, from content to process, from thoughts to thinking. That failure is inevitable is taken as a given, because the domain in which a model is normally taken to be correct (the first-order domain) is not the domain at which this work aims (the second order domain, and its recursion into the first). But as long as the failures help thinking move creatively forward from its starting point, that is, if they serve the actual transition to a new level of organization/patterning/relating/unfolding, then we can safely move away from the dichotomy of failure/success to a distinction of a higher order (transformation).

The philosophical works of Eugene Gendlin (1962/1997, 1998) provide a suitably complex and subtle framework and support for this kind of process-based approach. Gendlin's contributions will be explored in more detail later, as they provide key points of contact bridging cybernetic epistemology and anthroposophy, as well as being itself an example of aesthetic epistemology in action. A brief examination of the methodological aspects should be noted here, however, as they contextualize the second-order perspective through which this work is undertaken as whole.

Gendlin has developed a process called "thinking at the edge" (2004), which is a "systematic way to articulate in new terms something which needs to be said but is at first only an inchoate 'bodily sense'" (Gendlin, 2004, para. 1). The process involves a series of steps designed to newly bring forth language, concepts, and relations that meet the complexity and precision implicit in experience. The philosophical source from which this process springs is

developed in Gendlin's book *Experiencing and the Creation of Meaning: A Philosophical and Psychological Approach to the Subjective* (1962/1997). In it, he begins with the fundamentality of experiencing:

Now, if it is the case that we are really dealing with *experiencing* whenever we feel something, whenever we mean something, whenever we live in a situation, whenever we think, then experiencing is obviously so ubiquitous and so basic that we must take it to be a very fundamental phenomenon. (p. 14)

This point *is* obvious, as Gendlin notes, but its obviousness belies its significance, which few have taken as seriously as Gendlin. Experiencing is the dark, loamy soil out of which and in the continually present and ongoing context of which all divisions of experiencing into thinking, feeling, willing, believing, knowing, sensing, intuiting, conceptualizing and—importantly—*meaning* occur. Gendlin's whole project positively complements the considerations that are at the root of anthroposophical methodology, as mentioned above in the section on Goetheanism. This is in part because Gendlin's own approach is deeply phenomenological. It is not too speculative to point out that Goethe's quote admonishing us against seeking "behind" phenomena, because the phenomena *are* the theory, carries the same impulse as Gendlin's statement that he is "against reading concepts back as if they were 'the basis of' the process that gives rise to them. That falsifies and hides the process" (Gendlin & Kleinberg-Levin, 1997, p. 169). Goethe (1810/1970) noted and warned against the same tendency:

The investigator of nature ... should form to himself a method in accordance with observation, but he should take heed not to reduce observation to mere notion, to substitute words for this notion, and to use and deal with these words as if they were things. (p. 283)

The basis for Gendlin's "thinking at the edge" is in working with the *felt sense* (of one's experience). The term "felt sense" is simply a way of indicating the nature of experience *as directly felt*, as present right now, fully, complexly and preconceptually (but also conceptually). To "have" experience is to feel it, to sense it, to carry it, to be it—and this having can itself be explored and explicated further. Gendlin's work can be framed recursively, as the experiencing of experience, which in the language of this dissertation is the distinguishing and subsequent crossing of first and second orders with respect to experience. Gendlin (1962/1997) himself explicitly recognizes that "content concepts" (p. 29) are inadequate to the task of elucidating the complexity that we actually directly experience, and that we need to work towards a process model, which requires "process' categories that attempt to distinguish, not contents, but different modes or dimensions of process" (p. 32). This directly parallels Bateson's (2002) own use of orders of logical typing in reference to the complementarity between calibration and feedback (chapter VII).

Yet Gendlin (1962/1997), in a fashion much like a Zen *rōshi*, continually calls our attention to the difference between our actual ongoing experiencing *as such* and our conceptualization, symbolization, and explication of it (the N/N+1 difference), noting that "we cannot expect even a process logic to be fully adequate to experiencing. We must let the concepts *refer to* experiencing, for they cannot fully *represent it*" (p. 33).

Gendlin is careful to construct a model which is fundamentally *open* and *living*, in the sense that it does not lock itself to any specific conceptualization

(the style of most philosophy), but which is rather built and developed from the beginning so as to always allow for its own self-exceeding, a very esoteric orientation. The model and its attendant concepts are meant to be used to further call forth new ways of conceptualizing, even about the very model itself. The fierce delicacy with which Gendlin self-reflexively handles the difference between first- and second-order approaches (although he does not use these terms) to experience is, in part, what makes his work unique, and he continually attempts to enact his model in his creation and explication of it.

Gendlin (Gendlin & Johnson, 2012) has clearly articulated the need for a new kind of science that includes first-person experiencing in a non-reductive way. He recognizes that the two kinds of science that we have now, the reductive unit-based model of modern science and the holistic model of ecology, cannot adequately include first-person experience. These models are simply not phenomenologically rich enough. Gendlin calls for the creation of a third model that includes reflexivity

not as mere ‘consciousness’ added to processes that can be understood without it. [Reflexivity] is not just an observing awareness that hovers over a merely physical body. It is rather an inherent dimension which gives organic processes many characteristics which cannot appear in the two existing sciences with third person concepts about what occurs over there. Both sciences miss first persons, but we are here, after all. (Gendlin & Johnson, 2012, para. 9)

This simple phrase, “but we are here, after all” implies not just that we must somehow “account for” consciousness and experience (such accounting is a hallmark of the unit-model), but that we must *start* by accepting the full spectrum of human experience as a basic phenomenological lynchpin of the new kind of science. The new science is one that builds *from* experience, not *to* it. It does not

seek to explain experience by its logical reduction to non-human units, nor does it wish to let it mysteriously emerge only from the equally non-human whole.

Gendlin's way is a middle way, weaving between the contractive pole of the unit model and the expansive pole of the holistic model. The middle way is organic, oriented towards actual processes of living, of "interaction-first" (Gendlin, 1998, p. 22). Of course, Gendlin is not the first to either see this dilemma or try to address it. His process model complements and carries forward the basic project of Alfred North Whitehead (1929/1979), but in a way that is influenced much more by phenomenology than ontology. Gendlin (1989, 2004, 2006) himself cites the influences of Sartre, Merleau-Ponty, Husserl, Heidegger, Binswanger, Dilthey, Plato, Aristotle, Leibnitz, Dewey, Whitehead, and Wittgenstein as important in the creation of his model.

In this work I follow the spirit of Gendlin's explorations, which I find to be not only compatible with cybernetic epistemology and anthroposophy, but which help ground, re-frame, and bring forward the picture that emerges when these two domains come together in an aesthetic epistemology. There are two key methodological issues raised by Gendlin that are utilized in this dissertation. The first is to take very seriously the difference between concepts and experience, and to be careful not to replace experience with conceptualizations of experience (to confuse first and second orders), although we will make and cross this boundary many times. Gendlin warns that

Logically specified, symbolized, unique concepts are not felt meanings and do not have the creative characteristics of felt meanings. Our having of concepts involves felt meanings, which can be directly referred to. They make their creative functioning available to concepts without destroying

the logical relationships of concepts as uniquely specified products.
(Gendlin, 1962/1997, p. 148)

This means that in addition to forming concepts, space must always be left for their own overcoming, for their potential to shift when brought back into relationship with experiencing, with the *felt sense* of what is being developed conceptually. This is comparable to esoteric indications for meditative practice.

The second methodological contribution follows from and supports this process by giving a way of indicating just that part of experience from which the new concepts come, and to which they refer, but always incompletely. Gendlin makes the helpful distinction between conceptualization, which *represents* what is meant, and *direct reference*, which only *refers* to what is meant, without binding it in specific, overtly expressed language (Gendlin, 1962/1997, p. 238). In the language of this dissertation the difference is again that between levels of order, N and N+1, between content-oriented and process-oriented modes of symbolizing experience. This difference plays a vital role in that it forms a key part of the content as well as guiding both the process of its expression and its initial coming into being.

The difference between conceptualization and direct reference is not absolute. Conceptualization is like a shadow of direct reference; it takes the shape it does because of an occurrence that could be directly referred to, but maybe isn't. Thus conceptualizations can be thought of as fixing a process that could also potentially yield *different conceptualizations* through the process of forming a direct referent in working explicitly with a particular felt-sense that itself gave rise to the initial conceptualization.

An example may help illuminate this difference. Many different drawings can be made of the same person; each will capture specific details of the time and place of the work, the angle of view of the artist, the tone of the light, and so forth. Each drawing comes forth out of the artist's ability to let the motions of her pencil, the sweep of her gaze upon the scene, and the focus of her attention, to arise out of her whole experience of the subject she is attempting to portray. In order to do this she must repeatedly reach a place in her observation and drawing that allows her to directly refer to the felt-sense she has of her subject; she must seek for, create, and discover that direct referent to which her activity of drawing directly refers in its actual unfolding (*although not necessarily in its explicit outcome*). Multiple drawings of the same subject will be manifestly different, but may all arise from the same direct referent. The drawings *represent* the subject explicitly, while the process that gives rise to the drawings—the process by which the artist directly refers to her experience in the moment of drawing and observing, in order to lay down the next line on paper just so—cannot itself be fixed in a drawing, in words, or in any other way, but can *only* be referred to: this is the forming of a direct referent. There is “something happening” in the forming of a direct referent that is not vague or indeterminate, but precise and specific. The direct referent can *refuse* this new line as being too thick, or too curved, just as it can call for a new color to be added just here, but not there. The activity always remains the activity, even while that activity produces definite artifacts (drawings, thoughts, words, objects). Such artifacts usually do not explicitly represent the activity out of which they arose (the felt-sensing), but rather

represent the subject matter to which the felt-sensing is directed, which is in most cases not itself.

Thus concept formation is usually different than the concepts that such activity explicitly yields, which can be thought of like the shed skin of a molting snake. The snake goes on living, but it leaves behind something that is a hardened image of that very living activity. Most concepts are like this; dried husks that form around a living activity. Even more directly, but from an esoteric standpoint, we can say that a concept *is* the death of the living activity of its becoming. A concept is precisely what appears when the thinking that produces it ceases. Although they certainly don't agree on the language, both Gendlin and Steiner are concerned with the specific "unusual" case in which concept formation itself is the explicit content of thinking.

Purposeful Confusion

As should be clear by this point, my goal is not simply to arrive at concepts whose meaning can be transmitted entirely at the first-order level. (Indeed I don't think this is possible, though most methods spend a lot of effort to avoid integrating the second-order aspects that always attend their implementation. The differences between various methods can even be traced by following the specific ways that this avoidance becomes a guiding systemic principle for the exploration of an inquiry.) Rather, my goal is to stay near the boundary between experiencing as such (and thus all concepts that flow from it) and its symbolization in concepts. The point is not to mark the boundary so as to point out what lies on either side, but to mark the boundary so that it can be

crossed repeatedly, in order to make *the crossing* the “thing” that the dissertation is about. This requires some unusual languaging, meant not only to hold the first-order level of the concepts, but to indicate (and thus attempt to call forth in the reader) the second-order level always at work in their formation, in their coming-into-being and expression. The second-order level is usually unnoticed, ignored, or even actively avoided, and so I must include procedures that are meant to work in reverse of the more normal academic modality, in which the prime direction is one from uncertainty to certainty, from non-specific to specific, from unformed to formed. Ultimately, utilizing processes that work at the second-order level to counterbalance the normal first-order-centric tendencies in thinking form a central thrust of an aesthetic epistemology, and Gendlin’s *direct reference* helps both demarcate the difference and cross over it.

But this crossing can never be more than indicated; its *actual* occurrence is always left up to the reader. When such a crossing is indicated but is not taken, not experienced inwardly, then confusion may result. This is helpful in that it will not be possible to point out at every moment when such a crossing is intended; indeed, sometimes the very indication changes the context such that its potential occurrence is minimized (as in the case of explaining the joke before its delivery). Therefore, the reader is invited to reframe moments of confusion as opportunities to engage differently, to allow the confusion to work as an indication that an opportunity for experiencing the meaning in a different way is present. It is far preferable that one experience an actual change in the *way* one thinks, than to simply grasp what is meant in a way that is “correct.” Experiencing confusion

may indicate a doorway into this potential shift, and thus also an invitation to cross the threshold. With these considerations presented, the main content of the dissertation can now be given.

Epistemological Conundrums

Thoughts about knowing have long been oriented around the traditional view of “true and justified belief” (Ladyman, 2002, p. 6). The idea that what constitutes knowledge is justified true belief relies upon assumptions which fall outside the purview of the definition itself. For example, “true” often carries the implicit assumption of a fully objective world that simply “is” true (where “facts of the matter” are real in such a world, regardless of the status of the observer). This further connotes a split between knower and known, between subjective and objective states (with a preference for the elimination of the subjective in favor of the objective). “Belief” assumes that knowing requires that the content of the “truth” be believed, in order to avoid situations in which we would have to say that we don’t believe what we know to be true. “Belief” therefore also assumes that truth is separable from belief, and that they can be separated; a view challenged deeply by postmodern thinking, or which can be viewed quite differently, for example in Jean Gebser’s (1949/1985) idea of *verition*. “Justified” assumes that we cannot count as knowledge mental contents that are both true and believed unless the additional step of justifying the true belief is included. I cannot digress into extensive counterarguments to the traditional idea of knowledge as justified true belief, but the view has certainly been challenged, for example by Timothy Williamson (2002), who views knowledge not as something to be explained but as the very basis of explanation, or more famously by Edmund Gettier (1963) on the basis of cases which fit the definition of justified true belief but intuitively don’t seem to count as knowledge because of a chance element.

In any case, on the face of it answering the question “What is knowledge?” by calling it justified true belief has some definite *advantages*, perhaps most notably in that this view of knowledge can mesh quite well with the basic tenets that underlie the modern scientific paradigm (the existence of an objective world, the separation of knower and known, the reliance upon externalized processes that are amenable to measurement to eliminate subjectivity, and so forth).

A very interesting situation occurs, however, when we attempt to apply the definition of knowledge as justified true belief to itself. The problem here is that we can always ask whether the above assumptions (as an example) are allowed to count as “knowledge” by their own definition. How do we know (have justified true belief) that knowing consists of justified true belief? The resulting chain of reasoning becomes infinite, requiring ever more sophisticated layers of “justification” that can then be “believed” to be “true,” without ever finding a place from which some traction could be had to allow knowing to begin. This is the mistake of an epistemology that attempts to follow the reductive model offered by material science, which likewise seeks in a linear, hierarchical way for elementary particles upon which the rest of the world can be built. When epistemology takes this route, the result is that if we count as knowledge only what is justified true belief, we can never know if we know.

But this very situation suggests a potential way forward: the basis for knowledge cannot lie outside knowledge, but must rest *within* it, that is, in the domain of *thinking*. We cannot hope to find an explanation for knowledge by

seeking only into the projected contents that thinking throws into the world—the *thoughts*. The hope rather lies in allowing the thinking process, from which thoughts coalesce and are cast off like a snake casts off its old skin, to bend its linearity into a circle and become recursive. Knowledge must find what it needs for its self-illumination within its own domain—the domain of thinking (not *thoughting*). Knowledge must have a recursive foundation.

Taken in this way, epistemology becomes a creative, experiential, and experimental act; it can even be described as aesthetic. It becomes a lived and living process, the *generating* of the known, not the known itself. *Knowing can never be fully described by the known*. In its knowing, epistemology always exceeds what it knows. But what does it mean to make epistemology recursive?

I explore this question below by giving a description of key features of recursive epistemology, using the distinction between first-order (linear) and second-order (recursive) epistemologies. Then I examine an issue central to second-order epistemology, the nature and role of the observer, by exploring how recursion operates in the act of observing. This is supplemented by a discussion of the character of thinking as illuminated by concepts from the domain of anthroposophy. I then present in more detail the “fundamental epistemological pattern” referred to earlier, and show how it is dependent upon (and is, in some sense) the act of distinction. The mathematician and logician George Spencer-Brown provides concepts which help to clarify the situation and allow for an exploration of the way that logic can be viewed in an expanded way from the new perspective being developed. This gives us a way of thinking about how the

differences between logics can be experienced, and how that experience is aesthetic in nature, having to do with the realm of feelings and not just of thinking. Eugene Gendlin's introduction of the idea of the implicit adds a further conceptual layer that deepens the discussion by focusing on the actual lived phenomenology of thinking and how we can "feel" our thinking occurring. This allows for an exploration of how an aesthetic epistemology can be used to transform the trenchant dichotomy between subject and object by tracing back the process by which we make distinctions. Finally this allows for a more direct presentation of aesthetic epistemology on its own terms, and how it is a transformation precipitated by the mutual fructification of thinking and feeling.

First- and Second-Order Epistemologies

Gregory Bateson (1991) famously said that we "cannot claim to have no epistemology. Those who so claim have nothing but a bad epistemology" (p. 178). Bateson is calling for self-reflection in our epistemology. He wants it to be recursive, so that in our production of knowledge we do not delude ourselves into thinking that the means of production is independent of what is produced. Bradford Keeney, cybernetic epistemologist, family therapist, modern day New Orleans-style shaman, and student of Gregory Bateson, notes that recursive epistemology has roots in second-order cybernetics' recognition that "any distinction drawn is drawn by an observer. ... An observer observes by drawing distinctions. ... The starting point of epistemology is therefore an observer drawing distinctions in order to observe" (Keeney, 1983, p. 24). This leads us to a fundamental recursion or non-linearity at the very start of any epistemological

endeavor. While non-recursive epistemologies try to mitigate this kind of loopiness, cybernetic epistemology embraces it as the very heart of knowing, using it as a creative generator of change and transformation. Working with a non-linear epistemology leads to a different kind of knowing, one which “emphasizes ecology, relationship, and whole systems. In contrast to lineal epistemology, it is attuned to interrelation, complexity, and context” (Keeney, 1983, p. 107).

The consequences of *lacking* a self-reflexive epistemology are potentially dire and all-too common, leading to real practical and ethical dilemmas. The structure of the (simplified) sequence may go something like this:

- Knowledge is produced on the basis of a non-reflexive epistemology (Bateson’s “bad” epistemology). Say, for example, that you have been wrongfully convicted of a crime. By some process, the judicial system has generated new facts, such as that you performed an illegal act (even if you didn’t). In the eyes of the law and potentially of your peers, and certainly for any strangers, this knowledge takes root.
- The knowledge produced is easily assumed to be “objective” and “true,” particularly by those who are disconnected with the process of its generation. Ex: It doesn’t really matter why you did what you did, or what any extenuating circumstances are. Your guilt is assured by virtue of the fact that you were found guilty.
- This tends to have a psychologically limiting effect with respect to alternative knowledge and especially alternative modes of knowledge

production (remembering the inertial weight of past cognitive processes).

One's viewpoint becomes ossified. Ex: The judicial system limits its treatment of you as a whole human being only to what is allowable within the strictures that the law defines. You become identified with your act.

- The unreflective assumption of the “truth” of the knowledge becomes justification for its projection, often forcefully, onto other people and processes in the environments surrounding the knower. A sense of conviction that the world is “like this” (with the implicit connotation that it is “*only* like this”) leads to inflexible protocols in our institutions and in our modes of interaction with others and our self-conception. In other words, outer processes are also ossified; they become sclerotic. Ex: Now, instead of being a whole human being with a full and complex life, your identity in large part becomes restricted to that of a criminal. Your identity shifts, and you are now identified with the label “criminal.” Because you are a criminal, the judicial system feels justified in creating places called prisons designed largely to maintain the distinction of your new identity.

The unintended effects of this kind of linear process of knowledge production could fill multiple volumes, from the most subtle aspects of daily life to world-historical events. But recursive epistemology is not in opposition to linear epistemology; it is rather meant to be a way of maintaining complexity and subtlety (and ideally, wisdom) by calibrating the linearity of standard epistemological practices through higher-order recursion.

Calibration and Self-Calibration. So what does it mean to have a self-reflexive epistemology? The difference between the two types of epistemologies, non-self-reflexive and self-reflexive, can be described by the first- and second-order difference. [[Gesturally-oriented comparative images are included below to help underscore in a visual way the differences between linear and recursive epistemologies. Many other images could be made that symbolize the same differences, and engaging in such a process would be opening a doorway to an enactment of an aesthetic epistemology.]]

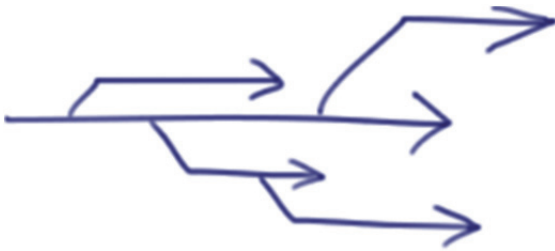


Figure 3:
1st Order: Non-self-reflexive.
Copyright 2014 by Seth T. Miller.



Figure 4:
2nd Order: Self-reflexive.
Copyright 2014 by Seth T. Miller.

A non-self-reflexive epistemology is a first-order epistemology, a process of creating knowledge that operates in a linear fashion (Figure 3). This means that the knowledge it generates is not explicitly connected to the process of its generation, and thus does not act as a potential corrective to its mode of production (Figure 4). This was discussed above in the section on methods and content, and how they are in a recursive relationship in esoteric epistemologies such as anthroposophy. We will now look at this topic more deeply.



Figure 5:
1st Order epistemology. Knowledge disconnected from the process of its generation Copyright 2014 by Seth T. Miller.



Figure 6:
2nd Order epistemology. Knowledge created explicitly connects with the way it is generated. Copyright 2014 by Seth T. Miller.

Epistemology is a tool for knowing—but with a non-self-reflexive epistemology, the tool’s operation does not change the tool. No matter what job it is called to do, it tends to re-instance any new creations in the manner and style of its past processes (Figure 5), regardless of what might be new in the situations it encounters. Alternatively, a reflexive epistemology is structurally ordered (it is recursive across levels) so as to have the capability of self-modification on the basis of changes in context (Figure 6). Importantly, knowledge produced by a self-reflexive epistemology has the ability to trigger a change not simply in future knowing, but in the processes that generate future knowing.

The kind of newness that comes from a linear epistemology can be described as innovative, but not radical—or its success requires the favor of chance. It is well-suited to the kinds of knowledge domains that work towards technical, but not paradigmatic advances (Figure 7 and 8).



Figure 7:
1st Order: Tends toward
technical innovation.
Copyright 2014 by Seth T.
Miller.

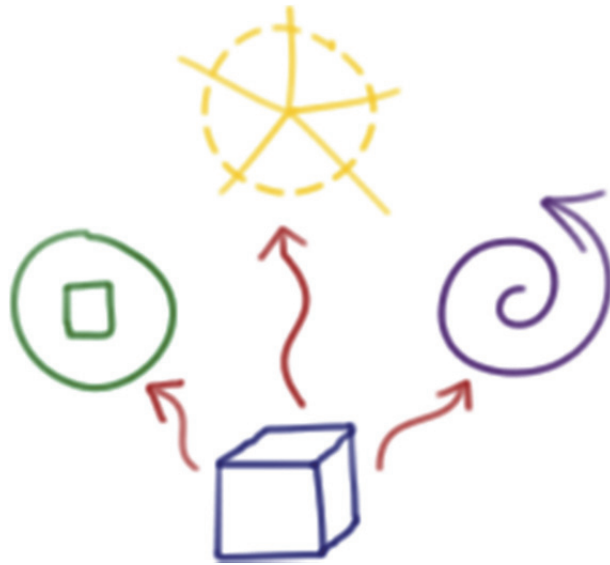


Figure 8:
2nd Order: Can yield paradigmatic shifts.
Copyright 2014 by Seth T. Miller.

To use a term from cybernetics, a linear epistemology is resistant to calibration (higher-order feedback). But this lack of openness to calibration is often not simply passive, but active: attempts at calibration are often either discarded or met with increasing rigidity, with a measure of “doubling-down” on the knowledge already produced by the epistemology and an increasing unwillingness to change the process by which knowledge is produced. We could therefore describe this kind of epistemology as willfully ignorant. This can actually be quite beneficial in producing new knowledge (within the parameters already accepted by the epistemology) because it minimizes the recursive complexity and is more amenable to simplification. Reductionisms of all types, where all phenomena—regardless of their complexity—are explained only in

terms of more simple (and often more abstract) entities, are linear epistemologies. Said differently, a linear epistemology allows one to ignore second-order alternatives (Figure 9). Most of modern scientific thinking rests on the back of linear epistemology, to which it is well-suited.

On the other hand, a self-reflexive epistemology is a second-order epistemology, where the process of knowledge-generation allows itself to be changed by the knowledge it produces. Reflexive epistemology makes and utilizes the distinction between levels of order by crossing the boundary between them (

Figure 10). This allows it to be sensitive to changes in the contexts of its operation, and is therefore an *open* epistemology. Specifically, it is open to calibration—and not simply in a passive way, but actively: it *seeks* calibration of its own processes (not just its content) through an active monitoring of what it is generating. It is *self-calibrative*.

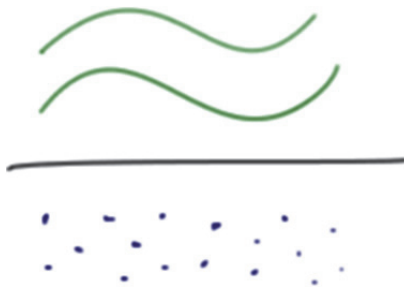


Figure 9:
1st Order: Process kept independent
of content. Copyright 2014 by Seth
T. Miller.

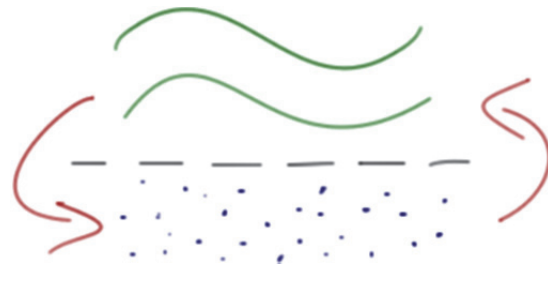


Figure 10:
2nd Order: Process changes in
response to content. Copyright 2014 by Seth
T. Miller.

The linking of process and content in this recursive way is akin to the creation of a new type of sensitivity. We can metaphorically say that operating with a recursive epistemology *is* the development of a new type of higher sense-organ for a knowing system. It is a sense-organ for that system's own knowing. This is another way of saying that what a system distinguishes distinguishes its distinguishing. Recursive epistemology is open to self-revision not only at the content level (which is also true of linear epistemologies, although there may still be a difference in their relative inertia to this change), but also at the process level. This means that the kind of newness it can potentially yield includes radical, as well as technical shifts. Radical shifts restructure the further possibilities that are available to the knowing system; they are paradigmatic shifts.

It is important to consider that the recursion between knowledge and knowing (between content and process) actually applies to *all* epistemologies, even first-order epistemologies. It is simply that in the case of a first-order epistemology, the epistemology is not systemically inclusive of this fact—we could say that it is not sensitive to its own sensitivity. A second-order epistemology is sensitive to its sensitivities: it includes processes whose content is *the change of* processes. The most tightly recursive epistemologies have processes whose content *is itself*. We will see later that differences in the level of tightness in the recursion has consequences for how we can think about esoteric practices such as meditative visualization.

The Unknown and Unknowing. Every epistemology has its boundary, a place where it meets a kind of threshold of what it can so far distinguish to itself.

Here again we have a first- and second-order difference. The first-order level to this threshold is the possible content that could be revealed there, if only our knowing could continue across the threshold. This is the unknown purely as content. The second-order level to the threshold is the ongoing activity *of the unknowing*.

A first-order epistemology meets its boundary only by virtue of the loss of what is seen as its potential content. The unknown is assumed to be a specific content that is just like the known in every way except that has yet to be brought to light or discovered. These metaphors work from the assumption that knowledge is somehow waiting “out there” to be had, and the protocols for knowledge production are thus geared towards the transformation of the unknown into the known, often with forceful manipulation and through maximization of control procedures. The unknown is precisely what needs to be minimized, and processes that generate unknowing are therefore usually seen as barriers to further knowing, leading only to confusion or obfuscation. The unknown is valued only negatively, as the not-yet-known. The not-yet-known is pulled through from the other side of the threshold and brought “down” to re-instance the same reality that the epistemology already operates within, as further proof of its existence (Figure 11).

A second-order epistemology meets its boundary also by virtue of what is not known, but in addition it values the unknowing as an active and potentially transformative process. What for the first-order epistemology is only a potential new content is for the second-order epistemology a potential new *way of being*.

This is a higher-order content, and is not simply “out there” to be discovered but must be enacted to exist; it must be *brought into being*. The unknowing is thus taken to be an invitation, a doorway, and instead of taking the unknown and making it known through the same epistemological patterns, it opens the door to *more unknowing* (

Figure 12).



Figure 11:
1st Order: Unknown as potentially known content. Copyright 2014 by Seth T. Miller.



Figure 12:
2nd Order: Unknowing as potentially transformative process. Copyright 2014 by Seth T. Miller.

Enacting a second-order epistemology is to allow one’s way of knowing to change, not just the content of what is known. Unknowing is thus valued as a transformative agent, as a source of not only new knowledge but new ways of living forward. For a second-order epistemology, unknowing is a feature to be actively worked with, even developed, rather than a bug to be squashed. Said another way, a linear epistemology does not know that it does not know, while a recursive epistemology does, and makes of this something new of itself. The

active incorporation of processes that yield states of unknowing is a primary way that a recursive epistemology self-calibrates.

Validity. [[This discussion is meant to provide a re-orientation at a process level of what is meant by the terms thinking, thought, world, and reality. Following Gendlin (1991), the terms mean how they are used in the context of these sentences, and the sentences are formed to indicate what the words mean. If the words are taken to carry only their old, habitual meanings, then the passage will not make the kind of sense aimed at—new meanings are being brought forth in their usage in *this* way, here in these sentences.]]

First-order epistemology focuses on the content of what it produces, and derives from this content the very justification for its truth (Figure 13). It invests its validity in its facts, while second-order epistemology focuses on the way process and content are in a recursive relationship (Figure 14).



Figure 13:
1st Order: Content-focused. Copyright
2014 by Seth T. Miller.

Figure 14:
2nd Order: Process-focused. Copyright
2014 by Seth T. Miller.

This is an important but subtle and potentially difficult point: a linear epistemology generates facts, and then projects them onto “the outer world” (which is experientially created *for us, by us*, in this recursive, projective act) so

that when we perceive the world we derive a sense of certainty about our epistemological relationship to it. The world seems simply *to be that way*—the projection of our thoughts onto the world *obscures our thinking*. We ask the world to tell us what we can know, without realizing that *we* have given the world the ability to speak to us when we dissolve our thinking in it, leaving only thoughts behind as a kind of corpse. By investing the world with our thoughts, we actively engender in it the power to reflect “the known” back to us in a way that makes it seem as if this occurs independently of our activity. Thus the validity of a linear epistemology is actively *felt* when we discover its results in the facts “out there,” because for such an epistemology the facts mark the epistemological end-point, the place where thinking is no longer required, where it dissolves itself in the projected object of its knowing (Figure 15).

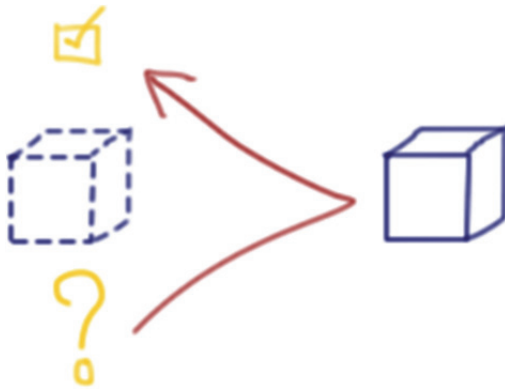


Figure 15:
1st Order: Validation reflected by its content. Copyright 2014 by Seth T. Miller.

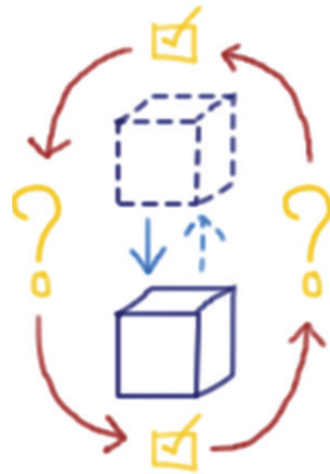


Figure 16:
2nd Order: Validation as ongoing content-process recursions. Copyright 2014 by Seth T. Miller.

What is left behind is a thought-content, which, divested of its genesis, seems to exist independently of us. This provides a powerful sense of certainty.

For this reason, linear epistemologies can easily lead to a perception of the world as intrinsically dead, made of impersonal, non-living forces and objects, as is the case with material science. In such a view the objective nature of the world is objective precisely because of its independence from any subjects (Figure 17). Taken to its extreme, the epistemological tendency at work here can lead to the sense that the world is *only* composed of objects and impersonal, material forces, and that all talk about subjects is a mistaken way of referring to objects (for example in Ryle, 1984).

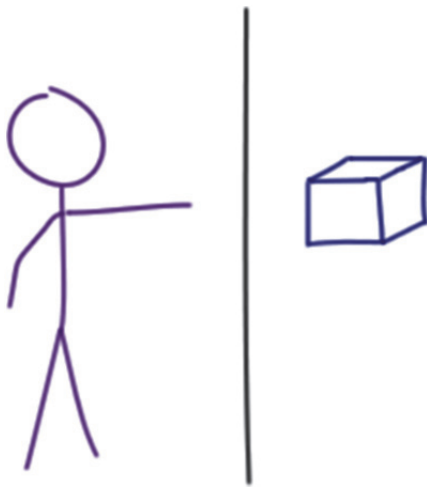


Figure 17:
1st Order: Observer split from environment. Copyright 2014 by Seth T. Miller.



Figure 18:
2nd Order: Observer and environment are mutually constituted in one process. Copyright 2014 by Seth T. Miller.

But when dead objects are taken to be fundamental, this kind of view tends also to produce *deadening* and *objectifying* modes of interaction with the world. We need only look to any of the innumerable modern crises in the environment, in politics, in education, in medicine, and elsewhere to see the kinds of effects the adoption of this kind of epistemology produces. For example from

a systemic perspective, in the American public education system students are largely treated as objects. Standardized testing methods and policies which punish schools for poor results actively sever connections between the living, personal experience of the student and the process of education, which becomes much more like an assembly line for the production of successful student units that can fit like cogs into the wheels of society. This is in stark contrast to the educational goals of the Waldorf schools, based on the educational philosophy of Steiner, which is explicitly designed to support the development of each child's individually unique being in an environment of love.

A critic will respond to this by pointing out that the truth of the knowledge discovered by a linear epistemology is not dependent on the knower, because it can be *utilized* to achieve the production of technological objects that work independently in the world. Technological devices—cell phones, transistors, steam engines—are taken to *demonstrate* the veracity of the epistemology *because the technologies work*. If the epistemology was in error, technologies could not successfully be developed from the principles it discovered, *or so it is assumed*. All standard scientific prediction follows this same epistemological pattern: the test of knowledge is found in its empirical demonstration, in whether it yields some particular configuration of “outer events” vs. another. If our theory predicts that we observe state A in the world, and then we look at the world and observe that it is in state A, we feel justified in assuming that our theory of state A *actually applies* to the world. What could be wrong with this?

The more subtle view of recursive epistemology sees that we project our thought about state A onto the world through the activity of our observation of it (

Figure 18); this is why “outer events” had to be put in quotes in the previous paragraph. The activity of observation ceases, but the thought content left behind now makes “reality” appear for us as such. If reality is taken to be a piece of glass, our thoughts form the silver coating on its back that reflects the activity of thinking back to itself, so that it can perceive a world, and itself in that world. Thinking thus perceives its thoughts *in the world*, but it does not perceive its own activity, to which it is asleep (at first). We could say that the world—the world in which we actually live forward, not an abstract world-without-us⁹—is the perceiving of our thoughts projected there by, and reflected back to, thinking. When the process is non-recursive, the result leaves us with the sense of a world that just “is” that way; allowing us to take it for granted as such (again, this is potentially advantageous—even adaptive—as it allows for parsimony in attention, which is physiologically expensive). Thinking’s projection of itself as thoughts into “the world” allows itself to forget itself *as thinking*; it sees itself only reflected in its *thoughts*. Thus the “discovery” of the properties of the world is *also* the discovery of our thoughts in it, but not necessarily the discovery of *thinking*: something more is required for that. Recursive epistemology is a way of describing this something more, and an invitation to enact it.

⁹ As Heinz von Foerster stated, “objectivity is the delusion that observations could be made without an observer” (as cited in Glasersfeld, 2001, p. 37).

With this background, the argument about technology demonstrating the truth of the knowledge derived from a linear epistemology can be seen in a different light. When we create a new technology or empirically test a scientific theory, we are actively involved in the linking of a thought-content to the world (*remembering that the world arises for us in this activity*). When this linking is hidden *by the very process of the linking itself*, it seems as if “the world” validates the underlying principle in question. Nothing more seems required; state A was predicted, state A occurred, case closed, further thinking can be avoided, and the process can now be given over to the engineers for implementation. This is a dangerous tendency for linear epistemologies, because it covers over its assumptions with a profound feeling of the correctness of the thought. Good science already knows that correlation is not causation; but the point here is that *even causation is not causation*. This is another sentence that is meaningless unless it is taken from a perspective that can distinguish between first- and second-order meanings.

Hume (1748/1938), of course, raised a similar point using a very different set of concepts in his *An Enquiry Concerning Human Understanding*, where he notes that “nothing is more usual than to apply to external bodies every internal sensation which they occasion” (p. 57). Hume understood projection, and the problems it raises for inductive thinking and causation, but from a first-order level. When we recognize the second-order relation between the activity of thinking and the thoughts that precipitate out of thinking as its product, the door is opened for a different kind of relation between thinking and the world, based not

upon the linear polarities that result from a first-order epistemology (I/world, subjective/objective, illusion/reality, etc.), but which rest on a recursive foundation in which such polarities are always parts of larger circles. This is what Jung (1972) identified, in his own way, with his psychological conception of the enantiodromia (pp. 72-73), a term which goes back to the process-philosophy of Heraclitus and concerns the intrinsic union of opposites.

In a linear epistemology truth is taken at a first-order level. Indeed, the very strength and power of first-order epistemology is its self-enclosing of truth within processes that yield first-order content amenable to the kind of projection that is only noted from a second-order level, as discussed below. Looked at from the second-order perspective, truth for a linear epistemology is limited to what can be adequately projected outside the processes that yield it (another basis for its willful ignorance) (Figure 19).

Recursive epistemology walks a delicate middle line when considering the source of its veracity. It does not project itself onto the products of the stopping of its own activity (the dead object), but it also does not move to the extreme of pure solipsism, where the world becomes somehow “simply” my creation. It rather works with the arising of truth out of the phenomenological *relating* between process and content, between first and second-order levels in recursion (

Figure 20). It takes neither the world nor the knower for granted as such, and seeks a phenomenologically oriented integration of knower and known through their recursive relating (and co-generation).



Figure 19:
1st Order: Truth is objective and “out there.” Copyright 2014 by Seth T. Miller.

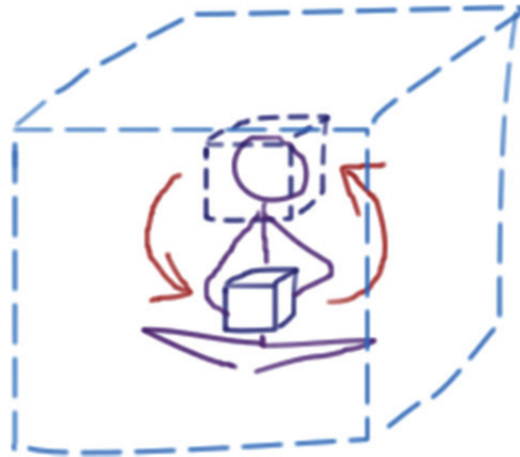


Figure 20:
2nd Order: Truth is a way of relating process and content. Copyright 2014 by Seth T. Miller.

A consequence of this is that linear epistemologies tend to produce knowledge in piecemeal form (Figure 21). Truth occurs in bits, the veracity of which is not intrinsic to the bits, but only supported by the truth of other, immediately adjacent bits. This conception has led to the development and continued reduction of knowledge into specialties, sub-specialties, and sub-sub-specialties. Although alternatives to this trend have always existed (notably in some “esoteric” and aesthetic domains, including anthroposophy), it is only relatively recently that limits of this approach have been increasingly recognized from within the various disciplines. The recent rise of transdisciplinary thinking (“Ngram for the Word Transdisciplinarity,” 2014) is in part a result of this recognition, and is an attempt to frame debate about these limits in a transformative way. Transdisciplinarity seeks a way forward that does not require a wholesale break from past knowledge and processes of knowledge construction. It wants to carry forward the vast amount of knowledge they have

produced, but in ways that do not recapitulate the epistemological and ontological blindness to their second-order processes.



Figure 21:
1st Order: Knowledge produced as
“pieces.” Copyright 2014 by Seth T.
Miller.



Figure 22:
2nd Order: Knowledge produced as
“wholes.” Copyright 2014 by Seth T.
Miller.

It is not a question of whether one or the other epistemology is “right”—at least in the sense carried by this question when asked from a first-order perspective. A consequence of recognizing the importance of the role of second-order recursion in epistemology is that it re-orientes the focus of epistemology in a profound way. A recursive epistemology gives up the notion (derived from first-order thinking) of keeping itself separate from the bigger picture—this allows it to be integrated in a transdisciplinary way with other fields, such as ontology, cosmology, aesthetics, and so forth. Recursive epistemology is not merely about how we think, but also about how we act, how we feel, and how we live ourselves forward with and within the world, in recursive relationship with it. This is what

allows the knowledge it produces to be not just about parts (although it is also about parts), but about wholes, and more importantly, how we ongoingly arrive at the part/whole distinction in experience. It understands that knowledge is never separate from a knower, and that a knower is never separate from all the wider contexts in which knowing occurs (Figure 22). Thus a very important question for a recursive epistemology is *what are the wider contexts?* But that phrasing is old, and still carries the assumptions of linear epistemology, and we are looking for something else. It is enough at this stage to note these major differences between first and second-order epistemologies.

Unnaturalism. This view of recursive epistemology contrasts with (from the perspective of linear epistemologies), or is complementary to (from the perspective of recursive epistemologies) the strong trend towards naturalism in philosophy, science, and consciousness studies. The protocol at work in naturalism is explicitly linear, as pointed out by Seager (1999) in his introductory book surveying the field of consciousness studies:

We can codify the rules of naturalization as follows:

X has been naturalized iff [if and only if]:

- (1) X has been explained in terms of Something Else.
- (2) The Something Else does not logically involve X.
- (3) The Something Else is properly natural. (p. 250)

Yet the recursive epistemologist can note that this explanation, which seems quite linear, is in fact quite loopy, because point (3) implies the whole

procedure once again in order to determine whether the Something Else is properly natural (see the section below on “Levels of logic.” for more exploration). This is the sort of situation that occurs when we wish to retain the deep power that has been conferred to thinking through the strict use of linear ways of thinking; we don’t see what we don’t see.

Seager (1999) thus finds himself in a quandary that typifies the experience of reaching a threshold of linear thinking: the experience of paradox. Before crossing the threshold *into* the paradox, the view seems bleak:

Since every explanation is necessarily advanced from, as well as aimed at, the perspective of a conscious explainer, there is always an element of consciousness standing apart from the explanation—the part that takes up, that understands the explanation. Normally this doesn’t matter since this background element has nothing to do with the offered explanation. ...

But in trying to explain consciousness itself, this independent element, the standpoint from which the explanation is offered and in terms of which it is understood, contains the very thing we want to explain. Nor can we remove it since the standpoint of consciousness is an essential part of any offered explanation. Naturalizing consciousness is akin to a camera trying to take a picture of itself; the best it can capture are reflections. But quietism is not an option. It is indecent to have a ragged and unpatchable hole in our picture of the world. Cold comfort to end with the tautology that an unpatchable hole is... unpatchable. (pp. 250-251)

Seager gets to the point of explicitly recognizing the need to be able to deal with the recursive loop that one encounters in explaining consciousness... but does not have the tools with which to do so. While his focus is on consciousness in particular, it is no stretch to realize that the same situation is true *of all explanation* in general—the insight second-order cybernetics realized early on. These paragraphs are literally the last of Seager’s whole book on theories of consciousness, and seems perfectly fitting as a place from which a recursive epistemological approach could take up the work. This dissertation is in part an

attempt at bringing forth the contexts that allow us to recognize the situation in this way, and to propose a few key ideas that are intended to help us cross the threshold into the paradox that awaits. We need to embrace the fundamentality of recursion at work in epistemology.

Part of embracing the paradox of recursion in epistemology means to recognize that every knowing is simultaneously an unknowing. Every revealing is simultaneously a veiling. Distinctions create knowing, but the consequence is always that another distinction is *not* made. Søren Brier (2008b) notes this well, pointing out that “all attempts to construct exact models lead to the creation of non-knowledge, or 'blindness'” (p. 109).

This is the yin and yang of epistemology, and it is unavoidable. Its unavoidability suggests something fundamental about the revealing/concealing aspect of epistemology. It points both to the central place of distinction in any epistemology, and to what lies beyond, before, and around distinction. Epistemology is never “it” but can only ever be a “pointing to it.” However, in its actual unfolding, the way that epistemology occurs *does point* beyond itself—to its own origins. It can make no ultimate universal claims, because every claim is founded upon distinctions that are in some sense *not* made. Eugene Gendlin will note that such un-made distinctions point to the important role of the realm of the implicit, which plays a discoverably functional part in the unfolding of our thinking.

What can be done in the face of this strange circumstance? What lessons can we learn, and what consequences can we derive? Perhaps we can see that

creativity and novelty are intrinsic to “reality,” which thus loses some of its realness in the sense of what material/substance philosophies are after, and instead holds spaces for something *else*. Steiner's own epistemology is actually a very practical embracing of this seemingly awkward situation. He recognizes the unity of the world ontologically, but simultaneously points out that this unity is not “real” in the normal sense. Rather, what constitutes reality in its fullest possible meaning is precisely dependent upon the *way* in which thinking separates itself out of this unity, and in so doing creates both itself for itself and the very reality which it thus beholds (see the section “The Role of Distinction” for how we can make sense of this with the help of George Spencer-Brown’s calculus of indications).

The key is to move away from epistemology as some kind of universal description of *what* can be known, what domains admit of “knowledge,” and the restrictions placed on the form of knowing (what it must look like to “count” as knowledge), towards a better understanding of the *processes* that generate knowing. We need a way to look at the second-order nature of epistemology: not the known but the *knowing*.

This is one place where Gendlin can be of great help. He helps bring forth language and concepts around the process of knowing by looking at relations between experience and the creation of meaning in a functional way (avoiding universal claims, or at least contextualizing them in a way that renders their potential to be otherwise more obvious). The role of distinction is fundamental for epistemology, but a problem arises when one asks, “*how, or upon what basis,*

does any given distinction arise for a knowing system?" If epistemology is to address this question it must become reflexive, it must turn back upon itself, and close the loop of knowing. If it does not do this then we end up with epistemologies that offload their very foundations onto other disciplines. This tendency is rampant in modern thinking where the epistemological roots, either implicitly or explicitly, rely upon knowledge that has already been generated in some *other, non-reflexive* field in order to claim validity for the very processes by which that knowledge is generated. This is a major error; we could call it the linear error of epistemology.

The greatest offender is found in the collection of modern sciences that deal with the brain and experience: neurology, psychology, and cognitive science, along with a large amount of philosophy that flows from insights put forth by these disciplines. The key issue to recognize is that appeals to brain physiology can never provide a sufficient basis for epistemology when those appeals continue to work from a reductionistic, bottom-up only, materialist paradigm. Such appeals dodge what should be a central concern of epistemology by a kind of slight of hand: one palm holds out an experience for you to view, then, while distracting you with the "weight of scientific reason" your attention is diverted to the other palm, where they show you a bit of matter. You look back to the first palm, and lo and behold, it is empty! Magically the experience has become *nothing but* matter, and you are convinced it was that way *all along*. The name for this prestidigitation is called *promissory materialism*, the idea that one day all talk of experience could be replaced with talk of matter without any loss of meaning.

It is an attempt to reduce experiencing to matter. Such attempts will always fail—*if we pay attention*—because every such attempt already rests upon the implicit but actual activity of thinking in its barest sense: as the capacity for the creation of the very distinctions upon which the attempt relies. Thinking occurs *before* “matter.”

As Brier (2008b) recognizes,

A broader framework—both transdisciplinary and non-reductionist—is therefore necessary. This non-reductionist framework should be able to incorporate semiotics, cognitive semantics, and pragmatic linguistics in a theory of signification and semantics without abandoning what we have gained through the rigor and the methods of the sciences and the logic of philosophical analysis. (p. 110)

To this we can simply add that such a framework needs also to be able to deal with the recursivity at the heart of epistemology; it must be able to embrace and utilize paradox rather than attempting only to dissolve it.

Observing the Observer

Observation is always already participation.

A key element of aesthetic epistemology is a shift in understanding of what it means to be an observer. We have already seen something of this shift in the discussion of Goethean beholding, which pointed towards a way in which an observer could skillfully enter into relationship with a phenomenon in order to transform one’s perceptive capacity with respect to that phenomenon. Goethean beholding is a way of forming a sensory organ out of the recursive process of attending to one’s attention towards a particular phenomenon in all its variation. It is a way of changing one’s epistemology from that of “objective” observer to “subjective-objective” observer, although this language still uses the old

meanings. While we may—at least in the modern paradigm—take the stance that observers are subjects that perceive objects (see Figure 23), Goethe’s method shifts this duality.

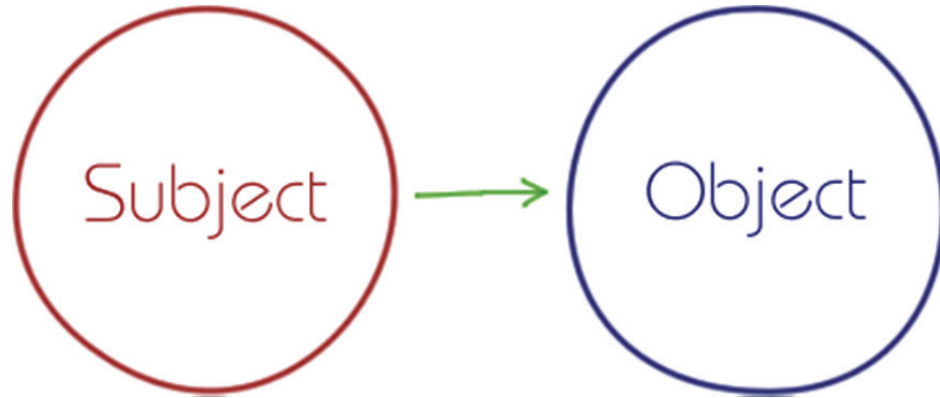


Figure 23: A simplification of the Enlightenment view of the subject-object relationship, in which a subject views an object from outside, as independently from the object as possible. Copyright 2014 by Seth T. Miller.

For Goethe, the relationship experienced between subject and object transforms such that the object begins to take on qualities that can only be approached in the same way as our own subjectivity, while simultaneously our own subjectivity takes on more objective qualities. We “meet” the object *as a subject*; but only because our subjective nature is made more objective through its specific connection to the changes in the phenomenon we are observing (see Figure 24).

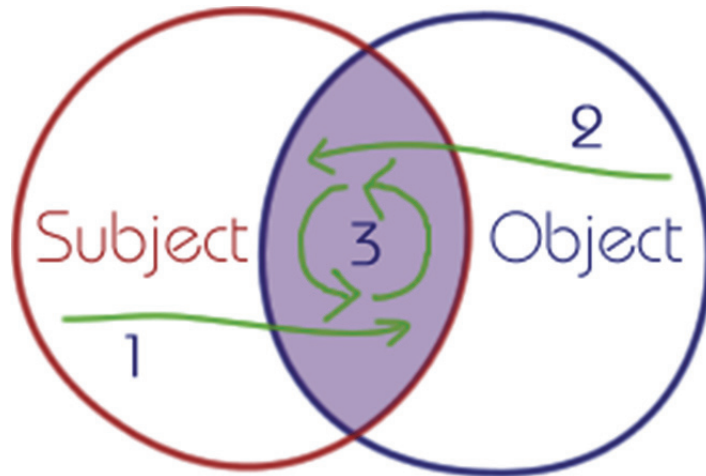


Figure 24: A Goethean view of the subject-object relationship. 1: The subject takes on an objective character specific to the mode of engagement with the phenomenon, 2: the object takes on a subjective character, ceasing to be "merely" an object, allowing for 3: a space of "subjectivity-objectivity" where the subject and object are experienced as a complex unity. The subject both changes and is changed by the object. Copyright 2014 by Seth T. Miller.

This is the central element of Goethe's method, but without the actual experience of its occurrence the description may seem abstract or even fanciful. Yet even without this, we can be clear that Goethe recognized that knowledge was dependent upon transforming the *relationship* between subject and object. Unlike Newton, who carefully set up his prisms in a dark room so that he could stand back and see, as if from a God-like vantage point, the unequivocal results of his *experimentum crucis* all at once by letting a single beam of the sun pass through his prism, Goethe slid himself *into* the experiment by looking through the prism to see directly what was occurring across a wide variety of situations. Goethe knew that the *way* one observes changes what one sees. We could say that he recognized the observer-dependence of epistemology, and thus knew that to change epistemology required a change in the very nature of the observer. A similar insight has been reached more recently in a more abstract way in

cybernetic epistemology, in which epistemologies are shown to be dependent upon the particular way that observers are autopoietically organized. The *necessary* inclusion of the observer in any description of the world is a deeply obvious and yet profound principle. It was neatly expressed in Heinz von Foerster's (2003) article *Cybernetics of Cybernetics*, where he builds off of Humberto Maturana's phrase "Anything said is said *by* an observer," by indicating that "Anything said is said *to* an observer" (p. 283, see also Figure 25). This is in contrast to the view that anything said is simply... said, as if into a vacuum. This older view, championed in the Enlightenment, took up the principle that statements could simply be true or false all by themselves, and were *about* the world but not really *of* the world (the roots of these two views can be traced all the way back to Plato and Aristotle). Cybernetic epistemology modifies this assumption by re-introducing the observer *as an integral part of the world*.

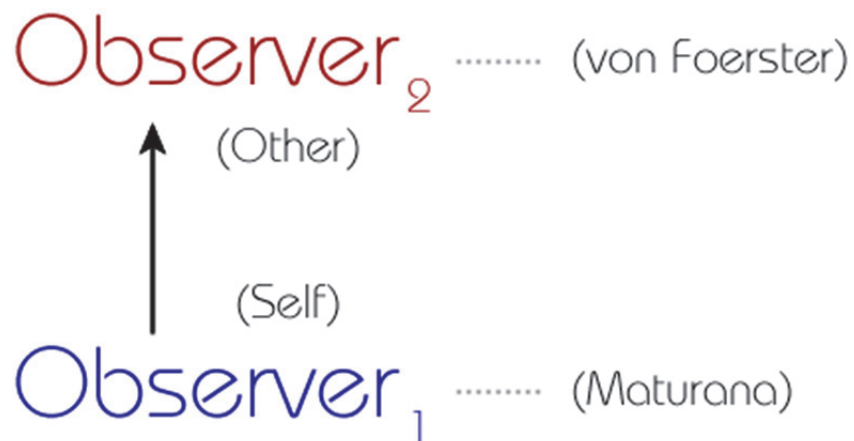


Figure 25: A cybernetics of description following Heinz von Foerster. There are two different observers involved in any description; observer 1 is the describer, and observer 2 is the one to whom the description is directed. Copyright 2014 by Seth T. Miller.

Therefore we can see that the distinction between subject and object can only occur from a place in which that distinction has *already* been made. Implicit in the subject-object split is a circular vortex, a self-creating thought reliant upon itself as a process to make its content. The assumption of the distinction as an enacted, second-order process (between subject and object) is what allows for the first order content of the distinction between subject and object. However, it is normally the case (for a non-reflexive epistemology) that the thought content of the distinction is not inclusive of the second-order process that is required for it to become what it is. Epistemology needs to free itself from the chains of only using first-order thinking; it must embrace itself as a process of unfolding, and not reduce itself only to what has unfolded. This process *is* the active generation of epistemology qua epistemology, i.e. it is recursive epistemology.

What is important for this dissertation is that perspectives on just what this word “observer” might mean can be helpfully explored also through esoteric methods. In an important way a central—perhaps even *the* central—aspect of esoteric practice involves the closing of the loop of observation. Esoteric practice in general (always with caveats) can be thought of as the experiential exploration of the cybernetic epistemological injunction that no description of reality can be complete without an integration of the describer in the description. Indeed, the central thrust of, for example, Ramana Maharshi’s method depends upon a direct maximization of this very feature with his recursive use of the question “Who...?” (Maharshi, 1988).



Figure 26: (Self) description. In this case the two observers from the previous figure are constituted by the same system. Copyright 2014 by Seth T. Miller.

While von Foerster links the principle explicitly to the social realm (2003, p. 284) by distinguishing the observer of Maturana's phrase (a self) with the observer of his own phrase (an other), it is important here to point out that it is also possible for these observers to be the same (

Figure 26). In this case, the observer that initiates the activity of describing is also the one to whom that activity is directed, forming a closed loop. Of course this is just a way of pointing out that in some sense all description *is also* a description of the observer, a fact which can be noted—and more importantly, utilized—when the loop is closed and the description is not given only to another, but to one's own self.

The situations depicted schematically in Figure 25 and

Figure 26 are simultaneous and not mutually exclusive. The observer that initiates the activity of describing is also one to whom that activity is directed,

generating a closed loop, but the second observer is not thereby obviated (a path that would lead to solipsism).

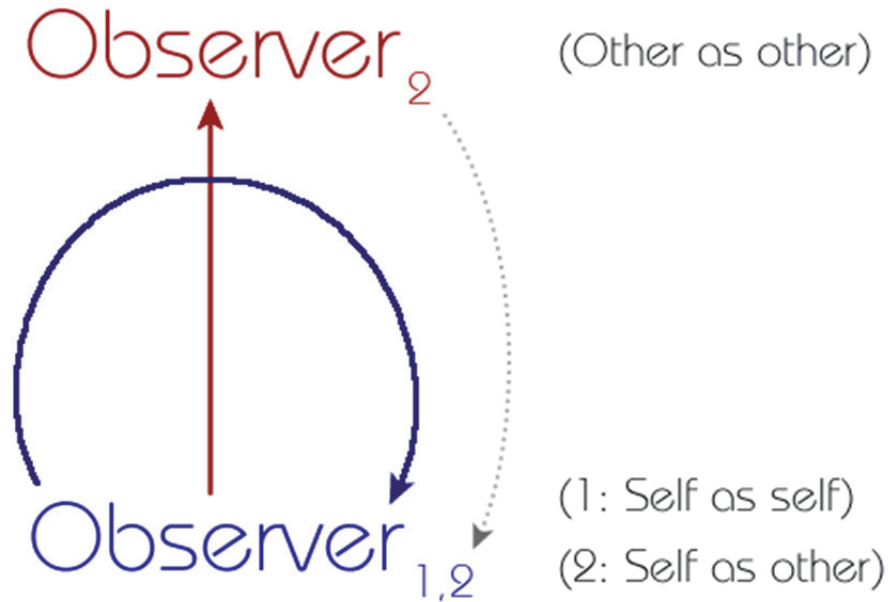


Figure 27: A cybernetics of (self) description. Observer 1 simultaneously describes herself in every description to Observer 2, who remains a key part of the complex web of relations unfolding. Self and other are both necessary aspects of the situation. Copyright 2014 by Seth T. Miller.

It should be noted that the relation between levels of order N and $N+1$ discussed previously is active in this case of the Observer (1,2), where the self (1, in blue), perceiving itself as other (2, in blue) in its own description (importantly, *regardless of the content of the description*), is a kind of boundary crossing that opens up the possibility of a second-order recursion, indicated by the dotted arrow from Observer 2 (in red) to the 2 of Observer (1,2) (in blue). This line is dotted because the link is implicit in the nature of the self as other, indicated by the 2 of Observer (1,2). This is all to say that the self as self is *also implicitly* self as other; observers are never solely observers of others (the Enlightenment dream), but are always *also* observers of themselves. Self and world are recursively connected.

It is precisely this second-order link (the dashed line) that is utilized in the Goethean phenomenological method. In Goethean beholding, the nature of the other as other is incorporated directly into the self, both as self and as other, through a process of sensory and cognitive attunement.

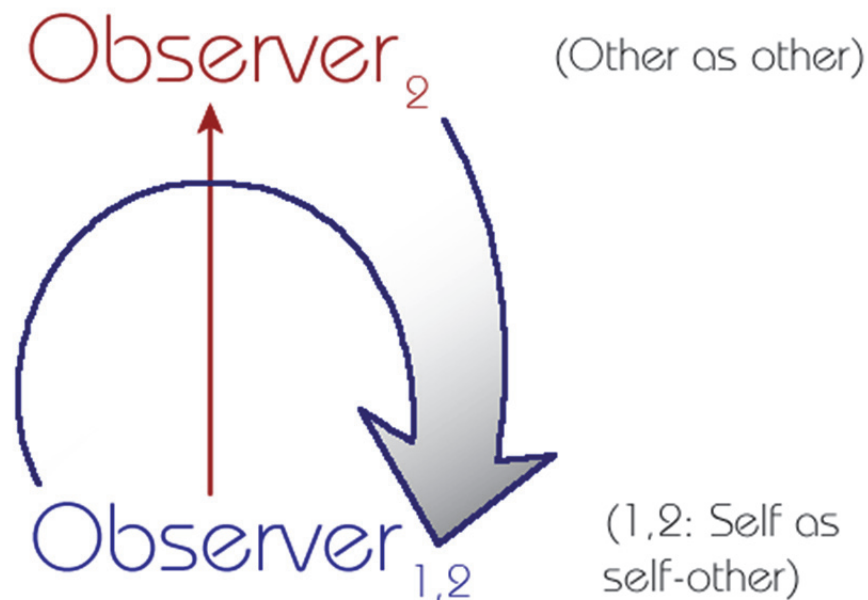


Figure 28: Goethean beholding. The other as other becomes incorporated into the self of the observer, simultaneously as self and as other. Copyright 2014 by Seth T. Miller.

But the fascinating result of carrying out this kind of procedure is that the very distinction between self and other undergoes a complex transformation. The recursive web operationally linking the two observers as self and other is mirrored, such that each observer intrinsically participates both in self-observation and observation of the other (see Figure 29).

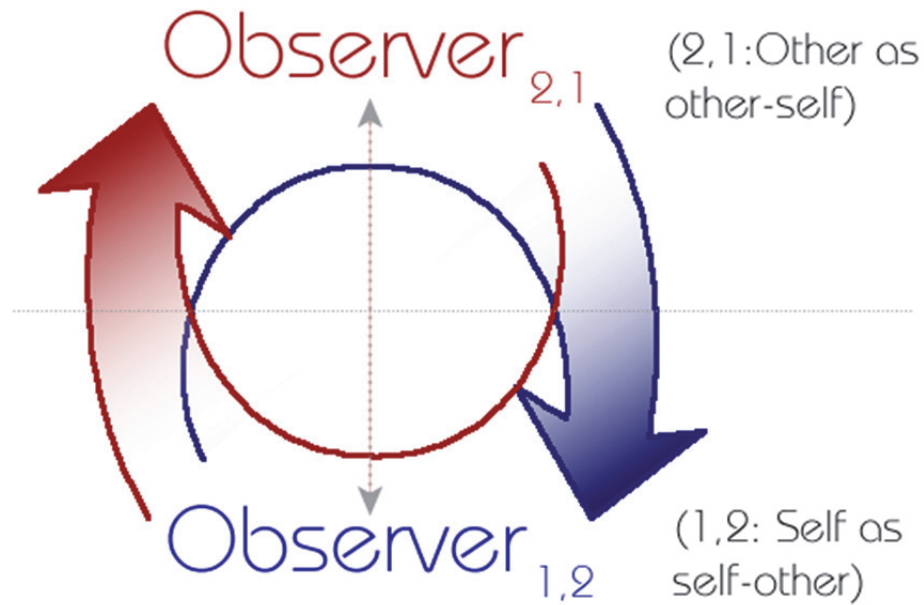


Figure 29: The recursive web of self and other. Each observer participates directly in the becoming of the other and in their own becoming. Copyright 2014 by Seth T. Miller.

In this way the constructed duality between the self and the other is *experientially* transformed. It is not simply dissolved in a mystical sort of oneness or obviated outright, but is rather complexified: the distinction (first-order, N) is utilized for its own reorganization and transformation at a higher level (second-order, N+1) by virtue of a recursion between those two levels. Thus the original Observer 1 (simply as self) now complexly includes Observer 2 (self as self-other), while the original Observer 2 (simply as other) now recursively includes Observer 1 (other as other-self). The whole set of relations recursively crosses the boundaries erected implicitly by the original distinction, but now explicitly; that crossing *is* the transformation of the original distinction through higher-order self-

relation.¹⁰ We can say: *I cannot be me without you*, and vice versa. This situation is schematically represented, and is thus an abstraction, a model. As *only* a model it isn't very useful, but if it is taken as an indication of a possible *experience*, then the indication becomes an invitation: an invitation to cross. A different way of exploring the same relation is discussed in the Appendix, on esoteric connections to George Spencer-Brown's *Laws of Form*.

Martin Buber's (2000) *I-Thou* relationship also points to the same distinction we are making here. Indeed, we can recontextualize Buber's *I-Thou/I-It* distinction as an instance of the key pattern at work in aesthetic epistemology: the distinction between levels of order and their recursion. Buber's philosophy is, like aesthetic epistemology, relational at heart: more primary than either the *I*, the *It*, or the *Thou* is the relationship between them. This is why *I* must always be with either *It* or *Thou*; it cannot be alone, because the *I* is relationally defined (this is the essence of the *Thou*: unbounded relation). In the language of aesthetic epistemology being developed here, the *I-Thou* relation is the second-order level with respect to the *I-It* relation, while both the *I-Thou* and *I-It* relations are first-order with respect to *Thou*. *Thou* is the higher-order relation out of which the first-order distinction between *I-It* and *I-Thou* arises. The situation is recursive: the *I-It* relationship includes the implicit invitation to cross that distinction and move into an *I-Thou* relation, and *that* move is likewise an invitation to cross the distinction between *Thou* and the *I-Thou/I-It* distinction. This recursiveness is

¹⁰ This formulation can be thought of as paralleling Heinz von Foerster's (2003) discussion of recursion between multiple observers in a social context as the basis for the experience of objects, which is likewise the origin of ethics (chapter 11).

what leads Buber to speak of the unboundedness of the *Thou*, finding its ultimate nature in/as God, which we could (somewhat cheekily) say is the second-order level with respect to all possible first-order distinctions.

Structural Coupling and the Observer

Humberto Maturana, biologist and second-order cybernetician, has thought deeply about the nature of the observer, offering a structural, biological perspective that brings these ideas forward in a different way:

The observer and observing, therefore, arise in the flow of structural changes that takes place in the members of a community of observers as they co-ordinate their consensual actions through their recurrent structural interactions in the domain of operational coherences in which they realise [sic] their conjoined praxis of living. In other words, observer and observing constitutively take place through, and in the course of, the structural changes of the observers as these operate as a structure determined system conserving their structural correspondence with the medium in which they interact. (Maturana, 1988b, p. 30)

Although the language here is very specific to concepts developed by Maturana, it may not be too difficult to see how closely their essential meaning follows the insights developed by Goethe (and Steiner's more explicit expansion of these concepts) with respect to the links between the observer and observed, or subject and object. Maturana is giving us a hint about how it may be that Goethe was able to present his method as yielding a kind of state that is neither simply subjective nor simply objective but rather a synthesis of both. Goethe, Steiner, and Maturana each work with the inner nature of observing, with the *form* of observing, taking the phenomenology of observing seriously and attempting to see what secrets are revealed when the observer observes the observing. This attention to the second-order nature of observing (not just the content of what is

observed but also the process by which observing occurs) provides a common ground for their ideas. Each discovers that observation cannot be separated from transformation. For Maturana the transformation occurs through what he calls *structural coupling*.

Structural coupling refers to the way a structure-determined system engages with its environment and/or other systems such that recurrent interactions lead to a structural congruence in the behaviors of both systems (Maturana & Varela, 1992, p. 75). We could say that structural coupling entrains, and thus unifies, the behavior of two systems. This is a systems-oriented way of describing the basis for the creation of a new sense organ and the simultaneous emergence of a new phenomenal domain in which an observer can then operate. As Maturana and Varela (1992) indicate, human beings are complex enough that our “realms of interaction open the way to *new phenomena* by allowing new dimensions of structural coupling” (p. 176). Crucially, this kind of new phenomenal domain, because it is shared by the two systems, is co-participatory in nature: it is a domain in which both sensation and action occur, and in which the actions of one are coupled to the sensation of the other in a recursive pattern. Following Maturana (1988a), this is essentially to say that the new phenomenal domain can potentially have the character of *language*. It is a realm in which meaning is brought forth out of the recursive interaction of the participants because of the *way* that sharing (giving and receiving, listening and speaking, sensing and affecting) occurs (i.e., the way that sharing is structurally coupled).

The difference, with Goethe but also more so with Steiner, has to do with the particular “domain of operational coherences” and the “medium in which they interact,” and thus the specific quality of the new phenomenal domain that emerges. For Maturana (1988a) these must ultimately have a biological basis. Even though he (1988b) posits the “existence of completely different nonintersecting phenomenal domains that are not intrinsically reducible to each other” (p. 12) he consistently takes the stance that such phenomenal domains must have their roots in biology, recognizing that “the observer is a living system, and that all its properties result from its operation as such, all the properties of the observer as an observer require a biological explanation” (1988b, p. 18).

Steiner would agree with Maturana here, but only as far as the normal sensory capacities are concerned, which he would agree *are* biologically rooted (although not in a reductive way; they are *also* spiritual).¹¹ Maturana (1988b) points out that the observer’s “cognitive abilities as an observer are biological phenomena because they are altered when his or her biology is altered” (p. 4). But there are a few things to note about this linkage.

First, we need not think of the relation linearly. The directionality from biology to cognition can be taken as a partial arc of a larger circle. The link between biology and cognition is recursive, including also a link from cognition to biology; one’s cognitive abilities can also affect one’s biology. I am taking the

¹¹ Jung (1933) concurs with a more subtle approach to the relation between spirit and body: “But if we can reconcile ourselves with the mysterious truth that the spirit is the living body seen from within, and the body the outer manifestation of the living spirit—the two being really one—then we can understand why it is that the attempt to transcend the present level of consciousness must give its due to the body” (p. 220).

position here that we cannot already assume cognition to be reducible to biology—whether it is or not is something that *thinking* must discover. The looping between cognition and biology has been part of cybernetics from almost the beginning, noting that cognitive abilities form a node in the feedback loop that includes biology. As a very simple example, it is part of my cognitive ability to identify an object as such (to distinguish it) allowing me to utilize it in a way that requires biological changes, as in using a cup to drink from. From Steiner’s perspective, however, the link from cognition to biology is much deeper, having to do with an involutory-evolutionary cosmology of the human being (and other beings as well).

What Steiner offers here is a detailed tracing out of the way thinking happens when looked at with the benefit of supersensible capacities (built from the kind of higher sense-organs referred to previously). In particular he (1922/1994, 1910/1996a) describes thinking not just from the perspective of the physical form but also traces the process through the life-body (the “etheric” body), as well as the soul-body (the “astral” body) and spirit (“I”). For Steiner (1894/1964), thinking is a *spiritual activity*. Exploration of the details of these links requires extensive work that is not simply intellectual in nature—and this is precisely the *kind* of work that an aesthetic epistemology supports. However, the basic idea of Steiner’s is clear: changes in biology are not always only the result of changes in biology (i.e. material evolution), but include also a spiritual aspect that operates through a complex, integrated weaving together of all aspects of the human being—in particular *thinking*. Even more directly, Steiner (1894/1964)

eschews any approach that attempts to locate causes of thinking in anything other than itself:

Unprejudiced observation shows that nothing is to be counted as belonging to the nature of thinking except what is found *in* thinking itself. One will never arrive at something which is the *cause* of thinking if one steps outside the realm of thinking itself. (p. 39)

With this bold stroke Steiner indicates how any search for the causes of thinking in biology, in structure-determined systems, in sensori-motor feedback loops and the like, will always fail the phenomenological test to which Gendlin's work has sensitized us: the "reading back" into the phenomena our concepts about it, thus "invent[ing] a hypothetical activity as the basis of thinking" (Steiner, 1894/1964, p. 39).

As a recent example of how this error is quite common in contemporary scientific circles, we can take the example of Princeton neuroscientist Michael Graziano's (2013) attention schema theory of consciousness. Graziano wishes to boil down consciousness to information, indicating that there is no awareness as such, only a *description* of awareness. He claims that attention is a data-handling trick of the brain—a way that the brain selectively ignores some inputs in favor of others—and that awareness is the brain's own model to itself of this process of attending. Likewise, consciousness too does not really exist. For Graziano, what we call consciousness is merely the *attribution* of a *description* of consciousness, either to oneself (self-consciousness) or to another. Yet it is an error to equate a description of awareness or consciousness with its phenomenological occurrence. If a computer is programmed to report the informational content "I am aware of an apple" when an apple is placed in front of its connected camera, it would be a

mistake to argue that the computer actually *experiences* itself as aware of an apple. The computer could be programmed to report any other informational content in the same circumstance, such as Microsoft's current stock price. Graziano is fine with this, taking the position that in the case in which the computer reports that it is aware of the apple we can safely attribute that awareness to the computer—because in his model consciousness *is* attribution.

But this makes the mistake of reducing a second-order process to a first-order content. Just because the first order content is a description of a second-order process does not mean that the first-order content *is* that second-order process. In other words, taking a position that reduces consciousness to a description and attribution of consciousness simply ignores the incontrovertible first-person experiencing of consciousness itself. If we took Graziano's idea to an extreme then in some sense the description of consciousness provided in his book would be enough to make the book itself conscious if it only included the additional statement that “the description of consciousness herein provided is attributable to the book itself.”

If Graziano recognized the distinction between levels of order at play here, then he would note that descriptions are first-order results of some already-happening second-order processes, and cannot *by themselves* actualize a higher-order process. Second-order cybernetics makes this clear by pointing out that every description is made by a describer, in a context of communication (i.e. to another). Graziano simply dodges the issue by reducing the reality of the describer without accounting for it on its own terms, an accounting which is

precisely what Steiner's epistemology attempts. In effect, Graziano doesn't recognize what Descartes experienced in his *cogito*: even the *illusion* of consciousness is enough to prove its own reality, because one must *actually* have consciousness (second-order process) to have the illusion of it (first-order content).

Steiner, taking a completely different tactic, is adamant that the causes of thinking are only ever found in thinking itself. This is not a merely a conceptual statement, but a phenomenological one to be experienced directly. Without the actual experience we will easily fall into the trap of remaining ignorant of the nature of thinking, unwittingly transferring the phenomenological reality of thinking to some presumed process or object such as the brain. Whether it is the brain, the brain+body+environment, or even some presumed spiritual process (Steiner, 1894/1964, p. 121), it is *always* thinking itself, as an activity, within which the identification between thinking and its presumed source is made. This is a fundamental fact for Steiner (1894/1964), and forms the recursive point around which his whole philosophy evolves (p. 36). This is why a book many consider to be his most important is called *Intuitive Thinking as a Spiritual Path*, and why Steiner (1894/1964) indicates that the activity of thinking upon thinking *is* a fundamental experience of the spirit:

When we observe our thinking, we live during this observation directly within a self-supporting, spiritual web of being. Indeed, we can even say that if we would grasp the essential nature of spirit in the form in which it presents itself *most immediately* to man, we need only look at the self-sustaining activity of thinking. (p. 121)

The Character of Thinking

Steiner's approach is not contradictory to the main aspects of Maturana's view, but rather extends and modifies it. Maturana's cognition is the type of cognition that is biologically rooted—this is the distinction that makes a difference for him, and (as he indicates) this distinction is valid in the domain of his explanation. However, if we take a larger view of Maturana and Steiner together, we can see that they delineate a wider playing field for the nature of cognition. Metaphorically speaking, the work of Maturana and those who seek biological and/or physical roots of cognition are using the lower half of the playing field; Steiner's approach attempts to work *also* with the upper half. This lower half of the field is one in which explanation for cognition derives from the projected objects of its activity, whatever they may be. The upper half is one in which explanation for cognition is sought in the experience of the activity of cognition itself. Once we are clear about how Steiner takes thinking in its phenomenologically experienced reality not as an abstraction, not as our later thoughts about thinking, but as a self-grounded experience of the spirit, we can begin to see how Steiner's view complements and extends those that seek an explanation for cognition outside itself.

If we only have the view from the lower playing field, then all that constitutes the human being—in particular thinking—must be seen as deriving from precisely what is non-human, i.e. the various elements of the world (the existence of which we cannot take naively) such as the brain and body considered abstractly. This leads to a perspective in which whatever human thinking may be,

it is taken as completely dependent upon the elements that constitute it, *and nothing more*. This would include systems-oriented, functionalist, structural, emergentist, organismic, and other naturalist or mechanistic views of consciousness that are not also phenomenological. What these views share, in one way or another, is the removal of the phenomenal experience of thinking *from thinking*. In each case, the phenomenal experience of thinking (second-order) is replaced with some object or system of objects (first-order) upon whose organization and activity thinking is pinned—but in so doing the living thinking itself, as a phenomenological fact, is destroyed. What is left is the dead shell of the thinking activity: the thoughts. But to mistake the thoughts with the activity that produced them is a fundamental error, and it is the error into which all the previously mentioned views fall. Once thoughts *about* thinking are taken for *thinking itself*, all the questions that seek an origin for thinking outside itself start to make sense, but only because the very thing they seek an explanation for has been obfuscated and replaced with a kind of lower-order doppelganger.

The doppelganger, whether it takes the form of a brain, an artificial neural network, or anything else other than thinking itself, is much more tractable to standard methods of scientific analysis, and thus most of the work in consciousness studies focuses here. Unfortunately this is analogous to looking for lost keys only under the light, not because that is where they were lost but because it is where searching is easiest. Steiner wants us to be very clear that it will always be by an actual act of thinking that thinking will place itself into the world as the presumed activity of a brain or other mechanism, even while noting

that “the whole human body is built up in such a way that the brain, *the organ of the spirit* [emphasis added], is its crowning glory” (Steiner, 1922/1994, p. 31).

All such mechanisms do not already come with a self-illuminated explanation of how the mechanism yields the phenomenal activity of thinking. It is always only thinking itself that adds that connection, after the fact of its occurrence. For Steiner, it is only in thinking itself that such a self-illuminated explanation for thinking can be found as a reality (Steiner, 1924/1988b, especially chapter 8); every other activity of the soul, including feeling and willing, does not have this characteristic. It is precisely thinking that is self-revealing. As Steiner (1894/1964) puts it, “My observation shows me that in linking one thought with another there is nothing to guide me but the *content* of my thoughts; I am not guided by any material process in my brain” (p. 28). While this view is superficially similar to the functional view of cybernetics, where the particular physical embodiment of a system is less important than the rules by which the system operates (Ashby, 1956), Steiner is not being a functionalist here, but rather a phenomenologist. He takes the actual experience of thinking seriously in its own right as a process to be investigated, rather than focusing only on the products of thinking. In this way Steiner justifies the view that while naïve realism is generally invalid, it is appropriate only in the case of thinking (Steiner, 1894/1964, p. 80), because there is no circumstance in which thinking is not already a part of any explanation of the world. This is why “before anything else can be understood, thinking must be understood” (Steiner, 1894/1964, p. 35).

In this vein, Steiner prefigures by a Century what David Chalmers (1995) will call “the hard problem” of consciousness, which is the inability to reduce the phenomenological experiencing (qualia) to objective, third-person processes, a problem also known as the “explanatory gap.” It was already in 1883 that Steiner (1883-97/1988a) could say that

If we could follow the whole series of processes that occur with respect to some sense perception or other from the peripheral nerve endings of the sense organs all the way into the brain, we would in fact nowhere arrive at a point where the mechanical, chemical, and organic—in short, the temporal-spatial processes—end and that appears which we actually call sense perception; for example, the sensation of warmth, of light, of sound, etc. One cannot find a place where the causal motion supposedly goes over into its effect, the perception. (p. 208)

Steiner even uses as his example the sensation of the color red, which becomes the go-to example for qualia in modern cognitive science and philosophy. Steiner’s solution to this problem is likewise ahead of his time, in this case prefiguring Bateson’s (1972) cybernetic idea of the difference that makes a difference (p. 453). With respect to the relationship between sensation (an experiential reality) and the physical body, Steiner (1883-97/1988a) indicates that “The sensation is present at every point from the stimulator to the brain, but not as such, not explicitly, but rather in a way corresponding to the nature of the object existing at each point” (p.209).

Steiner here makes the distinction between the “what” and the “how” of sensation, which we have noted is operationally the difference between first and second levels of order. Steiner is speaking of “the sensation” as the difference that makes a difference, which Bateson (1972, p. 452, 2002, p. 85) calls

information, and which Bateson agrees is explicitly non-physical in nature. Thus Steiner (1883-97/1988a) can say that

I could insert as many things as I wanted into the path from the stimulator to the organ of perception: only that will occur in each one of them that can occur in it by virtue of its nature. But it is still the sensation, therefore, that expresses itself in all these processes. (p.209)

For Steiner, the sensation—the difference that makes a difference—is of a higher logical order than the pathways in which it is immanent; it organizes the activity that appears in the physical pathways from the stimulator all through the system to the organ of sensation. For Steiner it is a question of the way sensation “expresses itself” in a spatial-temporal process. The spatial-temporal process is a precipitate, a densification, a concreting, of a coming-into-being of a higher-order process of sensation itself (this is in stark contrast to Bateson’s view). Thus, he can say (Steiner, 1883-97/1988a) that

It is far from the truth to regard such a spatial-temporal process as the cause, as that which causes the sensation in me; something quite different is the correct view: The spatial-temporal process is the effect of the sensation within a thing that has extension in space and time. (p. 209)

Fleshing out the full picture of Steiner’s view on this matter is quite beyond the current scope of argument (and it is important enough that Steiner himself spoke often and at great length about it from various perspectives). The main point on the table now is that in the above discussion we can see the importance of the distinction between levels of order N and $N+1$ in Steiner’s work, although he never uses that kind of language. By staying with the phenomenology of thinking, he is continually trying to refocus our attention on the originating process from which specific thoughts precipitate out of consciousness into our direct awareness. This is precisely the same standpoint

from which Eugene Gendlin derives his philosophy of the implicit (Gendlin, 1962/1997). In particular Steiner is very clear that we need not look outside thinking itself for some external explanation of its occurrence. This emphasis on the phenomenological unfolding of thinking serves as a basis for the task of aesthetic epistemology, which aims at recovering the process of thinking from the fact of the thought.

The experience of the self-illumination of thinking is a recursive one, where the activity of the “I” (which we don’t yet need to conceptualize as some kind of already-there object) is directed at itself through (and as) its capacity to think. Here thinking distinguishes itself as thinking. The recursive nature of this pattern means that it is paradoxical, at least to the mind that operates through the assumptions of bi-valent logic, where A and not-A are incompatible (the axiom of non-contradiction). But this assumption is one that esoteric epistemology does not accept (Iwersen, 2007, p. 5); neither does transdisciplinarity (Nicolescu, 2008a, p. 6); aesthetic epistemology need not accept it either.

A Fundamental Recursive Pattern

Saying that thinking *cannot* ever completely discover its roots outside itself is an attempt to indicate that the central character of this recursive aspect of the experience of thinking works like a pivot point through which an aesthetic epistemology flows. How we understand aesthetic epistemology is stamped by the character of how we have this kind of experience (*or not*). The possibility for an aesthetic epistemology—not just as a theory but as a practice—is therefore like a door unlocked by this key, when thinking finds itself in the midst of the

fundamental recursive pattern (and not just its linear extrapolation). We can think of this pattern as the distinction between levels of order N and $N+1$, and the recursion between them. Taking a cue from Gendlin (1998), we can refer to this pattern with the Greek letter *theta*: θ (p. 89). Gendlin's use of the form is meant to be descriptive of the concept he develops of "going on in," because of the way that the form of the letter establishes a circle that it then crosses. His description of the concept of "going on in" can be applied equally to this fundamental pattern, θ , which likewise "means that the process generates for itself a context, in which it goes on further" (p. 89). We have already seen this pattern active in a number of ways, but now it can be made more explicit.

From the cybernetic side, the distinction between levels of order follows indications in Francisco Varela's (1976) *Star cybernetics*, where he introduces a basic dialectic form (the "Star statement") where any statement about an object can be recontextualized by considering both the "it" (what I am calling level N) and the "process leading to the it" ($N+1$) (p. 62). Varela notes that in any Star statement the two aspects of any polarity are mutually specifying, and that this type of relationship implies a higher level where the seemingly separate aspects are unified (p. 64). This meta-level is $N+1$, what Varela calls a "second-order whole" (p. 64)—but the second-order whole does not appear *by itself* without the first-order differences which it simultaneously rests upon and creates, because the very first/second-order difference is itself part of a cybernetic Star with its second-order whole! In other words, we again find recursion between levels to be a key theoretical and operational aspect of the fundamental pattern that cannot be

divorced from the fact of the initial distinction between levels; they are a unity—a complex unity. As Edgar Morin, transdisciplinary theorist of complexity states,

The meta-system can only be a retroactive/recursive loop that does not annul, but rather feeds on those contrary movements without which it would not exist and which it integrates into a productive whole. In this way the antagonistic character of the physical and of the anthropo-social points of entry becomes not only that which impedes, but also that which is necessary to, the constitution of the meta-system. (as cited in Ferrer & Sherman, 2008, p. 122)

The fundamental pattern is not only a distinction between levels, but is also how the levels comprise a single complex act through their recursion with each other. Thus one aspect of the complex unity (*of distinction*; the unity of separation) is an epistemic act (i.e. a knowing), and another is an ontological act (i.e. a creation, or better, a *being*). Knowing changes being; being changes knowing. As Varela (1976) indicates, in order to transform the problematic duality of mind/body “a change in experience (being) is as necessary as a change in understanding” (p. 67). Or as Aldous Huxley (2009) put it: “Knowledge is a function of being. When there is a change in the being of the knower, there is a corresponding change in the nature and amount of knowing” (p. vii). But more directly we can say that the content of what is known is precisely the being that the knowing is; while the being is the being of what is known by virtue of the distinction. *What* is known is what that knowing *is*; what *is*, is what is *knowing*. Knowing and being form a complex unity. We can say that the two aspects, knowing and being, are mutually constraining (and therefore mutually freeing).

The terms N and N+1 are another way of getting at the concept of levels, and I can agree with Varela (1976) in “[calling] a level any one step in this (or a similar) ladder of imbricated stabilities” (p. 64). This definition has the helpful

quality of allowing levels to emerge dynamically. Levels of reality are not “already there” ontologically, waiting to be discovered epistemologically, but are the recursive *basis* of ontology. Ontology is not only about “what is,” but must *also* be about its own becoming; it must become recursive, just like epistemology (of course, because these form a complex unity). Therefore we can conceive of the act of stepping as creative: every step is the simultaneous making of a distinction and a bringing forth of the reality that the distinction is an enactment of. So in one sense we can say that ontology and epistemology *follow*, or better, *flow from* the fundamental act of distinction. In another sense we can say that ontology and epistemology are *nothing but* the act of distinction. This approach helps us see why Varela recognizes an archetypal pattern—he calls it “an ultimate, or Universal Star”—at work in all other star statements, in the form of “Reality/levels of reality” (p. 65), a point which is utilized in a new way in Nicolescu’s (2010) three axioms of the methodology of transdisciplinarity discussed earlier.

Varela was very interested in taking a new approach to the mind-body problem, and introduced his Star cybernetics as a framework for thinking differently about the duality inherent in (and inherited by) the traditional split between mind and body, a premise which Bateson (1991) called “monstrous” (p. 149). This “hard problem” of consciousness (how experience as such—“*qualia*”—arises within a material world), noted as such by David Chalmers (1995), is only hard because in formulating the problem in this way, we already operate through the distinction between mind and body. In this case the move

between “Reality/levels of reality” is already accomplished, and we then find ourselves in a position of trying to understand the consequences of that move. The point is not that to make such a move is somehow intrinsically wrong—the point is rather simply that by recognizing the second-order aspect of “making a move” or “taking a step,” we become sensitive to the possibility of *other* moves, steps, and distinctions. Not only that (and here is the crux of an aesthetic epistemology), we become sensitive to *how* the movements, steps, and distinctions are made, so that rather than simply focusing on the difference in *content* between different moves, we can focus also on the way in which such differences arise at their process-level. This second-order level of awareness, as previously indicated, is a way of understanding what it could mean to develop (from an esoteric standpoint) new sensory organs—that is, new capacities for experiencing within the correspondingly new phenomenal domains that the process generates, unfolds, and allows.

The distinction between first and second orders is an instance of the more general pattern of distinction between N and $N+1$, in the same way that an avatar of a deity both is the deity and also only an aspect or instance of the deity’s total ontology. In this way we can see that the more general pattern of distinction between N and $N+1$ itself, as a single “step” in the ladder, refers not just to any one step (or difference), but implicates *the whole activity of stepping*; that is, of distinction itself, along with its epistemological and ontological consequences. Therefore what I am calling the fundamental pattern, ϑ —the distinction of and recursion between levels of order—can be thought of as a way of describing

description. The pattern distinguishes itself both as content and as process (N, N+1). This is its first-order nature, its content. But this content arises out of a process: *the process of distinguishing itself as this content*. This is the second-order nature of the pattern. The whole is a complex unity of the first and second-order levels through their recursion (hence the looping form of θ). The “form” of the pattern (the distinction between levels and their recursion) is a way of indicating the act of indicating. It is a way of pointing to the activity at work in distinguishing, such that the pointing retains—as much as possible—the second-order nature of the distinguishing (rather than only pointing to itself as content). In this way, it is an “empty” distinction, having only itself (N and N+1) as its content (N). In the visual form of the θ , the process of writing the symbol creates a space (the closed circle) that is then crossed (by the same single activity) and taken further. The symbol encloses an empty space that it then occupies, all as one recursive movement. This kind of emptiness is precisely the emptiness or voidness of the Buddhist *śūnyatā*. Śūnyatā does not refer simply to the absence of objects (including the Self)—the negative interpretation—but can be seen as a consequence of the positive realization that every reality flows from a creative process of distinction, and that every distinction *could be otherwise*. This is to say that the emptiness is empty of even emptiness (another statement of the fundamental recursive pattern, demonstrating a distinction of and recursion between levels), and can equally be seen as full. The term *śūnyatā* comes from the root *svi* meaning “swollen”—with all possible distinctions, all possible realities.

This gives an interesting way of thinking about perhaps the most famous of all Buddhist sutras, the Heart sutra, and its key paradox: “Here, Sariputra, form is emptiness, emptiness is form. Form is not other than emptiness, and emptiness is not other than form. That which is form equals emptiness, and that which is emptiness is also form” (Fox, 1985, p. 79).

Carl Jung (1961) calls it the *pleroma*, saying,

Harken: I begin with nothingness. Nothingness is the same as fullness. In infinity full is no better than empty. Nothingness is both empty and full. As well might ye say anything else of nothingness, as for instance, white it is, or black, or again, it is not, or it is. A thing that is infinite and eternal hath no qualities, since it hath all qualities. (p. 379)

In the old logic, the recursive nature of this kind of formulation, and the formulation of θ , would constitute a paradox of self-reference, but I have already noted that other logics are possible (see the section “Levels of logic.” for specifics). More significantly is to point out that all logics can be seen as the *result* of the way in which the fundamental pattern occurs: to make any logical move depends upon a distinction that implicitly enacts the moves possible for that logic. Ways of moving forward, ways of stepping, *generate logic*.

The Role of Distinction

Here we are helped by the work of George Spencer-Brown (1972), whose calculus of indications provided a great inspiration to figures such as Heinz von Foerster, Louis Kauffman, Niklas Luhmann, Humberto Maturana, and Francisco Varela (to name only a few), and which provides another way of approaching the fundamental pattern. Spencer-Brown, a polymath involved with disciplines from mathematics and engineering to psychology and poetry, is interested in the most

basic questions of logic, mathematics, and reality. His major work, *Laws of Form* (1972, 1994), is a multilayered treatise examining how “although all forms, and thus all universes, are possible, and any particular form is mutable, it becomes evident that the laws relating such forms are the same in any universe” (Spencer-Brown, 1972, p. v). While on the surface *Laws of Form* reads like a work of mathematics and logic, it is more than that. With the benefit of having awareness of the fundamental pattern, we can parse the topic of the book more directly by saying that it is both “about” a basic form (that of distinction) common to all universes, but is also constructed in such a way as to utilize the form as the central operative principle through which its content is developed and presented. That is, it has both first and second-order levels, which are in recursion with each other. The first-order level is the content of the book as such, and its main idea: the fundamentality of distinction and the laws that relate distinction to itself. Its second-order content is found in the fact that with every step taken (along Varela’s “ladder of imbricated stabilities”), Spencer-Brown is inviting the reader to participate in the creative, ever-present, and ongoing process of distinction *in-situ*. By directing the process of distinguishing to the content of the idea of distinction, a recursive loop is formed. To read the book only for its explicit content and not for what is occurring at the second-order level, implicitly, is to miss its most salient contribution. I have given a more thorough examination of some important ways in which *Laws of Form* can be understood in connection with cybernetic epistemology and esoteric philosophy (S. T. Miller, 2011),

included here as an Appendix, but let us examine what Spencer-Brown can offer in the context of developing an aesthetic epistemology.

As indicated, the basic idea of the book is that of distinction, and how distinction is so primary as to underlie the forms of all possible realities, which arise from nothing:

All I teach is the consequences of there being nothing. The perennial mistake of western philosophers has been to suppose, with no justification whatever, that nothing cannot have any consequences. On the contrary: not only it can: it must. And one of the consequences of there being nothing is the inevitable appearance of “all this.” (Spencer-Brown, 1994, p. ix)

The way in which nothing (recalling the “full” interpretation of the Buddhist *sūnyatā* above) yields “all this” is through the act of distinction. As Bateson (1972) says, “In the world of mind, nothing—that which is *not*—can be a cause” (p. 452)—in this case, a cause of its own changes through distinction. Spencer-Brown (1972, p. 1) therefore takes distinction (and what distinction makes possible, indication) to be fundamental. Of course, we encounter something of a paradox when trying to describe anything that is meant to serve as “fundamental”—because if it is truly fundamental then it must not be derivative of something else. It can, however, be *self*-derivative, and this points to the nature of distinction (and mind) as a self-defining act. Distinction, taken fundamentally, is recursive, a point which Louis Kauffman, a mathematician who expanded upon Spencer-Brown’s *Laws of Form* with Francisco Varela, agrees (L. Kauffman, 2002, p. 58). Distinction is fundamental in the sense that it is precisely that component of experience that forms an implicit substrate of *all* experience. As Maturana (2012) indicates, “We exist doing distinctions. It’s not a limitation.

This is our condition of constitution” (p. 176). Bateson (1991) remarks in a similar vein that “a difference is an elementary idea. It is of the stuff of which minds are made. It’s *not* something in the realm of the hard sciences” (p. 162). Completing the recursion, it is not only that mind is constituted by distinction, but that mind is also the “generator of all form” through its “twin facts of *distinction* and *classification*” (p. 187).

These facts are “twin” because they are recursively united across levels. Distinction and classification are ways of describing the two basic inseparable aspects of the act of thinking. While the former is a manifestation of the metapattern of separation/difference/otherness, the latter is a manifestation of the metapattern of unification/sameness/identity. Together, they describe the higher-order metapattern of thinking itself, which simultaneously distinguishes (at level N) and unites (at level N+1). This meta-metapattern, or archetype, is what I am describing as the “fundamental pattern” of distinction of and recursion between levels of order. However, it should be noted that it is not the case that the two different levels are equally available to thinking when it takes itself as its own object in an attempt to reveal to itself how it is occurring. The first-order level (what thinking has distinguished) is more directly prominent at first due to its explicit nature. The uniting at a higher level, however, does not share the explicit quality of the act of distinction; it is implicit. It is therefore easy to miss the implicit operation of the second-order level of unification that accompanies every act of thinking. Indeed, it is just this difficulty that esoteric techniques can directly address, and later I will couch this in terms of the need to “reverse”

thinking—a practice which is specifically designed to illuminate the second-order aspects of thinking. Thinking trained in this way is more capable of making integrative moves.

Because the uniting aspect of thinking occurs implicitly, it has the potential to become explicit. But the explicit revealing and discovery of the implicit potential for making such an integrative move affects the distinguishing part of thinking because these are in a recursive relationship—the second-order changes the first. This is a way of describing a pattern by which thinking transforms itself by becoming sensitive to the integrative potential of every act of thinking. This is also a way of indicating how new phenomenal domains for experience become possible for such a transformed thinking. Such new phenomenal domains can be described as arising from the higher-order unification of the lower-order content of thinking (the thoughts). Stated differently, the process by which a thought comes to have its specific content not only yields that content, but also sets the particular pattern by which that content can be potentially transformed at a higher-order level through its integration with the wider phenomenal domain appropriate to it. This is a way of describing what in anthroposophy would be called the development of organs of supersensible perception—that is, organs of spiritual perception. These organs are built out of the way in which thinking reveals its own operation to itself. Rather than leading to some kind of solipsism, this process does precisely the reverse: it lays the foundation for how thinking connects to what is *more* than subjective. It

experientially reveals the recursive relationship between self and world, showing how self is implicit in the world and the world is implicit in the self, inseparably.

To be self-defining is another way of indicating the complex unity of the distinction of and recursion between first and second-order levels. An act of self-distinction has the dual aspects of both coming-into-being (second order) and of having-become (first order)—although this formulation is misleading in that it lays out in time what is simultaneous or time-less. Spencer-Brown (American University of Master’s Conference, 1973, “Time and Space,” para. 4) indicates that time, like space, isn’t prior to distinction, but follows from it. With this parsing of the complex unity, we therefore take both the process of distinguishing and the content of what is distinguished. In the particular case of θ , these are linked: that is, the process is its content, recursively. We can call this situation that of *identity* (similar to Herbst’s (1995) identity-maintaining operator), in the sense that what makes for sameness, for any “stability” on the “ladder of imbricated stabilities,” is the way in which that stability is continually held from becoming any *other* stability by virtue of the process of its self-distinction. This is the reverse of both objectivist and essentialist positions, which would like objects to have their existence somehow “already” passively within themselves, so that *then* some kind of interaction can take place. Contrastingly, this model follows Gendlin’s (1998) concept of “interaction first” (p. 22)—but specifically *self*-interaction as formulated through the pattern θ . This notion is supported also from second-order cybernetics, where an object is taken to be an *eigenform*—“a

symbolic entity, participating in a network of interactions, taking on its apparent solidity and stability from these interactions” (L. Kauffman, 2005, p. 130).

This applies even to ourselves as objects, and Kauffman (2001) notes that this formulation follows C.S. Peirce’s idea that identity for human beings arises because we are “signs for ourselves” (as cited in L. Kauffman, 2001, p. 104). From this kind of relational perspective we see that identity (in this sense of “stability” mentioned above) arises by an act of self-description through a recursive process that distinguishes between and unites across the first and second-order levels. To the question of “levels of *what?*” I have already indicated that the levels are not “already there,” so I don’t wish to say “...unites across the first and second-order levels *of reality,*” because what the concept of θ indicates is precisely the forming of reality in this process. In other words, reality is how θ happens; it is how the process of distinction further defines itself through the successive layers of imbricated stabilities that it recursively produces. Reality *follows* process, in the sense that the first-order nature of reality (*what* it “is”) is only so by virtue of *how* it is (its second-order nature), remembering that these form a complex, recursive unity.

Yair Neuman (2003) arrives at a similar place, noting that the basic unit of the mind (following Bateson, 1972) is a process of self-referential differentiation, and that

A possible interpretation of the primary distinction [of Spencer-Brown] is that the 'something' that emerges out of nothingness is an observer, which is the systemic closure that maintains its closure through differentiation. In this sense, the primary distinction from ontological, epistemological and even developmental-psychological points of view is the process of differentiation of nothingness to an observer and its environment. (p. 522)

From his cybernetic perspective, Neuman (2001) can thus suggest that “existence and being are associated with a distinction and that existence is not a property or description of a measurable object but *a second order manner of representing an identity-preserving-process of a given distinction*” (p. 30). This process-oriented view of ontology necessitates a process-oriented view of epistemology, and vice versa. Following the indication by Steiner (1917/1987a), we take as central to a process-oriented view the recognition that “whatever we look upon as ‘existing,’ whatever entity we ascribe the state of ‘being’ to, is directly related to the process of coming into being” (p. 160). This is a utilization of the difference between levels of order. Moreover, we must not confuse the difference by collapsing them to a simple unity (either by reducing becoming to the become or the become only to becoming). The goal of aesthetic epistemology is to use the distinction between levels of order to open a space for thinking to operate newly, so that it can live further in the space it thus creates for itself with that distinction.

[[We are trying here to put together the puzzle of thinking, with thinking. At the joining of every piece of the puzzle, the image of the whole puzzle changes just a little bit, including the piece just joined. The implicit nature of the puzzle’s image becomes explicit, and this changes the implicit functioning of the placement of each next possible piece.]]

An example of the fundamental pattern in education. Spencer-Brown (1972) gives us a helpful idea when he recontextualizes the identity relation “=” as “can be confused with” (p. 69). With respect to θ , we can see that the

distinction of and recursion between levels is one of identity in the sense that the second-order process can be confused with its first order content, because in the case of θ , its content *is* the process. In recognition of this, aesthetic epistemology then asks the question “how is the confusion made?” which is to also ask “how does the distinction form?” Perhaps an example here will help.

Let us take the following situation, examining it from our new perspective:

- a) $1/3 = 0.33333\dots$ (by long division)
- b) $1/3 + 1/3 + 1/3 = 3/3 = 1$
- c) $0.33333\dots + 0.33333\dots + 0.33333\dots = 0.99999\dots$
- d) $0.99999\dots = 1$

This bit of logic shows a way of thinking leading to the conclusion that the infinite repeating decimal $0.99999\dots$ has the same value as the number 1. When learning about this relationship, whether or not students will accept the idea that $0.99999\dots = 1$ depends in large part upon how they conceive the problem (Tall, 2000, pp. 221–222). If students think of $0.99999\dots$ as a process unfolding linearly, so that nines are successively added to the “end,” they are much more likely to doubt the supposed equivalence. However, if they can take $0.99999\dots$ all at once as a single conceptual object (in the same way as they take the number 1), then they are much more likely to agree to the equivalence.

There are two things to note here. From a first-order perspective with respect to θ , we can simply note the difference between characterizing the number 1 as first-order (fact-like), and the number $0.99999\dots$ as second-order (process-

like). Here, in accordance with θ , we draw a distinction between first and second-order levels of the situation.

From a second-order perspective with respect to θ , we can see that how the distinction between first and second-order levels is made (or *not* made) is significant with respect to the first-order content of the distinction between levels (or the ignorance thereof). In other words, the extent to which the content of the distinction between levels of order becomes significant depends upon *how* that distinction forms, not simply *that* it forms. The distinction can form sharply and with exacting clarity, or with an accompanying sense of confusion at the edges, or with a sense of skepticism, excitement, careful trepidation, and so on. In each case, the complex phenomenology of how the distinction occurs can reverberate with significance for how the actual content of the distinction unfolds. For example an open confusion may lead towards greater clarity, while a closed frustration may obfuscate the content to the point that the distinction is all but lost. This significance of the second-order level has obvious consequences for learning contexts.

But θ is more than the distinction between levels; it is also the recursion between them. Therefore aesthetic epistemology would expect this difference (which is a second-order difference) to be consequential. Or to put it in Gregory Bateson's words, aesthetic epistemology would expect this difference to make a difference (noting here that the first usage of "difference" is first-order and the second usage is second-order—a relation which can be made explicit from the perspective of θ). That is, we expect that the first-order nature of the conception

(the *fact* of whether a student conceives of the number 0.99999... either as a first-order fact or a second-order process) will have consequences with respect to any potential changes in the process of further conceiving. In other words, the “what” of the situation affects the “how” of the situation, just as the “how” of the situation affects the “what.”

This relation is implicitly utilized by savvy educators, to focus teaching efforts on reconstructing the situation with the benefit of awareness of the recursion between levels (their “original interaffecting” in the sense of Gendlin (1998)). This allows a teacher to dynamically shift focus between first- and second-order levels as appropriate for a given learning context, rather than directing focus primarily to the first-order level. It must be noted that the disturbing trend in American education towards “teaching to the test” can be analyzed from the perspective of θ as a one-sided and defective approach precisely because it systemically discounts or ignores the second-order level of teaching in favor of first-order reproduction of content. The systemic nature of this ignorance leads, for example, to treating both students and teachers only with respect to their first-order nature—as facts or variables to be optimized instead of creative processes to nurture and which need a healthy context in which to unfold. Just as the difference between first- and second-order levels has yielded important advances in the realms of family and systemic therapy modalities, so too it has much to offer with respect to education. Explicating how awareness of θ can help illuminate and transform the educational situation is, however, a task for a

dedicated essay beyond the current scope, which is intended to provide a theoretical foundation for such an exploration in terms of its form.

Distinction as both epistemological and ontological, and the limits of knowledge. Returning to Spencer-Brown, we can see how the act of distinction is a complex unity, having both epistemological and ontological consequences. The basic premise is very simple: if we make new distinctions we can act in new ways, create new things, new objects, new concepts, and new forms of experience. From this perspective, it is possible to view the practice of science as an attempt to make the *kind* of distinctions that bear themselves out in our acts, specifically through those distinctions that have empirical, testable consequences for future experiencing. While all knowing bears itself out in *some* way (it leads to and influences experiencing), what the current context highlights is the importance of looking at just *how* this bearing-out occurs. If the fundamentality of distinction is taken seriously, and the recursive nature of distinction is recognized along with its ontological and epistemological aspects, then we are led to consider distinction as *generative* in nature. As Bradford Keeney is fond of saying: “Draw a distinction to know a world!” (personal communication, August 27, 2008).

From the perspective of cybernetic epistemology, it is a “defining feature of an autopoietic system that it should specify its own boundaries” (Maturana & Varela, 1980, p. 109). This principle holds also in the domain of thinking. In this sense, then, our knowing is unrestricted, because its boundaries are precisely those that arise by virtue of the distinctions that *thinking* makes—for itself.

Unlike the Kantian view, in which the potential for knowledge is seen as intrinsically limited by the very structure of reason itself, the view of aesthetic epistemology reverses this situation, pointing out that the structure of reason that Kant sees as inevitable actually arises from the distinctions that he makes, not the other way around. It is therefore senseless to speak of a priori limits to knowledge because the only limits to knowledge are the ones that thinking creates for itself. As the champion of transdisciplinarity, Basarab Nicolescu (2008a) states, “knowledge is forever *open*” (p. 8). This is a fundamental point to which Steiner (1894/1964) devoted much of his basic philosophical work, arguing that if we take the position of monism then there are no intrinsic or a priori limitations that prevent thinking from making itself commensurate with the world. This is because thinking is not separate from the world, but is immanent throughout it—one of the central points made from a completely different angle by Gregory Bateson (Bateson, 1972, 2002; Bateson & Bateson, 1988; Charlton, 2008; Harries-Jones, 1995), to the extent of even titling one of his most important books *Mind and Nature: A Necessary Unity*.

Correspondingly, we are not prevented from making new distinctions, thus opening new phenomenal domains for experience to occupy. In science we think we are “testing” our ideas “against” a reality that is somehow already there independently of us, but we can recontextualize this from the perspective of θ : reality forms *with* our distinction of it. The reality is “for” exactly the context (second-order level) through which the distinction (first-order level) is made, i.e. reality is *relational*. To be real is to be in relation.

Distinction, as a recursive act, therefore has the dual character (which distinction generates through its recursivity) of being both epistemological and ontological in nature. The process of distinction creates a world (for the cybernetic “observer” mentioned previously) in which the distinction can be seen/experienced/known as active, and which recursively changes the process by which that distinction is made. The reality we encounter, and our ability to know it, depends upon the distinctions we make that form it.

With respect to ontology, we can say from this perspective that there is no “it,” no independent reality that is exclusive of the observer. But of course we do have much talk and thinking about “it.” Ultimately the talk about “it,” the pointing to “it,” is more fundamental to “it” than anything else, because *relations* constitute “its” reality. We can say that thingness is a subset of relatedness. Following Gendlin’s (1998) process-concept of “interaction-first” (p. 22), we can conceive of relations not as forming between two already-existing “things,” but rather as being recursively self-generated between other relations. In this sense, things are the precipitate of relations, a hardening out of a more fluid state.

Going further than Gendlin, we can take a cue from the process-language of alchemy (S. T. Miller, 2008) to see how relations themselves are a precipitate of the tension between complementarily opposing potentials, made by a distinction out of the whole. This corresponds to the recursive ontological alchemical sequencing of the elements from Fire (the whole) to Air (polarity) to Water (relation) to Earth (thing), to Fire (a new, transformed whole). Relations are to opposing potentials of a distinction as things are to relations. Opposing

potentials are themselves a precipitate of the whole by virtue of distinction (of Fire by Fire), and work alongside each other within the whole simultaneously. Each step from the whole is a kind of step-down transformation; we could say that beginning with level N, we move to level N-1, both ontologically and epistemologically. Each level is pulled out of simultaneity by an act of distinction within the whole, of the whole, by the whole. A cascading of levels of distinction thus yields the ontology of “things,” as well as the structurally correlated epistemology by which those things can be known. The ontological cascade is balanced by the epistemological one, working from the inverse direction. In alchemy, the recursive ontological sequence from Fire to Earth becomes the recursive epistemological sequence that moves from Earth to Fire. That is, the way in which we transform our knowing moves from the initial things or facts (Earth; made by our distinctions), to their relations (Water), to the contexts of the relations (Air), to the whole of the integrated contexts (Fire), which finally yields new facts (a new, transformed Earth). The pattern of our knowing follows the ontological pattern of coming-into-being as an inversion of it, which is why Goethean-style observation is central to anthroposophy: it seeks to bring to conscious awareness the patterns through which the objects of our perception form.

This language of alchemy is admittedly unusual, but I include it for two reasons. The first is that it is a process-oriented and transformative language, and thus sensitive to the distinctions that are central to this dissertation. I have explored the nature of the elements as an archetype of transformation in my

Master's thesis (S. T. Miller, 2008), which lays out the above context quite thoroughly. The second reason to include this language is that anthroposophy itself builds upon the same alchemical concepts, for example in the (1998) and (2005) works of Dennis Klocek, who has explored the nature of the elements in an anthroposophical light very deeply. Even more directly, the elements of Earth, Water, Air, and Fire, considered as symbols of their process-nature, play an explicit conceptual role in anthroposophy, most specifically in the cosmological picture that Steiner (1920/1997a) presents of the evolution of the earth and his (1922/1994) conception of the spiritual worlds, to name only the most obvious. As archetypes the concepts show up at all scales and throughout multiple domains; again, I have detailed this elsewhere (S. T. Miller, 2008).

The point being made here is that distinction, as a fundamental act, has both ontological and epistemological consequences, and these are both simultaneous and in some sense polar and complementary, working in complex recursion with each other (via the fundamental pattern Θ).

Distinction and reality. This view of distinction will likely seem akin to the claims of radical constructivism, but I wish to follow the lead of both Bateson and Steiner by taking a more balanced view, in which human beings are integrated into a complex unity that is not exhausted only by *our* interactions with it. We can take as a starting point the indication of Nicolescu (2008a) that “by Reality (with a capital ‘R’) we intend first of all to designate that which resists our experiences, representations, descriptions, images, or even mathematical formulations” (p. 4). This formulation of Reality is relational, fitting with the

second-order cybernetic injunction of (at least implicitly) including the observer in the observed. Moreover, this formulation is also compatible with the phenomenological stance that flows through aesthetic epistemology, placing questions about reality in the context of *how* resistance appears in our experience and through our distinctions. Although we are free to make new distinctions, *we do not determine the resistances we experience by virtue of having made those distinctions—these must be discovered phenomenologically*. Reality is both “for us” but *also* “beyond us”; it is immanent *and* transcendent; it is *both* created *and* discovered.

As topologist Louis Kauffman (2005) notes of the work of Heinz von Foerster, it “[tricks] us into considering the world of our experience and finding that it is our world, generated by our actions. The world has become apparently objective through the self-generated stabilities of those very actions” (p. 130). But von Foerster (2003) would not consider that the resistances we phenomenologically discover necessarily lead us to the conclusion that there is a real, objective, pre-existing world “out there.” He would say that we *do* “invent [our] own surprises” (p. 282). But the invention of such surprises—the discovery of a resistance in our phenomenology—can be approached as a moment of crossing from an implicit second-order process to an explicit first-order content. In other words, the resistances we discover become signals that a different pattern of relating is possible at a *higher* level. Each surprise that we experience when we expect X and Y occurs instead can be thought of as an invitation to change our

relationship with reality through our recursive participation with its—and our—becoming.

So despite the importance given here to distinction, this does not require that we take the view that “everything is relative,” that we can make any distinction we so please at any time, or that there is no ground for morality and reality. Although we can have some freedom with the distinctions we make—and such distinctions depend upon our particular constitution—we constantly find our distinctions challenged on multiple levels. But the relationship between our constitution and our ability to make distinctions is not only determinative in one-way. Our distinctions also have the ability to change our constitution, our very ability to make (further) distinctions. We are autopoietic. Therefore, though we are bound by our current constitution, we are also freed by its potential to be otherwise. For this reason the challenges and resistances we experience are not simply the consequence of meeting an already-there objective reality, nor are they purely a consequence of our own constitution. The view of aesthetic epistemology being developed here is neither purely constructivist nor purely realist, but rather one that allows for the simultaneous co-participatory generation of reality and ourselves through the epistemological-ontological act of distinction. Rather than making the distinction realism/idealism and choosing one side or the other, aesthetic epistemology wishes to approach the manner in which this distinction is made in order to allow for the possibility of what in transdisciplinarity (Nicolescu, 2010) would be considered a move towards the “included middle” (p. 24) of this seemingly binary opposition.

Thinking, feeling, and willing. A useful way of parsing how various resistances arise in our experience can be had through an examination of our ability to see three primary aspects of the human experiencing in the will, feeling, and thinking. The differences in the form and content of resistances encountered via these capacities works as an indicator of the ways in which we participate in the mutual realization of ourselves and reality.¹²

In experiencing our will, we find that our actions do not always have the consequences we may have initially intended. The activities resulting from our will meet the world and are immediately absorbed and modified by it. We cannot inwardly follow the consequences of our actions in the world in the same way that we can follow the arising and carrying out of the action itself (which we can do only dimly in any case). We can only subsequently perceive the results of the disappearance of our will into the larger context(s) through the capacity of our sensation and reflection. We almost immediately “lose control” in the realm of the will. Try any will exercise (for example, for ten seconds only let the single thought of the word “peace” enter your consciousness), and you can perceive this directly. In the realm of the will we have the least freedom. Every distinction has some will component, often implicit, and often only potentially encountered later.

¹² For a deep phenomenological exploration of why this particular division makes sense when considered through a perspective that traces the embryological development of the human organism, see Johannes Rohen’s (2007) *Functional Morphology: The Dynamic Wholeness of the Human Organism*. Rohen shows how the activities that we call thinking, feeling, and willing are embedded deeply in the form and functions of the physical body even from the moment of conception.

That is, every action has built-in assumptions of some kind. *Every action embodies an epistemology.*

In the human being the polar complement to the will is the thinking, where we correspondingly have the most freedom. We have the capacity to make new distinctions. Because of this freedom, we are not required to recognize when our distinctions no longer fit the context before us. We can refuse to “go there” in our thinking, and continue to make and operate out of a habitual, old distinction or pattern of related distinctions. Nevertheless, just as our will disappears into a wider world in which we are embedded, and which modifies and even completely transforms our will impulse in ways beyond our control that we must then phenomenologically discover, so also our thinking is embedded in a wider world—a world of thinking (that Steiner would call the spiritual world). Here too, the results of our thinking do not simply stand on their own, but are modified by wider contexts, by the thinking of other beings—presuming of course that we attend to this world and can make distinctions within it.

In other words, despite thinking being potentially free, it still meets limits. The limits are not explicitly self-imposed, but are *found* within the process of thinking recursively unfolding itself (θ). We can’t just make any distinction and have it be “real”—reality is not *only* our distinction of it, although it requires that as well—reality is also the unmarked space around our thinking. It is what resists our thinking, without itself being thought by us; it is the shape of the boundary of our thinking, the non-distinguished. As Louis Kauffman (1998) states (in reference to the distinction—the “crossing”—of Spencer-Brown): “The name is

nothing but the act of crossing from the absence of name” (p. 65). In Eugene Gendlin’s (1998) philosophy of the implicit, this unmarked space is the unseparated multiplicity out of which the felt sense arises, and to which it can directly refer in order to generate something new.

Saying that thinking experiences limits does not contradict what was said earlier, that there are no a priori limits to knowing except what thinking creates for itself within its own domain, because in the very act of coming into relation with the wider contexts thinking discovers its limits not as an imposition from this outside world but as an essential part of its own unfolding within that world. Thinking creates these limits out of its *own* activity in its transformative relationship with what lies beyond it. The discovery of its limits is the creation of them, and they are thus not a priori or imposed upon it, but are another aspect of the very unfolding of thinking itself. In this way, thinking can be seen as simultaneously both free and limited, but only because of its recursive nature. What this means is that the limits that thinking places upon itself and discovers for itself now do not have to be carried forward into all future thinking; the limits can change. We can see this occurring actually in life whenever we transform our thinking capacity (second-order) so as to make new thoughts (first-order) possible, for example when we discover the thoughts that underlie the concept of irrational numbers when before we have only understood the rationals.

Taken now in the context of the will, thinking also has the capacity to recognize error (a form of limitation—every error rests upon and requires thinking to identify a process of self-limitation in the very overcoming of it)

through the way in which it interacts with the activity of the will. In other words, we can allow our thinking to be modified by the way it recursively interacts with the perceived results of our willing. This is the basis for all of science, both material and spiritual (experiment/will, observation/thinking). When we initiate a will impulse, the wider context of the world—conceived of on multiple levels, not merely physically—responds in multiple ways and on multiple levels, and opportunities exist for the human to sense these responses and take them in as a source of potential correction to the initial impulse (this recursion is cybernetics in action). This requires (and is one of the drivers of) a shift in consciousness towards more acute reflexivity and a transformative awareness of both self and other; in short, towards higher-order consciousness. This is why meditation can be defined as the recursive art of attending to what one is doing while doing what one is attending to. It is a recursive meeting of the thinking (attending) and the will (doing). In thinking we have the option to utilize what comes to us through our senses to refine our will impulses, but this doesn't happen in isolation because thinking is relatively powerless in the face of the will; a bridge is required.

Here is where our life of feeling comes into play, because it offers an experiential palette of moods, gestures, tones, and patterns that weave between the will and thinking poles to integrate them together. It mediates between them and reflects both, and is an integral part of any transformative process in consciousness by providing the basis for a kind of experiential pattern-language that thinking can recognize in both itself and in willing. Of course what is meant by “feeling” here is quite specific, and very different than the familiar emotions,

which are more like primary colors: bold, obvious, ubiquitous, but incapable of much subtlety without modification. Feeling helps connect will impulses to thinking and thinking to will impulses. It overlays the conceptual content of the thinking with a soul-content that fills in what the thinking cannot. Imagine having *only* thoughts about the Sistine Chapel, as opposed to having thoughts about it *and* allowing it to touch our soul aesthetically.

An example will help here: which are more different, 1 and 2 or 9 and 10? Take a moment to think about this question, and try to arrive at an answer... then try to answer it differently but with equal justification. From an abstract stance, they are equal, both having a difference of “1.” But from another, more relational standpoint, 1 and 2 are vastly more different from each other than 9 and 10 are, because 2 is double that of 1, while 10 is only 111% of 9. The illustrative point here is not that this second standpoint exemplifies that of feeling. Rather, the point is that it is with our feeling that the difference between the two ways of looking is made significant for us. Although an intellectual comparison between the two modes is possible, a mere intellectual comparison eradicates the “inner” or “soul” difference that is directly sensible with the help of a developed feeling life. Another example might be the feeling-differences between, say, integers and fractions, or between the real and imaginary numbers. I use mathematical examples because these examples are very “pure” conceptually, offering little emotional basis for distinction—or rather, the examples are so stark conceptually that any emotional content is easily identified as such, allowing more subtle distinctions from the feeling realm to arise.

Distinction, space and time. As noted previously, the “move” of distinction is simultaneous with the forming of space and time. Immanuel Kant’s analysis of space and time as a priori forms of experience hints at the epistemological nature of distinction, but denies its ontological nature. Jonael Schickler (2005) has argued, however, that Kant’s skepticism about ontology is misplaced, and can be rectified through a careful understanding of Rudolf Steiner’s work, which unites epistemology and ontology in an esoteric cosmology. Schickler traces connections from Kant to Hegel, arguing that Hegel’s *Phenomenology of the Spirit* is limited by virtue of an ontological underdeterminism. What is needed is a way of thinking about thinking that does not sell itself short, in an ontological sense. Schickler shows how Steiner’s (Steiner, 1894/1964) view, in which thinking is not merely a property of local systems but part of the universal process of the cosmos itself (p. 70), can be understood—purely philosophically—as a logical progression and culmination of the struggles of Kant and Hegel. Steiner himself directly addresses and attempts to overcome the limitations of the transcendental idealist view of Kant, and saw this as part of the thrust of his (Steiner, 1894/1964) main philosophical work, *The Philosophy of Freedom*.

For Kant space and time are not pre-existing properties of nature (the Newtonian view, from which Kant distanced himself), but rather are the a priori *form* of experience that allows for the very possibility of having any *content* to experience (Kant, 1783/2004, p. 126, 4:375). [[Notice the distinction here between a second-order level (the form of experience, its “how”) and a first-order

level (the content of experience directly).]] What the current discussion of θ brings to the table is the ability to recognize how Kant's thinking on this matter is linear. For example, Kant (Kant, 1787/1988), by saying that "time is the formal condition a priori of all appearances whatsoever" (p. 107), is assuming that a context for the process of perception (the implicit representation of time) has to already be there in order to then have something like an experience of simultaneity or succession occur. A careful reading of this shows that Kant is "reading back" into a presumed context (the a priori nature of the representation of time) the very thing he is trying to explain. Kant's confrontation with this was just what led him to postulate the necessity of the a priori; bound by a linear way of thinking, the substrate for the experience of time seems like it has to already be there so we can then have time-like experiences. With the benefit of understanding the recursive nature of distinction, we can see, however, that this need to logically externalize in a linear way is not required. Perhaps in a somewhat cryptic but compact way, we can say that the experience of time generates time (recursively). What θ indicates is that the a priori representation of time doesn't have to pre-exist in some fashion, but can be a part of the generative activity of the distinction being made in the moment of its occurrence. This, then, is a part of the nature of distinction when taken as an ontological/epistemological unity: it generates both space and time.

Logic, distinction, and inverting modus ponens. Just as distinction is more fundamental than space and time, it is also more fundamental than logic, being the operative soil from which logic (of any type) can grow. Any logical

move is only “a move” by virtue of the distinction that it is an enactment of. To put it another way, we can say that distinction is the form of thinking; thinking is the enacting of the form of distinction.

Just as Einstein recontextualized the absolute conception of Newtonian space and time through the second-order move of making them dependent upon differences between how specific observers make distinctions (yielding a new, complex unity of space-time that is of a second-order nature with respect the first-order perspectives of individual observers), so too aesthetic epistemology does not assume already the absolute universality of logic independently of the distinctions that we make with respect to logic. The universality of logic—again—is something that *thinking* must discover by creating the distinctions necessary for the appearance of that world. Rather than assuming a realm of logic that is outside of time and universally valid (as in discussions of “all possible worlds,” for example), aesthetic epistemology lets logic arise through the act of distinction in thinking—a distinction by thinking of itself. Logic is the creation of a space in thinking by thinking through thinking’s fundamental recursive act of distinction, θ . This is a living activity.

Seeing logic not as some absolute Platonic idea, but in the context of θ —that is, seeing it in the context of the continual unfolding of itself through a recursive process of distinction—changes how we can reinterpret logical relations which otherwise do not easily admit of any alternative. For example, aesthetic epistemology reinterprets—and inverts, but does not thereby obviate—the logic of *modus ponens* (MP). MP is usually explained by saying that it is the principle at

work in the example: P implies Q , P is asserted to be true, so therefore Q must be true. MP allows us to take assertions about P out of further formulations about Q , because once we determine P , Q follows. For this reason MP is sometimes referred to as the rule of detachment (Tarski, 1995). If 10 players sign up to play hockey (P), we *will* play hockey (Q); 10 players signed up, therefore the game is on. Once I know that P is true, I can forget everything else about it, and rely *solely* on the inferential consequences that P has for Q . In other words, I can take it for granted that if ten people sign up to play hockey, then the game is going to happen; all I need to remember to think further about Q is nothing about P other than that it is true.

Aesthetic epistemology, however, working from the fundamental pattern, recognizes that MP rests upon the assumption that everything salient about P and its implications for Q can be *explicitly* reduced to binary abstraction, such as the answer “yes” to the question “did ten players sign up?” This is not a necessary assumption, and aesthetic epistemology works to show that *how* P gains its “value” is consequential for Q , because it recognizes that everything that might be salient about the relationship between P and Q *cannot be made explicit, nor can it be reduced to disjoint binary values* such as true or false, nor any set of predetermined values. The salience of P for Q is always an open question that rests in part on the way that P is determined in the first place, because the way P is determined (N+1) carries consequences for what it can imply (N).¹³ This is just

¹³ Cf. Heinz von Foerster’s (2003) discussion of how even the very basic notion of the amount of disorder (entropy) in a physical system is dependent upon the language we choose to use to describe that order (chapter 12).

another restatement of the basic theme: how you get there is what you get; it is the fundamental pattern again.

From this perspective, MP is a way of taking a shortcut around the messy nature of implication by a kind of willful ignorance. It is a way of *not looking further*, a tacit accepting of only what has *already* been formed, explicated and accounted for in the “if...then” relation, or the implies arrow (\rightarrow) in formal usage. Aesthetic epistemology allows us to see that the logic $P \rightarrow Q$, read as “P implies Q,” is literally inverted, and can be read instead as “P *explicates* Q,” because in the formulation the whole gist is to indicate *just* the explicit relation that P has to Q , and to forget the rest. Aesthetic epistemology therefore draws our attention to the *implicit* relation(s) between P and Q , so that we can then ask about them in order to make them explicit. If ten people signed up, but three did so with the implication (not explicitly) that they would attend only if the weather forecast indicated it would be a good day to play, then when the weather threatens to turn sour these three *might* not show up, changing the nature of the game, and even whether it can be played at all. How the signing-up occurred carries more than just the fact of the signing-up, it carries implications which may or may not be known, and which may or may not have further effects. The point is that all of this *cannot* be completely known in advance (we can’t just add another—or infinite—conditional statement(s) to the explicit mix), because the implying is precisely that: *implied*. It is not “already” the case that some X “is an implication” of P ; the implication X , and its possible consequences, can form at *any* time.

What aesthetic epistemology, and the fundamental pattern, points out is that this is done by an act of distinction, which can always be newly made now.

More than one kind of thinking. The distinction between implying and explicating is very important, in part because most of the history of philosophy and thought in general has focused on the side of explication, both in the first-order sense of the products of explication, and in the second-order sense of the process of explication. Logic is perhaps the purest form of explication, admitting into the process of thinking only what thinking determines to fit the rules that it creates for itself in full awareness. Logic gives mathematics the ability to be true, but it is thinking which creates logic. If the process of thinking were always completely self-illuminating, and could not be otherwise, then it would admit of no distinction between implication and explication; these would be identical. Every relation would be an explicit one, available directly to thinking as a specific content.

This is not, however, the case, and noting this allows us to make a distinction between two kinds of thinking: firstly as the activity in which the contents of thinking are connected explicitly with the process of their generation, and secondly as the activity in which the contents of thinking appear independently of the process of their generation. To help make this distinction, we can use terms to distinguish the two types of thinking. The first can be called *living thinking*, and the second, *thoughting*. In the language of aesthetic epistemology we can say that living thinking is another manifestation of the fundamental pattern θ . It holds the distinction of and recursion between its

process and its content. This is a rare kind of experience. Thoughting, on the other hand, is a way of speaking about the kind of thinking that occupies the vast majority of experience, in which the inner relationships within the content of experience are omitted from the experience itself. In thoughting the content of experience does not include how it arises, while in living thinking the way of arising is part of its content—it is recursive. Living thinking explicates its implying; thoughting only implies its implying. The distinction between implying and explicating is not binary—in living thinking the implying still occurs even though it is explicit. This is a feature of the operation of the θ pattern, which has both a separating aspect (the distinction between levels of order) and a unifying aspect (the recursion between levels). θ is the unity of the distinction between itself and unity.

Logic as an activity of thinking. The exacting and tight nature of logical thinking arises when its basic principles (the distinctions upon which it rests) are not taken for granted, but are held inwardly in the act of logical reasoning as a constituent part of its unfolding. Otherwise, the reasoning (its second-order nature, not its first-order nature) remains just as dark as any other implying, because without explicitly having the reasons [[second-order]] for our reason [[first-order]], we stay bound to a partial arc of a larger circle. Or as Steiner (1917/1996b) indicates in this vein, “One is totally justified in declaring the correctness of the paradox: ordinary consciousness knows the content of its convictions [[first-order]]; but it only dreams the logical lawfulness that lives in the seeking of these convictions [[second-order]]” (p. 111).

In such a case we have trouble understanding [[second-order]] our understanding [[first-order]]; we cannot tell why our reasoning is rational. In other words, reason, to distinguish itself from other forms of implying, must be awake to its second-order aspect in recursion with the first (the fundamental pattern again). When it does this it sees that what is reasonable is so for reasons that it can take into itself explicitly. The consequence of this, however, is that in this act of awakening recursively to the reasonableness of reason, we recognize also that the assumptions upon which reason operates and which are the very heart and soul of what makes it reasonable *could be otherwise* if different distinctions were made. That is, we recognize that we are free in just this realm of experience: our thinking, which is *larger* than reason. Reason is a subset of our thinking capacity formed by the distinctions which thinking makes, rather than acting as some kind of ultimate boundary. Reason is not an abstract space Platonically already permeating the entire universe, into which thinking can explore and expand in order to make itself commensurate with the orderliness it discovers there (the dream of the Enlightenment). Rather reason is a space that thinking carves for itself (out of nothing, out of a distinction). Reason is a stage thinking creates for its own acting.

Levels of logic. The logic of θ is circular. Generally circular logic is a bad thing in philosophy—a sign of flawed thinking leading to contradictory results (Brendel, 2007). At best, circularity is used as a technique to dismantle an argument—those found to be based on circular logic are thrown out as meaningless because they are tautological, succumbing to a *reductio ad*

absurdum. From this perspective, the meaning and validity of statements based on circular logic have two problematic aspects: they are unfalsifiable (because they generate the conditions of their own validity by fiat), and they are also unverifiable (for the same reason). In other words, one cannot check the validity of arguments based on circular logic, rendering statements that arise from them meaningless. At best, cases of circular logic are taken as indicators that at some specific point in the logical chain an invalid step was taken that needs to be corrected. However, this perspective is not the only possible one. Aesthetic epistemology reveals a different way of thinking about circular logic.

What is taken for granted in the case of circular logic is that the source of the judgment about its validity or invalidity is not found within the circular logic itself, but arises from elsewhere. In other words, there is no inherent contradiction to a chain of circular logic from *within* the logic of the circular. Indeed it is quite the opposite: circular logic, rather than being self-negating, is self-fulfilling, self-determining, self-generating. This is autopoietic logic, the logic of self-creation.

The sense that circular logic is somehow self-contradictory or impossible is a feeling that arises primarily on the basis of an epistemology that confers validity to a chain of reasoning only by reference to something beyond itself, which is to say that the logical chain must be linear if it is to confer validity. Underneath this feeling is hidden the signature of first-order logic—a logic that relies upon a distinction between looking backwards and forwards in a logical chain. In this case, A leads to B leads to C, and the feeling of the rightness of this

“leading to” is dependent upon the fact that each step follows the previous in such a way that one can forget the previous step and concentrate only on the next step, because all the important information relating the previous step to the current step is necessarily contained in the logical state of the current step (i.e. Modus Ponens).

In this sense then, first-order logic is a line-like logic, proceeding always from a logical point to logical point: it is hyper-local: only the directly previous and immediately forthcoming steps are of concern. But something strange happens if suddenly C leads back to A with the same type of logical step that was used to get from A to B and B to C (see Table 1). In such a case we find ourselves back where we started, yet by virtue of a process that only seemed to take us forward. This form is reminiscent of Escher’s stairway in his piece *Ascending and Descending*, and is a consequence of insight from cybernetics, which “proposes that change cannot be found without a roof of stability over its head. Similarly, stability will always be rooted to underlying processes of change” (Keeney, 1983, p. 70).

We can make a further distinction: to return to one’s starting point is simply to oscillate. Strict oscillation, however, where one returns *exactly* to one’s starting point is only found in the abstract realm of logic, where entropy does not apply. Otherwise, any real system will return to its starting point in such a way that some part of the system is *changed* by virtue of the process of traversal between whatever A, B and C represent. We need therefore to include how this change is present when circular-causal patterns operate, and can do so through the

addition of a subscript that counts the iteration through the cycling:

$$A_1 \rightarrow B_1 \rightarrow C_1 \Leftrightarrow A_2 \rightarrow B_2 \rightarrow C_2 \Leftrightarrow \dots A_N \rightarrow B_N \rightarrow C_N.$$

The circular logic has now become spiral; a new dimension is added. Instead of merely cycling between unchanging values over and over, the process of return implies a changed starting point, newly. This sets the stage for *transformation*, versus the lower-level *change* that occurs in a system that only oscillates (i.e. repeats). This can be taken a step further. Just as it is possible to add a dimension of freedom to linear logic through a recursive operation, and a dimension of freedom to circular logic by allowing the recursive operation to integrate at a second-order level (allowing the process of change to change itself; i.e. transform), we can also see how the spiral-logic can itself be subject to a higher-order pattern. In this case we are looking at how a transformative process changes by virtue of a higher-order recursion. What might this look like?

In order to address this it will help to point out the patterns implicit in the previous steps. We can see how linear-logic rests already upon the separation of elements A, B, and C; this requires a lower-order logic (almost so bare as to belie the very idea of logic) by which A is A. That is, we can indicate a 0th-order of logic, the sole content of which provides the basis for all further steps. The only content of this order of logic is that of *identity*. Identity occurs as the first result of a distinction. This order of logic is only implicit; it does no logical work by itself, but only forms the substrate for how all further logical moves can carry forward by allowing for an element of logic to be separated out as such. In other words, the 0th-order—arising as the *f*/act of distinction—is what logically allows

A to be not B, i.e. not *not* A. This aspect of logic was pointed out by Plato (~368 B.C.E./2004) and Aristotle (~350 B.C.E./2012), and is occasionally mistakenly attributed to Aristotle as his “law of identity.”

The change from point-logic to linear-logic brings the elements of logic into relation; A is no longer merely A, but is in relation to B, and the logic of this order is a description of the ways in which such a relation can occur. If we turn our attention not to the fact of the difference between point-logic and linear logic (the first-order level), but examine the nature of the process by which one relates to the other (the second-order level), we then discover that the move from point-logic to line-logic is an *expansive* one (see Table 2). In a direct sense, in linear-logic each logical move is an expansion of the previous. B *follows* A and is implied by whatever change is indicated by the specific logical move that the symbol \rightarrow represents in a given case. The logical move from A to B is thus (merely) an expansion or explication of what is already implicit in A through the frame of the logical move of \rightarrow . This kind of logic finds its puissance in the realm of (classical) physics and chemistry,¹⁴ and underlies the sentiment by Laplace that an intelligence of sufficient immensity with complete knowledge of the state of the universe at any given time could know with certainty also its

¹⁴ It should be noted that while each type of logic is associated with a specific phenomenological realm of inquiry, it is not the case that each logic *only* applies within the indicated domain. Rather, what is meant here is that the phenomena in different areas (physics/chemistry, biology, psychology, spirituality) can be fruitfully approached through the *type of thinking* characterized by the associated logical level, and that (consequently) approaching, say, spirituality through the logic of the point or physics through the logic of the spiral will be less revealing and full of depth, although no restriction bars such application.

whole past and whole future with equal ease. We can identify this kind of logic with Bateson's (1972) lowest level of learning, *learning 0*, which is the realm of causality or specificity of response (pp. 279-308).

Looking now at the transition from linear-logic to circular logic, we can discern a movement polar to that proceeding from point-logic to linear-logic. Instead of endlessly marching onward through discrete logical steps of explication, circular-logic closes in upon itself; a contractive movement. Circular-logic yields restriction by virtue of the recursive operation, simultaneously intensifying what is brought by the first-order logic—which is still operative—but now integrated into the higher-order pattern of the circle. This is a second-order kind of change and is the one identified and explored more deeply by cybernetics in the guise of feedback, which allows for regulation and the generation of stable reproducible states (homeostasis) through a repeating process. This form of logic is necessary to understand biology and life-processes, which are autopoietic in nature. At a very basic level, the logic of life is that of circular regulation and self-repetition, i.e. reproduction. Here is Bateson's *learning I*, which occurs when repeating a process leads to a change in the specificity of response (essentially a "rote" learning).

The transition from circular-logic to spiral-logic occurs as a linearization of the circle by stretching it out through a new dimension. This is a manifestation of the expansive polarity, to which we return but at a higher level, because the circularity of the previous level is taken out of the realm of (mere) reproduction and repetition and is now projected outward, allowing for a new degree of

freedom. Spiral-logic allows the lower-order recursion of the circle-logic to now change itself, leading to a higher-order of change which I have called transformation (because the form of the logic is carried across the boundary between first and second-orders). This is the type of logic that is appropriate for describing the psychological realm, because the circular changes of the previous level are now capable of calibration through the appearance of a higher-order directionality. That is, this new changing of the change (of the circular-logic) yields not some haphazard difference, but establishes a directionality along a new degree of freedom around which this second-order changing occurs. A polarity is established: the higher-order pattern of the spiral does not simply recirculate, but manifests a type of change that can only be characterized by including the direction of the change along the new degree of freedom. This is a recapitulation of the same pattern that occurs at the lower-order level of linear-logic, where implicit in the movement from A to B to C is a directionality that *could* be reversed: from C to B to A. Linear-logic, too, requires and implies the creation of a polarity through which it plays itself out. Spiral-logic resonates with Bateson's *learning II*, where new sets of alternatives become available, but which are still closely allied with the contexts of changes occurring in *learning I*. In other words, A₁ and A₂ are recognizably similar. If *learning I* is learning how a hammer can be used to change the relationship of a nail with a piece of wood, *learning II* would be understanding that a hammer can also be used in other contexts in ways that carry forward the basic functioning of the hammer as a compact high-impulse delivery system, say, to break open a rock, pop out hail

dents in one's car, or in forging metal. One has generalized the activity at the previous level to a higher order.

Lastly is the transition from spiral-logic to strange-attractor (SA) logic. The same meta-pattern of oscillation between expansive and contractive poles operates again: the expansive gesture in spiral-logic becomes a contractive one through a higher-order recursion. The recursion is "of" precisely the linearization occurring at the lower order. In this case, the way that spiral-logic changes the changing of circular-logic is itself changed by recursion at a higher level. Again, all the previous logical moves are retained, but a new pattern is revealed that those logical moves are participating in and forming. This higher-order pattern has the character of an *archetype*, typified by the way all the lower-order movements are integrated together into a single complex gesture. Whereas the recursion of circular-logic is repetitive, the recursion of SA-logic is "strange" in the sense that it is not a strict repetition, nor is it the almost-repetition of spiral-logic, where the changing between any A_n and A_{n+1} follows a more or less predictable path because of its linearization. Rather, the recursion of SA-logic is one that allows for non-linear changes between any A_n and A_{n+1} , and has the characteristic of a complexly *structured field*. In mathematics, a strange attractor is the shape in phase space traced out by the changing state of a system where that shape is fractal in nature. This means that lower-order changes in the system follow a pattern that cannot be fully discerned except by seeing how the same system would evolve *differently* under slightly or even radically changed conditions. In other words, the revealing of the higher-order pattern requires an

understanding of the whole *field* of possible tendencies for the evolution of a system from any arbitrary starting point. This is the adopting of a meta-level view in which all the possible changes are integrated into a structurally complex but unified *whole*.

Strange-attractor-logic is unusual in character; I have called it both archetypal and described it as having the character of a strange attractor. This linking between these two concepts has been explored before by Van Eenwyk (1997), who shows that there are fruitful links to be explored between the (Jungian) view of archetypes and insights from chaos theory. Robin Robertson (2009) has similarly explored connections between chaos theory and the transformative science of alchemy. Strange-attractor-logic is the kind of logic that describes higher-order transformations that have the characteristic of waking up from a dream, where a kind of non-linear transition occurs that recontextualizes what has come before and organizes it coherently into a new picture. This kind of transition is most typified by spiritual transformations and provides a way of describing how new capacities for experiencing can completely re-organize one's context at a higher level, which likewise reflects newly upon all the lower-order changes, thereby becoming meaningfully different. This is the kind of shift that Bateson's *learning III* describes; a shift in the available sets of alternatives. Instead of a change from one set of alternatives to another, as in *learning II*, *learning III* describes a shift to a higher-order, so that differences between *sets* of sets of alternatives become available. This has a profound effect:

whole domains of experience gain a new qualitative overlay facilitated through their recognition of membership in a higher-order set.

Table 1

Different Orders of Logic

Type/Shape of Logic	Order	Mapping Characterization / (Quality)
Point-logic	n/a (0 th)	A (identity)
Linear-logic	N (1 st order)	A→B→C (separation)
Circular-logic	N+1 (2 nd order)	A→B→C→A (re-relation/recursion)
Spiral-logic	N+2 (3 rd order)	A ₁ →B ₁ →C ₁ ⇔A ₂ →B ₂ →C ₂ ⇔...A _N →B _N →C _N (polarization)
Strange-Attractor-logic	N+3 (4 th order)	$ \begin{array}{l} A_1 \rightarrow B_1 \rightarrow C_1 \rightarrow A_1 \Leftrightarrow \\ A_2 \rightarrow B_2 \rightarrow C_2 \rightarrow A_2 \Leftrightarrow \\ A_N \rightarrow B_N \rightarrow C_N \rightarrow A_N \Leftrightarrow \end{array} \left. \vphantom{\begin{array}{l} A_1 \\ A_2 \\ A_N \end{array}} \right\} T $ (integration)

Note: A characterization of different orders of logic. Each order includes the logic of the previous order, and expands upon it by adding another degree of freedom. The large “T” can stand for either archeType or simply Type. Copyright 2014 by Seth T. Miller.

Table 2

Qualitative Changes Between Orders of Logic

Transition	Process	Pattern	Order/Reduced Order of Change	Type of Change
Point→Line	linearization	expansion	1 st /1 st	sequencing stepping modifying
Line→Circle	recursion	contraction	2 nd /2 nd	regulating repeating reproducing
Circle→Spiral	linearization	expansion	3 rd /1 st	learning transforming
Spiral→Strange -Attractor	recursion	contraction	4 th /2 nd	integrating transcending

Note: A description of characteristics of the processes of change *between* orders of logic. Transitions oscillate between the archetypal movements of expansion and contraction. This reveals a (second-order) meta-pattern of movement in the *whole*, from point-logic to strange-attractor-logic, of *integration*. The integration is of previous levels and is carried on the back of the (first-order) meta-pattern of oscillation between expansive and contractive poles; integration occurs *between* the poles of expansion and contraction as a higher-order movement. The integrative movement is thus one towards a kind of complexity and diversity that resists both stasis and explosion; it is a middle way. Copyright 2014 by Seth T. Miller.

Table 3

Applications of Orders of Logic

Type/Shape of Logic	Realm	Bateson's Levels of Learning	Steiner's Levels of Thinking
Linear-logic	physics & chemistry	learning 0	Day-waking consciousness
Circular-logic	biology	learning I	Imagination
Spiral-logic	psychology	learning II	Inspiration
Strange-Attractor-logic	spirituality	learning III	Intuition

Note: This table correlates the different levels of logic with the realm in which they most fittingly apply, Bateson's levels of learning, and Steiner's levels of thinking. Copyright 2014 by Seth T. Miller.

An example will help elucidate the differences between these levels in a different way. It should be recalled that the differences between levels of logic is referring to differences in *how* thinking orients itself so as to take its next step. They are differences in the way that thinking can occur as it works itself forward with some thought content.

Let us take meditation. The linear-logic of meditation is implicit in the instructions, for example, to hold in one's mind a single thought content, such as compassion for all beings, to the exclusion of other thoughts. This is accomplished first through a basic protocol such as sitting down, closing one's eyes, taking deep breaths, refusing alternative thoughts, and so forth. The pattern at this level is local, having the form "if A then B," so that one could "do" the meditation by following the "steps." Meditation occurs in this way as successive attempts to take the next appropriate step based on the immediate situation, but in

the same *way* as previous steps have been taken. So a stray thought becomes the trigger for some internal message to “stay focused”—but in just the same *way* as sitting down might be a trigger for “close my eyes.” At this level, the way thinking lives itself forward in meditation is not very conducive to its success, because the way it punctuates the sequence of events tends to destroy the higher-order pattern it is seeking (i.e. deeper absorption). It’s a kind of paradox similar to the idea that one could generate silence through the use of speech.

The transition to circular-logic, a qualitative step up from first to second-order, occurs when the meditation becomes recursive and self-sustaining. Here one is absorbed in the content of the meditation, and while the experience is still punctuated by changes, stray thoughts, and the like, the *way* that thinking notes and addresses these changes serve to keep the meditation going; the second-order level of the way that the content moves forward is altered. Instead of first-order punctuations derailing the meditation, the second-order process—the framing of the punctuation—is shifted, so that *not meditating* becomes a successful way of continuing the meditation. At this level, each change leads back to the explicit content of the meditation. One thus needs to change the level of one’s consciousness in order to “exit” the meditation, whereas at the previous stage of linear-logic the meditation would be done when some amount of time elapsed or other explicit condition was fulfilled in the stepwise sequence. Circular-logic describes the pattern of the experience in meditation of losing track of time and of one’s consciousness being absorbed in an “orbiting” around the content of the meditation.

The transition to spiral-logic occurs when the act of meditating now reflects itself in other areas of one's life. In this example, one would actually behave, think, and feel differently towards others by virtue of having done repeated meditations on compassion (for example), and these differences recursively change one's capacity to do the meditation. The meditation is thus no longer "about" compassion at this stage, but is actually the demonstration and embodying of it at a higher level; one's consciousness *is* a manifestation of compassion. One experiences a *transformation*. Whereas before the way thinking would orient itself towards the content of the meditation was dependent upon the local step-wise sequencing (linear-logic) or the circular meditative *context* (circular-logic), now each specific moment in thinking bears within it a signature of its having been changed by the previous steps, such that no 'external' trigger or even specific context is needed for the meditation to "occur"—the meditation has strengthened itself so that it carries itself forward through consciousness even when we are no longer explicitly "doing" the meditation. "The meditation" is thus no longer limited to the specific time set aside for its overt practice, but has shifted the entire frame of consciousness, which bears its stamp. It is as if the meditation were capable of continuing even after one's eyes open and one begins to attend to the tasks of the day. The boundary between the external world and the internal changes: it becomes *symbolic*. The world begins to reflect back to oneself newly through a changed capacity of consciousness that has oriented itself around the meditative content. It is as if external events begin to speak symbolically. This is a description of the gaining of a capacity by

thinking to dwell within a particular content so that consciousness occupies it with a kind of duality or multiplicity. The content of the meditation has been integrated at a higher-order level, so that it is implicit in the way thinking generates *other* content and thus the way the world appears. The experience is of being in a kind of meaningful inner dialogue with the world. Checking out at the grocery store or walking down the street can thus be simultaneously a mundane act and the actual manifestation of compassion. Both aspects are actually present for thinking, but retain a kind of separation; the distinction between the lower-order and higher-order is maintained.

Lastly is the transition to SA-logic. Here, the distinctions between all the lower levels become integrated into a higher-level pattern that becomes indistinguishable from the content of the lower order levels. That is, the content of the meditation that has been experienced differently through all the lower-order levels is revealed to be the manifestation of a unified archetypal pattern that bears a “shape” or “gesture” that is identifiable without being limited to any particular set of identifications; it is a diverse-unity. One has a direct sense of how the pattern structures not just one’s own meditative experiences but *other phenomena* in the world, which now bear a new character through the sensitization that has occurred in the meditative practice. The symbolic experiences of spiral-logic become more than symbolic in SA-logic; they are experienced as a kind of higher reality within reality. The lower-order reality is experienced as illuminated from within by virtue of the higher-order pattern, such that the lower-order reality is nothing but the way the higher-order manifests; it is a higher-order recursion.

This kind of experience is not simply transformative for the individual, but is also transformative *for the world*. The world reveals itself as not merely symbolic but as permeated through and through with a deeper level of reality by which the symbol gains its meaning; the symbol opens up to its source. This experience can be described as one of meeting a higher being. Thus the meditation on compassion can lead one to what becomes an experience of, for example, the Buddhist deity of compassion Avalokitasvara (Guānyīn), whose name means “one who observes the cries of the world.”

It should be clear that at this level the question of whether one is experiencing some purely subjective content or an objective aspect of the world becomes nonsensical; the *type* of question doesn't apply—the difference between subject and object at this level is both illusory, valid, and neither illusory nor valid. Whereas the logic of the circle is more straightforwardly paradoxical, the logic of the strange attractor is paradoxical at a different level, yet just as the paradox of circular logic does not mean that it must be abandoned or reduced to linear-logic, neither should we abandon the higher-order paradox of strange-attractor logic or try to reduce it to a lower form so that we can better understand it (the very attempt would destroy it).

If this sounds strange, it is a prescription that has proved to work quite splendidly for mathematicians dealing with perfectly formal logics: if the logic of positive numbers doesn't allow the subtraction of a bigger number from a smaller, this isn't a reason to call the question impossible or nonsensical, we just need to invent the logic of negative numbers. If natural numbers don't satisfy our

experience of wonder at the length of the diagonal of a square... we can just invent a new way of thinking that *does*. If it seems impossible to have a number that, when multiplied by itself, yields a negative number, we don't need to give up thinking about the problem—we need to expand what our thinking is capable of. Or if we want to find a way to multiply two non-zero numbers together to get zero... we can invent an 8-dimensional split-octonian algebra that can do it... and perhaps use it to describe how spin $\frac{1}{2}$ particles like electrons behave and predict the existence of antimatter to boot.

The point is not simply that we can think with different content, but that we can think with a different *process*; we can change *how* our thinking happens. Inventing negative numbers is not just a change in the content of how we think about numbers, but requires something more—at the very least, openness to what at first seems impossible from the perspective of the positive numbers. This is a higher-order shift, a frame-shift. It is a phenomenological change in the actual way that assumptions act to limit thinking—we can *feel* the difference in our changed thinking. Changing our first-order assumptions doesn't *only* change the first-order thoughts that follow from them, but also can change the whole activity of thinking itself, so that new *ways* of generating thoughts become available, and in ways that can be put to use, just as new inventions in mathematics can help us describe our physical world. In this respect, we can turn to the work of Eugene Gendlin, whose work focuses directly on how to generate new *ways* of thinking about thinking.

Eugene Gendlin's Process Philosophy

With respect to thinking, most of the work in epistemology has either ignored or taken for granted the distinction between first and second-orders, between the contents of thinking and the thinking process itself. Gendlin provides a notable counterexample to this trend, and his (1962/1997) book *Experiencing and the Creation of Meaning* can be viewed (although he certainly wouldn't put it this way) as an attempt to explore the recursion between levels of order in experiencing by making the functioning of the implicit in thinking explicit. That is, he takes the second-order level, the coming-into-being of thinking, as the phenomenological object of his study so as to make what implicitly functions in that process available directly for thinking in the form of first-order concepts. It is perhaps for this reason that Gendlin's work is very closely aligned with the goals and concepts that lie behind aesthetic epistemology. In fact, I would not hesitate to call Gendlin's basic philosophical work one of the most sophisticated and subtle *examples* of aesthetic epistemology in action.

Gendlin's (1998) process model gives us the language to say that what makes the second-order have the quality of being "second-order" is *how the implicit functions in it*. We can take the second-order level to be the level of implicit functioning, the "how" of the "what." This fits well with Gendlin's overall intellectual thrust, which over and over embodies attempts to reverse the tendency to decouple a process from its results. This reversed attitude runs counter to the basic "inertial" direction of thinking → thoughts prevalent today, and which has been bolstered through the Enlightenment and the rise of modern

science. Gendlin's project can be viewed as a way of recovering the process-level of experience by moving experience in the polar direction, from thoughts → thinking. In the language of this dissertation, it is a transition from first to second-order. Importantly, this polar movement—which can be called “enlivening”—is not in opposition to the inertial direction but complementary to it. The way that this complementarity avoids being a direct opposition is by recursively uniting with the inertial direction. That is, the focus on re-enlivening the process-nature of experiencing [[second-order]] explicitly changes what occurs in experience [[first-order]].

Gendlin's great contribution is his phenomenologically-oriented exploration of the structure of this kind of relation (between first and second-order levels in experiencing, although he does not use this language) and its subsequent conceptualization. By taking the process of experiencing as the object of experience, Gendlin is following the fundamental pattern θ by making the distinction of the difference between the process-level and product-level and allowing that distinction to function (to recursively apply) in further experiencing. As Gendlin shows, this *kind* of approach is a phenomenologically generative and transformative process, which is why I call it “enlivening”: it actually leads to the experience of being more alive, of touching something deeply authentic in experience.¹⁵ This is simply the signature of what occurs when the second-order level, the implicit functioning of unfolding processes, is integrated into experience rather than ignored or drowned out by the much more direct and easy-to-grasp

¹⁵ Hence the use of techniques derived from this basic philosophy in therapeutic settings, which go by the name of “focusing” (Gendlin, 1981).

first-order contents which often tend to overwhelm the subtlety of the second-order level. This parallels an indication by Steiner (1917/1987a) that “In the world things *exist* and things *become*, but only what is in the process of becoming is alive; what is already in existence is always dead. What is in existence is the corpse of what was becoming” (p.160). This principle holds not only for the realm of ontology, but also for epistemology, for our knowing. We can thus add to the previous statement the following: in the world of thinking thoughts exist and thoughts become, but only thoughts that are in the process of becoming are alive; what is already thought is dead. Thoughts are the corpses of the thinking that produced them.

The point I wish to make here is that awareness of the way the implicit functions in awareness (a recursion) can be considered a primary basis of esoteric work: i.e. awareness not of this or that fact, but of the process-level, the level of coming-into-being. Esoteric work is transformative work, and the way that it is transformative (how it is transformative) can be seen through the distinction and enaction of the fundamental pattern θ . From this perspective, transformation can be viewed as the making of a first-order distinction that reverberates into the second-order, changing the process by which the first-order distinction is made (a calibration), thus changing what is possible, newly, now that the distinction is made. Thus also, what is occurring at the second-order level reverberates into the first-order, allowing for new distinctions, new “that’s” to occur, on the basis of how the second-order level implies itself into occurring.

The effectiveness of esoteric practice, and of ritual more generally, primarily rests not upon the specific first-order content (whether a candle on the altar is blue or red), but on the second-order process (the contexts carried forward by the way the practice is accomplished). When Steiner (1922/1994) says that “‘Higher seeing’ does not make a person a ‘knower’ in the spirit any more than healthy senses make a ‘scholar’ in sense-perceptible reality” (p. 17), we can see that this is because of a distinction between simply ‘having’ the first-order facts and being able to gain those facts for oneself through a second-order process. The first-order content is less important in this context than the capacity by which the first-order content is generated through a second-order process. Engaging directly with second-order process builds *capacity*. This does not at all mean that the first-order content (the color of the candle, for example) is necessarily insignificant, only that the significance cannot be found only within the first-order level. Meditating on thoughts of hate is still meditating, but because the first-order is in recursion with the second (the fundamental pattern Θ), the particular first-order content *does* make a difference. The point is simply that *how* it makes this difference cannot be found only in the first-order level, but is a consequence of its relation to a higher-order context in which the first-order content is embedded. When the second-order process is mistaken for or reduced to a first-order level and the “what” takes precedence over the “how,” then all sorts of problems arise, including paths toward fundamentalisms of all kinds. The point of the fundamental pattern Θ is to point out how not to be fundamentalist; to open up the second-order level to awareness, to make the second-level order a first-

order content so that it can then change the second-order level, so that it can change the implying of the second-order level, and thus change, newly, the first-order level. This is just a way to parse the meaning of θ . In line with Steiner, we can say that the fundamental pattern is a tool by which thinking can awaken to its own activity so that it can directly discover its freedom. This is a spiritual freedom that occurs in the realm of thinking.

Such freedom can be equated to living thinking, in the sense that what is living always has the capacity to transform: it is not already fixed and complete, but retains an innate capability for self-change through higher-order feedback. The *kinds* of thoughts produced by living thinking likewise carry this signature of flexible resilience: they exhibit a balance between the poles of contraction and expansion. They are not so rigid and formed as to exclude any alternative (fundamentalism), nor are they so formless and vague so as to lose their meaning entirely by being too shifty. Steiner (1917/1987a) describes spiritual-scientific truths as thoughts of this type, with the warning that

Spiritual science cannot hand people something which, once assimilated, is enough for the rest of life. I have often pointed out that there exists no short summary of a world view which can be kept at hand in one's pocket. In place of ready formulas, science of the spirit provides something with which the human soul must repeatedly unite itself, which must be repeatedly inwardly assimilated and digested. External truths such as those provided by natural science we can, if we have a good memory, take in and then possess them once and for all. That is not possible with spiritual-scientific truths, the reason being that the truths of natural science are lifeless concepts. The laws of nature are dead once they have been formulated into concepts, whereas spiritual-scientific truths are living concepts; if we condemn them to lifelessness because we accept them as if they were external truths, then they provide no nourishment; then they are stones the soul cannot digest. (p. 156)

Gendlin's process philosophy provides a way to understand what Steiner means when he talks about "living concepts." Gendlin (1998) goes into great depth as he builds up his process model, starting from a basic set of distinctions and relations between the body and environment, and he does it in such a way that it can, if we wish it, bear the weight of Steiner's *living thinking*. This is because Gendlin shows how it becomes possible for thinking to attend to a space in experience that lets us address the complex, yet-to-be-conceptualized sense of the whole from which new thinking can emerge. He calls this space *the body* and the process of referring to it in this way *direct reference*. We do not need to consider "the body" to be *only* the physical body¹⁶—we can also consider it in an expanded way (more about this in the section: Feeling thinking and thinking feeling.) Direct reference "carries the whole forward, and is the having of that whole. The new 'feel' is a feeling, having, sequencing, of the whole" (Gendlin, 1998, p. 218). It is a feeling but not in the common sense: it is a feeling that is *also* a thinking; this is precisely the characteristic of Steiner's *living thinking*. This is the kind of thinking that is *aesthetic* in nature. It is imbued with feelings that are "of" the *way* a part of our experience yields forth new thinking. Gendlin's great insight for epistemology lies in his ability to conceptualize the way in which we can refer directly to the space from which a changed thinking comes. He admonishes us to recognize the implicit functioning of this space in experiencing, and shows us how we can integrate that functioning explicitly

¹⁶ When asked directly about this issue (personal conversation, May 2, 2013), Gendlin allowed the point, but does himself seem to consider the body primarily in its normal, physical-biological sense.

through the process of directly referring to how that space changes itself as we address it. This becomes the basis for the generation of new *ways* of thinking, and is a shift from focus on first-order content to second-order process.

Through the Subject/Object Dichotomy

Aesthetic epistemology seeks to move away from an absolute subject-object split—indeed it moves away from *any* absolute split. As recognized clearly by Steiner (1894/1964), it is only by an act of thinking that we gain the distinction between subject and object in experience (p. 43). We cannot *begin* with the split—it must form. The knowledge of myself as a subject—to “have” myself in my experience as a subject—is conditional upon this distinction functioning in experience; it is not primary. The consequence of the *way* this distinction is formed is therefore an important aspect of aesthetic epistemology, which asks: “How is this distinction ongoingly being made?” Rather than trying to answer this “how” question from a perspective that already includes the distinction, aesthetic epistemology seeks a phenomenological way forward, focusing on the way in which the distinction arises (many times, differently) and functions within experience, both implicitly and explicitly. Asking “how?” in this way is an invitation to make experience recursive across levels N and N+1.

Assuming the already-given world of objects and attempting to derive subjects from such a world is not a promising path to take, because it ignores the way in which the split between subjects and objects *has actually formed* (and continues to form) in experience. That is to say, it ignores the difference between levels N and N+1. Said differently, aesthetic epistemology asks us to examine the

relation between subject and object by utilizing the distinction between them at level N as an invitation to cross to level N+1: we must examine the ongoing arising and using of the distinction in thinking.

Why is this focus important? The way in which we ongoingly distinguish ourselves as subjects cannot be separated from the way in which the world, with all its various objects, likewise appears for us. It is *one* process that is responsible for allowing both subject and object to become a part of our knowing. For this reason aesthetic epistemology allows for a fundamental re-framing of the philosophical “problem of the external world” and of objectivity in general. By shifting towards a phenomenological, process-oriented perspective, aesthetic epistemology does not posit an already existing world of objects, but instead asks us to focus on the way our distinguishing lives in our relating to objects, and how our relating recursively forms the basis of our further distinguishing of objects as such. In other words, it invokes and creates a new way of participating with the experiencing from which objects emerge, one in which we discover a new response-ability for how our distinctions and objects recursively intertwine, creating and crossing a boundary between subject and object, between *I* and *Thou* (Buber, 2000).

In every experience in which includes (especially implicitly) the distinction between subject and object, we participate in a process by which an un-distinguished multiplicity (to slightly modify Gendlin’s (1998) term *unseparated multiplicity* (p. 35), and which we could also call the *śūnyatā* of Buddhism, the dynamic Chaos of the Greeks, the pleroma of Jung, or the

unmarked space of Spencer-Brown) *in its own particular way* coordinates the further making of that distinction in experience. The distinction—a process—implies changes both in its own coming-into-being and in any processes that it affects. Gendlin (1998) says that “the first-mentioned difference in our first process is itself already affected by the differences it makes” (p. 39). This seems to be a way of stating the basic recursive nature of the pattern θ , and is directly analogous in the conceptual realm to the autopoiesis of Maturana and Varela (1980) in the biological realm, where an organism “is” the further creation of the conditions sufficient for the arising of the organism.¹⁷

Aesthetic epistemology seeks to make explicit not just *that* the subject/object distinction functions in this way (so as to realize the conditions for its functioning in further distinguishing), but to bring to awareness *how* this distinguishing occurs. The esoteric insight that “how you get there is what you get” leads us to recognize that the second-order aspect of the distinction (its process-level, its implicit functioning) leaves a kind of trace that, when followed *in reverse*, becomes the basis for its very transformation.

¹⁷ Their more complete definition: “An autopoietic machine is a machine organized (defined as a unity) as a network of processes of production (transformation and destruction) of components that produces the components which: (i) through their interactions and transformations continuously regenerate and realize the network of processes (relations) that produced them; and (ii) constitute it (the machine) as a concrete unity in space in which they (the components) exist by specifying the topological domain of its realization as such a network.” (Maturana & Varela, 1980, pp. 78–79)

Reversing Thinking

Let a crude analogy illustrate this point. Imagine creating a form out of interlocking building blocks. If you wish to transform your creation, you will need to remove some blocks and add others. The specific form that you started with, however, *because of the processes that you used to build it*, explicitly limit the kinds of actions required to effect any kind of further transformation. You can only add blocks in places that already have them, and you can only take blocks away that are already there. Moreover, it is easier to add or remove blocks in some places than in others, again because the process by which the original form came into being limits the way it can transform. Instead of conceiving this situation only through the idea of limits, we can also take each limitation (each consequence of how it was put together in the first place) to be a *potential seed* for its future transformation. It is quite appropriate to say that the limits of a system are also its potentials, exactly. Limitation and potential for transformation are two sides of a single boundary, a boundary that forms in any distinction. On one side, which we can call centric, is the real form; on the other, which we can call peripheral, is the corresponding potential. Considering only a real form but not its potential, or only a potential to transform without reference to particularity and actuality, are equally incomplete views of a complex unity.

From this perspective, it would be possible to say that for every form that becomes manifest, a corresponding potential for its transformation is not. Following Gendlin, we could say that the potential is *implicit* in the further unfolding of the situation. Following Steiner, who identifies the (transformed)

thinking capacity as an activity of the spirit, (Steiner, 1894/1964, p. 122, 1883-97/1988a, p. 203), we could say also that the potential is spiritual. That is, we can describe the phenomenal domain in which we directly experience the potential for transformation of a system (this is not an abstract indication but a real experience to be had) as that of *thinking*. Specifically it is by an act of “reversed” thinking that this is accomplished.

[[This is a difficult idea. It is hard to grasp because to think it requires our thinking to make a second-order change; we cannot think the thought in the same way that we think, for example, the thought “There in front of me is a rose.” The inertial direction of thinking (from second-order process to first-order content) can only yield a corpse of the kind of living thinking I am attempting to point to here. To think the idea of “reversed thinking” is only successful through an *actual* reversal of thinking. This is another consequence and demonstration of the fundamental pattern θ , because this situation is one in which the second-order process and first-order content are found together in a tightly bound recursion; the phenomenon to which I am pointing is too delicate to be experienced by a thinking that cannot grasp the recursion between levels as a single, diverse unity.]]

Above are multiple ways of describing a pattern, a kind of Batesonian double or multiple description (Bateson, 2002), following the logic of abduction. Let us add another layer of description that will provide another angle on the same phenomenon, this time from Goethe, whose scientific method deeply influenced Steiner:

If I look at the created object, inquire into its creation, and follow this process back as far as I can, I will find a series of steps. Since these are not actually seen together before me, I must visualize them in my memory so that they form a certain ideal whole. At first I will tend to think in terms of steps, yet nature leaves no gaps, and thus, in the end, I will have to see this progression of uninterrupted activity as a whole. I can do so by dissolving the particular without destroying the impression itself. (cited in Hoffmann, 1998, p. 133).

Goethe indicates here a practical perspective on effecting the reversal of the actuality of form. It requires directing the capacity for awakened thinking (Steiner's *Imagination*) "back" along the stream of the becoming of the form in question in such a way as to allow all its particularities to become a complex whole instead of a series of connected but separate events. This unity of pattern is perhaps what Gendlin (1998) is referring to when he speaks of the unity of implying, which is always "one implying rather than that of separate processes" (p. 39). What Goethe calls the "impression" I called *potential* above. It is the structured space of Gendlin's implying. Steiner (1924-25/1998) would call it the "etheric."¹⁸ In any case it is non-physical, in exactly the way that the science of cybernetics is not a cybernetics of machines but of higher-order patterns.¹⁹

¹⁸ "The thoughts of man have their true seat in the etheric body. There, however, they are forces of real life and being. They imprint themselves upon the physical body, and as such 'imprinted thoughts' they have the shadowy character in which the everyday consciousness knows them." (Steiner, 1924-25/1998, p. 65)

¹⁹ "Cybernetics stands to the real machine—electronic, mechanical, neural, or economic—much as geometry stands to a real object in our terrestrial space. There was a time when "geometry" meant such relationships as could be demonstrated on three-dimensional objects or in two-dimensional diagrams. The forms provided by the earth—animal, vegetable, and mineral—were larger in number and richer in properties than could be provided by elementary geometry. In those days a form which was suggested by geometry but which could not be demonstrated in ordinary space was suspect or unacceptable. Ordinary space dominated geometry.

How distinction functions implicitly in experience sets up the specific, in-situ dynamic by which the tension between the distinguished and the undistinguished is both created *and potentially* resolved into a new form, through a new pattern. This potential for re-resolution requires some aspect of the situation to traverse “backward” along the path by which it initially came to be. In other words, transformation (the realization of implicit potential, considered in the sense discussed before as a consequence of its ontology and phylogeny) is effected in part by an “undoing,” by a patterned reversal of the processes that acted in the creation of the situation to be transformed (the nature of “the situation” is left purposefully ambiguous here). In alchemical terms, the precipitate must be dissolved, must be taken up into solution, in order that in this “higher” state it can be purified, and thus become the basis for a new, transformed precipitate to form.

Today the position is quite different. Geometry exists in its own right, and by its own strength. It can now treat accurately and coherently a range of forms and spaces that far exceeds anything that terrestrial space can provide. Today it is geometry that contains the terrestrial forms, and not vice versa, for the terrestrial forms are merely special cases in an all-embracing geometry.

The gain achieved by geometry’s development hardly needs to be pointed out. Geometry now acts as a framework on which all terrestrial forms can find their natural place, with the relations between the various forms readily appreciable. With this increased understanding goes a correspondingly increased power of control.

Cybernetics is similar in its relation to the actual machine. It takes as its subject-matter the domain of “all possible machines”, and is only secondarily interested if informed that some of them have not yet been made, either by Man or by Nature. What cybernetics offers is the framework on which all individual machines may be ordered, related and understood.” (Ashby, 1956, p. 2)

The terms “backwards” and “undoing” are placed in quotes above. By this I wish to indicate the following: it is not the case that the reversal I am speaking of leads to a situation that would be equivalent to one in which the forming never occurred in the first place. On the contrary, the tracing backwards is a reversal which itself happens as a forward movement, it is a further change of the situation, its transformation. Again, the distinction between first and second orders can be of service here. The overt changing of the situation that happens as a forward movement is the first-order aspect of the situation. But the *way* that this first-order change occurs is through a reversal at the *second-order* level, a reversal at the level of the implicit process.

There are three interlinked aspects that work together here. Firstly is the manifest, first-order level of the explicit situation, the “what.” This first-order level has become what it is by virtue of successive limitation. These limits are thus at the same time an exact signature of its specific potential to transform. This non-manifest potential (to be otherwise, but in specific ways) is implicit in the manifest form; this is the second aspect. The third aspect is the activity of reversal occurring at the second-order level, which serves to bridge the first two by making the potential *potent*—it actualizes the virtual potential by looping the first and second-orders together in a recursive knot. From this point, new options for manifestation are no longer merely possible, but immanently so. We can describe this kind of situation as living, as having a potential that is not “somewhere back there” but pulsing right now through the very bones of the situation, ready to burst forth newly.

This description has already moved into the aesthetic realm, but we can see the same basic principle at work in the realm of biology. Here it is called neotony, the tendency for an adult to retain the characteristics of the juvenile. The whole gestalt of the evolution of the human organism can be viewed in the light of this tendency, which we can parse as the tendency towards greater *retention of potential* through a de-actualization of form. The human organism has, from this perspective, evolved in such a way as to *remove* overt, first-order specializations such as running, climbing, or strength, in favor of more general *capacities*—capacities to *be otherwise*, to *transform*; specifically, to transform at a higher level.

Goethe, who was both a scientist and artist, saw this principle of coming-into-being as the necessary counterpart to the actual form of the become. The direction of outer science was towards greater and finer specification of form, while the direction of art served as a complementary balance by embracing a reversal of the process of coming-into-being. Steiner (who edited Goethe's scientific works), weaves it together in the following way:

He everywhere seeks not only what is given to the senses in the outer world, but also the tendency through which it has come into being. To grasp this scientifically and to give it artistic form is his mission. In its own formations, nature gets itself [quoting Goethe], “in its specific forms, into a cul-de-sac”; one must go back to what ought to have come about if the tendency could have unfolded unhindered, just as the mathematician always keeps his eye, not upon this or that particular triangle, but always upon that lawfulness which underlies every possible triangle. The point is not what nature has created but rather the principle by which nature has created it. Then this principle is to be developed in the way that accords with its own nature, and not in the way this has occurred in each particular entity of nature in accordance with thousands of chance factors. The artist has “to evolve the noble out of the common and the beautiful out of the unformed.” (Steiner, 1883-97/1988a, pp. 100–101)

This is what was behind Goethe's discovery of the archetypal plant (Urpflanze), out of which endless new plant forms could be made. In a letter to Johann Gottfried Herder, Goethe says

With this model [of the archetypal plant] and the key to it, one can then go on inventing plants forever that must follow lawfully; that means: which, even if they don't exist, still could exist, and are not, for example, the shadows and illusions of painters or poets but rather have an inner truth and necessity. (as cited in Steiner, 1883-97/1988a, p. 19)

The possibility of creating endless, new, lawful plant forms is a consequence of the way that Goethe himself accomplished the act of reversed thinking that I am attempting to describe and elicit here. His phenomenology is a training designed to loosen the inertial direction of thinking so that its reversal can be accomplished. Today our modern science is pursuing the same goal through outer technical means in its quest to regress specialized adult cells back into a pluripotent state, so that a skin cell could transform into, say, a heart cell or pancreatic cell. These induced pluripotent stem cells are an example in biology of the more general pattern under discussion here, which is not *only* biological, but also applicable to the epistemological realm, that is, the realm in which thinking takes itself as its own object (which now we see clearly as an occurring of the fundamental pattern θ).

In other words, what holds for the forms of outer nature is also true for the inner life of the human being, in our thinking. We can elicit greater health, resilience, and flexibility in the body by its neotonization, by inducing a change at the second-order level in the cells (a change of change) in a direction that works to counterbalance the forming, coming-into-being, precipitating, differentiating,

centric direction of normal growth, specifically when the forming tendency is too strong. This is the microcosmic expression of the macrocosmic pattern of human evolution as a whole, in which the adult human being retains its potential by not specializing too much in one area, but (if we wish to put it this way) specializing rather in *generalization*. The pluripotent stem cell is the specialist at *becoming* in the realm of physiology taken as a whole. The human form is the specialist at *becoming* in the realm of evolution taken as a whole.

Just as we can note how in the realm of physiology and evolution can be found situations that run in a direction “reversed” from the normal unfolding of events, so we can find a similar situation in the realm of human thinking. We have already approached it from a variety of angles above, but now we can see it in a new light. It is that pattern of patterns which I have called θ ; a pattern that connects, a metapattern.

Most of the thinking that occurs is not reversed, but serves to recreate the epistemological conditions for the continued making of the distinctions that are already operative in the thinking, usually implicitly. This epistemological situation appears at a lower-order level as biological autopoiesis, where the same metapattern of non-reversed activity—in this case, living activity—serves to recreate the conditions for the continued creation of the conditions for that same living. With respect to θ , however, I am indicating not a biological autopoiesis but an epistemological autopoiesis—a spiritual autopoiesis active in the realm of thinking, the exploration of which is the central theme of this work.

The distinctions we make in the course of normal thinking create endless divisions; we live the world of these distinctions, which are implicit in every action, every feeling, every thought. We have seen that every distinction is a limitation. We can view every distinction as a kind of wounding; a wounding of the unmarked space, of *śūnyatā*, of Chaos, of nothing. But this wounding is accompanied simultaneously by a potential for healing. The old alchemical saying is “your wound is your medicine,” which is an explicit recognition of this principle by which the first-order level of what-has-become can be transformed in accordance with its second-order patterning at the level of process. Each wound carries in the process of its occurrence the exact signature of what it needs in order to be healed. Likewise, each distinction carries in the process by which the distinction was made the exact signature of what it needs in order to be transformed.

Aesthetic Epistemology

This, then, is the goal of aesthetic epistemology: to help us deal with the wounding that our distinctions create by allowing us to trace their becoming so that we can release ourselves from the specific bondage of those distinctions—it is a way of discovering freedom through living thinking. Every idea is a potential trap, if it keeps thinking from distinguishing newly; every distinction is a tunnel that keeps us from moving in some *other* way. Aesthetic epistemology helps us recover from the tendency to recapitulate our past distinctions in new thoughts and actions by inviting us to focus on *how* our distinctions arise and are enacted. This requires more than just the application of the same kind of thinking

(thinking) that already made the very distinctions it is trying to illuminate. A new kind of thinking is required: one that is capable of building for itself a larger context in which the field of distinctions that *were not made* can still be implicitly present. This kind of thinking is of a higher order with respect to our normal thinking, in that it is specifically attuned to the processes surrounding *how* distinctions are made, rather than only to the content of those distinctions. This move towards “how” requires thinking to reverse itself. It must trace the activity of its own becoming, and follow the very trail it laid down as it became. The distinctions it makes are its signature, the crumbs left by the way thinking devours the world. By following these crumbs back towards their source, thinking loosens itself from over-attachment to its thought products, and in the process begins to build for itself new capacities. Morin (2008) identifies a similar trajectory for thinking, looking for ways to allow it to

distinguish without disjoining, to associate without identifying or reducing. This paradigm would include a dialogical and translogical principle that would integrate classical logic while taking into account its *de facto* limitations (problems of contradiction) and its *de jure* limitations (limitations of formalism). It would incorporate the principle of *Unitas Multiplex*, that escapes abstract unity whether high (holism) or low (reductionism). (p. 6)

The kind of thinking that can tolerate distinction without disjoining and association without identification is an *aesthetic* one. It is the kind of thinking that esoteric practice aims at and which transdisciplinarity facilitates. It is aesthetic in part because it is second-order, recursive, and not *only* intellectual. By involving itself with the process-level rather than only the product-level, the capacities of thinking transform in ways that make it sensitive to just those kinds of differences that make a difference to the “how” of its own activity. The

recursive nature of aesthetic thinking keeps it from mistaking the products of its activity for that activity itself, while keeping the two levels recursively unified.

Including feeling in thinking. For Steiner, this kind of shift in thinking, that I am calling a shift from a first to second-order level in recursion with the first, occurs when thinking penetrates the life of feeling and unifies its own activity with it, transforming both in the process. From a large-scale historical standpoint, the Enlightenment-era valuation of thinking above all other forms of experience led to a lack of—even a repression of—research into emotion and feeling. The objectivity, sharpness, and clarity of thinking contrasted with the subjectivity, messiness, and protean nature of feeling, making it easy to relegate to a domain of the “merely” subjective. This makes sense because the clarity sought through the methodology of science is perfectly suited to the domain of the intellect from which that methodology itself arises (another example of the recursive linkage between first and second orders). Happily this situation is showing some signs of rectification (Brun & Kuenzle, 2008), although it is only somewhat recently that explicit research into areas of human experience that are not as cleanly differentiable as thinking have been accepted more into the mainstream (Forgas, 2001), following a wider trend of re-integrating “the body” into thinking. This trend has been greatly helped, perhaps more so than from any other domain of inquiry, by that of feminist philosophy. Feminist philosophy has quite squarely breached the wall of presumed (abstract, universal, Cartesian-style) objectivity that has held sway for most of the history of epistemology (Antony, 2002). The overall trend toward a re-evaluation of the strict separation of

thinking, feeling, and willing has found support through research in cognitive science, psychology, neuroscience, and biology as well. As usual, the resulting picture becomes more complicated, messy, subtle, and sensitive than was previously assumed.

A good deal of research connecting our capacity of thinking to our *emotions* (which I distinguish from a wider domain of *feeling*) has been accomplished, although this area of study is still relatively young. Antonio Damasio (1999, 2005) in particular has given a bottom-up style account of the importance of the role of emotion, and how emotions cannot be separated from thinking. This basic picture, in which even our most abstract thinking capacity is seen as impossible without also incorporating an affective dimension, is increasingly substantiated by a variety of authors (Taylor, 2001). Likewise much work showing how the body (and our feeling experience of being embodied) is implicated in thinking processes has been explored by George Lakoff and Mark Johnson (1999), particularly with respect to language. Gene Gendlin's (1998) work, specifically his process model, which is a recursive exploration and elaboration of the phenomenology of what he calls *direct reference*—the capacity to have before oneself in awareness a Unitis Multiplex, a complex experience that is rich, living, new, and full of felt qualities as well as thoughts—goes a long way towards avoiding the old philosophical traps, and is perhaps most compatible with the aims of aesthetic epistemology.

Gendlin's implying and Bateson's mind. Gendlin develops his model from the phenomenology of what he calls a "felt sense," which takes center-stage

in the development of cognition from its simplest forms up through and including its higher-level manifestations in abstraction, language, and logic. The felt sense itself arises as a basic consequence of the way that a living system *implies*.

“Implying” is a base term from which most of Gendlin’s philosophy flows, and is used to indicate the *phenomenological* way in which a living system (generates, has) experiences. In its most basic sense, implying is non-representational, holistic, and recursive. Gendlin (1998) gives the basic example that “Hunger implies feeding and so it also implies food. It might imply the chase to get the food which may be far away. Hunger also implies digesting, defecating, scratching the ground to bury the feces, getting hungry again” (p. 7). Implying is what occurs with a whole body (not just a brain) living in a complex situation. It is thus not only intellectual, nor only based on feeling, but is a very basic way of indicating the phenomenology of a living situation without yet operating through the distinctions of thinking vs. feeling vs. willing or any other division, all of which form *later* out of the more basic capacity of implying. In the language of this dissertation, the implying is second-order with respect to thinking, feeling, and willing, which are first-order precipitates of the process of implying. The way implying occurs generates (and is) what later becomes thought, feeling, and action. One way to think about implying is that it is the phenomenological complement of Gregory Bateson’s cybernetic description of Mind.

Bateson (2002) describes mind from the outside, in a way that borrows the objective style of speaking that science has all but perfected. Thus minds are those systems which meet the following criterion:

1. *A mind is an aggregate of interacting parts or components.*
2. *The interaction between parts of mind is triggered by difference, and difference is a nonsubstantial phenomenon not located in space or time; difference is related to negentropy and entropy rather than to energy.*
3. *Mental process requires collateral energy.*
4. *Mental process requires circular (or more complex) chains of determination.*
5. *In mental process, the effects of difference are to be regarded as transforms (i.e., coded versions) of events which preceded them. The rules of such transformation must be comparatively stable (i.e., more stable than the content) but are themselves subject to transformation.*
6. *The description and classification of these processes of transformation disclose a hierarchy of logical types immanent in the phenomena. (p. 85-86)*

With this Bateson gives us an *external* criterion for a description of mind.

This is suitable if we wish to use the criteria to judge whether any given aggregate of interacting parts constitutes a mind, but doesn't do us much good at all with respect to the question of what it might be like *for the mind itself to be a mind*. It simply avoids the issue of "the hard problem" altogether; that is, it dodges the question of internality. But Bateson is a cybernetic epistemologist, so he knows that any description implies a describer. His *method* of description (the second-order level, not the individual elements he describes) does not leave much room for the describer, however.

Gendlin's *implying* attempts to fill the space of the describer (at the second-order level, not only the first). What he discovers here has important consequences for *how* we explore ideas about the meeting of thinking and feeling,

because he continually keeps pointing us experientially towards the place of the arising of the phenomenon, rather than only to its content.

Gendlin's phenomenological exploration of implying yields new concepts that flesh out the experiential space of Bateson's "rules of transformation." Examples (Gendlin, 1998) of such concepts are his different *body-ens* (body-environment links), *everything-by-everything*, *schematized by schematizing*, *occurring*, *pyramiding*, *relevanting*, and *the FLIP*, to name only a few. A separate study would be required to show the depth of compatibility between Gendlin's phenomenologically-built concepts of experiencing and Bateson's cybernetic-epistemological *mind*. In the present work I wish only to indicate that whereas Bateson's cybernetic language is appropriate for describing mind from the outside (which we have noted is like an abstract dream because there is no independent "outside"), Gendlin's work is more appropriate for describing mind from the inside, particularly in its second-order, process nature. Of course it is superficially true that this kind of description "from the inside" must be about the individual subject doing the describing. However, the stronger (solipsistic) claim that such a description *cannot* be about any mind other than that of the describer is too strong. Addressing this point is important because it will allow us to build the contexts through which we can see how one's feeling life can not only be more than merely subjective, but can become a central part of an experiencing that connects human beings with a wider reality in a way that moves beyond the subject/object dichotomy normally operative in this domain.

Traversing Jacob's ladder. To begin, we must briefly confront the still-potent leftover residue of Enlightenment-era thinking in the form of the rise of individualism. In tandem with the Enlightenment-era valuation of objective modes of description came a greater differentiation of and valuation of individual experience. This corresponded with the push in science (then: natural philosophy) to overthrow the perceived shackles of the old religious dogmas that kept science from advancing (i.e. from discovering the "truth" about "reality"). Part of this shift required that a single person's experience, if properly curated through the context of an experiment, could directly and immediately counter the whole weight of past dogmas. In other words, Enlightenment-style thinking necessitated the ability for individual experience to raise itself above the received cultural wisdom of the past. Seeing the phases of Venus or the mountains on the Moon through Galileo's telescope could thus precipitate an experience of the overthrowing of the Aristotelian paradigm upon which the Catholic Church had depended and developed for centuries. Honing of the method of empirical truth-seeking paralleled and complemented the ability to hold one's own experience *as one's own* (a second-order level). This trend reached its penultimate expression in the form of existential philosophy,²⁰ but the trend hasn't stopped there. It would be possible to say that the trend towards the separation of the individual from the whole continues in such a way that it becomes *overdeveloped*. Thus, for example, individuality itself becomes fractured and multiplied in postmodern

²⁰ For an example of a deeper view which explores the idea that the experience of individuality provides the very conditions of the possibility of understanding (and hence of knowing) objects in general, see (Haugeland, 1998).

thought, so that what once lived deeply united with a wider social and spiritual context, and then became separated out into its singular form, now becomes shattered into various disconnected, momentary sub-natures. The self, having already become atomized, is now split further into endless shards of hyperlocal, hypertemporal sub-units whose “reality” becomes so questionable as to be indistinguishable from mere appearance. As in the Copenhagen interpretation of quantum mechanics, where it is not permissible to speak of reality outside the specific instance of a single experiment, the appearance of the fractured self *becomes* the reality, which is to say that it is fruitless to seek beneath the appearance for a deeper unifying principle (unless that unifying principle is the dissolution of unifying principles). The self, like God, becomes “only” a form of narrative, lacking any extrinsic unity.

This brief historical perspective is meant to give some context for the current situation in the realms of philosophy and the cognitive sciences, where a sense that it is impossible to “get out” of the particularization of experience in any meaningful way is still prominent. In this view, my experience can only ever be of my local, embodied, momentary, partial self (or selves) in a particular physical context and social environment. Any claims to universality of experience, from this perspective, are absurd. Rather than actually *having* shared experience, for example, this sort of view would wish to re-phrase the context into one of individuals having their *own individual* experiences of shared experiences (where the second-order level operates through processes unique to the individual, even while producing first-order content of “shared experiences”). In other words, in

such a view the final analysis must always rest only on the most atomistic (and objectifiable) elements of experience, which trump the phenomenological content of the experience itself.

This view (admittedly given here only as a very partial picture of a more complex situation) runs directly counter to the thrust of esotericism, and (for very different reasons) also of second-order cybernetics. Despite utilizing an objective style of speaking (its second-order aspect), the actual content of Bateson's idea of mind (its first order aspect) can be seen as working against the atomization of experience and as a move towards a more ecological and holistic view. An esoteric perspective would embrace the possibility that individual experience is not reducible only to some local and temporary set of outer events. This is because central to almost all esoteric views is the exploration of patterned links between the whole and its parts. While this is also true of cybernetics and systems-science, esotericism includes contexts ignored by these more outer-oriented views, specifically those that would be called spiritual in nature. Indeed, it could be possible to show how the outer sciences of cybernetics, systems-sciences, and complexity-sciences have real historical roots in esoteric views (Marvell, 2007).

Modern theories of embodied and (more so) embedded and enactive consciousness provide partial stepping stones between the eliminative materialist view of mind (the most restrictive outgrowth of the Enlightenment-era trend) and more esoteric views. This shift, from mind-as-brain to mind-as-brain+body to mind-as-brain+body+environment (Clark, 2008) to mind-as-

brain+body+environment+behavior (Rockwell, 2005) is part of a larger movement, seen from an esoteric perspective, of a re-integration of consciousness with its own origins, consciously. This is a recursive second-order transformation that deals with a change in the *way* we think about consciousness and experience, not just *what* we think about them. A unifying signature of this shift is that the trajectory is one which moves from first-order considerations to process-oriented, second-order considerations. No longer is it only a question of “what is consciousness?” but *also* of “how is consciousness?” In the places where this shift is occurring, the second-order contexts for experiencing are being slowly recovered from the field of dead, objectified thoughts about thinking, even while the self-objectification of consciousness (for it is only we who can objectify our own consciousness) continues unabated elsewhere. These outer changes in philosophy and cognitive science are accompanied also by a recovery of the phenomenological realm of experience and its re-integration into wider contexts. This movement can be seen in the work, for example, of Søren Brier’s (2008a, 2008b, 2009) development of cybersemiotics, which attempts to move beyond the abstract (and dead, in the context developed above) idea of information by re-incorporating meaning and experiencing at a foundational level, rather than merely trying to come up with another way of explaining meaning and experiencing “away.”

In general, esoteric perspectives overcome the issue of the separation of the individual from the world by seeking the world *within* the individual, and correspondingly, the individual *within* the world. The “Above” is never

completely disconnected from the “Below.” Looking inwardly at the second-order level of one’s own experiencing (and specifically, how it transforms through esoteric exercises) leads one to see how the whole inner world is built out of processes which are not only not “merely” subjective, but which are directly shared by the “outer” world. Complementarily, deepening one’s experience of the outer world (through Goethean phenomenological-style observation, for example) leads one to see the same processes and modes of transformation occurring within one’s inner experience. The first-order *content* of inner and outer experience may differ dramatically, but the second-order *processes*, the *patterns of transformation*, are found to correspond. We can recontextualize Bateson’s *pattern that connects* to refer not only to the systemic principles connecting phenomena in the outer world, but to the complementary principles operating in transformations of the inner world. From an esoteric perspective, then, we have a *higher-order pattern* of patterns that connect, which unites the patterns that connect amongst outer transformations with those that connect amongst inner transformations. This is simply a way of restating the central alchemical principle, expressed in the Emerald Tablet:

That which is Below corresponds to that which is Above, and that which is Above corresponds to that which is Below, to accomplish the miracles of the One Thing. And just as all things have come from this One Thing, through the meditation of One Mind, so do all created things originate from this One Thing, through Transformation. (Hauck, 1999, p. 45)

Anthroposophy, perhaps more thoroughly than any other esoteric system (at least in the West), attempts to illuminate just these sorts of linkages between the “Above” and “Below,” placing them in a wider cosmological-evolutionary perspective. In this picture, the distinction between the individual and the world

(or between self and other, between inner and outer, between mental and physical) is taken to arise out of a larger cosmic-evolutionary perspective (Steiner, 1904/1987b, 1920/1997a), and is therefore a temporary consequence of the local human situation and not its entirety. In other words, what obtains now for human consciousness in terms of its capacities, structure, and contents, is in a state of change (and not only in one way, but many). For this reason it would be a mistake to attempt to answer questions about the nature of consciousness, mind, or thinking from a perspective that only deals with the specific form and contents available to human consciousness as it is *now*. This would be like making the mistake of teaching a young child based entirely on theories of how adults learn, or vice versa. Different conditions obtain for the child and the adult, and projecting either “backwards” or “forwards” conclusions appropriately made for one situation onto the other will at best be ineffective and at worst detrimental.

Because of the link between the Above and Below, however, it is not the case that present human consciousness is therefore incapable of seeing beyond its current limitations. This is because the whole past history pertinent to the development of the current situation is still immanent in it; a relation which we can contextualize now as obtaining by virtue of the ongoing recursion between first and second-order levels, between the *what* and *how* of the entire cosmic-evolutionary picture. The child becomes an adult, and the adult was once a child; the child is immanent in the adult, and the adult is a patterned (non-random) potential transformation of the child. Although the child transforms into an adult, aspects (particularly second-order aspects, or patterns of processes) operative in

the child remain (in a transformed way) into adulthood. These patterns can be traced and elucidated, so that within the adult of today is revealed the working of the child of the past.²¹ This is simply an example of the holistic perspective of esoteric philosophy, in which the part and whole form a unity that is both immanent and transcendent. The relation is commonly referred to as *recapitulation*, where a previous process of development is transformed and repeated at a higher level in a current process of development. The key in thinking about recapitulation is to distinguish between the first and second-order levels. While similarities at the level of content may link different developmental phases, it is the process-level that is more significant (and harder to perceive).²²

A consequence of this kind of esoteric view in which the microcosm and the macrocosm form a complex, interpenetrated unity is that subjective experience contains everything it needs to find within itself what at first (for our present situation) seems to lie ever beyond it: objective knowledge of the “outer” world. It bears repeating that this is accomplished not because the contents of

²¹ Steiner’s ideas on education (1921-22/1995b, 1919/1996c, 1922-24/1996d, 1919/1997b, 1924/1997c, 1920/2001, 1924/2004b, 1922/2004c, 1923/2004a) draw very much from these kinds of holistic-developmental links that connect local processes occurring in a child now to those occurring macrocosmically in the past or as future potentials. Waldorf education, which grew out of Steiner’s indications, is the largest independent alternative education movement in the world.

²² Ernst Haeckel’s biogenetic law (“ontogeny recapitulates phylogeny”; one of the most famous examples of recapitulation) is largely discredited now in the realm of biology, but this is because the focus has been on the first-order similarities (such as the formation of pharyngeal grooves in the human embryo mirroring fish gills). A better path would be to examine the way that patterns of processes transform. From an esoteric perspective, it is at the second-order level that the “signature” operates; first-order similarities are not enough, and may even be misleading.

inner experience are the same as the contents of the outer world, but because the second-order patterns of transformation unite the inner and outer phenomena at a higher level. Experiencing the *way* one changes inwardly yields *direct* insight into places in the outer world where the same second-order process occurs. These are united *at the process level*. In this way human experience can universalize itself: it can find itself in the universal, and the universal in itself. This would be equivalent, using Steiner's language, of learning to perceive in the spiritual world, using spiritual organs of perception developed for the purpose. In this way also meaning (thought only to be personal and subjective in nature) connects with the world of objects. It should be clear that what is meant by "the world of objects" is not an independently existing material world, but one in which objects are mutually constituted through the activity of their observation (another recursive link between levels of order). Or as philosopher John Haugeland (1998) expresses, "meaning may be as much a corporeal and worldly phenomenon as it is 'mental'" (p. 5), leading to the view that "the constituted objective world and the free constituting subject are intelligible only as two sides of one coin" (p. 6). A similar point is developed from a very different angle by Oxford philosopher John Foster (2000), who defends a view of idealism as the only viable option after having first assumed and then found wanting the two major realist positions of strong direct realism and broad representative theory. He states that

By introducing this kind of ontological link, then, between the occurrences of sense-qualia and the relevant physical item, idealism avoids the problem of perception that arises in the framework of realism. It shows how the subject's awareness does not need to reach beyond what occurs in his own mind to make contact with things in the physical world. (pp. 256-257)

The ontological link Foster refers to here is one that exemplifies the recursion between first and second-orders in perception. The link is formed because the very occurrence of some quale is itself an *instance* of the second-order process which constitutes it. We could say that *how* perception happens *is* what is perceived. An esoteric perspective would agree with this, and further illuminate the relation by seeking just those *specific* ways in which the process-level coming-into-being connects with what-has-become for it. That is, it utilizes the distinction of and recursion between first and second-order levels as a central research protocol.

This same essential protocol can be seen as (non-esoterically) at work in revising, for example, theories of perception and consciousness so as to include action and behavior as a key constituent and organizing principle, for example in James Gibson's (1986) idea of perception as information for action rather than passive documentation for representation of an external world, or Alva Noë's (2004) idea of perception as a kind of skillful activity of the body as a whole that must be enacted. Gendlin's (1998) process model works similarly to include the *way* the body implicates itself not only in perception but even into abstract thinking and ultimately in what he calls direct reference.

In all these cases a uniting feature is the dissolution or reinterpretation of the division between inner and outer, mind and body, or subject and object in favor of a more holistic view in which human experiencing is intimately united with the world itself (however it may be conceived). Whereas many of the modern philosophical and scientific positions seek to achieve a similar unity

through various forms of *naturalization*, esoteric views take a wider perspective in which the claims of naturalist views are taken to be only a partial selection from a playing field that includes also cosmic-evolutionary and non-physical contexts. Naturalist views, from this perspective, are (for the most part) valid within the confines of the principles that limit their domain of inquiry (usually to the physical world only), but which operate from a vastly oversimplified metaphysical position. Esoteric perspectives are thus not (from their own perspective) directly counter to scientific perspectives, but can be considered (although not without modification) to rather be an expansion of them. Or conversely, and more in line with the historical picture of their evolution, scientific perspectives can be seen as an outgrowth, specialization, and limitation of the esoteric. With the basic situation laid out in this way, we can now proceed to address specifically the role of feeling in a new way.

Feeling thinking and thinking feeling. This basic position is essential to esoteric perspectives: the human being is multi-dimensional. Our evolutionary history (cosmic, spiritual, and material) has produced in us different capacities through which we live and which allow us to be sensitive to ourselves and our surroundings. Making the distinction between thinking, feeling, and willing provides one way of parsing differences in our experiential capacities (a division which goes back at least to Plato and Aristotle). (With the recursive link between levels of order in mind, we must also recognize that this parsing also plays a part in the generation of those very capacities as well, remembering Varela and Maturana's "phenomenal domains".) While it is useful to make the distinction

between these three modes of experiencing, they are not separate, but are in complex relation to each other. Steiner, who utilized the distinction between these three modes of experiencing throughout his work, did so with the explicit understanding that these capacities are completely intertwined:

For a cruder description it is permissible to say: Thinking, Feeling, and Willing live in the soul of man. For greater refinement we must add: Thinking always contains a substratum of Feeling and Willing; Feeling a substratum of Thinking and Willing; Willing a substratum of Thinking and Feeling. In the life of thought, however, Thinking predominates; in the life of feeling, Feeling predominates; and in the life of will, Willing predominates over the other contents of the soul. (Steiner, 1924-25/1998, p. 64)

In most esoteric systems the differing capacities underlying (and restricting) the possibilities for experiencing are intimately related to ontological differences, for example between the material body and various “subtle” bodies.²³ This is also true in anthroposophy, where a distinction is made between nine different aspects of the total human being (see Table 4, right column).

²³ The concept of “body” is so closely tied to its material connotations that it is easy to misunderstand (through over-reification). It is perhaps better to think of a “body” as a *mode* of patterning, a *type* of patterned activity, which *can* be material in nature, but which can also be “subtle.” What makes a body is the patterned way in which it becomes. A physical body is a patterned way in which material substances come together; an etheric body is a patterned way in which growth and decay happens, an astral body is a patterned way in which sensing and feeling happens, and so forth. This is an attempt to recast the idea of “a body” in a more process-oriented way.

Table 4

Complementary Ways of Seeing the Total Human Being

3-fold	4-fold	7-fold	9-fold
Spirit	Developing/Future aspects	Spirit Body	Spirit Body
		Life Spirit	Life Spirit
		Spirit Self	Spirit Self
Soul	“I” (Spirit-filled Consciousness Soul)	“I” (Spirit-filled Consciousness Soul)	Spiritual or Consciousness Soul
		Astral Body	Intellectual or Heart-Mind Soul
Body	Astral Body	Astral Body (Sentient-Soul Body)	Sentient Soul
	Etheric Body	Etheric Body	Soul Body
	Physical Body	Physical Body	Etheric Body
			Physical Body

Different ways of parsing the total human being in anthroposophy. Cf. Chapter 1 of Steiner’s (1922/1994) *Theosophy*.

These nine ontological aspects can be simplified to seven or even to four: the physical, etheric (or life), astral (or soul), and ego (or spirit) bodies (Steiner, 1922/1994). This diversity of ways of viewing the human being may seem unusual, but it is an example of how Steiner avoids dogmatic or rigid ontological forms. His ontology is flexible, in precisely the same way that different first order content can flexibly exemplify a unified second-order activity. The second-order activity is multiply realizable in terms of its first-order expression. From an esoteric perspective, this is a description of the nature of archetypes.

With respect to the ontology of the various bodies identified in anthroposophy, it is explicit that no absolute, harsh divisions exist between them. Rather, they interpenetrate, merge, or decouple in various complex ways. The capacity for feeling, in anthroposophy, is closely related to the astral (literally “star”) body. This is the body that organizes and makes possible the experience of sensation, and is closely linked to the development of the animal kingdom, as it

is what distinguishes in a most basic way between the category of plants (which don't have an astral body²⁴) and animals (which do). It allows for an inward separation in experience between "my" being and "the world," in the sense that it is the creation of an inward space in which experience can occur that is no longer simply a continuation of outer world-processes, but rather of transforms of those processes at a higher level. Whereas plants do not have an inward representation of their world, animals do (this is of course bound up with the appearance of nervous systems in the animal kingdom). A plant is more directly connected to its environment, being distinct from it only by virtue of the particular patterning of life processes (which we label as different species) that transform it (for example through photosynthesis, or nitrogen fixation). A plant can be thought of as a kind of expression of the environment in which it lives, through the particular form (patterning activity) of its species. In an animal, the life processes turn in on themselves, providing multiple layers of feedback specific to the individual organism. As life processes complexify through greater levels of self-involvement, organs (patterns of activity) arise that monitor the fluctuations in the

²⁴ The situation in anthroposophy is even more complex than indicated here. Steiner makes an interesting distinction that we today can see as very analogous to the physical idea of the relationship between a field and its particle, which can be considered a localized excitation of its associated energetic field (as the Higgs particle is a localized excitation of the Higgs field, for example). An astral body is build out of activities occurring in the astral *realm*. For Steiner, animals have a localized astral body that is associated directly with the physical form of the animal. Plants, however, do not have an astral body so closely associated with their physical aspect. This does not mean, however, that there is no astral activity associated with plants. For Steiner, the plant's astral component manifests only to supersensible vision capable of experiencing the astral realm directly. In such a case the astral activity associated with plants is experienced as taking place almost entirely in the spiritual world, and not in or even only immediately around the plant's physical forms.

life processes and help provide calibrative adjustments that can help keep the organism within livable limits (autopoiesis). These organs form the basis of sensation, and allow an organism to interact in new and higher-level ways with its environment and itself. The astral body is comprised of those processes that both limit and make use of the life processes of the etheric body. In a way, the etheric body can be understood as a kind of food for the astral body, which digests it in order to transform the life processes into sensory processes (and thus sensation itself).

The astral body allows for the basic polarity of desire/seeking/pleasure (sympathy) and disinclination/avoidance/pain (antipathy), all of which are “for” or “had” by an individual organism. The astral body is thus an important vehicle for the experience of emotions, but also of more subtle and complex feelings of all types. Moreover, the astral body is linked to the etheric body, and the etheric body is linked to the physical body. While most sensations are concerned with what is occurring in the physical and etheric bodies, in the human being the astral body also connects to the spiritual center of the individual, the “I-being”—that part of ourselves of which only we can say “I,” and which Steiner connects with the capacity to think. In this way, the astral body can become a vehicle not only for the inner experiencing of processes occurring in the physical and etheric bodies, but also in thinking.

Steiner recognizes that the physical organism, particularly the brain, makes a difference to one’s thinking capacity: “Only an appropriately constructed brain can serve the purpose of thinking. The whole human body is built up in such

a way that the brain, the organ of the spirit, is its crowning glory” (Steiner, 1922/1994, p. 31). However, he is careful not to say that thinking *is* the functioning of the brain. Rather, for Steiner thinking is an activity of the spirit, which utilizes (*and develops*) the physical organism in order to realize itself. The way it does this involves also the astral and etheric bodies. Thinking is an activity of the *whole* being, and cannot be located exclusively in any one part, but rather depends on the specific activities and relations between all the bodies that comprise the being in question. Different *kinds* of thinking are therefore made possible through different ways in which the various members of the organism relate. In the language of Maturana, these relations could be analyzed in accordance with the principle of structural coupling—for example between the etheric and astral bodies or between the physical and etheric bodies, each of which forms a kind of environment for the evolution of the other. Extending the language of Gendlin to apply to this situation, these various relations form the basis of the way that the body (considered as a whole, i.e. including its non-physical aspects) can imply itself forward, in a changed way. In both models, the differences in the relations between the parts of the total organism and its environment(s) lead to the possibilities of new capacities for sensation and action.

Making these distinctions allows for the possibility of addressing how thinking shows up differently in different organisms in a multifaceted way. For example, it would be possible to apply Goethean-phenomenological observation to the processes underlying thinking in a human being on the one hand and a horse or a snail or an ecosystem on the other, as a way of entering more directly

into the process-oriented differences between them. Gendlin's (1998) model leads up to his stages VII²⁵ (language and the universalization of concepts) and VIII (direct reference), and using his model can help us see in another way the process-oriented differences, this time by virtue of leading us through a deeper engagement with the way our own thinking forms through our own bodies (so that we can understand the ground from which we make assessments about other beings).

For Steiner, an important step occurs when the activity of sensation is not directed downward²⁶ towards the activities of the etheric and physical bodies, but rather is placed in service of the activity of thinking, i.e. in service to the spirit. This is accomplished by working with various esoteric and meditative exercises (Steiner, 1918/1947), but also to some extent through the simple act of living and the opportunities and challenges life presents. When the astral body is taken hold of by the "I" either through explicit training or through the opportunities of life, the astral body slowly begins to transform. Steiner speaks of the spiritually transformed part of the astral body as the *spirit self*:

Within the "I," the spirit is alive and active. The spirit streams into the "I," taking it as its "garment" just as the "I" itself lives in the body and the soul [the astral body]. The spirit shapes the "I" from the inside out and the mineral world shapes it from the outside in. We will call the spirit that shapes an "I," that lives as an "I," the spirit self, since it appears as the human "I" or "self." ... The spirit self is a revelation of the spiritual world within the "I," just as a sense perception, coming from the other side, is a

²⁵ The numbering scheme (i.e. VIII) actually refers to the chapters in which Gendlin develops the concepts, so it is somewhat misleading to refer to them as stages.)

²⁶ "Just as our bodily nature works from below upwards to set limits on the soul, spirituality works from above downwards to expand it" (Steiner, 1922/1994, p. 46).

revelation of the physical world within the “I.” ... Just as we call the revelation of physical things “sensation,” we will call the revelation of spiritual things “intuition.” (Steiner, 1922/1994, p. 51)

As the “I” continues to develop itself through the lower bodies, they each transform: the etheric body into *Life Spirit* and the physical body into a *Spirit Body* (see Table 5). However, this picture of transformation is very long-term in the cosmological sense; just as children develop different capacities at different phases of existence in a microcosmic sense, so too humanity as a whole develops its capacities in concert with the particularities of its macrocosmic situation, which Steiner (1904/1987b, 1920/1997a) takes great care in elaborating.

Table 5

The Seven-fold Human Being

7-fold	
Spirit Body (Transformed Physical Body)	
Life Spirit (Transformed Etheric Body)	
Spirit Self (Transformed Astral Body)	
“I” (Spirit-filled Consciousness Soul)	
Astral Body	
Etheric Body	
Physical Body	

The seven-fold human being. The higher members are transformations of the lower through the activity of the “I.”

To distill the complex cosmology that Steiner presents for the current context, it is enough to indicate that he views humanity as being in a position where its leading developmental edge is oriented around the way in which the “I,” through its own efforts, penetrates into the astral body in order to transform it. Said another way, Steiner sees the task of developing humanity today as linked to the way in which we deal with *sensation* and *feelings*. The Goethean-style

phenomenology advocated in anthroposophical circles²⁷ is specifically aimed at this meeting place between the “I” and the astral body. The goal is to transform our thinking through a different *kind* of involvement with our sensation and feeling lives.

This can be said yet another way. Inasmuch as human beings are animals, the content of our sensations and feelings has as its primary source the living body (the physical, etheric, and astral, but not yet the “I”). Our sensations are directed at the way our bodies change in response to changes in our immediate external environment (which is constructed for us in this very process of sensing). In other words all our sensation is also sensation of our own living processes in action. To see a table requires a linking (a structural coupling) between patterned changes in our sensation with the “Reality” of the table. “Reality” is in quotes because I want to avoid the naïve-realist perspective that the table is somehow “out there” in a purely independent way from our interaction with it. Rather, it is better to consider the reality of the table precisely by virtue of the specific way in which our sensation encounters a kind of *resistance*, following Nicolescu’s (2008b) vision of Reality as “that which resists our experiences, representations, descriptions, images, or even mathematical formulations” (p. 4). *Whatever* provides this resistance is “real,” and the *way* it resists our interaction with it yields potential insight not only into our own sensation, experiencing, representing, and living, but also into “Reality.”

²⁷ The courses offered by Dennis Klocek (<http://www.dennisklocek.com>) are particularly useful with respect to incorporating these insights into every-day life.

While most sensations put us in the context of a “Reality” that becomes external for us, our feelings put us in the inward context of the “Reality” of the circularity of our own living bodies. As Laird (2007) states, our “feelings seem to be different kinds of things from behaviors and bodily responses. Feelings are information, or knowledge, about just those behaviors and responses” (p. viii). In other words, feelings (which occur through the vehicle of the astral body) are of a higher order with respect to bodily processes (the etheric and physical bodies).

All of this applies to animals—but the human being is not only an animal. We are also something (much) more. For Steiner, this something more is first found in the capacity to have an individual experience of one’s own “I,” an experience that is phenomenologically quite distinct from other types of sensations or feelings. While this experience is rooted in the lower bodies (physical, etheric, and astral) and could not develop without them, it does not supervene upon them. Rather, as a spiritual monism, the situation is the reverse for Steiner: the physical, etheric, and astral bodies in general are the consequences of a wider, multivalent spiritual ontology. Matter itself is a form of spirit (hence the unity between them). While in the case of the human being we *need* the physical, etheric, and astral bodies in order to gain the capacity to say “I” of ourselves, it is not the case that the lower bodies *constitute* the “I” experience. The “I” experience cannot be reduced to the configuration of the lower bodies. It is perhaps more fruitful to think of the relations between the various bodies with the help of the pattern 9: they are in a recursive, co-generative relationship across levels. The seeds of the higher-order become the fruits of the lower, but those

fruits draw the higher order through new changes that otherwise would not have occurred (i.e., history exists, and it matters). Moreover, rather than conceiving of the “I” as some kind of ontological object, it is better to consider it an ontological-epistemological *event* or *process-event*. The “I” is the participatory event of its own coming-into-being through recursive distinction of itself. In the “I” is the experience of the direct union of the “I’s” epistemological knowing of itself with its ontological becoming of itself. The “I” is that place in experience where knowing and being are directly united: the epistemological content of the experience is simultaneously the realization of the “I’s” actuality, and the ontological actuality of the “I” is nothing other than the knowing of this fact.

Of consequence for the current context is that the “I” provides a kind of link through which the spiritual world comes to fruition in the lower bodies—by virtue of the way in which the same process in experience that becomes the “I” can be also manifested through the “I” in the context of the other bodies. Macrohistorically, the awakening of the “I” to itself is an accomplished fact, witnessed whenever a human being actually gains the wakeful experience of their own individuality as such (a feat far less common than our everyday use of the word “I” would suggest). Steiner explains how the possibility for this “I-experience” is rooted in a larger cosmic constellation of events, such that it is generally available to human beings today. The current situation, therefore, is one in which the “I” can now strengthen itself further by starting to work its way into the astral body, bringing with it the light of the spiritual world that accompanies the “I” experience, and which radiates through the astral body, transforming it.

More directly stated, this is a process by which we bring the kind of self-aware (recursive) wakefulness of our “I” experience into the duller, more dreamlike realm of our feelings and sensations.

Rather than having the content of our feeling lives be determined primarily through the activity of the physical and etheric bodies (as in the case of animals), it comes under the influence of the “I,” whereby we gain a kind of wakeful recognition not only of its content, but also of its manner of coming-into-being. That is, the influence of the “I” on the astral body is largely to bring a second-order awareness to the flow of its first-order content. As the “I” brings itself to bear on our feelings and sensations, it is not simply that we gain a new awareness of those feelings and sensations, but that, because of the fundamental pattern θ , the very content of those feelings and sensations changes. This is due to the recursive feedback between awareness of the content of feelings and sensations on the one hand, and awareness of the *way* in which we have the content of our feelings and sensations on the other. This is why the work of Eugene Gendlin is so compatible with Steiner’s indications in this realm—it exemplifies the process by which we can gain this second-level awareness of the coming-into-being of our feelings and sensations.

The transformation of our feelings and sensations by the strengthened activity of the “I” does not have consequences only in for astral body. Also affected is our ability to think. Or rather—more accurately—the strengthening of the “I” *is* a transformation of our thinking capacity, and it is indeed the way in which our thinking activity works into the astral (and lower) bodies that

determines the kinds of transformations that occur there. Part of what makes for a transformed thinking capacity is the ability of the “I” to ennoble the astral body and to use the newly extended capacity for feeling and sensation gained there to reflect back on the thinking process itself. In other words, thinking transforms when the “I’s” own thinking capacity is directed towards transforming our feeling and sensory lives, so that the changes engendered in our feeling and sensory capacities can be recursively applied not to the *content* of our thinking, but to its *process*. All of this is just an attempt at describing the way the relation θ applies between the “I” and astral bodies. Or as Steiner (1922/1994) indicates: “Our loftiest *feelings* [emphasis added] are not the ones that happen by themselves, but the ones achieved through strenuous and energetic *thinking* [emphasis added]” (p.32).

In other words, our feelings do not only allow for knowledge about our bodily responses and behaviors, but also, through engagement with a transformative process that incorporates the fundamental activity of the pattern θ , we gain knowledge about the second-order level of our thinking process itself, of *how* we are thinking. A transformed feeling life allows one’s thoughts to yield not only their first-order content, but can also include the *feeling* of the thinking itself, the feeling of the way it occurs. This feeling constitutes a kind of knowledge, but it is a process-based knowledge, a knowledge of *how*, not *what*.

This kind of transformation of the sense and feeling-life (and thus also of thinking) is another way of describing what Steiner calls “Imagination.” This is a capacity by which thinking becomes a kind of *feeling-thinking*, or *living thinking*,

which has already been contrasted with “thoughting.” One way to describe aesthetic epistemology is to say that it is the application of the Imaginative faculty to the process of thinking, such that our thinking becomes integrated with the dynamic, living flow of otherwise hidden or unmanifest “Realities” that are completely opaque to “normal” thinking. Steiner calls the hidden “Realities” *spiritual*, but we can simply think of them as new ways in which our strengthened capacities of an integrated thinking and feeling life are *resisted*. In this sense, spiritual research becomes a way of describing the resistance encountered when we apply our faculties developed in this manner to a particular area or domain.

Summing Up

Aesthetic epistemology concerns itself with the *feeling* of thinking, with the second-order qualities of the thinking process, with the way thinking occurs and the kinds of contexts which allow it to occur *differently*. It is a synthetic framework that seeks to provide a language for distinctions and processes which underlie an actual transformation of thinking so that it becomes more than mere “thoughting.” Anthroposophy provides a very useful context for exploring, developing, and utilizing the distinctions upon which an aesthetic epistemology relies. Both its conceptual distinctions and its practical suggestions (its first and second-order aspects) serve to engender not only the possibility for understanding our thinking newly, but also invite the direct phenomenological enactment of that understanding (its first- and second-order aspects are in a recursive relationship). Gendlin’s work, which yields a re-enlivening of thinking through a recovery of its phenomenological complexity, adds a non-esoteric way of addressing the same

basic foundations of an aesthetic epistemology. Cybernetic epistemology, with its emphasis on the functional role of circularity and the importance of distinction, marks conceptual building blocks that serve not only as the foundation for further thoughts about thinking, but also play a second-order role in changing the very process of how that thinking occurs. Taken together, the way these three quite distinct realms overlap reveals a new playing field for how thinking can take itself as its own object.

Aesthetic epistemology is aesthetic because it depends upon the ability to *feel* how thinking occurs. It is not enough to *think* about thinking. Aesthetic epistemology thus not only lays a conceptual groundwork for how to understand a thinking that is transformed through integration with the feeling life, but also serves as an invitation to use those concepts in the actual transformation of the experience of thinking.

Epistemology, as it has been approached in academia, is almost entirely “flat”—it does not incorporate the distinction of and recursion between levels of order, but stays at the level of differences in content (even when it is discussing process-differences). Taking an esoteric perspective on epistemology reveals the need to add depth to the way that we approach it, so that we do not divorce the higher-order processes by which our thinking about epistemology actually occurs from the content of our thoughts about epistemology. Epistemology needs to become recursive, and when it does the possibility of it becoming *aesthetic* arises. The aesthetic element of epistemology rides on the back of its recursivity; it is through the interplay between levels of order that an aesthetic epistemology can

be revealed. Hence, no matter how many words are used to describe an aesthetic epistemology, something more is required for its realization. It must be enacted to exist.

As an example, Gendlin's work can be seen as both a second-order enacting of aesthetic epistemological principles and as a field of first-order content that results from the exploring of that second-order space with respect to fundamental concepts such as "the body," "meaning," and "experience." Gendlin's process model, and more importantly the *way* he uses language to present his model, and the way his model is a recursive exploration of the very ability to create such a model,²⁸ exemplify both a "what" and "how" of aesthetic epistemology. In order to understand Gendlin, we cannot simply think the content of the thoughts he presents; we must, as it were, dwell with Gendlin's thinking process. We must make a change in the manner of our own thinking so that it becomes commensurate with the contexts that call forth the specific thoughts that he presents—we must let the thoughts be *evocative*. The same is true of much of Steiner's writings; understanding them requires a heightened engagement on the

²⁸ Gendlin has verified to me (personal conversation, May 16, 2013) that, while his work *A Process Model* is developed explicitly in a "forward" direction, such that higher-order concepts are built up from the lower, this was simply a conscious choice that served the purpose of making his work more acceptable, and that indeed the concepts were actually developed in the *reverse* direction; that is, out of the actual phenomenological experiencing of what ends up conceptualized in the book as the highest-order concept, *direct referencing*. From the perspective of aesthetic epistemology we can note that the concepts in *A Process Model* thus arose out of—*as*—the recursive enactment of the very process in which it culminates—the book is a description of the coming-into-being of its own content. Gendlin's work therefore stands as an example of aesthetic epistemology—it establishes and recursively crosses a boundary between first and second-orders, between content and process, in an *act of aesthetic knowing*. Or as Gendlin (1998) puts it: "Our scheme does what our scheme is about" (p. 209).

part of the reader, such that one's own thinking becomes versatile and fluid enough to fill the complex shapes formed by the corpses of the explicit concepts he presents. This process serves to re-enliven those very words so that they take on new possibilities and meanings that are directly available to experience. In other words, reading Gendlin or Steiner is a kind of aesthetic epistemological *training*.

By recognizing the second-order level at work within the creation of thought content, we can experience how thought content itself flows forth not out of an a priori logical necessity but out of the *way* in which our thinking process is engaged with its own coming-into-being as content. Our thoughts are a precipitate continually condensing out of an ongoing process of thinking. The thinking process can take different forms—there is no one monolithic thinking, but rather endless varieties of how it can occur. Aesthetic epistemology alerts us to this while at the same time attempting to give a context for how recalibrations of thinking are recursively united with the changed thought-content they produce.

The result of engaging with aesthetic epistemology, in part, is the gaining of a more subtle, complex, diverse, and rich tableau of experiences oriented to the sensitive recursive boundary between first- and second-orders. Just as a painter who suddenly has access to a new primary color gains not only that single color but countless new ones by admixture with existing colors—and thus also the possibility of creating more complex, subtle, and dynamic paintings—so too aesthetic epistemological practices generate new qualities in the experience of thinking, leading to a thinking capacity that is imbued with feelings that

recursively unite the content of thinking with the process of its arising. This is like adding a new sensory capacity that is sensitive to the way in which thinking occurs. Such a capacity newly relates to *any other thought content*, and serves as an expanded experiential basis from which to engage with that content.

Many problems faced in modern society and by the world as a whole are exacerbated by a lack of recursive linking between the contexts that generate (and re-generate) the conditions for the existence of the problem and the actual specific problem itself. Aesthetic epistemology thus seeks to understand and embody the difference between and recursion between levels of order, following the basic insights from the domains that serve as its foundation:

- Draw a distinction, know a world. (Keeney/cybernetic epistemology)
- How we look is what we see. (Goethe/Goethean phenomenology)
- How we get there is what we get. (Klocek/Anthroposophy)
- We can't solve a problem from the level at which it was created. (Einstein/science)
- When we look for something in a situation, the scene we experience is altered by our looking, and what we then see affects in turn how we further seek. (Gendlin/process philosophy)

The wisdom of aesthetic epistemology is found in the way it explores and utilizes this linking across levels through a thinking capacity that is transformed through its integration with an ennobled feeling life.

References

- American University of Masters Conference. (1973, March 19). *Transcript of session one*. Retrieved from <http://www.lawsofform.org/aum/session1.html>
- Antony, L. M. (2002). Embodiment and epistemology. In *The Oxford handbook of epistemology* (pp. 463–478). New York, NY: Oxford University Press.
- Aristotle. (2012). In R. B. Jones (Ed.), *The metaphysics*. W. D. Ross (Trans.). (Original work published in ~350 B.C.E.). Retrieved from <http://www.rbjones.com/rbjpub/www/books/xb005.html>
- Ashby, W. R. (1956). *Introduction to cybernetics*. London, UK: Chapman & Hall LTD. Retrieved from <http://pespmc1.vub.ac.be/books/IntroCyb.pdf>
- Barfield, O. (1970). In R. Steiner, *The case for anthroposophy*. London, UK: Rudolf Steiner Press. Retrieved from http://wn.rsarchive.org/Books/GA021/English/RSP1970/GA021_intro.html
- Bateson, G. (1952). *The position of humor in human communication*. Paper presented at The Macy Conferences in New York, NY.
- Bateson, G. (1972). *Steps to an ecology of mind*. New York, NY: Ballantine Books.
- Bateson, G. (1991). *Sacred unity: Further steps to an ecology of mind* (1st ed.). New York, NY: HarperOne.
- Bateson, G. (2002). *Mind and nature: A necessary unity*. Cresskill, NJ: Hampton Press.
- Bateson, G., & Bateson, M. C. (1988). *Angels fear: Towards an epistemology of the sacred*. New York, NY: Bantam.
- Brendel, E. (2007). Self-referential arguments in philosophy. *Grazer Philosophische Studien*, 74(1), 177–197.
- Brier, S. (2003). The cybersemiotic model of communication: An evolutionary view on the threshold between semiosis and informational exchange. *tripleC*, 1(1), 71–94.
- Brier, S. (2008a). A Peircean panentheist scientific mysticism. *International Journal of Transpersonal Studies*, 27, 20–45.
- Brier, S. (2008b). *Cybersemiotics: Why information is not enough*. Toronto, Canada: University of Toronto Press.
- Brier, S. (2009). Cybersemiotic pragmatism and constructivism. *Constructivist Foundations*, 5(1), 19–38.
- Broek, R. van den., & Hanegraaff, W. (Eds.). (1998). *Gnosis and hermeticism from antiquity to modern times*. Albany, NY: State University of New York Press.

- Brun, G., & Kuenzle, D. (2008). A new role for emotions in epistemology? In *Epistemology and emotions* (pp. 1–31). Burlington, VT: Ashgate Publishing Company.
- Buber, M. (2000). *I and thou*. (R. G. Smith, Trans.). New York, NY: Scribner.
- Chalmers, D. (1995). Facing up to the problem of consciousness. *Journal of Consciousness Studies*, 2(3), 200–219.
- Charlton, N. G. (2008). *Understanding Gregory Bateson: Mind, beauty, and the sacred earth* (illustrated edition.). Albany, NY: State University of New York Press.
- Chemero, A. (2011). *Radical embodied cognitive science*. Cambridge, MA: MIT Press.
- Clark, A. (2008). *Supersizing the mind: Embodiment, action, and cognitive extension*. New York, NY: Oxford University Press.
- Clark, A., & Chalmers, D. (1998). The extended mind. *Analysis*, 58(1), 7–19.
- Damasio, A. (1999). *The feeling of what happens: Body and emotion in the making of consciousness* (1st ed.). San Diego, CA: Harcourt, Inc.
- Damasio, A. (2005). *Descartes' error: Emotion, reason, and the human brain*. New York, NY: Penguin Books.
- Faivre, A. (1994). *Access to Western esotericism*. Albany, NY: State University of New York Press.
- Faivre, A. (2010). *Western esotericism: A concise history*. (C. Rhone, Trans.). Albany, NY: State University of New York Press.
- Faivre, A., & Hanegraaff, W. (Eds.). (1998). *Western esotericism and the science of religion*. Leuven, Belgium: Peeters.
- Ferrer, J. N., & Sherman, J. H. (2008). *The participatory turn: Spirituality, mysticism, religious studies*. Albany, NY: State University of New York Press.
- Fisch, R., Watzlawick, P., & Weakland, J. (1974). *Change: Principles of problem formation and problem resolution* (1st ed.). New York, NY: W. W. Norton & Company.
- Foerster, H. V. (1995). *Cybernetics of cybernetics or the control of control and the communication of communication* (2nd ed.). Minneapolis, MN: Future Systems, Inc.
- Foerster, H. V. (2002). Ethics and second-order cybernetics. In *Understanding understanding: Essays on cybernetics and cognition* (1st ed.). New York, NY: Springer-Verlag.
- Foerster, H. V. (2003). *Understanding understanding: Essays on cybernetics and cognition*. New York, NY: Springer-Verlag.
- Forgas, J. P. (2001). *Feeling and thinking: The role of affect in social cognition*. Cambridge, UK: Cambridge University Press.

- Foster, J. (2000). *The nature of perception*. New York, NY: Oxford University Press.
- Fox, D. (1985). *The heart of Buddhist wisdom: A translation of the Heart Sutra with historical introduction and commentary* (Vol. 3). Lewiston, NY: The Edwin Mellen Press.
- Gebser, J. (1985). *The ever-present origin*. Athens, Ohio: Ohio University Press (Original work published in 1949).
- Gendlin, E. (1981). *Focusing*. New York, NY: Bantam Books.
- Gendlin, E. (1989). Phenomenology as non-logical steps. *The Focusing Institute*. Retrieved from http://www.focusing.org/bios/gendlin_phen_as_nonlogical_steps.html
- Gendlin, E. (1991). Thinking beyond patterns: Body, language and situations. *The Focusing Institute*. Retrieved from http://www.focusing.org/gendlin/docs/gol_2159.html
- Gendlin, E. (1997). *Experiencing and the creation of meaning: A philosophical and psychological approach to the subjective*. Evanston, IL: Northwestern University Press (Original work published in 1962).
- Gendlin, E. (1998). A process model. *The Focusing Institute*. Retrieved from <http://www.focusing.org/process.html>
- Gendlin, E. (2004). Introduction to thinking at the edge. *The Focusing Institute*. Retrieved from <http://www.focusing.org/tae-intro.html>
- Gendlin, E. (2006). In having more than one shape, the truth is more, but it isn't a shape. *The Focusing Institute*. Retrieved from http://www.focusing.org/gendlin/docs/gol_2178.html
- Gendlin, E., & Johnson, D. (2012). Proposal for an international group for a first person science. *The Focusing Institute*. Retrieved from http://www.focusing.org/gendlin_johnson_iscience.html
- Gendlin, E., & Kleinberg-Levin, D. M. (1997). In D. M. Kleinberg-Levin (Ed.), *Language beyond postmodernism: Saying and thinking in Gendlin's philosophy*. Evanston, IL: Northwestern University Press.
- Gettier, E. (1963). Is justified true belief knowledge? *Analysis*, 23, 121–123.
- Gibson, J. J. (1986). *The Ecological approach to visual perception*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Glanville, R. (1975). *A cybernetic development of epistemology and observation, applied to objects in space and time (as seen in architecture)* (Doctoral Dissertation). Brunel University, London, UK.
- Glanville, R. (1995). In R. Glanville & G. de Zeeuw (Eds.), *Problems of values and (in)variants*. The cybernetics of value and the value of cybernetics, the art of invariance and the invariance of art, et cetera. Retrieved from

- <http://www.univie.ac.at/constructivism/papers/glanville/glanville95-value.pdf>
- Glanville, R. (2004). The purpose of second-order cybernetics. *Kybernetes*, 33(9/10), 1379.
- Glaserfeld, E. von. (2001). The radical constructivist view of science. *Foundations of Science*, 6(1-3), 31–43.
- Goethe, J. W. von. (1966). *Goethe's werke: Hamburger ausgabe* (5th ed., Vol. 12). Hamburg, Germany: Christian Wegner.
- Goethe, J. W. von. (1970). *Theory of colors*. (C. L. Eastlake, Trans.). Cambridge, MA: M.I.T. Press (Original work published in 1810).
- Goethe, J. W. von. (1995). *Scientific studies*. (D. Miller, Ed.). Princeton, NJ: Princeton University Press.
- Goethe, J. W. von. (2010). The experiment as mediator of object and subject. *In Context*, 24, 19–23.
- Graziano, M. S. A. (2013). *Consciousness and the social brain*. New York, NY: Oxford University Press.
- Hammer, O. (2001). *Claiming knowledge: Strategies of epistemology from theosophy to the new age* (Vol. 90). Boston, MA: Brill.
- Hanegraaff, W. (1999). Some remarks on the study of Western esotericism. *Esoterica*, 1, 3–19.
- Hanegraaff, W. (2006). *Dictionary of gnosis & Western esotericism*. Leiden; Boston: Brill.
- Harries-Jones, P. (1995). *A recursive vision: Ecological understanding and Gregory Bateson* (1st ed.). Toronto, Canada: University of Toronto Press.
- Hauck, D. W. (1999). *The emerald tablet: Alchemy for personal transformation*. New York, NY: Penguin/Arkana.
- Haugeland, J. (1998). *Having thought: Essays in the metaphysics of mind*. Cambridge, MA: Harvard University Press.
- Heims, S. J. (1991). *The Cybernetics Group*. Cambridge, MA: MIT Press.
- Herbst, D. (1995). In T. A. Kindermann & J. Valsiner (Eds.), *Development of person-context relations* (pp. 67–76). What happens when we make a distinction: An elementary introduction to co-genetic logic. Hillsdale, NJ: L. Erlbaum Associates.
- Heylighen, F., & Joslyn, C. (2001). In R. A. Meyers (Ed.), *Encyclopedia of Physical Science & Technology* (3rd ed., Vol. 4, pp. 155-170). Cybernetics and Second Order Cybernetics. New York, NY: Academic Press.
- Hoffmann, N. (1998). In D. Seamon & A. Zajonc (Eds.), *Goethe's Way of Science: A Phenomenology of Nature*. The unity of science and art: Goethean phenomenology as a new ecological discipline. Albany, NY: State University of New York Press.

- Hui, J., Cashman, T., & Deacon, T. (2008). In J. Hoffmeyer (Ed.), *A legacy for living systems: Gregory Bateson as precursor to biosemiotics* (Vol. 2, pp. 77-92). Bateson's method: Double description. What is it? How does it work? What do we learn? New York, NY: Springer.
- Hume, D. (1938). *An enquiry concerning human understanding*. Charleston, SC: Forgotten Books (Original work published in 1748).
- Huxley, A. (2009). *The perennial philosophy*. New York, NY: Harper Perennial Modern Classics.
- Ioannidis, J. P. A. (2005). Why most published research findings are false. *PLoS Med*, 2(8), e124. doi:10.1371/journal.pmed.0020124
- Iwersen, J. (2007). The epistemological foundations of esoteric thought and practice. *Journal of Alternative Spiritualities and New Age Studies*, 3, 3–44.
- Jonas, H. (2001). *The phenomenon of life: Toward a philosophical biology*. Evanston, IL: Northwestern University Press.
- Jung, C. G. (1933). *Modern man in search of a soul*. (W. S. Dell & C. F. Baynes, Trans.). New York, NY: Harcourt, Brace & World, Inc.
- Jung, C. G. (1961). *Memories, dreams, reflections*. (C. Winston & R. Winston, Trans.). New York, NY: Vintage Books.
- Jung, C. G. (1972). *Two essays on analytical psychology*. (G. Adler & R. F. C. Hull, Trans.). Princeton, NJ: Princeton University Press.
- Kant, I. (1988). *Kant: selections*. (L. W. Beck, Ed.). New York, NY: Macmillan Publishing Company (Original work published in 1787).
- Kant, I. (2004). *Prolegomena to any future metaphysics: With selections from the critique of pure reason* (Revised Edition.). Cambridge, UK: Cambridge University Press (Original work published in 1783).
- Kauffman, L. (1998). Virtual logic - the calculus of indications. *Cybernetics & Human Knowing*, 5(1), 63–68.
- Kauffman, L. (2001). The mathematics of Charles Sanders Peirce. *Cybernetics & Human Knowing*, 8(1-2), 79–110.
- Kauffman, L. (2002). Laws of form and form dynamics. *Cybernetics & Human Knowing*, 9(2), 49–63.
- Kauffman, L. (2005). Eigenform. *Kybernetes*, 34(1/2), 129–150.
- Kauffman, L., & Varela, F. (1980). Form dynamics. *Journal of Social and Biological Structure*, 3, 171–206.
- Kauffman, S. A. (1990). The sciences of complexity and “origins of order.” *PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association*, 299–322.
- Kauffman, S. A. (2009). Reflexivity and eigenform: The shape of process. *Constructivist Foundations*, 4(3), 121–137.

- Keeney, B. P. (1981). *Cybernetic patterns in family therapy: A Batesonian epistemology* (Doctoral Dissertation). Purdue University, Lafayette, IN.
- Keeney, B. P. (1983). *Aesthetics of change*. New York, NY: Guilford Press.
- Keeney, B. P. (2005). Confessions of a cybernetic epistemologist. *Kybernetes*, 34(3/4), 373–384.
- Klocek, D. (1998). *Seeking spirit vision*. Fair Oaks, CA: Rudolf Steiner College Press.
- Klocek, D. (2005). *The seer's handbook: A guide to higher perception*. Great Barrington, MA: Steinerbooks.
- Kuhn, T. S. (1970). *The structure of scientific revolutions* (Vol. 2). Chicago, IL: University of Chicago Press.
- Lachman, G. (2007). *Rudolf Steiner: An introduction to his life and work*. New York, NY: Tarcher.
- Ladyman, J. (2002). *Understanding philosophy of science*. New York, NY: Routledge.
- Laird, J. D. (2007). *Feelings: The perception of self*. New York, NY: Oxford University Press.
- Lakoff, G., & Johnson, M. (1999). *Philosophy in the flesh: The embodied mind and its challenge to Western thought*. New York, NY: Basic Books.
- Lindenberg, C. (2012). *Rudolf Steiner: a biography*. Great Barrington, MA: SteinerBooks.
- Maharshi, R. (1988). *The spiritual teachings of Ramana Maharshi*. Boston, MA: Shambhala.
- Marvell, L. (2007). *Transfigured light: Philosophy, science and the hermetic imaginary* (1st ed.). Palo Alto, CA: Academica Press, LLC.
- Maturana, H. R. (1978). *Cognition*. Paper presented at the Theory of autopoietic systems as a new foundation for the social sciences in Frankfurt, Germany. Retrieved from <http://www.enolagaia.com/M78bCog.html>
- Maturana, H. R. (1988a). Ontology of observing: The biological foundations of self consciousness and the physical domain of existence. Retrieved from <http://www.inteco.cl/biology/ontology/>
- Maturana, H. R. (1988b). Reality: The search for objectivity or the quest for a compelling argument. *The Irish Journal of Psychology*, 9(1), 25–82.
- Maturana, H. R. (1993). In M. Titzmann (Ed.), *Zuchen (theorie) und praxis*. Biology of the aesthetic experience. Passau, Germany: Wissenschaftsverlag Rothe.
- Maturana, H. R. (2004). The origin and conservation of self-consciousness. *Kybernetes*, 34(1/2), 54–88.
- Maturana, H. R. (2012). The transcendence of the observer. *Constructivist Foundations*, 7(3), 174–179.

- Maturana, H. R., & Poerksen, B. (2004). *From being to doing: The origins of the biology of cognition*. Heidelberg, Germany: Carl Auer International.
- Maturana, H. R., & Varela, F. (1980). *Autopoiesis and cognition: The realization of the living*. Dordrecht, Netherlands: D. Reidel Publishing Company.
- Maturana, H. R., & Varela, F. (1992). *Tree of knowledge*. Boston, MA: Shambhala.
- McDermott, R. A. (Ed.). (2009). *The new essential Steiner: An introduction to Rudolf Steiner for the 21st century*. Great Barrington, MA: Lindisfarne Books.
- Merleau-Ponty, M. (2005). *Phenomenology of perception*. (C. Smith, Trans.). New York, NY: Routledge.
- Miller, S. T. (2008). *The Elements as an Archetype of Transformation: An Exploration of Earth, Water, Air, and Fire* (Master's thesis). John F. Kennedy University, Pleasant Hill, CA.
- Miller, S. T. (2011). An esoteric guide to Spencer-Brown's Laws of Form. *Circulus: Journal for Creative Transformation*, 1(1), 105–159.
- Montuori, A. (1998). In J. Petrankar (Ed.), *Light of knowledge*. Creative inquiry: From instrumental knowing to love of knowledge. Oakland, CA: Dharma Publishing.
- Morin, E. (2008). *On complexity*. Cresskill, NJ: Hampton Press.
- Nelson, R. (2008). Antijoke. Retrieved from <http://anti-joke.com/anti-joke/popular/haikus-are-easy--but-sometimes-they-dont-make-sense--refrigerator>
- Neuman, Y. (2001). Existing as “a difference that makes a difference”: On cybernetics, semiotics, and being. *Cybernetics & Human Knowing*, 8(3), 25–34.
- Neuman, Y. (2003). Turtles all the way down: Outlines for a dynamic theory of epistemology. *Systems Research and Behavioral Science*, 20(6), 521.
- Ngram for the Word Transdisciplinarity. (2014, January). *Google books: Ngram viewer*. Retrieved from http://books.google.com/ngrams/graph?content=transdisciplinarity&year_start=1900&year_end=2008&corpus=0&smoothing=3
- Nicolescu, B. (2008a). In B. Nicolescu (Ed.), *Transdisciplinarity: Theory and practice*. In vitro and in vivo knowledge -- methodology of transdisciplinarity. Cresskill, NJ: Hampton Press.
- Nicolescu, B. (2008b). *Transdisciplinarity: Theory and practice*. Cresskill, NJ: Hampton Press.
- Nicolescu, B. (2010). Methodology of transdisciplinarity: Levels of reality, logic of the included middle and complexity. *Transdisciplinary Journal of Engineering & Science*, 1(1), 19–38.

- Nikhilananda, S. (Trans.). (1995). *The mandukya upanishad: With Gaudapada's karika and Sankara's commentary*. Calcutta, India: Advaita Ashram.
- Noë, A. (2004). *Action in perception*. Cambridge, MA: MIT Press.
- Pickering, A. (2010). *The cybernetic brain: Sketches of another future*. Chicago, IL: University Of Chicago Press.
- Plato. (2004). *Theaetetus*. (J. Sachs, Trans.). Newburyport, MA: Focus Pub./R. Pullins Co. (Original work published in ~368 B.C.E.).
- Robbins, B. D. (2006). The delicate empiricism of Goethe: Phenomenology as a rigorous science of nature. *Indo-Pacific Journal of Phenomenology*, 6, 1–13.
- Robertson, R. (2009). *Indra's net: Alchemy and chaos theory as models for transformation*. Wheaton, IL: Quest Books/Theosophical Pub. House.
- Rockwell, W. T. (2005). *Neither brain nor ghost: A nondualist alternative to the mind-brain identity theory*. Cambridge, MA: MIT Press.
- Rohen, J. W. (2007). *Functional morphology : The dynamic wholeness of the human organism* (1st ed.). Ghent, NY: Adonis Press.
- Rosch, E., Thompson, E., & Varela, F. (1992). *The embodied mind: Cognitive science and human experience*. Cambridge, MA: MIT Press.
- Rowlands, M. (2010). *The new science of the mind: From extended mind to embodied phenomenology*. Cambridge, MA: MIT Press.
- Ryle, G. (1984). *The concept of mind*. Chicago, IL: University Of Chicago Press.
- Schickler, J. (2005). *Metaphysics as Christology: An odyssey of the self from Kant and Hegel to Steiner*. Burlington, VT: Ashgate.
- Seager, W. (1999). *Theories of consciousness: An introduction and assessment*. New York, NY: Routledge.
- Shear, J., & Varela, F. (Eds.). (1999). *The view from within: First-person approaches to the study of consciousness*. Bowling Green, OH: Imprint Academic.
- Spencer-Brown, G. (1972). *Laws of form* (2nd ed.). New York, NY: The Julian Press.
- Spencer-Brown, G. (1994). *Laws of form*. Portland, OR: Cognizer Co.
- Steiner, R. (1905, March 16). Esoteric development. *Lecture VII: The great initiates*. Retrieved from <http://wn.rsarchive.org/Lectures/EsoDevel/19050316p01.html>
- Steiner, R. (1909, December 5). Metamorphoses of the soul: Paths of experience Vol. 1. *Lecture 2: The Mission of Anger*. Retrieved from <http://wn.rsarchive.org/Lectures/Metamorph1/19091205p01.html>
- Steiner, R. (1910, March 29). Macrocosm and microcosm. *Lecture nine: Organs of spiritual perception. Contemplation of the ego from twelve vantage-*

- points. The thinking of the heart.* Retrieved from <http://wn.rsarchive.org/Lectures/MacroMicro/19100329p01.html>
- Steiner, R. (1947). *Knowledge of the higher worlds and its attainment.* Hudson, NY: Anthroposophic Press (Original work published in 1918).
- Steiner, R. (1964). *The philosophy of freedom: The basis for a modern world conception* (Vol. 7). London, UK: Rudolf Steiner Press (Original work published in 1894).
- Steiner, R. (1981). *Truth and knowledge.* Blauvelt, NY: Steinerbooks (Original work published in 1892).
- Steiner, R. (1983). *The boundaries of natural science.* Spring Valley, NY: Anthroposophic Press (Original work published in 1920).
- Steiner, R. (1985). *The origins of natural science.* Spring Valley, NY: Anthroposophic Press (Original work published in 1922-23).
- Steiner, R. (1987a). *Aspects of human evolution.* Hudson, NY: Anthroposophic Press (Original work published in 1917).
- Steiner, R. (1987b). *Cosmic memory: Prehistory of earth and man.* Blauvelt, NY: Steinerbooks (Original work published in 1904).
- Steiner, R. (1988a). *Goethean science.* Spring Valley, NY: Mercury Press (Original work published in 1883-97).
- Steiner, R. (1988b). *The science of knowing: Outline of an epistemology implicit in the Goethean world view with particular reference to Schiller* (1st Mercury Press edition.). Spring Valley, NY: Mercury Press (Original work published in 1924).
- Steiner, R. (1991a). *Anthroposophy and science: Observation, experiment, mathematics.* Spring Valley, NY: Mercury Press (Original work published in 1921).
- Steiner, R. (1991b). *Human and cosmic thought.* London, UK: Rudolf Steiner Press (Original work published in 1914).
- Steiner, R. (1992). *Spiritual beings in the heavenly bodies and in the kingdoms of nature.* Hudson, NY: Anthroposophic Press (Original work published in 1912).
- Steiner, R. (1994). *Theosophy: An introduction to the spiritual processes in human life and in the cosmos.* Hudson, NY: Anthroposophic Press (Original work published in 1922).
- Steiner, R. (1995a). Sense-free perception. In *Self-Transformation* (pp. 218–240). London, UK: Rudolf Steiner Press (Original work published in 1923).
- Steiner, R. (1995b). *Waldorf education and anthroposophy I.* Hudson, NY: Anthroposophic Press (Original work published in 1921-22).
- Steiner, R. (1996a). *Anthroposophy: A fragment.* Hudson, NY: Anthroposophic Press (Original work published in 1910).

- Steiner, R. (1996b). *Riddles of the soul*. Spring Valley, NY: Mercury Press (Original work published in 1917).
- Steiner, R. (1996c). *The foundations of human experience*. Hudson, NY: Anthroposophic Press (Original work published in 1919).
- Steiner, R. (1996d). *Waldorf education and anthroposophy 2*. Hudson, NY: Anthroposophic Press (Original work published in 1922-24).
- Steiner, R. (1997a). *An outline of esoteric science*. Great Barrington, MA: Steinerbooks (Original work published in 1920).
- Steiner, R. (1997b). *Education as a force for social change*. Hudson, NY: Anthroposophic Press (Original work published in 1919).
- Steiner, R. (1997c). *The roots of education*. Hudson, NY: Anthroposophic Press (Original work published in 1924).
- Steiner, R. (1998). *Anthroposophical leading thoughts*. London, UK: Rudolf Steiner Press (Original work published in 1924-25).
- Steiner, R. (1999). *Autobiography: Chapters in the course of my life, 1861-1907*. Hudson, NY: Anthroposophic Press (Original work published in 1925).
- Steiner, R. (2000a). *Esoteric Christianity and the mission of Christian Rosenkreutz*. London, UK: Rudolf Steiner Press (Original work published in 1911-12).
- Steiner, R. (2000b). *Nature's open secret: Introductions to Goethe's scientific writings*. Spring Valley, NY: Anthroposophic Press (Original work published in 1883-97).
- Steiner, R. (2001). *The renewal of education*. Great Barrington, MA: Anthroposophic Press (Original work published in 1920).
- Steiner, R. (2004a). *A modern art of education: Lectures presented in Ilkley, Yorkshire, August 5-17, 1923*. Great Barrington, MA: Anthroposophic Press (Original work published in 1923).
- Steiner, R. (2004b). *Human values in education*. Hudson, NY: Anthroposophic Press (Original work published in 1924).
- Steiner, R. (2004c). *The spiritual ground of education*. Great Barrington, MA: Anthroposophic Press (Original work published in 1922).
- Steiner, R. (2007). *The evolution of consciousness: As revealed through initiation knowledge*. London, UK: Rudolf Steiner Press (Original work published in 1923).
- Stewart, J., Di Paolo, E., & Gapenne, O. (Eds.). (2011). *Enaction: Toward a new paradigm for cognitive science*. Cambridge, MA: MIT Press.
- Stuckrad, K. von. (2005). Western esotericism: Towards an integrative model of interpretation. *Religion*, 35, 78–97.
- Tall, D. O. (2000). Cognitive development in advanced mathematics using technology. *Mathematics Education Research Journal*, 12(3), 210–230.

- Tarnas, R. (1993). *The passion of the Western mind: Understanding the ideas that have shaped our world view*. New York, NY: Ballantine Books.
- Tarski, A. (1995). *Introduction to logic and to the methodology of deductive sciences*. New York, NY: Dover Publications.
- Tart, C. (1972). States of consciousness and state-specific sciences. *Science*. Retrieved from http://www.paradigm-sys.com/ctt_articles2.cfm?id=53
- Taylor, E. W. (2001). Transformative learning theory: A neurobiological perspective of the role of emotions and unconscious ways of knowing. *International Journal of Lifelong Education*, 20(3), 218–236. doi:10.1080/02601370110036064
- Thompson, E. (2007). *Mind in life: Biology, phenomenology, and the sciences of mind*. Cambridge, MA: Belknap Press.
- Tolkien, J. R. R. (1965). *The fellowship of the ring*. New York, NY: Ballantine Books.
- Turchin, V. (1997). *The phenomenon of science: A cybernetic approach to human evolution*. New York, NY: Columbia University Press.
- Van Eenwyk, J. R. (1997). *Archetypes & strange attractors: The chaotic world of symbols*. Toronto, Canada: Inner City Books.
- Varela, F. (1975). A calculus for self-reference. *International Journal for General Systems*, 2, 5–24.
- Varela, F. (1976). Not one, not two. *CoEvolution Quarterly*, 62–67.
- Varela, F. (1999). *Ethical know-how: Action, wisdom, and cognition* (1st ed.). Redwood City, CA: Stanford University Press.
- Versluis, A. (2002). What is esoteric? Methods in the study of Western esotericism. *Esoterica*, IV, 1–15.
- Watzlawick, P. (1978). *The Language of change: Elements of therapeutic communication* (First Printing.). New York, NY: Basic Books.
- Whitehead, A. N. (1979). *Process and reality* (2nd ed.). New York, NY: Free Press (Original work published in 1929).
- Williamson, T. (2002). *Knowledge and its limits*. New York, NY: Oxford University Press. Retrieved from <http://site.ebrary.com/id/10288516>
- Wilshire, B. W. (1990). *The moral collapse of the university: Professionalism, purity, and alienation*. Albany, NY: State University of New York Press.
- Yates, F. (1986). *The Rosicrucian enlightenment* (1st ed.). New York, NY: Routledge, (Original work published in 1972).
- Yates, F. A. (1991). *Giordano Bruno and the Hermetic tradition*. Chicago, IL: University of Chicago Press, (Original work published in 1964).
- Zajonc, A. (1987). Facts as theory: Aspects of Goethe's philosophy of science. In *Goethe and the sciences: A reappraisal* (Vol. 97, pp. 219–245). Boston, MA: D. Reidel Publishing Company.

Appendix: An Esoteric Guide to Spencer-Brown's *Laws Of Form*

This article was originally published in *Circulus: Journal for Creative Transformation* (1,1), August 2011. It is included here in its entirety, including references and footnotes.

Abstract

This essay is an exploration of the question “what reflections might result from shining an esoteric/spiritual light upon George Spencer-Brown’s book, *Laws of Form*?” It is written as an informal guide, a commentary, and a playful esoteric romp with serious detours into epistemology, ontology, second-order cybernetics, and the nature of esoteric development. It follows the text of *Laws of Form* closely from beginning to end, but brings in a diverse number of perspectives. It takes the form of six *recursions* that invite a reconsideration of *The Laws of Form* from a perspective not usually taken, but which may fruitfully add to the way in which we understand Spencer-Brown’s enigmatic and important work.

Keywords: George Spencer-Brown, Laws of Form, esoteric, spiritual, recursion, second-order, epistemology, ontology



Figure 1: Spencer-Brown’s two laws of form. The law of crossing (left) and the law of calling (right).

Recursion #1

George Spencer Brown (in his spirit, I would like to say: “Let George Spencer Brown = GSB”), a logician, engineer, and teacher, wrote a curious little book, *Laws of Form*, that has inspired countless interesting people of widely varying backgrounds. The book is not a book of mathematics, nor is it a book of logic, although if you were to read it this is likely what you’d say. It is, rather, an attempt to enact something prior to both. Indeed, GSB (1972) feels that his work actually forms (meaning both “is” and “shapes”) “the basic forms [same double-

meaning] underlying linguistic, mathematical, physical, and biological science” (p. v).

If you haven't read *Laws of Form* (LoF), I quite recommend it, and it is actually quite short. Even if you don't want to follow along with the meaty theorems and proofs, the prose and context is definitely worth chewing on. What is fascinating to me is that the work can also be read with an esoteric eye, which is to say, with a sensitivity to the form and nature of spiritual experiences. This is not at all a departure from what GSB intended: in his other works he quite openly discusses this connection; see particularly *Only Two Can Play This Game*, published under his pen name, James Keys (1972). Even in LoF he prefaces his preface with the last line of Blake's *America: A Prophecy*:

“Tho' obscur'd, this is the form of the Angelic land.”

What I would like to do in this commentary is show that within the LoF are a number of coherent relations to principles that are rightly considered esoteric: they are hidden, but very important when considering spiritual development. Of course as a whole LoF can be taken as a cosmological treatise, and in this sense could be read alongside works such as those by Ibn Arabi, Nagarjuna, Lao Tzu, or Eckhart, among many others.

Because I doubt most of the people reading this already have a copy of LoF, I'm going to keep things pretty informal: I'm going to cite passages from LoF (following the order of the text) and then add comments containing esoteric connections, including some relations to second-order cybernetics and cybernetic epistemology. Because this work is essentially a commentary on the text of LoF (rather than an essay), it is quoted very frequently, and I felt a need to set off such quotes visually. For this reason quotes from LoF **use an alternate, sans-serif font**. Needless to say, the esoteric connections I will be pointing out rely heavily upon my own experience, which is largely but not solely informed by the spiritual science of Rudolf Steiner's anthroposophy. This work is an inspired offshoot of my PhD dissertation, in which I am connecting anthroposophy to second-order cybernetics and related disciplines.

Excellent. Hopefully the context provided up to this point is sufficient for me to begin, but before I do, I want to add a warning that this journey is not for the faint of heart or the unstable in mind, and will be neither easy nor brief; but it WILL be worth it. Without further ado, let us dive in to the beginning of the LoF:

Although all forms, and thus all universes, are possible, and any particular form is mutable, it becomes evident that the laws relating such forms are the same in any universe. It is this sameness, the idea that we can find a reality which is independent of how the universe actually appears, that lends such fascination to the study

of mathematics. That mathematics, in common with other art forms, can lead us beyond ordinary existence, and can show us something of the structure in which all creation hangs together, is no new idea. (Spencer-Brown, 1972, p. v)

With this call that leads “beyond ordinary existence,” GSB sets the stage and tone of the ensuing journey; both his and ours. Of course this is precisely the same call made by esoteric thinkers: to look beyond the ordinary to deeper or higher levels of existence. Esoteric thinkers, like GSB, seek knowledge of the *patterns of manifestation* that underlie experience. For this reason mathematics can be considered an esoteric discipline, as any Pythagorean knows. The sacredness of mathematics is not just for ancient Greeks: the very modern Rudolf Steiner clearly explicates a view of mathematics as a specific kind of thinking that forms a bridge between empirical knowledge and spiritual knowledge (Steiner, 1921/1991). Mathematical thinking therefore forms an integral part of the modern esoteric path of knowledge (different than, say, a path of devotion or action). What is important is not simply the content of mathematics, but rather the activity of *mathematical thinking*; this activity is rightly conceived to be part of spiritual training (a training of the spirit to see the spirit). Spencer-Brown (1972) notes that “A mathematical text is thus not an end in itself, but a key to a world beyond the compass of ordinary description” (p. 5).

This “world beyond the compass of ordinary description” can be taken to refer to the spiritual world. As we learn elsewhere from GSB (I suggest reading the transcript of his presentation at Esalen in 1973’s American University of Masters Conference, available at <http://www.lawsofform.org/aum/index.html>), the world he is trying to describe is not formally describable. This is a problem, obviously, and it is the same problem that pretty much every mystic of every tradition has run into in one form or another. Of course I could cite the Tao Te Ching’s famous “The Tao that can be expressed is not the Tao of the Absolute. The name that can be named is not the name of the Absolute” (Wing, 1986), or reference the whole point of the koan in Zen philosophy, or perhaps note the Sufi’s Wujud (the incomparable, incommensurable nature of God, which Ibn ‘Arabi points out is “absolutely incomparable with every declaration of incomparability that delimits” (quoted in Chittick, 1989, p. 110)). Basically, say anything and you are already off the mark, as it were.

But here’s the important esoteric bit, expressed well in this quote from author John Barth’s (2001) novel *Chimera*: “The key to the treasure *is* the treasure” (p. 8, italics in original).

Strictly speaking, the Laws of Form *cannot* be written, but in attempting to write them, they can be *indicated* by the marks: what is not in the mark is indicated by the mark, although it is *also in the mark*. If you think this is a

paradox, then you are correct, but it is a *functional* paradox in that it can actually accomplish something by its existence, which is exactly why so many mystical or cosmological traditions utilize the paradox as a central form of learning and communication. This is true even of Jesus Christ, as Parker Palmer (2010) elucidates:

The promise of paradox is the promise that apparent opposites—like order and disorder—can cohere in our lives, the promise that if we replace either-or with both-and, our lives will become larger and more filled with light. It is a promise at the heart of every wisdom tradition I know, not the least the Christian faith. How else can I make sense of the statement “If you seek your life, you will lose it, but if you lose your life, you will find it”? Or “The first shall be last and the last shall be first”? Or the affirmation that Jesus Christ was fully human and fully divine? Or the notion that we know there is a God but we cannot claim to know the God that is? (p. xxix)

The point is that something *happens* when we engage with this kind of paradox. GSB, who recognized that Russell and Whitehead’s Theory of Logical Types, which explicitly excluded paradox, was in error, and that the “problem” of the paradox wasn’t actually:

Put as simply as I can make it, the resolution is as follows. All we have to show is that the self-referential paradoxes, discarded with the Theory of Types, are no worse than similar self-referential paradoxes, which are considered quite acceptable, in the ordinary theory of equations. (1972, p. x)

He goes on to say that he found a way to deal with these paradoxes by *incorporating them formally*, which required the recognition of *imaginary* values, which means that a valid argument may contain not just three classes of statement, but four: true, false, meaningless, and imaginary. The implications of this, in the fields of logic, philosophy, mathematics, and even physics, are profound. (1972, p. xi)

Indeed, as GSB will have it, the whole of Time and Space in a sense arise out of a paradox, but that’s much later. He continues by indicating that:

we have a direct awareness of mathematical form as an archetypal structure. I try in the final chapter to illustrate the nature of this awareness. In any case, questions of pure probability alone would lead us to suppose that some degree of direct awareness is present throughout mathematics. (1972, p. 20)

Rudolf Steiner would indicate that this direct awareness is spiritual in nature, and arises through a free activity of the spirit: *thinking*. In any case, such

direct awareness must be considered both *real* and *essential* to epistemology. That is to say, a science of knowing cannot discard (as Russell and Whitehead tried in their failed *Principia Mathematica*) the role of *intuitive* knowing. This is a knowing that cannot be achieved through deductive or inductive processes; it is of a completely different *type*. GSB explicitly recognizes this difference in his discussion of the distinction between a proof and a demonstration in mathematics (“American University of Masters Conference,” 1973a): a computer can do a demonstration, because it relies only upon manipulation of what is *already* known, while a proof can only arise on the basis of what is *not* already known, and which cannot be reduced to mere calculations.

It becomes apparent that if certain facts about our common experience of perception, or what we might call the inside world, can be revealed by an extended study of what we call, in contrast, the outside world, then an equally extended study of this inside world will reveal, in turn, the facts first met with in the world outside: for what we approach, in either case, from one side or the other, is the common boundary between them. (1972, p. xxi)

Put simply, this is simply a recapitulation of the central tenet of alchemy, “As Above, so Below; as Below, so Above.” Steiner clearly indicates that if you want to know yourself, you need to look into the world, and if you want to know the world, look into yourself. Know the world to know yourself; know yourself to know the world. What GSB usefully adds to this principle, which is often overlooked in esoteric circles, is that the *link* between this inner and outer takes the functional form of a *shared boundary*. It is not the case in a simple way that what is inner is outer; it’s just not very useful to say inner=outer. The point is that there *is* a boundary between inner and outer, but that this boundary is where all the interesting bits happen, because it is the domain of action by virtue of which inner and outer become so. Or more seriously, is the place upon which, and through which, one must work if one is to transform, because this is what transformation *means*: to cross the boundary (which is coincident with creating the boundary, as we will see momentarily). For anyone that has read LoF, you know that this language of “crossing” is quite deliberate; the activity of crossing changes what is crossed. More on this later.

What is encompassed, in mathematics, is a transcendence from a given state of vision to a new, and hitherto unapparent, vision beyond it. When the present existence has ceased to make sense, it can still come to sense again through the realization of its form. (1972, p. xxiii)

Mathematics, now understood also as a spiritual activity, can *change the way we see*; it can help us transform *spiritually*. GSB is implicitly indicating

something that is found in many esoteric traditions: that there are many ways of viewing the world (and ourselves in the world), but that not all views are equivalent, nor can they all be equally relativized as postmodernism would have it. Rather, there is *structure* to be found in the various views, and the structure is significant with respect to the content of the view itself. I'm just restating GSB's quote in different words. The important thing here is the distinction between the *content* (GSB's "sense") and the *form* of the content. The *reason* why things change from being senseless to sense-full has to do not with the change at the level of the content, but a change at the level of *form*. THIS is the key that is the treasure. It is not enough to "think different" (think different content) — we must think *differently*, in a new *way*. Herein lies the power of mathematics as part of a spiritual discipline: its ability to transform our *capacity* to see, not simply *what* we see.

In general, the more universal the law, the more it seems to resist expression in any particular mode. (1972, p. xxiv)

When speaking of universal law, we can recognize what is meant esoterically by the word "archetype." The principle that GSB relates here is in accord with the features of the archetype, conceived in general (we could say, the archetype of archetypes). The more we attempt to encompass it in particulars, the more it squeezes through the cracks and eludes our grasp. This is in obvious relation to the previously discussed limitations of language.

What is interesting, esoterically, is that this inverse relation is a general characteristic of the boundary between the physical and spiritual worlds. It is something like Heisenberg's Uncertainty Principle: you can't pin down *both* the nature of an archetype *and* its manifestation at the same time, and you can swing (depending upon how you draw your distinctions) more towards the side of exactitude or more to the side of generality. Alchemically, this is a manifestation of the Air principle (Miller, 2008, see especially the page on the metaphorical qualities of the elements: <http://www.spiritualchemy.com/p6-metaphors.html>), and is a state that we will encounter again and again on our journey.

On a more mundane note, this polarity has long been with us in the form of the tension between induction and deduction. Historically these views were championed by Plato (induction) and his pupil, Aristotle (deduction). If you are a Platonist at heart you will have the feeling that the generalities are somehow *more real* than the particular, while if you are an Aristotelian at heart you will feel that the particulars are more real than the generalities, *obviously*.

The point is that both are correct, and neither view is complete alone. I would suggest, in this vein, the introduction of the process of *abduction* (Peirce, n.d.), championed by Charles Sanders Peirce, which is another form of reasoning that is perpendicular to both induction and deduction, and which fleshes out a

logical “space” that allows it to slip very well into the palm offered by esoteric methods. Or coming from a different angle, we can look at Eugene Gendlin’s process model (1997a) and philosophy of the implicit (1997b) as offering a way to think newly about how thinking is—coherently and precisely—*more than logical*.

In the preface to the 1994 edition of the Laws of Form, Spencer-Brown explains the ground of the work, which is “the point” so to speak:

All I teach is the consequences of there being nothing. The perennial mistake of western philosophers has been to suppose, with no justification whatever, that nothing cannot have any consequences. On the contrary: not only it can: it must. And one of the consequences of there being nothing is the inevitable appearance of “all this”. (1994, p. ix)

And further:

The idea that the creation must be a consequence of ‘something’ is moronic. No thing can have any consequence whatever. If there were originally something, it would poison the whole creative process. Only nothing is unstable enough to give origin to endless concatenations of different appearances. (1994, p. ix, footnote 5)

Obviously GSB is getting into territory that has a long esoteric history, beginning at least as far back as the ancient Greek’s identification of Chaos as the mother of Gaia, and thus the source of the difference between the Heavens and the Earth, the Above and Below. Now, things can get really interesting and complicated here very quickly, because we are being taken into pretty deep territory with these claims about nothing and something. But we have to go there because GSB’s essential insight, that nothing cannot NOT have any consequences, is very important, as he is making a fundamental metaphysical, cosmological, epistemological and esoteric point all at the same time, and indeed (as he indicates) this is actually *the only thing* he is trying to communicate, so it bears some scrutiny.

The Greek’s Chaos is generally taken to be a sort of formless void, but for some reason nobody seems to recognize that our habit is generally to take this phrase “formless void” and take the “void” aspect as a *thing we are talking about*. That is to say, we take “void” as a noun and “formless” as a modifier. But *the whole point* is that we are trying to talk about the *source* of “all this,” and as GSB indicates, it can’t be a *thing*, even a “void.” It is more appropriate to speak only of “formlessness” rather than a formless void, and if you are now hearing echoes of century’s worth of one-handed Buddhists clapping, you are in good company. There is a lot of good stuff to read on this, not least of which is Shankara’s

commentaries on the Mandukya Upanishad (and of course the Upanishad itself). In this Upanishad, the three syllables A U M are likened to the waking, dreaming, and sleeping states that comprise all existence. But there is a fourth state, *silence*, which is the substratum for the other three. The Upanishad (Nikhilananda, 1995) explains:

That which has no parts (soundless), incomprehensible (with the aid of the senses), the cessation of all phenomena, all bliss and non-dual *Aum*, is the fourth and verily the same as the *Ātman*. He who knows this merges his self in the Self. (p. 78)

Hopefully this fourth state reminds you of the Ibn ‘Arabi quote earlier. This is GSB’s “nothing”: it is cosmological, because it is the origin of the (all/any) universe, it is metaphysical because all physics (all manifest law of any kind) rests upon it, it is epistemological because all knowing rests precisely on this particular unknown, and it is esoteric because it allows the simultaneous integration of all of these other aspects in such a way as to provide the ground upon which actual spiritual evolution can occur individually and as a universe.

This “formless” (drop the ‘ness’ because that too makes it seem to “it”-like; and of course we have to drop the ‘form’ too—now we’re getting nowhere!) is also the state referred to in Genesis 1:2 by the phrase “tohu wa bohu,” which is usually translated as “without form and void” or “formless and empty.” This phrase is pointing, explicitly, to what was there before the universe was there (obviously a kind of paradox, but we are becoming comfortable with paradox, yes?). We read Genesis *forwards* in time, but don’t recognize that the ontological background of the question really leads us to consider that it is *pointing* backwards, to a state before time, which GSB indicates, quoting Roth (who wrote about Dionysius the Areopagite) “went on in perfect harmony until the time came, for time to begin” (“American University of Masters Conference,” 1973c, Contradictions para. 6).

So this phrase, “tohu wa bohu,” has become an idiom for both “confusion” and “commotion” in French, German, Estonian, and Hungarian, and here has preserved something of the flavor of GSB’s “nothing.” This confusion of meanings happens even the case of the Buddhist “*śūnyatā*,” which is translated either as “emptiness” or “voidness.” The actual root of the word is “svi” meaning *swollen*: this primal ground is not *empty* but is *ready to burst at every moment*. Thus the “nothing” is not best conceived of as a void, but more as a primal confusion or Chaos. Chaos is both empty and not empty, it is without form, but contains all form. It is thus very appropriate that in LoF, GSB indicates that the sign “=” may stand for the words “is confused with” (p. 69); at this level, identification and difference form a complex unity. This is the unity implicit in Jung’s enantiodromia, where a tendency or manifestation proceeds so far in one

direction that it suddenly becomes its opposite (for example Love into Hate on an emotional spectrum). That this can happen is a direct consequence of the primal confusion: nothing gets confused about itself, thus becoming itself. GSB has a nice way of talking about this, when he says that existence is “what would appear if it could” (“American University of Masters Conference,” 1973c, If It Is. It Isn’t para. 4). This phraseology, rather than collapsing the distinction into one state or another (existence or non-existence), *maintains the complex unity*. That the phraseology is also a paradox is essential to its meaning.

I could even point out that we have an excellent geometric, and therefore completely thinkable, manifestation of this principle of the complex unity of multiplicity given in projective geometry. One need only think about the relation between a line, its single point at infinity, which can be reached in *two* directions (the directions along the line, of course), and how this line is nothing other than (can be deliberately confused with) a circle whose center is at infinity (for a walkthrough of this exercise, see <http://www.spiritualchemy.com/46/linecircle/>). The topological structure of the line, taken as a whole, is a circle, but to “take as a whole” requires the inclusion of *infinity*, which is not a place or a destination in any sense of the word. Yet it is precisely this infinity that makes the whole *whole*, and allows a point moving on the line to zoom out to infinity and then come back to its starting point again *from the other side of infinity*.

You see, all of this is connected. This is why we find God spoken of as an “infinite sphere whose center is everywhere and whose circumference is nowhere,” a saying often attributed to Pascal, but stemming from a much earlier 12th century Neoplatonist work called *The Book of Twenty-Four Philosophers*, esoterically attributed to Hermes Trimegistus.¹

But before we reach infinity let us take a break. You have progressed now to the beginning of the actual Laws of Form themselves.

Recursion #2

Let us continue our beginning:

We take as given the idea of distinction and the idea of indication, and that we cannot make an indication without drawing a distinction. We take, therefore, the form of distinction for the form. (Spencer-Brown, 1972)

If this doesn’t strike you as having a “mystical” flavor, then you are drinking the wrong concoction. I’m not going to try to *explain* this, but rather I’m going to try to re-frame it; you could say, in GSB-approved language, that I’m going to re-mark it. The important thing to note about this, the very first

¹ (Magee, 2008, p. 22)

“official” sentence of the LoF, is that it is recursive. Let’s be clear: the Laws of Form (not the book, *the LAWS*) are only possible because of a recursion, a throwing back on itself of itself. But a throwing back of *what* onto itself? Well, “nothing,” of course; but nothing understood as *what everything would be if it were*.

But of course nothing doesn’t remain simply nothing (well, it does, but it doesn’t), because here we are. The question GSB is really attempting to get at is *the* question: how does this nothing become “all this”? THAT it does is directly evident (to the “all this” and likewise “all of us”), but GSB wants to know *how*; he wants to know the *form* by which happening *happens*.

There is only, really, one option: nothing becomes “all this” by virtue of *a distinction*.

Now, you’ll have to stay close as we proceed on this journey, because what we are doing here is trying to illuminate not creation, but the *illumination that illuminates creation*. We are trying to describe not simply *what* can possibly be talked about (the “all this”), but are attempting, rather, to describe describing. At its heart, this is ultimately an esoteric task, *not* (only) a philosophical one.

So to begin: the first distinction is THAT OF distinction. As we find out in the very last sentence of the last “official” chapter (before the lengthy notes), “We see now that the first distinction, the mark, and the observer are not only interchangeable, but, in the form, identical” (1972, p. 76).

This is to say, the distinction and the distinguisher are equivalent (they are confused: fused together). You may be wondering what “the mark” is. GSB just said it was identical with the first distinction, but while this is true, it is not yet illuminating. GSB *uses* the idea of a mark in its literal sense, as a mark on a page, for example. For this reason he can say, “Let a state distinguished by the distinction be marked with a mark [see image below] of distinction” (1972, p. 4).

The actual mark can be anything, but the primary shape he uses is that of a capital T with the right hand limb missing, an upside-down and backwards “L” (or an “L” rotated 180 degrees). In other words, making a distinction leaves a mark, and we can indicate the mark in any way we choose (we can mark the mark), but we have to choose something (already, at this very first moment, we see that in choosing a form we are *enacting* the pattern that the form marks; we are recursing between first and second-order levels, between the content and the process).

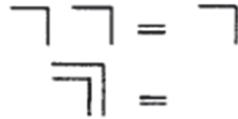


Figure 2: The Laws of Form. Spencer-Brown's two laws: the law of calling (top) and the law of crossing (bottom).

So back to the first distinction. What is it? The first possible distinction is that OF distinction, BY an observer which is the same as that distinction. Got that? It should be exquisitely clear that recursion is the nature of the form, and that this could not be otherwise.

What we have is a complex unity of the beginning of everything, consisting simultaneously of:

1. the *fact* of distinction as the *only possible form for the form*
2. the fact that the form of the form is *recursive* (what the form distinguishes is *itself*)
3. the fact that this "itself" is the same as the *observer* making the distinction.

The esoteric point is that these three aspects are all co-incident: they are the same incident, that of creation (all creation, not just the beginning of the beginning). What I would like to point out is that this recursion has a special character that becomes a key element in understanding all that flows from this beginning, and it has to do with the difference between the "levels of order" N and N+1.

But before I use this difference to make a difference (actually you will note I already have), we need a reason to make the difference. In GSB's words, "There can be no distinction without motive, and there can be no motive unless contents are seen to differ in value" (1972, p. 1).

That is, there can be no distinction without a motive to distinguish, but there can be no motive except by virtue of a distinction.

Thus (in a circle):

motive → distinction → (value) → motive → ...

The whole is recursive. But here, Ranulph Glanville (1995), President of the American Society for Cybernetics, points out that

If everything depends on drawing a distinction, how is the mark separated from the value? It must be distinguished. Then, if it is distinguished, it is distinguished by another mark (and value) drawn... ad infinitum. Unless the mark is the value, the value is the mark—ie, unless there is no space (that is to be cleaved), and the

distinction drawn distinguishes only itself. (In geometric analogy, instead of the distinction taking the form of a circle, it takes the form of a Möbius strip—that, from above, looks like a circle—which contains no space, has no in and outside, and which, having only one surface, can have its own value on itself: the mark is the value, the value is the mark.) (p.3-4)

Perhaps you can thus see the problem which GSB himself did not explicitly note. Drawing a distinction is not a singular act; it has at least a dual character, because there is the *act* of making the distinction (making the mark), and there is *the distinction* made (the value indicated by the mark). The problem is that in GSB's formulation *the first distinction doesn't distinguish between the mark as an ACT and the mark as a VALUE*, but it must somehow if we are to get anywhere. The way to do this successfully is with the implementation of the idea of N and N+1 levels of order. Soon.

As GSB indicates, "What is not allowed is forbidden" (1972, p. 3).

This is to say that we can only use distinctions that we make; therefore we must complexify our understanding of the first distinction: we must distinguish anew the first distinction. Glanville, with Francisco Varela, recognized this problem (1990). They saw that it led to an infinite regress (the bane of logic, which we are supposed to avoid—the regression, not the logic), and their solution was to say that "distinction cannot cleave a space, and its value must not be distinct from its mark, that is, a distinction distinguishes (is) itself" (p. 1).

Yet Glanville notes that that the distinction, which only distinguishes itself, also implies a manifold. Actually, we see that distinction *must* imply a manifold (it cannot ONLY be itself distinguishing itself, *simply*) or existence would never have any content other than existence itself — that is, no distinction of difference beyond that of the fact that existence exists.

Thus the first distinction must be a *complex* distinction; it must, we could say, keep the Chaos alive, it must maintain *potential* in more than one way. This is to say that it must be a complex unity, a single diverse manifold.

Now we have noted that Glanville wants to say that in order to avoid an infinite regress of distinctions that never reach any value, the distinction must distinguish only itself. But we can point out that this does not actually solve the problem, it rather only is a viewing of the problem from a different perspective. He thus ends up saying (1995) that:

If, in drawing a distinction, we do not distinguish between the mark and the value but take the value as being the mark, we have no regress. The distinction is then a self-distinction, and the value (which is the mark) is the value to the self. It is not accessible to the

outsider. It remains private. We have, instead, Objects that distinguish themselves and do not cleave a space: they do not even need a space within or without. Thus, the Object (its self itself) maintains itself, but is alone. The Object is the Object is the Object.” (p. 5)

This is a view which is in direct contradiction to esoteric experience... but such is not the basis upon which we need to address Glanville’s idea. We can rather point out that his attempt to avoid a regress actually fails, in the sense that the regress is successfully eliminated. It is, rather, simply transformed into a *recursion*, which still has a ‘regressive’ nature. However, that nature is, instead of played out extensively, is played out intensively, as in a point rather than a line.

And now we can bring back in the geometric imagination from earlier, and make use of it. Geometrically, the analogy for a normal regression is that of an infinite line. But every line is ALSO a circle whose center is at infinity. One can contract that circle (the line) from infinity (extensive space / no space) into finite (intermediate / actual) space, and then contract it further until the circle becomes a point (intensive space / no space). In other words, Glanville’s choice to avoid regress is, in some sense, unnecessary; the point-like logic is a *transformation* of the line-like logic, through the logic of the circle. Thus we are not restricted to our interpretation of the mark, of distinction, as that which EITHER does or does not “cleave a space”: it BOTH cleaves a space and DOES NOT cleave a space, depending upon the *distinction of the distinctions*. That is to say, by distinguishing the original logic of the mark of GSB from the modified “möbius logic,” Glanville (1995) is led to a *lower order* content (the value of the distinction), whereby “the Object is the Object is the Object” (p. 5) is considered as a mark marking itself in a way that is inaccessible to any outsider. But this is only a part of the story that is given by the distinction between the logic of the line and the logic of the möbius, which is the logic of the intensive point. By exploring the logic of this intensive point, we can change the way we distinguish distinction.

We have seen that the infinite regress seemed to be required by the failure of the mark to distinguish itself from its value. But to try to solve this by saying that the mark ONLY marks itself, *and is thus its own value*, is an error. If a mark can only mark itself, it is equivalent to being valueless, even to itself, because in order for the mark to have the value OF itself FOR itself, the mark must again distinguish itself from its value, otherwise we can only say “mark” *or* “value”, but not both. And here is where we get, as promised, to the need to introduce the N and N+1 business referred to before, as it provides a way to think about this admittedly bizarre and obtuse problem in a way that allows us to continue in our quest to illuminate illumination.

To recap: we are in a position where we recognize that the mark, the first distinction, cannot be simple. It cannot mark itself *only* as a mark, or *only* as a value. It must somehow be able to mark itself *and* its value simultaneously without requiring an infinite number of further marks to mark that distinction. It must be able to, in a single stroke, include the possibility for endless variation without itself requiring endlessness for it to begin. The universe is; it has come to be; the mark is made, and made again, and again...

Now, the key is to recognize that the key to the treasure is the treasure. The confusion (between the mark and its value) that has arisen needs to be de-fused, and re-fused, *in a new way*. What needs to be de-fused is actually manifest in things we have already run across: it showed up in the distinction between the capacity to see and what is seen, between form and content, and yes, between the mark and its value. What connects these examples is itself a *form*, but it is also a *content*, and yes, the content of the form is the form, but it is a *particular* form; it is complex, and it is recursive, and it is the nature of the complex recursivity that distinguishes it from “mere” distinction.

Let me be clear by saying that there is no real problem with GSB’s Laws of Form; there *is*, however, a problem because of the way that the form is taken. This is something GSB is very sensitive to, and which he discusses in the Esalen conference (“American University of Masters Conference,” 1973b). We must interpret the form, but the form is not boundable by interpretation. We can interpret it *any way we wish*, but (as we have seen) this does not mean all interpretations have the same value, or are therefore valueless. The whole key is to recognize the difference between the form and its interpretation, *because this is exactly the form*, it is the key.

We can say: *the form is that form whose content is the form*.

This would be more exact, but it is likely not helpful, even at this point where it might be approaching some semblance of sensibility.

Let us rather say: the first distinction, which must be a distinction, must *distinguish* itself *as* the distinction between its form and its content. We can see that there are two *levels* at work in this form. There is the level at which the *activity* of the distinction is occurring, and there is the level at which the *content* is distinguished by that activity. We can call the level of the content level N, and the level of the activity N+1. We could also call it N-1, both are equally appropriate. The point is that the first distinction has this strange feature: it distinguishes a boundary between form and content, between the activity of distinguishing and what is distinguished, *and it crosses that boundary as a part of its activity*.

This is to say, the first distinction is that which distinguishes activity and content, but which does not *merely* distinguish them: it *bridges them*. The confusion pointed out by Glanville is completely valid, but it is resolvable... that is to say, it is capable of dissolution and resolution. The way to do this involves distinguishing the level of form from the level of content, and recognizing that a *recursion* between these levels *is the form*. It is a complex unity. It is not simply distinction of distinction, at least considered in the way that such a phrase is most likely to be read. Rather, it *is* distinction of distinction, but in the way in which the first instance of distinction exemplifies the level of activity and the second instance of distinction exemplifies the level of content. This should now be quite clear: the first distinction must be of distinction, but this must be considered as a complex, recursive creation and simultaneous crossing of a boundary that is just precisely the boundary between that very activity of its creation and the fact of it as created.

Recursion #3

We ended the last section noting that the first distinction must be of distinction, but this must be considered as a complex, recursive creation and simultaneous crossing of a boundary that is just precisely the boundary between that very activity of its creation and the fact of it as created.

To get at this another way, we can point out that Glanville has actually hit on elements in this direction already, but (it seems) hasn't quite put it together in the same way. Remember that the whole time we have been talking about the first distinction we are *also* talking about "the observer," which we could call a "self." It may even be worth revisiting some of the above text with that implicit translation in mind. I remind you of this because Glanville, in his 1990 essay "The Self and the Other: The Purpose of Distinction," is exploring solutions to the problem of infinite regression that arise when the mark doesn't distinguish itself from its value, and he uses "self" and "other" to hold the logic of "mark" and "value," which is perfectly fine.

Glanville (1990) notes that we have a set of relations that are implicit in each other: that between self and other: "the fundamental distinction between self and other [read: between the mark and its value] cannot be more fundamental than the distinction of the self, nor can it be less so: another circularity, another reduction of hierarchy" (p. 3).

Except that this *isn't* a reduction of hierarchy. It is actually the very foundation of all hierarchy. This is Glanville's mistake (if it could even be called such): the misidentification of circularity with the collapse of hierarchy. The restoration of this feature is precisely what is needed to move forward, and Glanville actually gets there, but doesn't quite (it seems) recognize the fact.

He points out that the distinction between self and other is not complete, but actually implies more: the self *as* self, and the self *as* other. This is to say, the mark *as* a mark, and the mark *as* the value it indicates. But this is a reciprocal relationship, where we also note an other *as* self. He has a useful shorthand formulation which is probably worth mentioning, because it helps make the point more clearly. He (1990) takes a capital letter to refer to the recursive nature of self, as it is self-defining (but, as we shall see, also *other*-defining), and a lower case letter to refer to the objectified, the not-self (but only, and always, *for* self): “(A, A) indicates the self of A ‘observing’ itself as a self. (A, b) indicates the self of A ‘observing’ b as other, that is, b as another to A’s self :::: etc.” (p. 2)

Remember that “observing” here is (referring back to GSB) the same as the mark, the same as the distinction; it is the form. Now we get to the juicy bit. Glanville (1990) points out:

Thus, the distinction between self and other implies the distinction of the self, and the distinction of the self implies the distinction between self and other. And, because the roles of what are called the self and the other are, in effect, to each of them as a self, the same, and because each “validates the other,” it is necessary that that which the so-called self refers to as the other, is, to its self, a self in its own right: i.e., it distinguishes itself, and is thus distinguishable to another (the original self): again the circularity. Thus, we acquire an (aesthetic) symmetry. (p.3)

Now, to insert an esoteric aside, before we continue unfolding this subtle issue, we can note that what this means is that, *all others are selves, all selves are others*. This is nothing other than the esoteric principle that BEING is all that is: if it is “out there” as an object, *it, also*, has an interiority, a “self,” which we are recognizing here from a very odd starting point.

In other words, the ontology of A being is always the ontology of ALL being; the act of self-distinction is always simultaneously an act of other-distinction, *and vice-versa*. This, esoterically, is the principle of the cosmological Christ, the I-in-Thou/Thou-in-I. We shall see how this flows naturally from Glanville’s own formulation. To fill out his (1990) method:

The self distinguishes the self (A, A)
 In distinguishing the self (A), the self distinguishes another (A, b)
 The other distinguishes itself as itself (B, B)
 The other distinguishes the self as an other (B, a)

Whether or not an other can distinguish an (other) other as an other, it appears we may not know, for we can never be another.

Thus, (a, b) and (b, a) seem, for the moment, to be meaningless statements. (pp. 3-4)

The key, however, is in his (1990) recognition that: “the distinction between the self and the other and vice versa is, itself, a distinction. Let us call this distinction C” (p. 4).

Now, he doesn't recognize it explicitly, but here Glanville has implied exactly the principle that is required for the whole thing to come together: the *actual crossing*, simultaneous to its *actual distinction*, of the boundary that separates N and N+1 levels. This is a second-order distinction, the distinction of a distinction. But the whole point is that the second-order distinction is recursive with respect to the first-order distinction: they are co-generative and co-incident.

In other words, all three, A, B, and C, can be not REduced, but INduced, (or some other new word) to a *single, complex unity*. This paradox is equivalent to that of the mystical “three-in-one/one-in-three” of Christianity, and although it is synchronistic, the choice of the letter “C” for this is fortuitous.

So Glanville (1990) can now say:

In order for the self (of the first instance) to distinguish the other (A, b), and the other (of the first instance) to distinguish the self (B, a), they do so by drawing a distinction, itself a self to itself (C, C). So, for instance, the distinction between the self and the other (A, b), is made by drawing the distinction that distinguishes them, C – that is (C, C) – which, although a distinction like any other distinction, has the role of distinguishing between the self A (A, A), and the other B (B, B) as other (b) to the self (A), which, thus allows the transfer across: the making of the self of the other available as an other to the other self: that is, C (C, C) transforms B (B, B), for A (A, A), into b so that (A (A, A), b), and, reciprocally, (B (B, B), a). The role of the distinction C is that it allows a self to say of an other that it is an other. It may be taken, thus, that the purpose of the distinction C, for A and B, is that it permits / creates this role change, this transfer. (p. 4)

Now here is the place where an esoteric background is helpful. Glanville (1990) notes, following his own reasoning, that

this distinction, C, is to both A and B, itself an other. Thus, to A, C is c (A, c), and, similarly, to B, (B, c). We once again need a role transforming distinction, another distinction, D (D, D), and so on: the regression is apparently clear, although, as Varela and I have indicated [R. Glanville and F. Varela "Your Inside is out and your Outside is in" in G. Lasker (ed.) "Proc. Intl. Congress on Applied

Systems and Cybernetics, Acapulco", Oxford, Pergamon, 1980], this formal regression leads to a logical re-entry, and so is not quite so daunting as it might normally be." (p. 4)

But this whole business with D (D, D) and so on is simply not necessary. Why? Because there is no hierarchical regression: at any stage the infinite regression is the same as the single instance. Again, this is an esoteric mystery: that of immanence AND transcendence. This is the dual face of the ultimate: the Sufi *wahdat al wujud*. The *single* existence of C is all that is required. This "transfer function" is a *necessary* part of the primal distinction; it is the missing link between the mark and its value, that would otherwise create only endless duality. In other words, *all distinction* has a threefold nature: Self, Other, and the Self-Other Relation (or we can equally say: mark, value, and the act of distinguishing them).

Of course, this is just what has been recognized in esoteric circles throughout history. We can point out that alchemically we have: Self=Sulfur, Other=Salt, and Transfer=Mercury, or in Esoteric Christianity: Self=Father, Other=Holy Spirit, Transfer=Son. This goes on endlessly, which is precisely the point. Returning to the very *conditions* under which GSB relates the Laws of Form, he (1972) mentions that "There can be no distinction without motive, and there can be no motive unless contents are seen to differ in value" (p. 1).

We have seen this already, but now we can see it in a new light. As before we have:

motive → distinction → (value) → motive

Now we can recognize this as the very same threefoldness that is inherent in the primal form. So:

motive → distinction → (value) is also:

self → other → transfer function

will → thinking → feeling

sulfur → salt → mercury

and also, more primally:

activity → content → the crossing of the boundary (not completely integrated in GSB, found, but unrecognized as such, by Glanville), and lastly:

Father → Holy Ghost → Son²

² Alternate versions occur: see Manly P. Hall's *Secret Teachings of All Ages*, (2008), p. 477.

Hopefully, despite the admittedly difficult nature of this whole commentary, things might be starting to come together, that is to say, they might be starting to be confused.

So how can we express the mark in terms of its manifold unity? Of course, we can use anything as the mark, but this doesn't mean that all marks are equal. GSB's original mark is the upside-down, reversed "L", which does not visually or metaphorically well-embody the characteristics we have discovered for the first distinction. We need something that, as a *mark*, suggests the complex nature of the primordial distinction of distinction. GSB, in LoF, also uses a circle as a mark, which is better in that it indicates recursivity, but it is still too simple. Now, would it be any surprise at all that the kind of mark we are looking for has been known for millennia? And that this mark would have as an explicit meaning "supreme ultimate" and "primordial universe"? I refer, of course, to the *taijitu*, the "yin-yang" symbol, which I have modified a bit to be more explicit about the relations it expresses:



Figure 3: A modified *taijitu*, a symbol for the infinitely self-recursive, multi-leveled nature of distinction.

We can also indicate the same set of relations with this second form, which is actually more "technically" accurate, but harder to read visually:

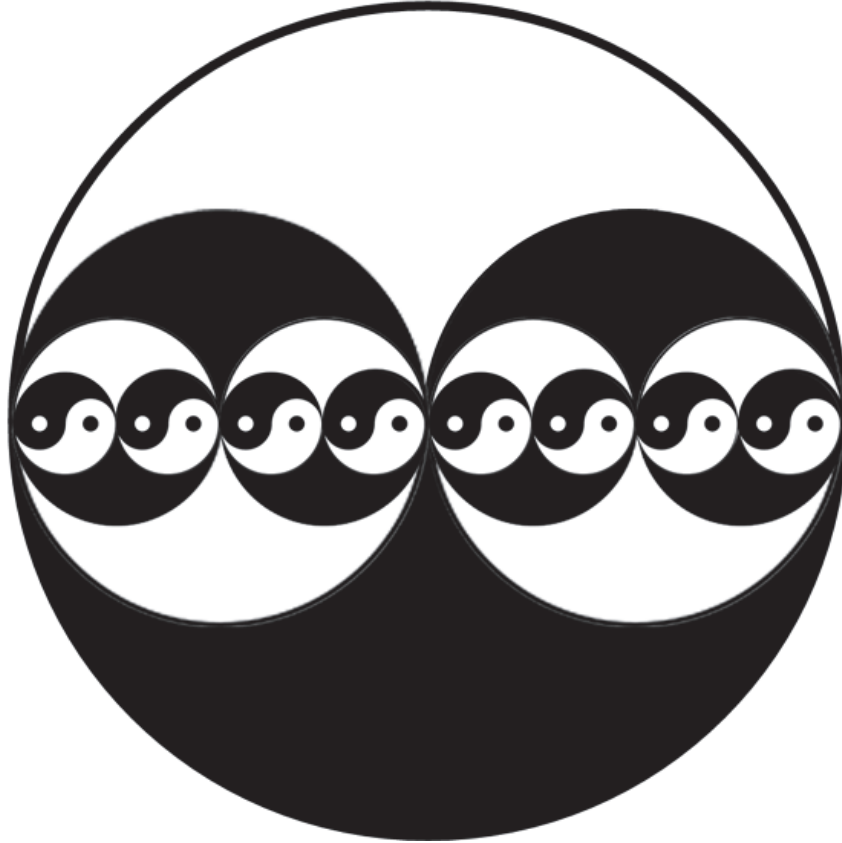


Figure 4: A variation of the modified *taijitu*. The ideal form is all (and only) self-embedded circles.

Here we have a mark that displays the qualities we know the mark must have: it is recursive, it is a complex whole, it defines itself, and most importantly it expresses, as well as any visual symbol can, the necessity of the mark to make a boundary that it then crosses. This last is what implements the most important feature of the primordial mark: it has to distinguish levels N and $N+1$, and it has to do so in a recursive way. Of course the symbol itself is static, but note: one cannot literally “see” the whole image all at once. Your eyes bounce back and forth, and as they do so, they continually cross the boundary that is the whole of the form (the self-defining boundary, which is all this form is). But then you realize, in looking at the smallest “dot” in the form, that it doesn’t appear to be subdivided again. This, of course, is a limitation of the medium, not the symbol, and suddenly the symbol has initiated *an activity* of continued crossing *in your thinking*. The actual drawn mark cannot directly be the activity of its own drawing, but it can indicate this activity as it occurs in you—actually. And then you are led to the realization that the whole symbol itself sits in a white space... which of course means that there is, ultimately, no reason to have the form so overtly indicated over many levels, because all that is needed is the original form:



Figure 5: The “standard” *taijitu*. This version is the most symbolically efficient possible for these concepts.

This is *exactly* the feature we would expect, actually *require*, of a form that fulfills its promise of being defined only by itself. That is to say, looking at the first, more explicit form, we see that every stage is implied by, and implies further, every other, so we really *can* “reduce” the form to the simpler version, because that is all that is needed to generate the entirety of the form and its activity.

So we can, in a very direct and precise sense, call this form, the *taijitu*, the form of the form. Implicit in this saying is again the creation and crossing of the boundary N and N+1. It would actually be helpful to distinguish our English: “Form” with a capital “F” can be taken to refer the N+1 level, the level of the coming-into-being of the “form”, with a lower case “f”, which denotes the form as expression, or rather, as expressed (pressed out from itself). In this sense, then, the *taijitu* is the Form of the form,³ and we can then use, as a form (lower case

³ Strictly speaking, the Form of the form cannot be a form, i.e. cannot be anything ex-pressable. However, the more subtle point on the table is the *relative*

“f”) something like GSB’s “cross,” the upside-down, reversed “L,” which sacrifices symbolic completeness for functional simplicity.

Of course it bears pointing out that the *taijitu* is a fractal, and that this is precisely what allows it to embody the characteristics we are after for the primordial form. Or rather, it would be more accurate, perhaps, to say that what it means to *be* fractal goes back to the nature of the first distinction as we have discussed it. In other words, that so much of the universe shows up as the expression of fractal patterning should not take us by surprise, but should be *expected*. It is no wonder that the Mandelbrot set is referred to as—and now we can perhaps sense something of the *literal* meaning of this phrase—the “thumbprint of God.”

Recursion #4

We ended the last section having come to realize something of the esoteric significance of the *taijitu*, or yin-yang, form, in something of an extended tangent. We return now to the text itself.

GSB himself seemed to understand the importance of the Laws of Form, even if there were some of these more subtle specifics which were not apparent to him (or at least which he did not write about explicitly). Having reached this point (literally we are still on page 1 of LoF), the vast majority of the rest of the work in LoF is seen to be secondary. Yet there are many valuable indications which deserve connection to esoteric principles, and the point of this exploration is to show that such connections are not arbitrary. So, to return to the actual content of LoF now, after this long but foundational detour, we can note that he says (1972): “Let any token [of the mark] be intended as an instruction to cross the boundary of the first distinction” (p. 5).

That is, every mark is an invitation to cross it; every distinction is a call to make that distinction, not to simply point it out, but *also* to DO it, to MAKE the distinction. In other words, the whole thing is active, not passive; it is not descriptive but *prescriptive*. Of course, the esoteric significance of this should be obvious, because precisely what distinguishes esoteric work from, say, philosophy or other disciplines, is that it is, *at its roots*, injunctive. That mathematics is the discipline *most closely allied* to esoteric work in this respect only serves to strengthen the indication that mathematics is the most directly spiritual of the academic disciplines.

nature of Form and form. Every form is an expression of Form, but every Form is a form to another Form. I hope that this observation is delightfully confusing.

Now, if you don't know, GSB uses LoF to show how, starting from *one* single form, he can build an entire logical calculus, including (but not limited to) the Boolean Algebra. In fact, the way he came upon the LoF was precisely through asking himself the question: what is the basic arithmetic upon which the Boolean Algebra is based? (“American University of Masters Conference,” 1973a).

He uses the token of the form, the upside-down and backwards “L” as an operator to do this work. The whole of the logical calculus in LoF is built out of the way that this form works with itself, and he notes that the two “primitive equations” upon which everything else is based take the form:

$$\begin{array}{l} \neg \neg = \neg \\ \neg \neg = \end{array}$$

Figure 6: The Laws of Form. Spencer-Brown's two laws: the law of calling (top) and the law of crossing (bottom).

He calls the first primitive equation *number*, and the second (where a form is inside itself, which equals the unmarked state) *order*. Why is this important? Because we can note that these two principles, upon which everything that is to follow in LoF is based, is nothing other than the embodiment, *in form*, of the principle of the N and N+1 orders discussed as the key to the whole thing in the first place.

To state it another way, these two primitive equations *work* because they embody exactly what would be required of them if they were to work (to take a GSB type of phrasing). More directly, they embody the principle of the creation of the cross and the crossing of the cross. Together, these two equations express the principles required to yield all the complexity necessary for any ontology: this means they have, together, a horizontal and vertical direction, or a breadth and depth, a distinguishing and a unifying nature. The first equation is horizontal: it serves to open up all the later logical space in LoF. The second equation is vertical: it serves to unify across levels, or to create more levels. You can see that this is just what is implied in the levels N and N+1: the level N is what it is by virtue of its containing everything else that is at level N, while the level N+1 is precisely the activity of the unification of everything in level N. N is the (differentiable) content, N+1 is the activity (un-differentiable) by which anything in N gets to be in N in the first place, vs. at any other level (say, N-1). The reason for calling these levels N and N+1, vs. actually counting them from some starting point should be obvious: they are recursive with each other; there *can never be*

some absolute destination “N” that could serve to begin the counting. We can only ever count from where *we actually begin*.

It is worth pointing out that GSB, thankfully, is very clear that, even though his two primitive equations express equalities, *the direction matters*. To state it another way, this is another example of the importance of the distinction between N and N+1. At the level N we simply have the two equations, and one side simply is *identical with* the other. But whether you start from the left and move across the equal sign to the right or vice versa is *significant*. GSB even gave names to these differences; he calls them:



Figure 7: The dual expansion of the Laws of Form. (Spencer-Brown, 1972, p. 10)

Keeping with the esoteric theme, we would note, based on our previous discussion, that these also all embody the “fifth essence,” the “C” of Glanville, the transfer function, the Cosmic Christ. So we have here two polarities, one of *distinction* (between number and order, which can be taken as GSB’s way of speaking about N and N+1), and one of *direction* (between condensation and confirmation, and between cancellation and compensation). The first polarity is, as we have seen, a vertical polarity; it is responsible for all hierarchy, and it is what was not explicit in Glanville’s works. The second polarity is a lateral polarity: it is responsible for the creation and dissolution of content for each hierarchical level.

Why is this worth pointing out? Because herein lies a formalization of a very deep esoteric principle, which is that *everything that is, because it is, can transform*. Remember, we are trying to speak here about the very source of all possible logic, so what we find in this realm should have serious implications for every *actual* logic, and therefore for every implementation of every actual logic. This is to say, the work here is looking towards the fundamentals of all epistemology. At the same time we are trying to speak about the very source of all possible form, for the existence of existence as such, regardless of its form. This is to say, the work is also looking towards the fundamentals of ontology. What is important, esoterically, is that we find out that at their roots, both

epistemology and ontology *meet and unify* in a complex, recursive way. Knowing and Being form a complex, recursive unity.

It is actually very clear to GSB that his work is meant explicitly to unite epistemology and ontology. He states (1972) that:

Throughout the essay, we find no need of the concept of truth, apart from two avoidable appearances (true = open to proof) in the descriptive context. At no point, to say the least, is it a necessary inhabitant of the calculating forms. These forms are thus not only precursors of existence, they are also precursors of truth. (p. 101)

This provides an interesting (and *transformative*) perspective on the question of why it is that we can know anything, and also on what it is that is possible to know. The scope of these questions in their details is beyond the current exploration, but suffice it to say, embedded in these formal equations lies a secret to esoteric transformation: indicating both *that* it is possible, and also something about *how* it is possible. You may even, if you are keen, note that it tells you something specific about *what it looks like* to transform, and thus *how to do it*.

Now, later, GSB gets into some of these details. For example he shows that:

$$\begin{aligned}
 & \overline{\overline{\dots c} | b | a} | g \\
 = & \overline{\overline{\dots c} | b | ag} | g \\
 = & \overline{\overline{\dots c} | bg | ag} | g \\
 = & \overline{\overline{\dots c} | bg | a} | g
 \end{aligned}$$

Figure 8: GSB's Theorem #13. This theorem indicates that higher-level distinctions (g) commute to all lower levels of distinction. (Spencer-Brown, 1972, p. 40)

This is his Theorem 13. Taken esoterically, this principle is seen in how ontology+epistemology (as a unity) flows from higher levels to lower; i.e. all existence and knowledge is derivative (generative based on higher order principles). I.e. "As Above, So Below" (which is only half of the story).

Then we have his (1972) Theorem 14: “From any given expression, an equivalent expression not more than two crosses deep can be derived” (p. 40).

Esoterically, ACTUAL knowledge can be traced back to higher order realms. That is, the indication of Theorem 13 can be actually carried out starting with ANY knowledge. In other words, because all knowing is derivative, it can lead back to its origins. But to discover this *actually*, for any particular knowing, we must, in the language of GSB, *cross*. Esoterically, of course, this is recognition of the principle that transformation is an *activity*, and one that can be cultivated. All of esoteric work is simply an elaboration of the injunction: *cross*. This adds the second half of the story missing above: “As Below, So Above.”

This has further consequences. As GSB (1972) notes, “From any given expression, an equivalent expression can be derived so as to contain not more than two appearances of any given variable” (p. 41).

This is GSB’s Theorem 15. Esoterically, this is the principle of the archetype: knowledge instantiates the activity of archetypes, and these archetypes are always a unity, that unity being given by their form of distinction. Multiple instantiations of a given archetype in different areas of knowledge are not separated, but can always be seen as participating directly in that single archetype. This is to say that an archetype can never be distinct from itself. You can perhaps see how, from an esoteric point of view, this is implicated in the above discussion about hierarchy and transformation, and the relation between universal law and its expressions from the near the beginning of this exploration.

Moving on, GSB (1972) indicates that: “The initials of the primary algebra are independent” (p. 53).

Remember the initials are the two equations we discussed above. The point is that these are not derivable from each other (or they would reduce to a single equation and thus not be “initial”). This means that all possible logics *require a distinction of distinctions*. This is to say that the form of any logic (its second order nature, N+1) requires its first act to be the realization of this form, which is its content (its first order nature N).

In other words, the foundation and generation of all logics is recursive, taking the form in which the second and first orders are mutually generative (i.e. the distinction of distinction). You may think that somehow this obviates the very principle of independence, because they are mutually generative. Not so, and this is the heart of the matter. It is precisely this type of recursion, between N and N+1, that *maintains the distinction*. They are *mutually* generative, not simply generative; this means that they require each other *distinctly*, in order for their

own separation. They cannot be *reduced* to each other, and both are required. We have a complex unity, not a simple one.

Now, GSB gets into some fascinating territory with respect to “re-entry into the form.” He describes (1972) re-entry in this way: “The key is to see that the crossed part of the expression at every even depth is identical with the whole expression, which can thus be regarded as re-entering its own inner space at any even depth” (p. 56).

We can see that he has just described the *taijitu*. What is important about GSB’s work is that it provides a way to *stop* the recursion at any given point, and to then look around to see what’s going on. This is to say, it can be used to calculate, to situate with directness towards one state (knowing that the states are infinitely transformable).

Even more importantly, the necessity of re-entry (recursion), which we have seen lies even at the root of the root of GSB’s work (even though he didn’t point this out himself), leads him directly to something that was implicit in the form but which can be itself brought out in a calculable way. I am referring here to the generation of the imaginary realm (the home of imaginary numbers, which are found as necessary roots to the regular algebraic equation $x^2 = -1$).

What is important, esoterically, has to do with what GSB points out as the *key* feature of the imaginary numbers: they are *oscillatory*.

Recursion #5

We ended the last installment with a recognition that the Laws of Form naturally led GSB to an understanding of both the necessity and importance of the realm of imaginary numbers. We will continue this elaboration.

You are likely familiar with the paradoxical sentence: “This sentence is false.” Is it false or true? The answer is yes, and it depends on *when* you ask. It was this kind of paradox that drove Russell and Whitehead into creating their Theory of Logical Types, which was designed specifically to prevent this kind of thing from simply ever coming up in the first place. GSB is not so limited, and understands the importance of *formally* including paradox in his calculus. So how does he deal with this?

He points out that we are driven to a higher order of logic, one that includes re-entry. In the first Esalen lecture, GSB states that

This has been totally overlooked in mathematics, that *i* [the square root of -1] is in an oscillatory state. Because in order to get over this paradox of x -squared equals minus one, we see that we can’t use any ordinary form of unity so we invent in mathematics another form of unity and we-call it *i*, which is the root that satisfies that

equation. (“American University of Masters Conference,” 1973b, Fluttering para. 1)

Let me indulge in a lengthy quote continuing from the same source, because GSB’s own dialogical presentation is quite apt:

It is really an oscillation defining time; but it is the first time, and, therefore, being the first time, the oscillations are without duration, so the wave has no shape at all. Just as the space of the first distinction has no size, no shape, no quality other than being states. This is one of the things that tend to upset people. It is part of the mathematical discipline that what is not allowed is forbidden. That is to say, what you don’t introduce, you can’t use. And until you have introduced shape, size, duration, whatever, distance, you can’t use it.

In the beginning of *Laws of Form*, we defined states without any concept of distance, size, shape—only of difference. Therefore the states in *Laws of Form* have no size, shape, anything else. They are neither close together nor far apart, like the heavenly states. There is just no quality of that kind that has been introduced. It’s not needed.

The same with the first time. The first time is measured by an oscillation between states. The first state, or space, is measured by a distinction between states. There is no state for a distinction to be made in. If a distinction could be made, then it would create a space. That is why it appears in a distinct world that there is space.

Space is only an appearance. It is what would be if there could be a distinction.

Similarly, when we get eventually to the creation of time, time is what there would be if there could be an oscillation between states. Even in the latest physics, a thing is no more than its measure. A space is how it is measured; similarly, time is how it is measured. The measure of time is change. The only change we can produce—when we have only two states—the only change we can produce is the crossing from one to another. If we produce an expression, like the ordinary expressions in the algebra, we have to make the crossing. We have to *do* something about it. We have to operate from the outside. If we produce that cross that feeds into itself, now we don’t have to do any thing. It is a clock, just as an ordinary distinction is a rule. A rule makes or defines space, and a clock defines time. In making our first distinction all that we have done is

introduce the idea of distinction. We have introduced nothing else. No idea of size, shape, distance, and so on. They do not exist, not here. They can be constructed, and they will be, but not yet. They are what happens when you feed the concept back into itself enough times.

Again, when you first construct time, all that you are defining is a state that, if it is one state, it is another. Just like a clock, if it is tick, therefore it is tock. But this time is the most primitive of all times, because the intervals are neither short nor long; they have no duration, Just as these states have no size. (“American University of Masters Conference,” 1973b, Time and Space para. 6)

All we need to add is that when he says “In making our first distinction all that we have done is introduce the idea of distinction. We have introduced nothing else” we can recognize something of the complexity of *what* this idea of distinction *is*, and how it *acts*.

I’m going to let GSB’s own remarks on space and time stand without further exploration, although I don’t imagine it needs to be pointed out how central the concept of vibration (and rhythm) is to esoteric work. Rather, I’m going to get back to LoF and continue with commentaries on chapter 12, where he (1972) summarizes the whole work: “The conception of the form lies in the desire to distinguish” (p. 69).

Esoterically, all knowing, all epistemology, always includes the WILL; i.e. activity; it is never passive. He (1972) continues: “Granted this desire, we cannot escape the form, although we can see it any way we please” (p. 69).

The form can be anything in terms of its manifestation, but to get from the second-order level to the first *requires* that a form be chosen. In other words, the first distinction is always dual: it is both the distinction of a particular FORM of distinction (from all the other possible forms of distinction), and it is also the distinction of distinction itself. This is to say, the first distinction is recursive, having both a first and second-order nature. The recursion is particular: it is between the first and second orders of the distinction. *This means that the process of making the first distinction is the content of the first distinction.* Thus, the first distinction is simultaneously ontological and epistemological: what is distinguished IS (ontologically) DISTINGUISHED (epistemologically). The form is recursive: what is distinguished is distinguished by what is distinguished by what is ... and so on. This should all make sense now.

GSB (1972) then relates that “The calculus of indications is a way of regarding the form” (p. 69). But there are many/infinite ways of regarding the form. This is a necessary correlate to the 1st/2nd order recursion of the first distinction. That is to say, we discover that *freedom* is both an epistemological and ontological reality: the content of the form and the coming into being of the form are not arbitrarily bound, except to that very fact (their recursion with each other as we have already seen). The recognition of freedom—of intuitive thinking—is the central pivot of Steiner’s own esoteric approach (Steiner, 1894/1964). GSB (1972) then relates three statements:

We may also note that the sides of each distinction experimentally drawn have two kinds of reference.

The first, or explicit, reference is to the value of a side, according to how it is marked.

The second, or implicit, reference is to an outside observer. That is to say, the outside is the side from which a distinction is supposed to be seen. (p. 69)

In other words, every distinction implies more than the distinction, but also that which distinguishes. Alternately, we can say that behind every distinguished space lies another space, as yet undistinguished, but potentially distinguishable. Esoterically, this is recognition of a hierarchy of epistemological and ontological levels. Included is the implication that to distinguish the space from which a distinction is made requires a transformation, whereby the new distinction occurs from outside the original space. I.e. the distinction must come from further “outside” the space. In esoteric traditions this can be expressed in different ways, but the most directly cognate is Sri Ramana Maharshi’s (1988) most poignant and diligently asked question: ‘Who is asking the question?’ (cf. p. 5). The recognition here is that one can directly address (and thus work on, train, implement) the potential to distinguish a higher space from which a distinction is made, and so on.

GSB (1972) notes that “In this conception a distinction drawn in any space is a mark distinguishing the space. Equally and conversely, any mark in a space draws a distinction” (p. 76). Esoterically, *one cannot not act*. In other words the fact that “one” is “one” implies already the distinction of “one.” It is not possible to remove “one” from “one cannot not act”; conversely, all action thus implies “one,” i.e. the actor, which is exactly why GSB (1972) says immediately following this: “We see now that the first distinction, the mark, and the observer are not only interchangeable, but, in the form, identical” (p. 76).

This should be quite clear now, and is one of the keys to the esoteric meaning of LoF. GSB essentially shows us, in his own way, that at their roots, epistemology and ontology form a unity. The operation of the mark is simultaneously the mark of the observer and is the observer. The mark as an epistemological act is also the bringing forth of an ontology. Conversely, and following from the last remark, there is no observer that does not make a mark, a mark which is coincident with — nay, even, as GSB indicates, identical with — the ontology of the observer.

Said more plainly:

- What you distinguish constitutes what you know.
- What you distinguish constitutes what you are.

Or, more cryptically poetic:

- You are what you know when you know what you are.

This has profound consequences. Because ontology and epistemology are recursively linked at their very base, it means that knowing is always linked to being, and that we can know being, because we are being knowing.

This relation, which is esoteric at heart, banishes the specter of Kant's noumenal world: there is no being, no ontology, which is without its epistemology. This is to say that there is no "thing in itself" (every mark has a definite value for its space, which is always beyond the mark, and implicated by it, i.e. the fact of the mark implies the fact of the unmarked mark), and likewise there is no "*think* in itself" (every mark is a mark in a space that is marked, i.e. the content of the mark is what is marked).

Here ends the formal chapters of LoF, but GSB continues for almost another sixty pages with notes designed to help lead the reader through the main text, or to elaborate on what is found there. It contains some fascinating esoteric nuggets. To wit:

It may be helpful at this stage to realize that the primary form of mathematical communication is not description, but injunction. In this respect it is comparable with practical art forms like cookery, in which the taste of a cake, although literally indescribable, can be conveyed to a reader in the form of a set of injunctions called a recipe. Music is a similar art form, the composer does not even attempt to describe the set of sounds he has in mind, much less the set of feelings occasioned through them, but writes down a set of commands which, if they are obeyed by the reader, can result in a reproduction, to the reader, of the composer's original experience. (1972, p. 77)

This exactly describes the nature of esoteric communication; its data cannot be fully conveyed in a direct manner—or if it is then it will likely be misunderstood—but the *process* that generates the data can be communicated. This means that the data proper to esoteric communication is that of the process which leads to its data. Indeed *the whole of LoF* can be taken this way, and is meant to be, as made implicit by GSB in the above quote.

Continuing in this vein GSB (1972) relates that:

In his introduction to the *Tractatus*, Russell expresses what thus seems to be a justifiable doubt in respect of the rightness of Wittgenstein's last proposition when he says "what causes hesitation is the fact that, after all, Mr. Wittgenstein manages to say a good deal about what cannot be said, thus suggesting to the sceptical reader that possibly there may be some loophole through a hierarchy of languages or by some other exit." The exit, as we have seen it here, is evident in the injunctive faculty of language. (p. 78)

That is, to indicate that which cannot be indicated, one can indicate a process which, when followed, generates the indication. This is simply to indicate *the esoteric process*, i.e. transformation, the building of capacity. It is necessarily recursive: following the procedure generates itself (and more). Furthermore (1972) "in each case the description is dependent upon, and secondary to, the set of injunctions having been obeyed first" (p. 78).

This is the KEY insight into understanding esoteric communication. Process BEFORE product. It can thus be indicated that the key to esoteric work is the activity of the WILL, primarily in *attention*. By changing how we direct our attention, we can progress esoterically.

Naming may thus be considered to be without direction, or, alternatively, pan-directional. By contrast, instruction is directional, in that it demands a crossing from a state or condition, with its own name, to a different state or condition, with another name, such that the name of the former may not be called as a name of the latter. (Spencer-Brown, 1972, p. 80)

This procedure of naming, because of its pan-directional nature, can be seen to have resonances with the importance of naming taken esoterically, i.e. naming is evocation, a literal calling forth, the bringing forth of a reality through the making of a distinction in the calling of a name. Even more, a name is, esoterically, indicative of the coming-into-being of the named; the name *names* the process-level of the *being*, not the first-order level of the being-as-already-become.

The second piece here is indicative of the context for naming, i.e. the importance of following a PARTICULAR sequence in order to arrive at a particular name. Esoterically, this is the integration of timing into injunctions, which has its outermost expression in the sense of ritual. In other words, esoteric ritual, such as meditative practice, prescribes a definite sequence which yields *transformation*, i.e. the generation of a capacity to name (distinguish) new states.

Immediately following the last quote, GSB (1972) notes that

The more important structures of command are sometimes called canons. They are the ways in which the guiding injunctions appear to group themselves in constellations, and are thus by no means independent of each other. A canon bears the distinction of being outside (i.e. describing) the system under construction, but a command to construct (e.g. 'draw a distinction'), even though it may be of central importance, is not a canon. A canon is an order, or set of orders, to permit or allow, but not to construct or create. (p. 80)

In this strange passage is indicated, from an esoteric standpoint, that in esoteric development, the path can only be *indicated*, not *forced*. In other words, freedom is an essential component of the path of spiritual development, in the sense that esoteric injunctions (and their groupings into various 'systems' or 'rituals', i.e. the 'canon') take the form: "if you do X, then Y is a consequence," NOT the more aggressive "DO X ...".

Again, immediately following the previous quote, GSB(1972) states:

The instructions which are to take effect, within the creation and its permission, must be distinguished as those in the actual text of calculation, designated by the constants or *operators* of the calculus, and those in the context, which may themselves be instructions to name something with a particular name so that it can be referred to again without redescription. (p. 80)

That is, we must recognize that in addition to the injunctions constituted by constants and operators specified in the actual calculation, one must also include as injunctions the *context* through which the constants and operators are approached. This is essentially the introduction of the second-order relation, where for any content there is a higher-order context which is essential for the unfolding of the lower order content. In other words, ignoring the context changes the first order distinctions, even to the point of inverting them. We could actually say that it is this principle which is behind the very creation, dissemination, and protection of esoteric knowledge. Esoteric knowledge is just that higher-order knowledge which provides the context for the lower-order

content. Lacking the esoteric knowledge leads to all sorts of perversions and confusions at the first order level.

GSB (1972), in discussing the nature of injunctions, points out:

Thus, in the structure of a proof, we shall find injunctions of the form “consider such-and-such”, “suppose so-and-so,” which are not commands, but *invitations* or *directions* to a way in which the implication can be clearly and wholly followed. (pp. 80-81)

From an esoteric standpoint it is important that when providing esoteric direction, one must uphold the principle of freedom. This actually corresponds with the principle of another famous cybernetician, who was present at the Esalen conference, Heinz von Foerster, whose “ethical imperative” is: act so as to increase the number of available choices. Of course, we would call this imperative an *injunction* in the previously discussed sense.

Recursion #6

We ended the last installment by discussing the esoteric nature of the *injunction*. We continue this exploration, and bring this series to a close. GSB (1972) notes that

In the command “let the crossing be to the state indicated by the token” we at once make the token doubly meaningful, first as an instruction to cross, secondly as an indicator (and thus a name) of where the crossing has taken us. It was an open question, before obeying this command, whether the token would carry an indication at all. But the command determines without ambiguity the state to which the crossing is made and thus, without ambiguity, the indication which the token will henceforth carry. (p. 81)

This re-affirms that the mark has both a first and second-order character: it names the state of its content (its indication), and it is an instruction (its injunction) to mark that name, to make that distinction which yields that state. Thus every mark is both an indication and an injunction. It is an indication of a content and an injunction on how to get there.

He further recalls (1972) that

We may consider how far, in ordinary life, we must observe the spirit rather than the letter of an injunction, and must develop the habitual capacity to interpret any injunction we receive by screening it against other indications of what we ought to do. In mathematics we have to unlearn this habit in favour of accepting an injunction literally and at once. This is why an author of mathematics must take such great pains to make his injunctions mutually permissive. Otherwise these pains, which rightly rest with the author, will fall

with sickening import upon the reader, who, by virtue of his relationship with respect to the author, may be in no position to accept them.) (p. 82)

All this actually relates to the task of the esoteric teacher, who recognizes that the way in which injunctions are presented (their context) has a quite prominent role to play in affecting the ability of the pupil to take them up. Thus a key aspect of esoteric teaching necessarily involves extensive caveats, personalizations, modifiers, generalizers, and specifiers. It is relational through and through; there is no one set of injunctions that will work for everyone.

In discussing the nature of the primal injunction, “draw a distinction,” GSB (1972) notes that

We have here reached a place so primitive that active and passive, as well as a number of other more peripheral opposites, have long since condensed together, and almost any form of words will suggest more categories than there really are. (p. 84)

All this indicates the primal nature of the WILL, its irreducible ontology. All that “is” flows from WILL. But we have seen also that this will is not alone: it is accompanied, in a complex unity, with both a *thinking* and a *feeling*, taken in their most primordial sense.

GSB (1972) then indicates that

We may ask why we do not justify such a convention at once when it is given. The answer, in most cases, is that the justification (although valid) would be meaningless until we had first become acquainted with the *use* of the principle which requires justifying. In other words, before we can reasonably justify a deep lying principle, we first need to be familiar with how it works. (pp. 84-85)

Again, we have a parallel in esoteric communication. It is not necessary to know why an injunction is made; the point is to follow it and see where it takes you. Once followed, it becomes possible to see why it was made, but that explanation is literally occult before the injunction is followed. This is precisely what makes so many esoteric texts seemingly obtuse or even outright nonsensical. It is also a built-in safeguard: if you don't think the injunction makes sense, you won't follow it through, and you won't gain entry into what is made available by following the injunction. This is to say, you won't build the transformative capacity required to recognize the need for the injunction in the first place. This is a fascinating element of the spiritual world: it is constantly making itself available to us, but *we have to do the work to come to know it*. In other words, those people who work esoterically are *always* self-selected: they elect to pass the

initial boundary of unknowing, knowing that the seeking itself will yield everything that is needed: one does not have to *start* with the answers.

Now, GSB (1972) finally makes an explicit revelation:

In all mathematics it becomes apparent, at some stage, that we have for some time been following a rule without being consciously aware of the fact. This might be described as the use of a *covert* convention. A recognizable aspect of the advancement of mathematics consists in the advancement of the consciousness of what we are doing, whereby the covert becomes overt.

Mathematics is in this respect psychedelic. (p. 85)

This is, obviously, an explicit reference to the essence of spiritual/esoteric development, the expansion/extension/transformation of consciousness. It is an elaboration of the principle we came across earlier, by which we can start *anywhere* and proceed “upwards” or “backwards” to higher or more previous levels. But what makes it “psychedelic” in GSB’s phrasing, is that this very progression is one through which consciousness becomes more capable, more resilient, more able to, as it were, traverse up and down the rungs of Jacob’s Ladder, stretching between Heaven and Earth.

Furthermore (1972),

In general there is an order of precedence amongst theorems, so that theorems which can be proved more easily with the help of other theorems are placed so as to be proved after such other theorems. This order is not rigid. For example, having proved theorem 3, we use what we found in the proof to prove theorem 4. But theorems 3 and 4 are symmetrical, their order depending only on whether we wish to proceed from simplicity to complexity or from complexity to simplicity. (p. 86)

This reveals an important esoteric point: there is no single path of development. Paths of development share injunctions — but the order in which they are carried out CAN be *somewhat* arbitrary. Generally there are definite limits to the level of arbitrariness in order, beyond which the higher-order rule of timing changes the outcome drastically. In *Laws of Form*, note that GSB indicates a switch of theorems 3 and 4, but not, say of 3 and 16. This is WHY there are such things as “canons,” or definite repeated types of groups of injunctions, because within those groups elements are somewhat interchangeable, but are not interchangeable between groups without potentially serious consequence (one could even have justification—far beyond the scope of this commentary—in calling some of these potential consequences “evil”).

One of the most beautiful facts emerging from mathematical studies is this very potent relationship between the mathematical process and ordinary language. There seems to be no mathematical idea of any importance or profundity that is not mirrored, with an almost uncanny accuracy, in the common use of words, and this appears especially true when we consider words in their original, and sometimes long forgotten, senses. (Spencer-Brown, 1972, pp. 90–91)

This relation, of course, is no surprise to an esotericist. The profound, even *magical* link between speech and reality is well known in every esoteric tradition that I am aware of, even going back to the most primal spirituality of all that is still active today, the shamans of the Kalahari Bushmen (which the cyberneticist Bradford Keeney has explored deeply). Many, many books have been written about this connection. A recent advance in this realm has been taken by Rudolf Steiner and the artistic and therapeutic speech work that has been developed out of his indications.

Much that is unnecessary and obstructive in mathematics today appears to be vestigial of this limitation of the spoken word. For example, in ordinary speech, to avoid direct reference to a plurality of dimensions, we have to fix the scope of constants such as ‘and’ and ‘or,’ and this we can most conveniently do at the level of the first plural number. But to carry the fixation over into the written form is to fail to realize the freedom offered by an added dimension. This in turn can lead us to suppose that the binary scope of operators assumed for the convenience of representing them in one dimension is something of relevance to the actual form of their operation, which, in the case of simple operators even at the verbal level, it is not. (Spencer-Brown, 1972, p. 92)

I include this quote because it points to the need to get beyond the induction/deduction polarity in the construction of knowledge. We need to include abduction (or something very much like it, as Gendlin’s thinking-from-the-implicit), which is implicitly multidimensional, as a valid third form of reasoning. This form of reasoning, mentioned earlier, is precisely what Steiner elucidated in a much more in-depth and direct fashion in his distinction of the Imaginative, Inspirative, and Intuitive faculties. These all build upon the esoteric seed that C.S. Peirce was waking up to in his recognition of abduction.

GSB (1972) states that

The validity of a proof thus rests not in our common motivation by a set of instructions, but in our common experience of a state of

affairs. This experience usually includes the ability to reason which has been formalized in logic, but is not confined to it. (p. 93)

This is where the question of the logic of logic is raised, and to which the idea of an aesthetic epistemology (my PhD dissertation work) is addressed. The “common experience of a state of affairs” can be taken to refer to what Steiner called the “given” and what Eugene Gendlin calls a “preconceptual multiplicity” or “precognitive unity” of experience itself. GSB (1972) continues:

It seems open to question why we regard the proof of a theorem as amounting to the same degree of certainty as the demonstration of a consequence. It is not a question which, at first sight, admits of an easy answer. If an answer is possible, it would seem to lie in the concept of experience. (p. 93)

GSB is leading himself here to the edge of what Steiner began with in his epistemological work *The Philosophy of Freedom*. It also points to the modern work of Gendlin on the nature of experience. The point is that what GSB is driving at leads to one of these moments where we have to go “up” or “back” to a higher order: we have to *cross*. This crossing comes about by paying attention to the difference between the content of our thoughts and the way that those thoughts arise. This means that GSB is right: we need to pay more attention to experience, because it is here that we will find the place from which logic itself arises, and which becomes the recursive beginning of epistemology (and proof). We have already noted important features of this very process. GSB (1972) indicates, using language that is *not* meant to be esoteric, but, which, if we have read Steiner, is quite apt from an esoteric standpoint:

But since the procedures of the proof are not, themselves, yet codified in a calculus (although they may eventually become so), our certainty at this stage must be deemed to be intuitive. (p. 94)

Quite so, but intuitive in a way not likely meant by GSB. In the Esalen conference, GSB is very specific about the nature of proof and how it differs from demonstration, as we saw back near the beginning. Now we can recognize something more about *why* there is such a difference: it has to do with the human being’s ability to *transform consciousness*, to move up and down the cosmic ladder to higher and lower orders. Computers only work *laterally*.

As GSB indicates,

In discovering a proof, we must do something more subtle than search. We must come to see the *relevance*, in respect of whatever statement it is we wish to justify, of some fact in full view, and of which, therefore, we are already constantly aware. Whereas we may know how to undertake a search for something we can *not*

see, the subtlety of the technique of trying to 'find' something which we already *can* see may more easily escape our efforts. (p. 95)

The esoteric path relies upon that which is there for us already; what it does is to make what we already see transform through the revelation of a higher context IN it. We then see more than we see, and this is the esoteric analogy for mathematical "proof." GSB (1972) continues:

This might be a helpful moment to introduce a distinction between following a course of argument and understanding it. I take understanding to be the experience of what is understood in a wider context. In this sense, we do not fully understand a theorem until we are able to contain it in a more general theorem. We can nevertheless follow its proof, in the sense of coming to see its evidence, without understanding it in the wider sense in which it may rest. (p. 95)

In other words, the esoteric path of development *occurs* from the 'bottom up' (or the inside out) but is *led* from the top down (or the outside in). Wider and wider contexts are revealed for what was previously already known, changing what is known in the transformation of the knower to the state in which that higher context becomes revealed.

GSB (1972) states that

Following may thus be associated particularly with doctrine, and doctrine demands an adherence to a particular way of saying or doing something. Understanding has to do with the fact that whatever is said or done can always be said or done a different way, and yet all ways remain the same. (p. 96)

This is a very important esoteric point, and is the key to the dissolution of fundamentalism of any type. Steiner uses the metaphor that while there is but one mountain, there are many paths to the top. Or more explicitly and helpfully, he (1918/1947) says:

One must postulate the following: no single matter is to be comprehended only by means of what is said about the matter itself, but by means of much else that is disclosed concerning totally different matters. This will develop the conception that what is vital is to be found not in any single truth but in the harmony of all truths. *This must seriously be considered by anyone intending to carry out the exercises.* [Emphasis added] (p. ix).

The exercises are simply those designed to awaken the esoteric capacities latent in human beings. This is coupled with the very clear recognition that "There is, in truth, no difference between esoteric knowledge and all the rest of

man's knowledge and proficiency. This esoteric knowledge is no more of a secret for the average human being than writing is a secret for those who have never learned it" (Steiner, 1918/1947, p. 3).

Of course, this is exactly the point that I am trying to make in exploring GSB's Laws of Form. I am simply taking LoF as the starting point, which could have been anywhere, for esoteric continuation. This whole commentary is an attempt to bring a vertical movement of knowing to the text LoF as a "thing" at level N; an attempt to move towards N+1. My hope is that by doing this here (for now this text is likely all just back at N for you, the reader) in a very explicit way, you can take up this same type of transformation.

GSB (1972), in his own words, indicates that

To any person prepared to enter with respect into the realm of his great and universal ignorance, the secrets of being will eventually unfold, and they will do so in a measure according to his freedom from natural and indoctrinated shame in his respect of their revelation. (p. 110)

This whole statement doesn't need to be connected to any esoteric principle because it is one overtly. He continues (1972), still in an esoteric vein:

To arrive at the simplest truth, as Newton knew and practised, requires *years of contemplation*. Not activity. Not reasoning. Not calculating. Not busy behaviour of any kind. Not reading. Not talking. Not making an effort. Not thinking. Simply *bearing in mind* what it is one needs to know. And yet those with the courage to tread this path to real discovery are not only offered practically no guidance on how to do so, they are actively discouraged and have to set about it in secret, pretending meanwhile to be diligently engaged in the frantic diversions and to conform with the deadening personal opinions which are being continually thrust upon them. (p. 110)

If this isn't a description of what the esoteric pupil encounters, I don't know what is.

Furthermore (1972):

In these circumstances, the discoveries that any person is able to undertake represent the places where, in the face of induced psychosis, he has, by his own faltering and unaided efforts, returned to sanity. Painfully, and even dangerously, maybe. But nonetheless returned, however furtively. (p. 110)

This may seem like something of a pessimistic view, and is likely informed by GSB's personal biography, but I had to include it because of his inversion of the concept of sanity is very apropos. He concludes (1972) that

The very act of dwelling for a while with even a simple form can evidently tax the whole of one's powers, so that to leave the simple forms before one is properly familiar with them can result in many unrewarding, or largely unrewarding, mathematical excursions. (p. 134)

GSB leaves us with a very profound point. Esoterically, progress is not made by advancing quickly, or by taking any kind of "shortcut," but is rather constantly built up on the basis of continually refined, basic characterological traits, such as those described by Steiner in his "six basic exercises." The point is not to "have" any particular knowledge, capacity, or power, but simply to *do the work*. Steiner points out that, no matter what we do, the extent to which we progress is never solely determined by our work in the moment, but is contingent upon a whole range of factors that span many aspects of the spiritual world, such as karmic considerations—but that even more so, there is always an element of grace involved. Thus, the work itself, stated another way, is merely all in *preparation* for the appearance of grace.

References (Appendix only)

- American University of Masters Conference. (1973a, March 19). *Transcript of session two*. Retrieved from <http://www.lawsofform.org/aum/session2.html>
- American University of Masters Conference. (1973b, March 19). *Transcript of session one*. Retrieved from <http://www.lawsofform.org/aum/session1.html>
- American University of Masters Conference. (1973c, March 20). *Transcript of session four*. Retrieved from <http://www.lawsofform.org/aum/session4.html>
- Barth, J. (2001). *Chimera*. New York, NY: Mariner Books.
- Chittick, W. C. (1989). *The Sufi path of knowledge: Ibn al-'Arabi's metaphysics of imagination*. New York, NY: SUNY Press.
- Gendlin, E. (1997a). *A process model*. The Focusing Institute. Retrieved from <http://www.focusing.org/process.html>
- Gendlin, E. (1997b). *Experiencing and the creation of meaning: A philosophical and psychological approach to the subjective*. Evanston, IL: Northwestern University Press.
- Glanville, R. (1990). The self and the other: The purpose of distinction. In R. Trappl (Ed.), *Cybernetics and Systems '90*. Singapore: World Scientific Publishing Company. Retrieved from <http://www.univie.ac.at/constructivism/papers/glanville/glanville90-selfother.pdf>
- Glanville, R. (1995). The cybernetics of value and the value of cybernetics. The art of invariance and the invariance of art. In R. Glanville & G. de Zeeuw (Eds.), *Problems of Values and (In)variants*. Amsterdam: Thesis Publishers. Retrieved from <http://www.univie.ac.at/constructivism/papers/glanville/glanville95-value.pdf>
- Hall, M. P. (2008). *The secret teachings of all ages: An encyclopedic outline of Masonic, Hermetic, Qabbalistic and Rosicrucian symbolical philosophy*. San Bernardino, CA: Forgotten Books.
- Keys, J. (1972). *Only two can play this game*. New York, NY: The Julian Press.
- Magee, G. A. (2008). *Hegel and the Hermetic tradition*. Ithaca, NY: Cornell University Press.
- Maharshi, R. (1988). *The spiritual teachings of Ramana Maharshi*. Boston, MA: Shambhala.

- Miller, S. T. (2008). *The Elements as an Archetype of Transformation: An Exploration of Earth, Water, Air, and Fire* (Master's thesis). John F. Kennedy University, Pleasant Hill, CA.
- Nikhilananda, S. (Trans.). (1995). *The Mandukya Upanishad: With Gaudapada's Karika and Sankara's commentary*. Calcutta: Advaita Ashram.
- Palmer, P. J. (2010). *The promise of paradox: A celebration of contradictions in the Christian life*. Hoboken, NJ: John Wiley & Sons.
- Peirce, C. (n.d.). Abduction. *The commens dictionary of Peirce's terms: Peirce's terminology in his own words*. Retrieved from <http://www.helsinki.fi/science/commens/terms/abduction.html>
- Spencer-Brown, G. (1972). *Laws of form*. New York, NY: The Julian Press.
- Spencer-Brown, G. (1994). *Laws of form*. Portland, OR: Cognizer Co.
- Steiner, R. (1947). *Knowledge of the higher worlds and its attainment*. Hudson, NY: Anthroposophic Press (Original work published in 1918).
- Steiner, R. (1964). *The philosophy of freedom : The basis for a modern world conception* (Vol. 7th English). London, UK: Rudolf Steiner Press (Original work published in 1894).
- Steiner, R. (1991). *Anthroposophy and science: Observation, experiment, mathematics*. Spring Valley, NY: Mercury Press (Original work published in 1921).
- Wing, R. L. (1986). *The Tao of power: Lao Tzu's classic guide to leadership, influence, and excellence* (1st ed.). Doubleday.