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A post-structuralist revised Weil–Lévi-Strauss transformation formula for conceptual value-fields

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Abstract. The structuralist André-Weil–Claude-Lévi-Strauss transformation formula (CF), initially applied to kinship systems, mythology, ritual, artistic design and architecture, was rightfully criticized for its rationalism and tendency to reduce complex transformations to analogical structures. I present a revised non-mathematical revision of the CF, a general transformation formula (rCF) applicable to networks of complementary semantic binaries in conceptual value-fields of culture, including comparative religion and mythology, ritual, art, literature and philosophy. The rCF is a rule-guided formula for combinatorial conceptualizing in non-representational, presentational mythopoetics and other cultural symbolizations. I consider post-structuralist category-theoretic and algebraic mathematical interpretations of the CF as themselves only mathematical analogies, which serve to stimulate further revision of the logic model of the rCF. The rCF can be used in hypothesis-making to advance understanding of the evolution and prehistory of human symbolic behaviour in cultural space, philosophical ontologies and categories, definitions and concepts in art, religion, psychotherapy, and other cultural-value forms.

Keywords: Lévi-Strauss; myth; symbol; law of myth; culture; evolution of culture; mind

1. Introduction

In the contest to articulate the most accurate and fruitful analyses and interpretations of conceptual or symbolic fields of culture, a robust method of clarification is important. As Hegel said with respect to philosophical absolutes, and here relevant to any hermeneutic of cultural-value forms, a philosophy without a method is like a "night in which all cows are black" (Hegel 1967[1841]: 79).

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In this study I offer an on-going revision of the mathematical formula used by Claude Lévi-Strauss, which I suggest strengthens its capacity for understanding and illuminating symbolic forms in art, religion, psychotherapy and other culture domains; for clarifying philosophical ontologies, definitions and concepts in conceptual value-space; and for hypothesis making to advance our understanding of the evolution, prehistory and history of cultural behaviours.

Lévi-Strauss first proposed a formula for the structuralist analysis of kinship relations using an algebraic group-theoretic formula suggested by the mathematician André Weil (Lévi-Strauss 1969[1949]: 221–227). He subsequently applied the formula to mythology, ritual, artistic design and architecture. With respect to myth he gave this description of the formula (Lévi-Strauss 1967: 228):

> Every myth (considered as the aggregate of all its variants) corresponds to a formula of the following type:
>
> Fx(a) : Fy(b) ~ Fx(b) : Fa–1(y).
>
> Here, with two terms, *a* and *b*, being given as well as two functions, *x* and *y*, of these terms, it is assumed that a relation of equivalence exists between two situations defined respectively by an inversion of terms and relations, under two conditions: (1) that one term be replaced by its opposite (in the above formula, *a* and *a–1*); (2) that an inversion be made between the function value and the term value of two elements (above, *y* and *a*).

Lévi-Strauss (1988: 207) posited several other variants of this formula, including

> Fx(a) : Fy(b) ~ Fy(x) : Fa–1(b).

In these formulae the 'functions' and the 'terms' each represent a complementary semantic binary opposition. Lévi-Strauss here refers to the '~' as an equivalence between the two sides of the formula and the '~' and semi-colons suggest that the formula has an analogical structure. While Lévi-Strauss not infrequently reduced results of applying the formula to an analogical ratio, he also referred to the '~' as the 'helicoidal step' and the final component, the 'double twist'.

After initial extensive academic debates about the pros and cons of the Weil–Lévi-Strauss formula its use subsided as anthropology and philosophy focused attention on postmodern and post-structural questions. Interest in the Weil–Lévi-Strauss formula – now termed the 'canonical formula' (CF) – has renewed with further investigations into the mathematical nature of the formula and its

fruitfulness in applications in anthropology (Maranda 2001; Mosko, Damon 2005) and automated motif discovery in cultural heritage and science texts (Maranda 2010).

While the structuralist concept of 'deep structure', including usages by Lévi-Strauss and Chomsky, has been out of academic fashion, neuroscience confirms the existence of cortical tracking for grammar-based internal construction of hierarchical linguistic structure including syllabic, phrasal and sentence building as part of a neurophysiological mechanism for abstract combinatorial operations (Ding *et al.* 2015).

Harrod (1975) applied the Weil–Lévi-Strauss formula to the myth and ritual of Artemis of Crete and in the process began revising the formula as more a mathematization of an unfolding process and less some sort of analogical structure. While Lévi-Strauss posited in the quote above that *a–1* is an opposite of *a*, in my revised interpretation it would be more accurate to call it an inverse of *a* resulting from the transformation, an asymmetric, non-linear and non-reversible transformation process. Here I gratefully acknowledge my teacher and reader, the anthropologist Susan S. Wadley, for her insightful understanding of how to apply in practice the full transformation schema of the CF, including its recombinations and inverse operations, to myth and ritual. Wadley's application of the CF to the South Asian myth of the goddess Manasa indicated to me that, in some applications, the CF's inverses could be viewed as 'transcendences' and this, in turn, could clarify the use of the concept of transcendence in philosophy and the study of religion. I have tested out further revisions and applications of the CF and have discovered that it can be applied fruitfully to clarify and illumine many cultural-value topics in philosophy, psychology, anthropology, study of religion, theology and even some scientific theories. In the course of doing these exercises I have developed a revised version of the Weil–Lévi-Strauss CF, which I designate the rCF. The rCF is more than a 'law of myth'; its applications are far more extensive. It can be re-interpreted as a general transformation formula for networks of semantic complementary binary opposites in cultural-value space.

With respect to the problem of universality, the rCF does not have universal application in the evolution and history of culture forms. A particular cultural artifact may be informed by the entire rCF or only one or more components of it. In Piaget's cognitive development terms the full rCF seems to be a manifestation of formal operations; the subgroup of the first four operations of *Fx(a), Fy(b), Fx(b)* and *Fy(a)*, a manifestation of concrete operations. Thus a symbolic culture-form may manifest only one or more of these first four operations. With respect to cultural evolution we may hypothesize that similar stages of development occurred and the earliest culture-forms likely could have only manifested out of one or more

of the first four 'concrete' operations components of the rCF. Harrod 2011 used such a 'concrete operations' hypothesis to generate a trans-species definition of religion and Harrod 2014a to demonstrate how chimpanzees evidence religious rituals. Artifacts with possible fourfolds of graphic markings appear to occur during the Oldowan two million years ago (Harrod 2014b), which might also be some sort of manifestation of a subgroup of the rCF.

2. A revised Weil–Lévi-Strauss canonical formula (rCF)

Lévi-Strauss sometimes reduced the results of applying the CF to a simple analogical ratio and has been rightly criticized for this rationalist bias. In general the CF and my proposed rCF need to be understood not as an analogy but as a 'productive dynamic process' moving through mediation to a 'gain' end-state, which is not a closed system (Quinn 2001; Köngäs-Maranda, Maranda 1971), and in which "symbolic elements are a projection of paradigmatic onto syntagmatic series, which always refers homologically to another series" (Petitot, cited in Quinn [2001])

In my revised version (Table 1), the variables '*x* and *y*' and '*a* and *b*' are two pairs of complementary semantic opposites. I designate the pairs as 'opposites' while emphasizing that they arise in complementarity, rather than one side acting as some sort of negation of the other. For Lévi-Strauss *F* means 'function'; in the rCF I take *F*, for instance, in *Fx*, *Fy*, or *Fa–1* to mean 'operates on'. For Lévi-Strauss the ':' is shorthand for an analogical 'is to' relation; in the rCF ':' means 'is to' in the sense of oscillatory cross-reverberating semantic denotations and connotations generated with respect to fourfold recombinations of variables and eightfold 'inverses'. I suggest that Lévi-Strauss used the '::' ambiguously, sometimes meaning 'as' in an analogical ratio, sometimes 'is equal to' and sometimes 'transforms into'. The rCF has replaced the '::' with an arrow, which now means only 'transforms into'. For instance, in the rCF *Fx(a)* means '*x* operates on *a*'. In CF applications, Lévi-Strauss frequently posited variables as nouns or adjectives and then extracted an analogical relation of variables. In contrast, the rCF posits *'x'* and *'y'* phrased with a verb and *'a'* and *'b'* with a verb or more rarely as gerund or noun.

Table 1. Revised version, André-Weil–Claude-Lévi-Strauss Canonical Formula (rCF)

active :	*passive* →	*reflexive :*	*doubly reflexive inverse*	*eightfold pathways*
(–, 0) :	*(0, –)* →	*(0, +) :* *(+, 0) :*	*(both +, + and 0, 0)*	
Fx(a) :	**Fy(b)** ➔	**Fx(b) :**	**Fa–1(y)**	primary path
	➔	**Fy(a) :**	**Fb–1(x)**	alternative path
Fx(b) :	Fy(a) →	Fx(a) :	**Fb–1(y)**	first derivative
	→	Fy(b) :	**Fa–1(x)**	second derivative
Fa(x) :	Fb(y) →	Fa(y) :	**Fx–1(b)**	third derivative
	→	Fb(x) :	**Fy–1(a)**	fourth derivative
Fa(y) :	Fb(x) →	Fa(x) :	**Fy–1(b)**	fifth derivative
	→	Fb(y) :	**Fx–1(a)**	sixth derivative

The rCF generates an eightfold of transformations. Though I designate these as 'inverses', I acknowledge that this is problematic. In the rCF, inverses are not reversals or negations. The rCF's transformation 'arrow' is not reversible; it presences a one-direction trans-formation. To take a term from Hegel, what I term an inverse has a quality like an *Anhebend*, in sense of, or feeling of, an uplifting, and has connotations of the sublime and the transcendent. In short, inverses are transcendences. They are eightfold and equiprimordial; there is no single absolute transcendence. An rCF inverse is not derived logically. It is generated via creative imagination. This creative imagining is not infinitely open; it is constrained or, perhaps more precisely, channelled by the rCF. I interpret the rCF inverses as doubly reflexive relationships, each inverse involving mutual reciprocity of dialogical communication, 'subjectively reflexive' as 'I' communing with an 'other', and 'objectively reflexive' as the other now an 'I' communing with 'me'. This transcends any simplistic 'I-other' or 'subjective-objective' relationship.

A robust amplification of such reflexivities may involve differentiating and articulating dialogical factors of self-relatedness – compare Hegel's attempt to articulate this as 'self-consciousness' – which appear to arise in three mutually reciprocal pairs of I-Thou relationships: (a) the 'I-Thou' relationship (Buber 1970[1923]), experientially felt as a standing before a central vertical dimension; (b) the 'ego-Self-axis', with respect to which the ego repairs its relationship to a higher Self, symbolized in dreams and active imagination by images of divinity during depth psychotherapy (Edinger 1972), a derived variation of Jung's concept of Self as the goal of the individuation process, and which is sometimes experientially felt as a transcendent on the right; and (c) the 'ego-creative-axis' in which one experiences

one's "ego-self being, a creative formative power which is alive in oneself, a creative life spirit" which is a particle of the greater divine in all phenomena (Neumann 1989[1959]: 367), variously characterized in Judaism as Elijah, in Christianity as the angel Gabriel or as the Holy Spirit, in Vajrayana Buddhism as outer, inner and secret guru, and in Jung as the shadow which can be transmuted into creative psychic energy, and sometimes experientially felt as a transcendent on the left. The Christian dogma of the trinity is one religion's exemplification of these threefold dialogical relationships. In short such religious 'beliefs' appear to be examples of the complex reflexivities of the rCF inverses. "'One, two, three; but where, my dear Timaeus, is the fourth […]?" (Plato, *Timaeus* 17a). In addition to the triad of ego-other reflexivities, a fourth might be called the 'ego-ego-axis' or, after Fichte, the 'I=I' identity, or paraphrasing Hegel, the self-consciousness function that calls the self out of unconsciousness into awareness of itself as a free individual. This may be viewed as analogous to identity in mathematics. As Hegel pointed out, this self-identity relationship is destabilized by its unfolding temporalization. It could be revisioned in terms of Deleuze's philosophical categories: identity, difference, repetition and singularity. Repetition of the singularity of 'I=I' in its temporalization instantiates its difference, its temporalizing self-differentiation, or in Derrida's terms *différance*. This sense of ontogenetic unfolding-in-time of self-consciousness was captured in the Torah *Exodus* account of Moses' encounter with and naming of his deity as a process of faith and life-unfolding, "*ehyeh asher ehyeh*" ("I shall become what I shall become").

Table 1 lays out an array of possible variant transformations. The non-bolded functions are redundant to the overall transformation or are switches of operator and the variable on which it operates, an operand. The aim of applying an rCF is to discover, clarify, describe and imagine the topos and thematics of a particular cultural-value field. At least with respect to the particular topics to which I apply the rCF I have not found that switching an operation's basic variables adds much to understanding that particular topic. This in part may be because of the complementarity nature of the binary semantic variables. The bolded primary and alternative paths in Table 1 are the main ones that Lévi-Strauss applied. In this regard, the second variant used by Lévi-Strauss, noted above, $Fx(a) : Fy(b) \sim Fy(x) : Fa{-}1(b)$, if employed in the rCF, would require one pole of a complementary semantic opposite to operate against the other pole. In applications I have tested out, such an operation seems to represent a violation or perversion of a primary, alternative or derivative path transformation. One might further explore this with respect to Derrida's notion of 'privileging' of a pole in a binary opposite.

In performing any rCF application the question arises which variables to select for the rCFs initial binary operation. In some cases the choice of the initial binary

operation is arbitrary; in others a particular sequencing of moments is more meaningful for the phenomenon being explored, explicated and thematized. In the case of the inverse operations listed in Table 1 I retain and generally apply all eight. They seem to comprise an interacting, holistic, mutually evocative and polythetic group, which sometimes shows remarkable beautiful symmetries and cross-reverberations of poetic meaning. In Table 1 the italics highlights the dynamic dramatic thread and valenced polarities thread in the overall transform. When I posit any inverse I view it as tentative since it is generated by imaginal extrapolation. Each inverse is equiprimordial, though listed in order of derivation. Although at first glance it may seem the transform is a closed system similar to an analogy, it is open. For any generated set of inverses, another set possibly might be imaginally generated. However, this openness is not infinite. Once basic variables and fourfold recombination are posited for an rCF, this channels the possible imaginative generation of inverses. Thus generation of inverses is both open and constrained.

In the rCF three threads interact: an affective, moral valenced polarity thread and a thread of moments of complementary binary semantic oppositions interact with a dynamic dramatic thread (active, passive, etc.). Similarly, with regard to the 'morphogenesis of meaning', Petitot (2004[1985]) interpreted the CF as having a tripartite distinction between (a) a Greimas' 'semio-narrative structure' having an 'actantial nature' and involving 'thematic roles' interacting through 'conflicts, separations, unions, passions' etc., and reflecting deep structures of 'lived experiences of passions, ideologies, actions, dreams, etc.', in other words, 'anthropological structures of the mind' (Petitot 2004: 2.7) (b) Propp's 'object of value and the quest that motivates action' (2.7); and (c) Fillmore's 'meaning relativized to scenes' (2.6), Waddington's 'morphogenesis of places', or positional differences unfolding in a dynamic process (3.2). With respect to the Levi-Strauss CF paradigmatic, categorical-semantic axis, Petitot further interpreted that it "does not have a reference in the objective world" and its instantiations "are some sort of psychical drives or ideals that give meaning to life, *a meaning that cannot be grasped as such but only experienced via its conversion into actantial structures*" (2.7, emphasis in the original).

Petitot suggested that the structure of the CF reflected deep structures of lived experience, including dreams. I note that in *On Dreams* Sigmund Freud (1989[1952]) observed that 'primary process' in dreams involves such features as (a) 'condensation' of multiple associations or 'dream thoughts'; (b) 'dramatization' of the thoughts as 'situations'; (c) 'pictorial arrangement' (picture-thinking) without logical connectives, including the absence of negation and either/or, and retaining only a 'both' or 'and'; (d) absence of causality, only sequences of situations; (e) 'displacement' of affect intensity; and (f) revision for intelligibility. In Freud's terms

I suggest that primary process condensations and picture-thinking without logical connectives other than 'both' or 'and' characterize the binary semantic thread of the rCF; dramatization and absence of causality, the dramatic actantial thread; and displacement of affect intensity – as well as awareness – the valenced polarity thread.

Greimas (1966, 1987[1973]) proposed an actantial model of narrative semiotics. Greimas develops this model to analyse folktales, which he argues typically involve six actants (Subject or Hero, Object of Quest, Addresser or Sender who initiates the quest, Addressee, Opponent or Villain, Adjuvant or Helper of the Hero) in a narrative schema. Hoping I do not introduce a nomenclature confusion, when I describe the dynamic dramatic thread of the rCF as actantial I am indicating that of the three threads running though the rCF it is this thread that most carries a sequence of active actor–passive actor interactions (Aristotle categories '*poiein*' and '*paschein*'). In the rCF, the sequence of phases moves from an active moment and passive moment into a reflexive (reflexive and reflective) moment, comparable to a moment of self-consciousness or self-reflection, and this into a doubly reflexive inverse moment, which is double as it generates both subjectively and objectively reflexive inverse relationships. This thread gives the rCF its dramatic qualities. These qualitative moments are respectively comparable to the characterization of plot ('*mythos*') phases in Aristotle's *Poetics*: (a) initial conflict and complication; (b) reversal ('*peripeteia*') of fortune subject to rule of probability or necessity; (c) discovery ('*anagnorisis*'), insight, realization of things as they are, often insight into a relationship with an antagonistic character; and (d) resolution, which for the audience via identification with suffering, pity and terror, results in catharsis. One might say after Nietzsche: no *agôn*, no character. With respect to Petitot's (2004) morphogenetic interpretation of the CF, I note that there is no mention in his interpretation of the dynamics of drama as theorized by Aristotle's *Poetics*.

With respect to the semantic thread of the CF, which consists of complementary pairs of semantic binary opposites, I note that Jung (1967[1956]) observed that a symbol, which has the quality of complementarity or a *coincidentia oppositorum*, as a motif in a libido myth symbolizes and transforms psychic libido and archetypal forms of life-force or spirit and is subject to a sequence of transformations. Jung (1970[1946]) posited instinct and spirit as two poles of the psyche's energy flow. Similarly, Ernst Cassirer held that a symbolic form expresses the interaction of two principles, spirit ('*Geist*') and life ('*Leben*') (Bayer 2008; Cassirer 1955). In Cassirer's and Jung's terms the thread of the rCF's complementary semantic binaries may be considered to be expressions of archetypal *coincidentia oppositora* of the psyche's energetic flow, involving animacy as instinct (drive) and spirited self-relatedness. The binary complementarities are the symbolic means through which animacy and self-relatedness are spontaneously transformed.

Petitot (2004: 2.7) observed that the Greimas "semiotic square is a universal schema for the articulation of meaning" and the "relations of contrariness and contradiction which are constitutive of it are not logical" but depend "on a dynamical topology of places and connections". I suggest the Greimas semiotic square of oppositions may be viewed as similar to the rCF semantic binary recombinatorics of the four operations *Fx(a), Fy(b), Fx(b)* and *Fy(a)*, and if so such a fourfold is a partial subset of the original CF and the rCF.

With respect to the semantic variables of the rCF, I emphasize the importance of distinguishing the rCF capacity to define or meta-define particular cultural-value fields from definition by a specific set of attributes (Aristotelian), intensional set of properties, prototype theory of graded categorization (Rosch 1973; Rosch *et al.* 1976), or its geometricized elaboration in conceptual space theory (Gärdenfors 2004). One might view a single *x, y, a* or *b* variable in an rCF application as definable by attribute or prototype definitions; however, I suggest this would be reductive since each such variable is but one term in a pair of complementary binary semantic oppositions and at least its connotations arise with respect to its pairing. Also, an rCF does not employ any Wittgenstein (2009[1953]: §65–71) definition by 'family resemblances' or 'games', a model that appears to confuse a definition of (biological) phylogenetic descent with a prototypical notion of similar/distant properties. The rCF is not a 'set' of prototypical attributes graded or ungraded, precise or fuzzy. Nevertheless an rCF may be used in its capacity to generate comprehensive polythetic, multi-component definitions of cultural forms or other ontological topoi.

Further, I suggest interpretations of the binary opposites in an rCF and in general in culture-formation must take into account the sharp distinction between 'signs' as 'discursive representation' versus 'symbols' as 'non-representational, presentational and non-discursive expression' (Langer 1951). For more detail on this distinction see Discussion below.

With respect to the rCF's valenced polarity thread, which interacts with the thread of moments of the complementary semantic binary oppositions as well as a dynamic dramatic actantial thread, in contrast to Petitot's tripartite model for meaning, I argue for clearly valenced polarities (+, 0, –) in addition to Propp's 'object of value and the quest that motivates action'. In other words, each moment of the rCF specifies two of these three motivating valences or values. I observe that this polarity thread brings a depth dimension to applications of the rCF, which involves, in Freud's terms, a displacement of affect intensity, and further, in meditation terms, a displacement which brings forth qualities of awareness, empathy and energetic freedom.

In an earlier version of my rCF I had posited valences in terms of binary 2-states with an initial conflict, the active moment negatively valenced '– – ' and the passive

moment similarly valenced '– –'. These recombined into two 'reflexive' moments each valued '+ –', and subsequently transformed into eight doubly reflexive inverses valenced '+, +'. Analogous dual valences are typical of recent theorizing of semantic-analysis lexicons. However, reflecting on Bernd Schmeikal's "Four forms make a universe" (2016a: Tables 11, 12) which describes how fourfold polarity strings built of + and –, such as (+, –, +, –) and fourfold array of quaternions, which build on +1, 0 and –1, can generate binary logic spaces, I was stimulated to further revise the rCF to have three valences (+1, 0, –1). In this revision the rCF posits two out of the three polarity valences at any sequential moment of the transformation. Out of nine possible permutations of binary combinations (–1, –1) (–1, 0) (0, –1) (+1, –1) (–1, +1) (0, +1) (+1, 0) (+1, +1) and (0, 0), the overall rCF sequences six of these. I posit the active valences as (–1, 0); passive as (0, –1); the two reflexive as (0, +1) and (+1, 0); and the eight final doubly reflexive inverses as simultaneously (0, 0) and (+1, +1). With respect to valences for the four basic variable phases of the rCF, the zero or void valence in each of these four phases treats and effects the operand, not the operator. This revision of the rCF seems semantically richer and more nuanced than my earlier (+1, –1) two-valence model.

Such a revision adding a zero or void valence seems especially appropriate for cultural concept value fields, such as psychotherapy, for example an evocation of 'displacement of affect intensity' (Freud), which can be seen as arising in each moment or phase of the rCF transformation, and Buddhist meditation with its view and practice of *sunya* to void affect of various phenomena establishing emptiness (*sunyata*). In transformations in which the initial phase or dramatic action involves behaviours causing evil and suffering the newly revised rCF valences seem to characterize these actions no longer as some sort of absolute evil (–, –) or absolute victimization (–, –), but as both negative and zero-charged, in a sense, negative yet 'empty' (*sunya*). Ancillary double negatives such as so-called absolute evil now may be seen as states of delusion (Buddhist *avidya*). The revised rCF alternate reflexive moments, which in some cultural symbolic forms may be viewed as *coincidentia oppositora* (Nicholas of Cusa; C. G. Jung) are valenced (0, +1) and (+1, 0), rather than (+, –), and the latter which may be interpreted as another instance of misunderstanding or delusion, as seems the case for simultaneity of extremes in psychotic delusions or implicit in scenarios of endless conflict or of absolute victory in annihilation of an opposite. Finally, in the new rCF the eight doubly reflexive inverses (not reversals but transcendences) generated by free imagination may be characterized as having valences that are simultaneously both doubly empty (0, 0) and doubly, even exuberantly, full (+1, +1). The rCF articulates culture-value trans-formations, which in the phrasing of Jung (1970[1946]: §93) generate a restoration of the free flow of psychic energy for creativity and work,

and in the phrasing of Schmeikal[1] (2016b) an 'intelligent energy that transcends human cognition', 'trans-contextual free energy', transcending even mathematical order, and further, citing a Buddhist sutra, an unbinding, total release awareness. In some philosophical and religious traditions such a release of free energy is evoked in symbolic forms of flowing water and burning fire or both simultaneously as in the Aztec *ollin* ('movement, burning water').

Recently, Thuillard and Le Quellec (2017) propose a reinterpretation of the Lévi-Strauss canonical formula (CF) as representing transformations on a phylogenetic tree for the evolution of myths, which tree may have lateral transfers of mythemes. They note that for the CF the two function and two terms "typically [are] persons or animals" (Thuillard, Le Quellec 2017: 2). In this phylogenetic interpretation, the CF functions are binary characters with states {0,1}, *Fx=0, Fy=1, y=1*; terms are characters with three states {–1, 0, 1}, *a =–1, b=0, Fa–1=1*; the formula has a sequence of four moments, (0, –1), (0,0), (1,0), (1,1); and it expresses a simple analogical relation, (0, –1) is to (1,0) as (0,0) is to (1,1) (Thuillard, Le Quellec 2017: 3–4). Setting aside justification for using the CF for myth phylogenetics, I suggest that the argument by Thuillard and Le Quellec for binary and triadic valences supports my proposed Revised CF (rCF), which associates for each sequential moment's function and term, two valences selected from a 3-state valence system. Though in contrast to Thuillard and Le Quellec the rCF does not seem to me to need to posit two different 2-state and 3-state threads but only one 3-state thread, as I described earlier.

In sum, the rCF involves a threefold interaction between (a) the string of the two semantic complementary binary pairs undergoing a recombinatory transition followed by inversion in the course of trans-formation; (b) a polarity string valenced (+, 0, –); and (c) an actantial dynamic, dramatic string.

3. Discussion: Mathematical interpretations and analogies

There have been several different mathematical interpretations suggested for the CF. As noted earlier, André Weil proposed the specific algebraic group formulation for the kind of transformations that Lévi-Strauss was investigating, culture-forms such as kinship systems, myths and totemism. Petitot (1985) proposed that René Thom's catastrophe theory, a branch of bifurcation theory in the study of dynamical systems, best accounted for the morphogenesis of meaning in the CF. Petitot (2001) argued that the CF is neither an analogical structure nor a simple Klein group of

[1] Schmeikal, Bernd 2016b. On consciousness & consciousness logging off consciousness. Retrieved from https://www.researchgate.net/publication/289335467 on 15 March 2017.

two couplings of two qualitative oppositions or decomposition of a space M into a fourfold Cartesian space of (+ +, + –, – +, – –); rather, the CF can be viewed as an example of a morphodynamic model having a temporal path and involving a conflict dynamics, as Maranda observed, and an "internalization" of an external parameter that drives the mediation, which leads to a double cusp catastrophe representing Maranda's 'double twist' (Maranda 2001: 280), in which "the process of capture itself *becomes a value*" (Maranda 2001: 300, emphasis in the original). The double cusp is "a singularity that expresses the coupling of two cusps, that is, the interaction between two oppositions with different supports" (Maranda 2001: 302). "The path expresses the progressive internalization of the domination of the *y* value over the *x* value through the mediation of *b*, and then the 'triumph' of *b* (elimination of *a*)" (Maranda 2001: 308). I find Petitot's (2001) interpretation of the CF supportive of my rCF formulation in adding a distinct value polarity string. Further, a morphodynamic path and a process of internationalization and capture seems evident in the rCF. However, I do not find notions of domination, triumph or elimination evident in the inverses in Table 1; rather there is an eightfold variation of end-states in which *x*, *y*, *a* and *b* appear equiprimordial.

Morava observed that the CF appears to be an algebraic group (a system of elements together with a system of rules for their combination) that is noncommutative, and a transformation of category-theoretic relations; and may be mathematically represented as a quaternion group of order-8 (Morava 2005: 55). Morava suggests that this interpretation seems complementary to Petitot's interpretation of the CF in terms of chaos theory (Morava 2005: 62). Morava's order-8 interpretation requires positing relations such as *Fx(y)* to generate the full group. As I noted earlier, I have found that such a combination would erase the complementarity of the semantic binary opposition between *x* and *y* and thus would be semantically impoverished. Darányi *et al.* (2014) accept the quaternion of order-8 hypothesis, test this on the Adonis myth and infer there are 32 variants of the CF. They propose a different set of variants than Morava; they do not include operations such as *Fx(y)*. I suggest that their formulation of the CF appears to confuse valenced polarity string (+, 0, –); actantial, dynamic dramatic string (active, passive, reflexive, doubly reflexive inverse); and binary semantic string, with the consequence that the valenced and the dramatic strings are allocated to 'functions', and the two pairs of binary semiotic opposites are allocated to 'terms', and these are listed as an apparently unlimited series of binary opposites. In my view, at least with regard to the rCF, they also appear to have confused binary opposite pairs ('*a* is a binary opposite of *b*') with negation ('*a* is a binary opposite of *–a*') and with inversion ('a is a binary opposite of *a–1*').

Whether or not catastrophe theory, category-theory, or quaternion group interpretations actually describe the CF I leave to mathematicians to demonstrate. For the purposes of my applications of the rCF I draw on several such interpretations as analogies that seem helpful in characterizing how I have gone about revising the CF into the rCF. For instance, adding a polarity string and dynamic string to the original semantic binary string of the CF reconstituted it as a bundle of three interacting transformations. In this regard, the rCF may be compared to the mathematical notion of "sheaf and other (quasi-)objects […] apprehended by way of 'gestures', that is, by way of *articulations in motion*, which allow for partial overlaps between the 'what' and the 'how' […] sufficient for understanding the *trans-form*-ability of the mathematical world, with its elastic transits, its unstoppable weavings between diverse forms, and its zigzagging pathways between modal realms; [including] fragments of sheafification" (Zalamea 2012: 309–310, emphasis in the original; 2015).

Zalamea (2012: 338) reflects on Merleau-Ponty, *L'Oeil et L'Esprit* (1964: 12) with its description of "the body operative in the domains of knowing as a 'sheaf [*faisceau*, sheaf, bundle, beam of light] of functions, which is an interlacing [*entrelacs*] of vision and movement' [my translation, J. H.] [and] as we have been indicating, that sheaf serves as an interchange (à la Serres) between the real and the imaginary, between discovery and invention, and allows us to capture the *continuous transformation of an image into its obverse*, through the various visions of interpreters". The late Merleau-Ponty's theses "combine the necessity of both thinking the *recto/verso* dialectic and thinking in a continuous fashion", both the visible with a "fold of invisibility" and "to unfold the world without separating thought" or "subregions" (Zalamea 2012: 338-339). This contemporary mathematics would be characterized after Hans Blumenberg as a "mathematical metaphorics" studying the complex lattice of graftings and ruptures between the "time of the world" and the "time of life"; and "creativity proceeds within the time of life", within what Merleau-Ponty called the operative body, but is always extending itself to the "time of the world" that envelops it; sedimentation is therefore historical, and takes place through a web of ideal positions that appear static, but which emerge on a ground of dynamic, polar mediations "[…] which lives synthetically on both the factical level (contextualization) and the functional level (correlation)[…] irreducible to any supposed 'objectuality'" (Zalamea 2012: 343–345). To my mind all these Zalamea descriptors are analogous to and help clarify features of the rCF.

With respect to automated motif discovery in cultural heritage and science communication texts, Maranda (2010) explores how 'mental operations' and their 'representational systems', 'the mind', 'both on the personal and cultural planes', which constitute 'nets of expectancies of events' are amenable to factor

analyses and statistical multiple regression where *X*s as Levi-Strauss' 'bundles of relations' are akin to memory organization packages, processes or nets (MOPps, MOPs, MONs) and *Y*s to imagination structuring processes (ISPs) and adaptive resonance theory (ART). Maranda argues for adding 'the vector of imagination' (ISPs) to such an approach as it loops back and revises MONs to reconfigure them (Maranda 2010: 9–10), and a concept of 'semiospheres' in which semiotic 'memes' as attractors and attraction basins serve as unfolding 'nodes' which emanate from it and which, in an inverse motion, consolidate the basin through their convergence on its polysemy (Maranda 2010: 13–14). From the perspective of my proposed rCF, Maranda supports extending application of the CF to a wide range of cultural practices and shows how it is "akin" to various statistical probability techniques. Further, Maranda offers a rich phrasing of the morphogenetics of the CF as 'nets of expectancies of events' and rightfully emphasizes a fundamental role for imagination, innovation and choice in mental operations describable using the CF. On the other hand, I suggest that Maranda's new interpretation of the CF, especially the notion 'feedback' has yet to adequately take into account distinctions between 'x and *y*' and '*a* and *b*' as complementary 'binary opposites' and the operations of 'negation', 'reverse' and 'inverse'. In multiple science and humanities fields the notion of 'representation' is also problematic and under debate. Further, as I have suggested any hypotheses about the role of 'representation' in culture-formation must take into account the sharp distinction between 'representation' and 'non-representational, non-discursive presentation' (Langer 1951, 1953: 70).

The applicability of the rCF to the full field of semantic binary opposites in cultural-value space may be compared to contemporary reformulations of the philosophy of mathematics seeking to extend the applicability of mathematics into fields of the humanities and the full range of ontological phenomena of experience, for example synthetic philosophy of mathematics (Zalamea 2012, 2015) and integral biomathematics (Simeonov *et al.* 2015). Building on mathematical philosophies of Justus Grassmann, Alfred North Whitehead, C. S. Peirce, and Robert Rosen's category theory as a general theory of modelling, Arran Gare (2016) calls for creation of a new mathematics applicable to all processes in the world. This new mathematics would not be limited to a theory of quantity and would have no mechanical algorithms; rather it would be 'an art' employing 'diagrammatic reasoning', 'patterns and categories and their mappings and transformations' with the aim to develop models adequately reflecting life. Gare gives as an example Andrée Ehresmann and Jean-Paul Vanbremeersch's mathematical model, Memory Evolutive Systems, in which "the successive configurations of a system, as defined by its components and the relations among them around a given time, will be represented by categories; the changes among configurations

by functors" (Gare 2016: 10). Marijuán *et al.* (2015: 1) note "the dynamic intertwining between self-production and communication that characterizes life at the prokaryotic, eukaryotic, organismic, and social levels of organization" and that "the ascending complexity of life is always information-based and recapitulates level after level, a successful 'informational formula' for being in the world […] (*Dasein*, Heidegger)". Bruni and Giorgi (2015) propose a specific biosemiotics model for heterarchically-organized systems distinct from hierarchical structure. Such a heterarchically-organized system seems more analogous to the rCF than one hierarchically structured. They define heterarchical systems in terms of "second or higher order emergence" (Bruni, Giorgi 2015: 4); "triadic or semiotic causality", "sensed difference" and "emergent interpretant", "a point of view where an aggregate of sensed differences that has been sensed makes a difference at a given level of integration", and "by this convergence of synergic factors a locus for selection and decision is constituted at a threshold level where semiotic integration occurs" (Bruni, Giorgi 2015: 3).

Parthemore (2013) proposed a 'cognitive enactive conceptual space theory' involving semantic 'representational symbols or icons' and 'non-representational bundles of associations', but this theory as well as others like it posits as foundational binaries such as 'inside/outside', 'self/other' or 'agent/environment' and this does not adequately account for the more radical distinction proposed by Langer between representational signs and non-representational symbols. Further, with respect to the rCF such hypothetical foundational binaries do not function as foundational, but only as sub-binaries requiring cross-mapping with another binary, and as such they may be viewed as mathematical degenerations of an rCF that has not been fully articulated and result in problematic dualisms. In contrast to Parthemore's conceptual space theory, the rCF instantiates two pairs of complementary binary semantic opposites in a recombinatorics, which may then undergo a doubly reflexive inversion, and as such creates its own non-representational, presentational arena of cultural-value interactions, which is neither internal nor external, neither subjective nor objective, but may be said, after Deleuze (2001), to occur in a plane of immanence.

In "Bauhaus isometry and fields", Bernd Schmeikal (2012: 1–2)[2] suggested that mandalas, including those painted and discussed by C. G. Jung, which reflect the "deep unconscious act in creation" and other palaeoart designs, e.g., Bhimbetka

[2] Schmeikal, Bernd 2012. Bauhaus isometry and fields. In: Gürlebeck, Klaus; Tom Lahmer, Tom; Werner, Frank (eds), *Digital Proceedings, International Conference on the Applications of Computer Science and Mathematics in Architecture and Civil Engineering, July 04–06 2012.* Retrieved on 25 March 2016 from http://e-pub.uni-weimar.de/opus4/frontdoor/index/index/docId/2785.

petroglyphs, Blombos engravings, Valcamonica engravings of nets and single or multiple rhomboids, are expressions of "a dihedral symmetry of the non-abelian group D_4, the space congruence of a square or automorphism of a 'Zweibein'. For me, it represents a neuronal interface between 'extension' and 'cognition', between our images of geometry and the logic of thought. The Gustav Jung Society of the UK has actually posed the question 'Is this an Imago Dei'? Well, if we consider some ideas of Spinoza, god should unite our two properties of being material and mental, being extended and emotional on the one hand, and being cognitive and logical on the other". Further, Schmeikal (personal communication, 22 March 2017) observed that the proposed rCF's threefold valence string (+1, 0, –1) "originates simply in the decomposition of algebra $\mathfrak{G} := \mathfrak{I}_4 \cup_- \mathfrak{I}_4$ (isomorphic with Z^3_2), and the 'set' $\mathfrak{I}_4 := \{Id, e, f, g\}$ are the four iterants shown, for instance, in the 'four forms paper' in formula 8.1" (Formula 8.1 and 8.6 in Schmeikal 2016a), and the 'set' $\mathfrak{I}_4$ referred to as "a module of self inverse commuting elements" (Schmeikal 2015)[3].

In "Four forms make a universe", Schmeikal (2016a) proposes that while Kant viewed nature, matter, space and time as experienced only through an inner representation within the cognitive system, they have a "representation which is both inner and outer" and "are active systems", "intelligent, perceiving, grasping and clear". "There is an oriented logic core within the space-time algebra". "This logic core is a commutative subspace from which not only binary logic, but syntax with arbitrary real and complex truth classifiers can be derived". "[T]he intelligence of space-time is prior to cognition, as it contains within its representation the basic self-reference necessary for the intelligible de-convolution of space-time. Thus the process of nature extends into the inner space" (Schmeikal 2016a: 889). Schmeikal argues that a Clifford algebra involving recombinations of fourfold polarity strings and quaternions is fundamental to quantum and relativistic space-time and its structuring is within us as we are within it. I tentatively suggest that such an active, self-referential and intelligent logic core prior to cognition and structuring the emergence of space-time seems to be analogous to the medium of the rCF.

In sum, though admittedly I am not a mathematician, with respect to efforts to interpret the mathematics of the rCF it appears to me that all the mathematical suggestions may be only analogies. The variables, combinations and transformations of the rCF do not appear to formalize mathematical entities in mathematical domains. The rCF elements do not seem to be numbers, vectors,

[3] Schmeikal, Bernd 2015. Real quaternions and logic space algebra from nothing. (Presentation). Noncommutative Algebras and Applications, Haus am Steinberg, Goslar, Germany, June 14–16, 2015.

orders, sets, groups, rings, topological spaces or other categories. The rCF does not appear to employ category-theoretic identity, composition or morphism, nor its functions Eilenberg–MacLane functors sending 'objects' from one category to another. The '→' does not seem to me a morphism. 'x–1' and other rCF inverses do not seem to be the 1–x inverses of Lawvere categories. The rCF does not use Kan adjunct functors. The rCF binaries are semantic opposites; they are not Lambek two-class graphs of a deductive logic.

4. Discussion: Conceptual value space

As noted earlier, with respect to poetics and linguisticality, the rCF is not an analogical formula as Lévi-Strauss interpreted it but a formula for creations of culture, whose elements and functions pertain to binary semantic opposites or complementarities, *coincidentia oppositora.* These are not representational but presentational and evocational. They are neither Saussurean nor Peircean 'signs' composed of signifiers, signifieds and referents. The rCF concerns symbols and symbol-to-meaning evocations. Any interpretation of the rCF must take into account this sharp distinction between signs as discursive representation versus symbols as non-representational, presentational and non-discursive expression (Langer 1951). A symbol or work of art "gives us forms of the imagination and forms of feeling, inseparably; that is to say, it clarifies and organizes intuition itself. That is why it has the force of a revelation and inspires a feeling of deep intellectual satisfaction, though it elicits no conscious intellectual work (reasoning)" (Langer 1953: 397). "A work of art is a single, indivisible symbol, although a highly articulated one; it is not, like a discourse […] composite, analyzable into more elementary symbols – sentences, clauses, phrases, words, and even separately meaningful parts of words: roots, prefixes, suffixes, etc.; selected, arranged and permutable according to publicly known 'laws of language'. For language, spoken or written, is a *symbolism*, a system of symbols; a work of art is always a prime symbol" (Langer 1953: 369, emphasis in the original).

This distinction between sign and symbol also applies to the concept of metaphor. Lakoff and Johnson (1980) present a theory of metaphor based on conventional metaphor; they do not conceptualize symbolic metaphor. Wheelwright (1962, 1968) develops the clearest definitions available contrasting poetic psychological metaphor, which he terms 'diaphor', versus Aristotelian-Quintillian conventional metaphor – metaphor *kat' analogion* – based on analogy, which he terms 'epiphor'. In poetic terms, such metaphors may be called trivial or cliché metaphors. Diaphor might also be termed radical metaphor (Cassirer 1945:

87). In a similar vein, Allemann (1967) emphasizes that for a century or more writers, poets, artists and other culture-creators have aimed to eliminate the use of conventional metaphor in favour of 'antimetaphor'. Blumenberg (Blumenberg 2010[1960]; Adams 1991; Pavesich 2008) demonstrated the poet's use of 'absolute metaphor', which is irreducible to logicism and resists being translated into conceptuality altogether. In sum, the semantic binary opposites in the rCF are not logical opposites of positive position/negation, nor are they conventional Aristotelian metaphors by analogy. They are more accurately designated as non-representational symbols, diaphors, creative metaphors, depth metaphors, absolute metaphors or antimetaphors.

Neuroscience brainimaging robustly supports the distinction between conventional epiphors composed of 'signs' and creative diaphors composed of 'symbols'. Anterior Broca's area (BA45 Talairach ~ ±45 25 15) has homologous nodes: the left hemisphere node is activated for true versus false propositional world knowledge, integration of signifier and referent (Hagoort *et al.* 2004), analogical reasoning (Luo *et al.* 2003), conventional metaphor (Cardillo *et al.* 2012), inner speech monitoring (Shergill *et al.* 2002), as well as insight for problem-solving (Jung-Beeman *et al.* 2004) and musical scale and jazz improvisation (Donnay *et al.* 2014). In contrast the right hemisphere homologous node is activated for the contextuality of world knowledge and semantic value opposites (Menenti *et al.* 2009), psychological introversion (Wright *et al.* 2006), novel metaphor (Mashal *et al.* 2007) – novel metaphor being an example of symbolic diaphors – as well as using insight for problem-solving (Jung-Beeman *et al.* 2004), aesthetic appreciation of golden ratio in artworks (Di Dio *et al.* 2007), and Acheulian biface making, which involves symmetries (Stout *et al.* 2008).

Additional brainimaging studies support a radical sign versus symbol with binary opposites distinction. Zahn *et al.* (2007) and Kiehl *et al.* (1999) identified co-activations in a neural network for recognizing binary value-opposites, which in these and other studies may overlap or be associated with semantic nodes. They identified a node in the anterior superior temporal (R BA22/38 ~ 55 5 0) that activates to judging relatedness of virtue concepts independent of valence and distinguishes abstract versus concrete words – this node also for REM sleep (Braun *et al.* 1997) – in a network which also activates L dmPFC8 (~ -5 15 55), which has a right homolog that activates to abstract/concrete semantics decision (Poldrack *et al.* 1999); L medial prefrontal BA 10/32 (~ -5 45 25) for moral and affective positive/negative valence and trust/not-trust reciprocity decisions (Van den Bos *et al.* 2009), pleasant/unpleasant (McDermott *et al.* 1999), positive/negative character self-traits (Fossati *et al.* 2003), part of a neural system sub-serving self-reflective thought or sense of self (Johnson *et al.* 2002) – this node also for REM sleep (Braun

et al. 1997); as well as a half dozen other semantic processing nodes, including left inferior temporal (BA20/32 ~ -55 -35 -5) for supramodal semiotic processing for relevance to topic (Straube *et al.* 2012), 'hit' verbs (Kemmerer *et al.* 2007), pareidolia conceptual processing that identifies meaning in squiggles (Voss *et al.* 2012), and 'closer in meaning' categorization of words or pictures (Vandenberghe *et al.* 1996). Neuroscience has also discovered a separate neural network for the experience of valenced binary opposites of animacy aliveness, such as living/not-living and animate/inanimate (Ptito *et al.* 2003; Moll *et al.* 2002; Price *et al.* 1997) as well as linguistic animacy opposites (Grewe *et al.* 2007; Grewe *et al.* 2006). This brief neuroscience review seems sufficient to call into question any theory of cultural evolution that only considers linguistic signs as characterized by Saussure and Peirce.

With respect to the conceptual imaginal-temporalization-space or 'medium' in which instances of the rCF are discovered and imaginally generated for any particular topos in any ontological region, I suggest such a medium seems similar to the medium of the *aevum* in Kermode (1967: 72): "The concept of *aevum* provides a way of talking about this unusual variety of duration – neither temporal nor eternal, but, as Aquinas said, participating in both the temporal and the eternal […] the time-order of novels." I tentatively sketch a model for the conceptual value-space medium of the rCF. Since using a table tends to show division more than integration, features in columns 3 and 4 may be considered as having inner and outer interleaved. Components of the value-space appear to correspond to personality preferences of the Myers-Briggs Type Inventory (MBTI), indicated in {brackets}, specifically introversion {I}, intuitive feeling {NF} and sensate feeling {SF} (Table 2). As an aside, I suggest further that the MBTI temperaments correlate more or less to the Neo-Five Factor Inventory (NEO-FFI): E-I in the MBTI similar to E-I in the NEO-FFI; temperament NT to Intellect/Openness; ST to Conscientious; SF to Agreeableness; and NF to Neuroticism, the latter scale confusing feeling-toned values and ideals, highly sensitive persons, and psychiatrically-labelled disorders.

Table 2. Conceptual value-space medium of the rCF.

Conceptual Value-Space Medium of the rCF					
Introversion {I}			**Extraversion {E}**		
What an introvert looking inside sees		What an introvert looking outside sees	What an extravert looking inside sees	What an extravert looking outside sees	
The Origin, ineffable and non-conceptual	Eros visualizing and attracting to ideal values {NF}	The value-space of the medium, the veil and the revelation; *aevum* (Kermode) {SF}	Ego, intentionality (noesis-noema) (Husserl) {NT}	Evidence (givens); principles logics {ST}	Phenomenal Life-World
	Somatic disposition states, e.g., chakras, nadis, inner winds {SF}	Presentation, symbol non-discursive (Langer) diaphor (Wheelwright) primary process (Freud); archetype as *coincidentia oppositorum* (Jung) {NF}	Representation, sign as signifier, signified, and reference (Saussure) {NT}	Index, icon, sign (Peirce) {ST}	
		Hermeneutics; theatre of art, religion, philosophy, other culture-forms {NF}	Biosemiotics; chamber housing scientific experiments {ST}		
		Reality as touch, contact {SF}	Virtual Reality {NT}		
Heart Sutra: Emptiness is Form (imaginal display appears in emptiness)		Awareness as displacement from ego-consciousness (Vajrayana *rigpa*)	Consciousness as consciousness of something (Husserl)	*Heart Sutra:* Form is Emptiness (all phenomena are empty display)	

Notes.

1. Using a table tends to show division more than integration; columns 3 and 4 might be shown as interleaved.
2. Schmeikal (2016) illumines the distinction between consciousness and awareness, and in suggesting such a distinction in this table I hope I have not done this distinction an injustice.
3. The Value-Space of the rCF appears to correlate to the psychological type of introversion and the temperaments of Intuitive Feeling {NF} and Sensate Feeling {SF}.
4. Tentatively, I suggest possible Myers-Briggs Type Inventory (MBTI) temperament correlations in {brackets}. E-I in the MBTI are similar to E-I in the Neo-Five Factor Inventory (NEO-FFI), and the MBTI NT to the NEO-FFI Intellect/Openness, ST to Conscientious, SF to Agreeableness, and NF to Neuroticism, the latter FFI scale obviously biased against NF.
5. If there are four phenomenological spheres of radiance or light, I suggest the Mental Sphere may correspond to Intuitive Thinking; the Sensory Perception Sphere to Sensate Thinking; the Empathic Imagination Sphere to Sensate Feeling; and the Feeling-Toned Value Sphere to Intuitive Feeling. For Jung a 'feeling-toned complex' was a personal stratum overlying the substratum of an archetype.

If the fundamental concept of cognitive science is that "thinking can best be understood in terms of representational structures in the mind and computational procedures that operate on those structures" (Thagard 2014[4]), the rCF provides a complementary and equally fundamental concept of non-representational structures in the conceptual value-space of the humanities.

If the rCF is a formula only analogous to a mathematical formula – as it seems to have no mathematical objects or categories – then, I suggest, it would seem that the Weil–Lévi-Strauss canonical formula, as well as its refinement and expansion in the rCF, is the discovery of a vital and rigorous method for conceptual studies in the humanities, which can raise the methodological status of the humanities to parallel that of mathematics and the sciences.

With respect to the relation between the rCF and notions of a holographic universe, I leave open the question of whether reality is holographic or not, but affirm the converse, that the conceptual-value procedures humans use to grasp and understand reality are holographic. In this light, for any given conceptual-value topos more than one formulation of an rCF may be possible. The elements of the rCF may themselves be viewed as belonging to a holographic field. Thus, the rCF itself may be viewed as holographic. In this sense, Leibniz's monads have a window in a holographic field, and the rCF's functions, basic and inverse, are monads or monadological. Further, one might say that the rCF is fundamentally relativistic.

Finally, while this overview of the rCF does not develop specific applications, the rCF was implicitly used in developing a trans-species definition of religion (Harrod 2011) and the case for chimpanzee religious behaviour (Harrod 2014a). Explicit applications of the rCF are forthcoming.

5. Conclusion

I have developed a revised André-Weil–Claude-Lévi-Strauss transformation formula (rCF) for valenced binary and complementary opposites, which is applicable to symbolic, imaginal, conceptual fields of culture, including history of religions, comparative mythology and folklore, anthropology of religion, art, literature and philosophy, as well as other ontological topoi.

Contra suggested post-structuralist category-theoretic and algebraic mathematical interpretations of the CF, the rCF appears rather to be a fundamental rule-guided principle for the combinatorial formation of philosophical and

[4] Thagard, Paul 2014. Cognitive science. In: Zalta, Edward N. (ed.), *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition) can be accessed at https://plato.stanford.edu/archives/fall2014/entries/cognitive-science/.

other cultural concepts. The rCF seems to have only a family resemblance to a mathematical formula as also to syntactic structures in language. The rCF formula guides creative imagination by combinatorial non-natural language rules, quasi-analogical reasoning, depth metaphor or diaphor and complex cognitive relational operations between pairs of binary valenced, complementary variables. It does so in the simultaneously immanent and transcendent *aevum*-medium of intuitive-conceptual space. Mathematical resemblances may serve to stimulate further revision of the proposed formulation of the rCF.

The rCF itself is a rule-guided procedure that is non-mathematical yet provides an equally robust method for conceptual value studies in the humanities. The rCF can be used for developing rigorous hypotheses to advance understanding of the evolution and prehistory of human symbolic behaviour, philosophical ontologies and categories, and clarifying definitions and concepts in the humanities[5].

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Постструктуралистская усовершенствованная формула трансформации Андре Вейля–Леви-Стросса для концептуальных полей значимостей

Структуралистская формула преобразования (CF) Андре Вейля–Леви-Стросса первоначально применяемая к исследованию систем родства, мифологии, ритуалов, художественных проектов и архитектуры, была законно подвергнута критике из-за ее рационализма и тенденции редуцировать сложные преобразования в простые структуры. В статье представляется пересмотренная нематематическая версия CF, общая формула преобразования (rCF), применимая к сетям комплементарных семантических бинарностей на полях концептуальных значимостей культуры, включая сравнительную религию и мифологию, ритуал, искусство, литературу и философию. rCF-формула организована правилами для комбинаторного осмысления в нерепрезентативной, презентативной мифопоэтике и в других культурных символизациях. Постструктуралистские теоретические и алгебраические математические интерпретации CF являются лишь математическими аналогиями, которые служат стимулированию дальнейшего усовершенствовния логической модели rCF. Формулу CF можно использовать в создании гипотез, чтобы усовершенствовать понимание эволюции и предыстории человеческого символического поведения в культурном пространстве, философских онтологиях и категориях, определениях и понятиях в искусстве, религии, психотерапии и других формах культурных ценностей.

Poststrukturalistlik täiustatud Weili–Lévi-Straussi teisendusvalem kontseptuaalsete väärtusväljade jaoks

André Weili ja Claude Lévi-Straussi strukturalistliku teisendusvalemi (CF) puhul, mida algselt rakendati suguslussüsteemide, mütoloogia, rituaali, kunstilise kujundamise ning arhitektuuri vallas, kritiseeriti õigustatult selle ratsionalismi ja kalduvust taandada kompleksseid teisendusi analoogilisteks struktuurideks. Esitan CF täiustatud mittematemaatilise versiooni, üldise teisendusvalemi (rCF), mis on rakendatav komplementaarsete semantiliste binaarsuste võrgustikele kultuuri kontseptuaalsetel väärtusväljadel, sealhulgas religioonis ja mütoloogias, rituaalides, kunstis, kirjanduses ja filosoofias. Valemit rCF suunavad reeglid kombinatoorseteks kontseptualiseeringuteks mitterepresentatsioonilises, presentatsioonilises mütopoeetikas ning teistes kultuuri sümboliseeringutes. Pean CF poststrukturalistlikke kategooriateoreetilisi ja algebralisi matemaatilisi tõlgendusi endid üksnes matemaatilisteks analoogideks, mille abil ergutada rCF loogikamudeli edasist täiustamist. Valemit rCF saab kasutada hüpoteeside püstitamisel, et edukamalt mõista inimeste sümbolkäitumise evolutsiooni ja eelajalugu kultuuriruumis, filosoofilisi ontoloogiaid ja kategooriad, definitsioone ja kontseptsioone kunstis, religioonis, psühhoteraapias ja teistes kultuuriväärtuse vormides.