Greimas Embodied
How Kinesthetic Opposition Grounds the Semiotic Square

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Abstract
According to Greimas, the semiotic square is far more than a heuristic for semantic and literary analysis. It represents the generative "deep structure" of human culture and cognition which "define the fundamental mode of existence of an individual or of a society, and subsequently the conditions of existence of semiotic objects" (Greimas & Rastier 1968: 48). The potential truth of this hypothesis, much less the conditions and implications of taking it seriously (as a truth claim), have received little attention in the literature. In response, this paper traces the history and development of the logical square of opposition from Aristotle to Greimas and beyond, to propose that the relations modelled in these diagrams are embodied relations rooted in gestalt memories of kinesthesia and proprioception from which we derive basic structural awareness of opposition and contrast such as verticality, bilaterality, transversality, markedness and analogy. To make this argument, the paper draws on findings in the phenomenology of movement (Sheets-Johnstone 2011a, 2011b, 2012, Pelkey 2014), recent developments in the analysis of logical opposition (Beziau & Payette 2008), recent scholarship in (post)Greimasian semiotics (Corso 2014, Broden 2000) and prescient insights from Greimas himself (esp. 1968, 1984). The argument of the paper is further supported through a visual and textual content analysis of a popular music video, both to highlight relationships between the semiotic square and mundane cultural ideologies and to show how these relationships might be traced to the marked symmetries of bodily movement. In addition to illustrating the enduring relevance of Greimasean thought, the paper further illustrates the neglected relevance that embodied chiasmus holds for developments in anthropology, linguistics and the other cognitive sciences.

Keywords: Semiotic Square, Logic, Double Binds, Analytic Philosophy, Existential Graphs, Phenomenology of Movement, Asymmetry, Lateralization, Transversality, Aristotle, Charles S. Peirce, Algirdas Julien Greimas, Maxine Sheets-Johnstone

1. Introduction

The traditional square of opposition emerged from attempts to diagram a cluster of logical relations that hold between a basic set of four oppositional propositions first formulated by Aristotle in *De Interpretatione* (c.330BCE, see Parsons 2008). Of the various efforts to adopt the square both as a heuristic and hermeneutic tool, the innovations of Algirdas Julien Greimas (1917–1992) have been the most successful. This assessment is attested in the sheer range of literary, visual and multimedia texts and genres to which his so-called "semiotic square" has been insightfully applied (see reviews in Broden 2000, Bonfiglioli 2008, Corso 2014). On Greimas' own account, however, the potency of the square rests not in its usefulness or accomplishments but in its *a priori* status. Greimas asserts (with little argumentation or explanation) that

the semiotic square is a "deep structure" inherent in human culture and cognition. On this account any success it may enjoy as a tool is due to its position as a given – its embedded, generative nature – that which enables it to "define the fundamental mode of existence of an individual or of a society, and subsequently the conditions of existence of semiotic objects" (Greimas & Rastier 1968: 48). The claim is clear enough, but is it true? Is Greimas correct? If so, how? How and where is this oppositional template situated in the human psyche, and what are the neurophysiological inputs or correlates that inform its minimalist mechanics? Is it some kind of species-specific neuro-developmental aberration? Is it a dimly remembered Platonic form? Do we search for it as an elusive legend in specific brain regions or genetic sequences, as Chomskyans have done for decades to no avail in their quest for the elusive Language Acquisition Device? In short, what is the semiotic square, where does it come from, and how does it work? Such questions have received little attention in the literature. The implicit response has been, instead, simply to take the great master's word for it and get on with the analysis. In reaction against this impulse, but with great interest in the veracity and implications of the claim itself, I focus this essay on the cognitive origins and phenomenological grounding of the basic image and relations featured in the square to propose that the diagram could prove to be the projection of a radically embodied gestalt.

My thesis is this: The semiotic square, as a generative template, is necessarily a developmental given of human tacit cognition, proceeding from salient features of human evolution. Prominently involved are the experience of upright posture and the distinctive reorganization of proprioception and kinesthesia this posture enables, relative to (and co-requisite with) limb specialization and the marked functional reconfiguration of the anatomical planes. More specifically, the new experiential template that results is realized in terms of basic oppositional sets of kinesthetic relationships that come to be shared between our hands, arms, feet and legs as we coordinate their motion through space and time. Among other evidence, I argue this position with reference to recent developments in the phenomenology of movement (Sheets-Johnstone 2011a, 2011b, 2012, Pelkey 2014), recent re-assessments of logical opposition (Nöth 1998, Martinek 2007, Beziau & Payette 2008, Danesi 2009), recent scholarship in (post)Greimasian semiotics (Broden 2000, Corso 2014) and prescient insights from Greimas himself (esp. 1968, 1984). The argument of the paper is further developed and supported via visual and textual content analysis of a popular music video from folk singer Kacey Musgraves to highlight ways that mundane cultural ideologies map onto the semiotic square, and to show, by extension, ways these facets of human cognition might also find their ultimate origin in the marked symmetries of embodied movement.

In spite of "the fundamental fact that kinesthesia and proprioception are [the] inextinguishable phylogenetic and ontogenetic correlates" of animate life, Maxine Sheets-Johnstone argues that kinesthesia and proprioception are conspicuously absent "much less noticed to be missing in neurophenomenological and enactive approaches" (2012: 47, 2011a: 471). She identifies kinesthesia as "our sense of self-movement" (2011b: 118), as something fundamentally different from the usual talk of motor control and motor skills that tend to emerge in discussions of embodiment among cognitive scientists. In fact, she argues, such mechanistic, neurological accounts are actually quite "distant from our real-life, real-time kinesthetic experience of movement. Indeed, we no more experience nerve firings than we do our brains!" (2011a: 118). It is at this juncture that a radically embodied reinterpretation of Greimas stands to be so fruitful. This assertion does not stand on its own, however: the argument must be assessed on the strength of its basic premises. First, then, it will be helpful to consider the development of the oppositional square through the history of western thought, to mine its conceptual twists and turns for clues.

2. The Logical Square of Opposition, Verticality and Privileged Universals

The traditional square of opposition functions as a diagrammatic organization of Aristotle's four categorical propositions: 1) "All S are P", 2) "No S are P", 3) "Some S are P" and 4) "Some S are not P". If we consider, for instance, the famous substitution of "Swans" for 'S' and "White" for 'P', the various claims to swan classification that result are at odds with each other in striking ways and are complementary with each other in subtle ways, all together suggesting a particular kind of organization. The basic features of the traditional diagram are reproduced in Figure 1 using both standard and analytic notation:
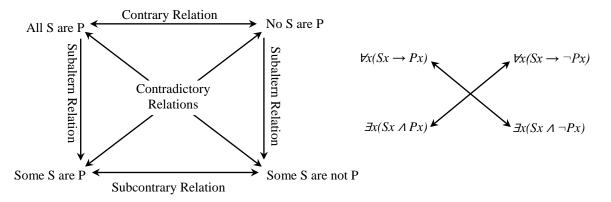
Figure 1. The traditional square of opposition (left) rendered in analytic notation (right)

It is important to note that the so-called "universal propositions", those which admit no exceptions, are consistently placed at the top of the diagram, with the "universal affirmative" listed first and the "universal negative" listed second. This non-trivial organization requires what is known in cognitive linguistics as the VERTICALITY schema (see Johnson 1987): a gestalt embodied memory motivating placement of the "particular" propositions below the universal, relative to the upright posture of the human body. This becomes conceptualized and lexicalized in traditional terminology surrounding the square as "*sub*altern" and "*sub*contrary" relations.

Considered in terms of their relative truth values, it is also worth noting the implications or meanings of various relations:

> The *contrary relation* … means that these propositions cannot both be true but can both be false. The *subcontrary relation* … means that [these propositions] cannot both be false but may both be true. The *contradictory relation* … means that one of them is true if and only if the other is false. The *subaltern relation* … means that if [the upper proposition is true, the lower] is true. (Bernhard 2008: 31)

One cause for a loss of interest in the square of opposition among logicians after the 19th century is the rise of analytic logic (Bernhard 2008). Subaltern relations seem merely redundant in analytic notations; subcontrary relations are suspect because they allow for ambiguity or paradox; indeed, only contradictory relations are considered to be valid in the analytic approach. A universal claim like "all swans are white" can be true if and only if its particular contradiction "some swans are not white" is false, thus further entrenching what is widely known as the principle of "excluded middle" and forging a further manifestation of the X-figure's salience to modern thought (Figure 1, right): oppositional tautology, or opposition for the sake of opposition, with little interest in middle-ground or implicature.

The implications of this loss of interest are worth considering in terms of spatial relations. Gunther Kress and Theo van Leeuwen (1996) argue that there are three primary spatial dimensions in visual texts: left/right, top/bottom and center/margin. In the traditional square of opposition, the center is eviscerated in favor of an exclusive focus on the extremities, or margins. Instead top/bottom and left/right relations become more pronounced. In the analytic turn, relations involving the lower-half of the diagram are deemed to be insignificant, except insofar as the truth value of an upper universal proposition might be validated by the falsehood its inverse subordinate. Thus the upper half of the diagram comes to be ensconced with a privileged, or "unmarked", focus.

Bernhard argues that the analytic dismissal of non-contradictory relations as invalid or irrelevant is misleading (2008: 31-32). Other diagrammatic systems of logical notation reveal further complexity. One such system that affirms the distinctive status of complex relations involving subaltern propositions emerges in the Peircean existential graphs, as Bernhard (2008: 37-39) demonstrates in a discussion adapted for presentation in the Figure 2 schematic.

The application of the traditional square of opposition to Peirce's existential graphs (1903: CP 4.418–4.458) is of interest because Peirce intended his system to represent "the fundamental operations of reasoning" (Bernhard 2008: 39), a goal closely aligned with Greimas' own stated position on the semiotic square.[1] When translated back into analytic notation (Figure 2, right), we find that Peirce's reformulation of Aristotle's four propositions does not function at the level of absolute positive universals. Instead, Peirce suggests that we think in terms of negated generals or hypothetical types, while the particular propositions proposed by Aristotle are replaced by positive individuals or tokens. This mode of thinking is fallibilist or tentative and does not pretend to aspire to pure thought or universal knowledge. As such, we also find that it reinstates or reaffirms the full set of diagrammatic relations dismissed by the analytic tradition while simultaneously breaking free from institutionalized constraints, and in many ways turning the analytic system on its head. Note, in particular, that the unmarked propositions in Peircean notation occur across the lower half of the diagram, in spite of the fact that their analytic translation is identical with analytic notation of the subaltern propositions. In short, Peirce turns the classical system on its head. And, as I demonstrate later in the paper, this "upside-down" metaphor is more than conceptually embodied.
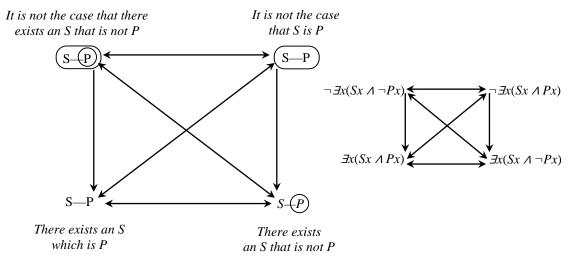

Figure 2. The traditional square of opposition applied to Peirce's primitive existential graphs (left), rendered in analytic notation (right), following Bernhard (2008: 37-38)

The prospect that four basic positional slots, or "propositions", arranged in contrastive sets may serve to inform human conceptual cognition is not a matter of interest solely to philosophers and logicians. Linguistics such as Michael Israel (2011) and Heny Klein (1998) have discovered basic grammatical phenomena, such as adverbials of degree, across world languages that also self-organize according to this oppositional scheme. Israel (2011) argues, for instance, that the logical square of opposition is useful for explaining polarity-sensitivity patterns that hold between exaggeration (emphatics) and understatement (attenuators) cross-linguistically, resulting in a taxonomy of four positional slots. In English this accounts for the existence of ordinary terms like "awfully" and "sorta", and the relations between them. The English emphatic "awfully" stands in a *contrary* relation to negative emphatics like "not at all", both of which stand in *subaltern* and inverse *contradictory* relation to terms like "not all that" and "sorta". The latter two slots stand, in turn, to each other in a *subcontrary* relation as attenuators. The irreducible status of each slot in such oppositional sets is further illustrated in their relative sensitivity to negation. Grammatically speaking, "negative polarity items … cannot occur in affirmative clauses, and positive polarity items … cannot occur in negatives" (2011: i). One can say, for example, "Bob isn't the least bit concerned about his hair", but not

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[1] As Bernhard (2008) notes, this stands in stark contrast to Frege's analytic model, which is inteded to form the basis of a language of pure thought. Interestingly, relations between Frege's version of the four propositional relations emerge as inverse correlatives of the language of actual thought proposed by Peirce.

"*Bob *is* the least bit concerned about his hair." Contrastively, one may say "Sally's condition is rather serious" but not "*Sally's condition *isn't* rather serious."

Such discoveries provide further grounds for reassessing the status of the diagram itself. In short, the square of opposition appears to be more than a convenient grid for keeping track of distinctions and relations, more than a handy heuristic for guessing new information according to analogical slots of a symmetrical template. It may well be that Greimas is on to something in his insistence that the diagram be admitted as a "fundamental mode of existence" underlying culture and inquiry. But if this is so, the square's own grounding in human experience must be shown to be more complex than an X-gestalt (whether embodied or not) considered merely as simplistic array of diagonal bars. This is a start, to be sure, but it leaves us in the same position as the analytic tradition. With little more than mere contradiction to offer (e.g., "the upper half is not the lower half and the lower is not the upper"), the diagram seems merely obvious and loses its interest. But recalling the curious focus, or privilege, granted to upper "universal" slots in the diagram, even this relation must be seen as more complex. Insofar as the square of opposition could be a mapping or manifestation of upright posture, the verticality schema itself would seem strangely out of balance, favoring the upper over the lower.

3. The Semiotic Square, Laterality and Conceptual Ideology

Greimas' adaptation of the classical square of opposition to semiotic analysis extends the structure's relevance beyond of the exclusive domains of propositional and grammatical logic, introducing a number of enhancements or clarifications in the process. The resulting schematic, as mentioned above, is claimed to represent the most primitive structure of cultural signification at both individual and social levels. In addition, Greimas' semiotic square is said to achieve congruence between theory and praxis. According to Schleifer, "the two levels of Greimas's square both separate and bring together—they superimpose—the oppositions between fact and method, semantics and syntax" (2000: 113). Although applications of the semiotic square are almost exclusively geared toward cultural phenomena such as lexical, visual and literary analyses, Greimas himself remarks in passing on the extra-disciplinary compatibility of the structure with the Klein group in mathematics and the Piaget group in psychology (1984: 49-50). Given the transdisciplinary nature of these claims, and their potential potency, it is curious indeed that so little attention has been paid to their validity and grounding. Consider the basic generative template for the semiotic square, listed in Figure 3 (adapted from Greimas 1984: 49 and subsequent developments).
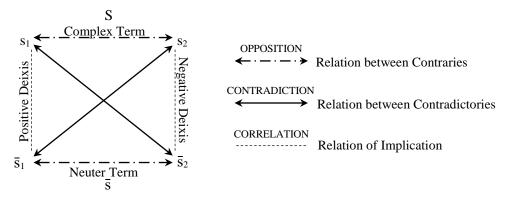

Figure 3. The Greimasean Semiotic Square

One Greimasean expansion of the classical square is the introduction of "semes" or "sememes" as the focus of the template, thus ushering the structure into the domain of human meaning making. This cannot be taken to indicate that the structure itself is merely semantic, only that it is valid for, and congruent with, semantic organization. A further expansion of the classical square is the central figure S, described as a 'complex term'—that which results, supposedly *a posteriori* (Bonfiglioli 2008: 109), from the contrary relations under consideration. This stands in contrast to a "Nueter" or "Neutral" Term which emerges from

the lower contradictory relations. Thus, the Neuter Term is not simply a negation of the Complex Term. Rather, it is a bleaching or neutralizing of the term's vibrancy and vividness (or dogmatism and self-sufficient presumption). The upper-half of the diagram is active/agent and the lower is passive/patient. This axis of contrast is not the most salient for Greimas, however. In fact, as Corso notes (2014: 72), in his own renderings Greimas omits lines of correlation connecting upper and lower halves of the diagram.

Whereas the classical square brings contradictory relations into focus (as discussed above), the semiotic square draws our attention to oppositional relations. This is most vividly noted in the organizing role of the first term (s_1) relative to its opposite (s_2). Consider polarizing English terms like "subject vs. object" and "life vs. death" and their respective corollary terms (see Figure 4). Given Greimas' appreciation of Lévi-Strauss (see Corso 2014:73) this is no surprise; but given the fundamental role opposition plays in the evolution of phenomena ranging from human thought and culture to information structure and the material universe (see Nöth 1994, 1998; Danesi 2009), the importance of this focus cannot be overstated. More critically, Greimas' development of the classical template in this regard draws attention to the privileged or dominant status of the first term (s_1) relative to its operative contrasts (see Jameson 1987: xv). The s_1 term becomes the asymmetrical anchor of an otherwise symmetrical template according to the preconditioned sociosemiotic relations of a given culture.
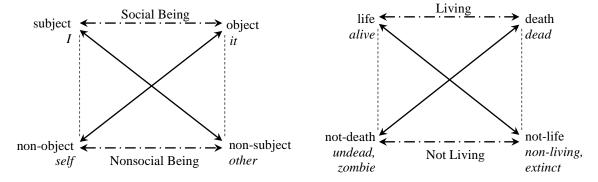

Figure 4. Semiotic square for "subject" and "life"

As discussed above, contradictory relations rely, at least in part, on the embodied VERTICALITY schema. Oppositional relations, in turn, appear to rely on an embodied schema that has received little attention in the literature. Svetlana Martinek (2007) refers to this conceptually neglected body memory as the "RIGHT and LEFT" schema. I propose instead that the schema should be discussed as LATERALITY due to the salient functional specialization (i.e., "antisymmetry") the schema involves, and due to its relevance beyond human and animal realities. Laterality, also known as "chirality" or "handedness" is found throughout the natural world (Riehl 2011), from the helical trajectories of vines and bacteria to the specialization of brain hemispheres and crab claws, with a general predisposition for right over left (Hegstrom & Kondepudi 1990). In this case, what is true of the natural world is also true of the cultural.

Not only is right-handedness or "dextrality" the most common manual expression of lateralization in cultures around the world, but the right hand side is most often associated with features such as strength, honor, dignity, normality and morality as opposed to the relative recessiveness or suspiciousness of the left (see also Porac & Coren 1981: 107-108). Consider Latin *dexter* (right) vs. *sinister* (left). In Hebrew יָמִין "right" implies strength and honor vs. שְׂמֹאל "left" which is associated with weakness and misfortune. Russian *право* "right" is cognate with Proto-Indo European *prō-vos "good, honest, decent" while *лева* "left" is cognate with a proto-term that appears to mean "curved, bent, twisted" (Martinek 2007: 194). Terms for "lame", "limp", "awkward" and "askew" in many Tibeto-Burman languages are cognate with Proto-Tibeto-Burman ***b(w)ay** "left" (Matisoff 2003) relative to *g-(y/r)a "right" whose reflexes are semantically unmarked.

The preferential bias for right over left has complex causes and consequences (see Riehl 2011, McGilchrist 2009). Perhaps the most basic and pervasive consequence for human cognition is the embodied source domain it supplies for generating our more abstract notions of markedness. The primary analogy can

be stated plainly: UNMARKED IS RIGHT, MARKED IS LEFT. The use of all caps, once again, is a cognitive semantic device; but it should be noted that this immensely important feature of embodied cognition is not widely recognized (much less institutionalized) in cognitive linguistics. Markedness is a theoretical and cultural phenomenon only to the degree that it is rooted in our lived experience of lateralization, primarily the experience of our right and left hand/arm movement in lateralized opposition.

In light of these insights the situation of the primary term (s_1) in the semiotic square might be surprising. It might seem counterintuitive that the unmarked "righthand" sememe is consistently placed in the upper-left corner of the square. But this would be a superficial analysis. When facing an interlocutor squarely, we recognize that the right side of the other is adjacent to our left and that their left is adjacent to our right (in keeping with related findings on "altercentric participation" from Bråten 2007). In much the same way, the right eye is oriented toward the left visual field while the left eye is oriented toward the right. Even in two-dimensional cultural abstractions such as a coat-of-arms we recognize this to hold true. The "dexter" (right hand) side in two-dimensional heraldry is understood to refer to the left-hand side relative to the viewer.[2] To the degree that a two dimensional mapping functions as a manifestation or analogical mapping of the human body image, I would propose that this reflexive chiasmus is more likely to hold true. These considerations aside, the best evidence that the primary term (s_1) corresponds with the "right hand" of the diagram is its consistently unmarked, privileged status, a status that governs all other terms in the diagram. But, much like their social counterparts, cultural terms invested with power and privilege are not inherently good or innocent.

On the contrary, as Iain McGilchrist (2009) demonstrates at length, Left-Brain+Right-Hand dynamics have a close relationship with aspects of cognition that are related to decontextualization, efficiency and control; and while such phenomena are not corrupt in themselves, they are easily corruptible. Left unchecked by Right-Brain+Left-Hand dynamics, the myth of the ascendant "right" easily spills over into harmful ideology: presumption, fragmentation, oppression and reckless automation. In short, in spite of being the presumed locus of meaning, the unquestioned ascendancy of the s_1 term can drive a given system into helplessness and even meaninglessness. Given that the semiotic square has long been recognized as a tool for identifying and dealing with ideological binds in cultural texts and contexts, these connections are especially fecund. Nevertheless, I will put them aside for now and pick them up again later. First it will be helpful to sketch a more full account of the diagram's proposed embodied grounding.

4. Transversality, Movement and the Embodied X

So far I have shown that the square of opposition appears to be grounded in two "schemas" or gestalt memories of body movement: VERTICALITY (upper-lower) and LATERALITY (right-left). Neither aspect of the square would make sense without lived bodily experiences and body memories that inform these abstractions and their imputed values across cultures. It is worth recalling that VERTICALITY, interacting with the frozen X or hourglass gestalt, is the ground of *Contradiction* (i.e., the upper is not the lower) while LATERALITY is the ground of *Opposition* (i.e., right over left) against an otherwise symmetrical frame. Here I propose that a third embodied model grounds relations of *Correlation* in the semiotic square: TRANSVERSALITY—a neglected concept that requires a brief orientation to the three anatomical planes of the human body image: 1) coronal, 2) sagittal, and 3) transverse.

The **transverse** plane intersects the human body schema at the waistline, tacitly juxtaposing experience of the upper body with the lower, and thereby blending our experience of laterality with our experience of verticality. Plainly put, transversality integrates our experience of both right and left limbs, both above and below the waistline. This fact may seem basic, and it is; but it is also non-trivial and has implications for embodied theorizing that have been neglected for too long. Before proceeding, though, it is important to underscore the distinction between transversality and verticality and to better orient the discussion to the other two anatomical planes.

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[2] These chiastic reversals hold potentially rich (and relatively untapped) consequences for insight into sociocognitive processes (see Pelkey 2013b and Corso 2014: 80-87 for intimations of things to come).

The human experience of verticality is primarily enabled by our enhanced experience of the **coronal** or "frontal" plane, more commonly (if only tacitly) known via our binary distinction between "front vs. back". Experience of the coronal plane is enhanced for *Homo sapiens* due to our species-specific mode of bipedalism, or upright posture. In the words of Henri Van Lier "While other animals are radiolarian or caudal-rostral, Homo is *transverse*, and thus *frontal-dorsal* stricto sensu, conferring a front not only to himself but to everything coming in front of him" (2003: 4). This evolutionary *coup d'état* not only sets our default perspective in an orthogonal relationship to the world around us—bringing into play the VERTICALITY schema—but also frees up our hands for more specialized tasks, enabling more pronounced and complex modes of LATERALITY. Since lateralization also applies below the waistline, we identify one final anatomical plane: the **sagittal**, tacitly separating left from right down the middle length of our body image. Both the coronal/vertical and the sagittal/lateral are integrated in TRANSVERSALITY.

With these facts in mind, Van Lier appears to be correct in referring to the human species as the "transverse primate" (2003). Transversality becomes the most fully suggestive or integrative account of the evolutionary advantages (and consequences) of upright posture, serving to highlight the dominant experience of the frontal half of the coronal plane and, in turn, the lateralization of the sagittal. Van Lier (2003: 2) further clarifies this position with reference to the human production and experience of angles. In referring to the human species as "an angularizing and transversalizing primate" (2003: 2), he marks out relationships between movement and geometry that underlie all modes of human matching and mapping, enabling and informing all acts of diagrammatization in anthroposemiosis, large and small, including the semiotic square of opposition.

Recognizing the angularizing, transversalizing human experience of our four limbs, mediated by an upright torso and three intersecting planes serves to expand our understanding of what I have called "the embodied X" (Pelkey 2014).. We are now better prepared to consider the form as an active figure "experienced as a linear pattern created by movement" (Sheets-Johnstone 2011b: 116). Sheets-Johnstone's insights into the phenomenology of movement are particularly relevant here. Consider first her argument that our ability to think relies on the movement of our whole body to find or create spatial regularities. She observes that "it is erroneous to think that movement simply takes place *in* space" since, "On the contrary, we formally create space in the process of moving" (2011a: 124). Furthermore, since "the body moves as an integrated whole"; "short of this fundamental kinetic integrity, we could hardly discover regularities" (2011a: 125); thus, "in both a phylogenetic and ontogenetic sense, thinking is fundamentally modelled on the body" (2011a: 309)

Suspicious of the modern "pointillist conception of movement" (2012: 64) that gives rise to theories of "body image" and "body schema", Sheets-Johnstone warns that such ideas "emanate … from a bias of Western thought that anchors reality in the spatiality of things to the exclusion of their temporality, i.e., their impermanence, their flow, their temporal dynamics" (2012: 64). Instead, she proposes the term "kinetic melody" (see e.g., Sheets-Johnstone 2012, drawing on Luria 1973). Kinetic melodies are "integral kinesthetic structures", familiar bodily dynamics tailored to particular situations that call for the re-enactment of one or more coordinated series of remembered movements such as signing one's name or walking along an icy sidewalk. The cognitive sedimentations in question differ from the pointillist theories she critiques primarily in that they are dynamic and open instead of being static and fixed.

Sheets-Johnstone identifies the interaction of four cardinal elements or fundamental qualities of felt movement underlying all kinetic melodies, two of which are temporal and two spatial (2011a: 123):

1) Tensional: felt temporal effort
2) Projectional: felt temporal force and energy
3) Linear: felt spatial paths and contours
4) Areal-Amplitudinal: felt spatial expansion and contraction

Of these four qualities, the third is the most relevant for grounding the semiotic square in the dynamics of spread-eagle posture. In short, our "tactile-kinaesthetic awareness" serves to "ground our imaginative consciousness of movement in the form of body lines. They provide the backbone of our awareness of the

linear designs created by our moving bodies" (Sheets-Johnstone 2011b: 116). Sheets-Johnstone argues that linear dynamics can be understood as both "linear design and linear pattern", clarifying that "linear design specifies how, in the course of moving, body parts and the moving body as a whole are curved, straight, twisted, and horizontally, diagonally or vertically aligned or any combination thereof", while "Linear pattern describes the trajectory or trajectories that a living body creates in moving" (2011b: 115):

> In becoming aware of the linear design of our bodies, we are actually synthesising separate joint angularities. Joint angularity, a product of muscular tensions, supports the imagined line. The angle of any joint may be considered kinaesthetically, but the distance between joints cannot; it can only be imagined, and imagined kinetically in the form of a drawn line. [...] There is, in other words, no continuous set of receptors to follow the skeletal outline of the body, either at rest or as it moves. The outline may be followed only by an imaginative representation in the form of a line or constellation of lines. (2011b: 116)

Because of this "imaginative consciousness of movement" (2011b: 122), awareness and memory of our bodily postures are visualized only as an artefact of kinetic imagination. "In short, when it is a question of our own movement, we have an imaginative consciousness of the linear designs of our bodies. Indeed, we are virtually always on the inside of our own movement. We are kinaesthetically but not visually aware of our moving bodies" (Sheets-Johnstone 2011b: 116).

Applied to the embodied X, this helps us further appreciate the complex dynamics that underlie the posture (see Figure 5): three anatomical planes mediate the proprioception of four limbs that are themselves actively related via a combination of kinesthetic perception and imagination across both the transverse and sagittal planes. Applied to the semiotic square, these insights suggest the important role of not only felt movement in the structure but also kinetic analogy or "imagination".
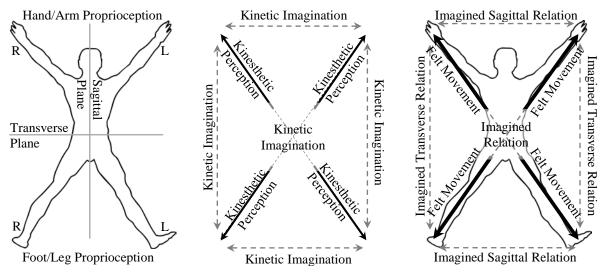

Figure 5. Mapping the experience of spread-eagle posture (right) relative to proprioception of the appendages and anatomical planes (left) and Sheets-Johnstone's linear quality of movement (center).

Lest it pose a distraction, it is worth noting at this juncture that the embodied X is framed by something geometrically much closer to a rectangle than a square. While the spread-eagle posture can be forced into a square the pose is less natural, and thereby less likely to inform our experience. It is notable, then, that this need not pose a challenge to the argument presented in this paper: Corso (2014), following Jameson (1972) stresses that the semiotic "square" is itself a misnomer, arguing that "semiotic rectangle" is more accurate.

Even so, can discussion of what would appear to be a static geometric structure (whether square or rectangle) be reconciled with the flowing dynamics of embodied movement Sheets-Johnstone describes? In other words, is there a place for stillness in embodied movement? According to Sheets-Johnstone, there is: "Our whole body is engaged in moving, sometimes engaged by simply being still…" (2011a: 125). She lists preparation to swing a bat in baseball or waiting to speak in a conversation as examples. In other cases, movement and stillness are coordinated simultaneously between different body parts, as when we attempt to thread a needle or sing an aria, perform surgery or simply read a book (2011a: 125). As for the visual nature of the square, she notes in passing that when it comes to "mirrors and third-person perspectives, our postures and postural awareness" can indeed be thought of as visual phenomena (2011b: 116), but only secondarily, as manifestations or projections of phenomena that are primarily related to kinesthetic imagination.

5. Symmetry, Analogy and the Semiosis of Extremities

An integrated, transverse understanding of the X-posture reveals that spread-eagle performance and projection require not only the felt movement of arms and legs into a new organized, created space complete with angles and memories but also the imagined iconic relationships that hold between them. With this in mind, it is worth exploring the possibility that vivid body memories of transversality may be among the most important bodily sources of what we commonly refer to as "analogy". Analogy requires both part-whole metonymic relations and resemblance-based metaphorical relations, the former as an act of embodied reasoning, the latter as an act of embodied imagination. This possibility, along with the stubbornly marked-unmarked relations of laterality, are why we must not make the mistake of approaching bodily designs and patterns such as the semiotic square as mere symmetrical frames.

To the degree that our experience of vertical relations can be considered in isolation (via focusing on the front-facing coronal plane, relative to the salient orthogonal contrast afforded by upright posture), we come closest to an experience of simple (dyadic) symmetry. As discussed in Section 2, here we find the embodied feeling of analytic contradiction to be most pronounced: upper is not lower, lower is not upper; arms are not legs, legs are not arms, though the geometric space they describe are mirror symmetric across the horizontal axis, marking out an hourglass pattern. This felt illusion of symmetry overlaps with the suspicions of analytic philosophers discussed above that the square of opposition might simply be invalid beyond a few basic tautologies. It also overlaps with suspicions among semioticians that the semiotic square might simply be a static, dyadic construction. Indeed, neither option would allow for the dynamic growth of signs (i.e., "semiosis"). Winfried Nöth (1994, 1998) argues that symmetry is involved in semiosis only via "sequences of symmetry break and the emergence of new patterns of symmetry" (1998: 47). In other words, mere symmetry is not meaningful. This is why the perfectly symmetrical hourglass pattern of frozen vertical relations on its own, the template-in-itself as it were, leaves us empty or dry.

Contemporary symmetry theory is founded on the assumption that bilaterality is perfectly mirror symmetric. Wherever else in nature this may be true, it is not true of the human body. Even human faces are not truly bilaterally symmetric, except in the ideal. Subtle dissymmetries and asymmetries, such as variant patterns of freckles and differing striations of wrinkles, along with more dramatic antithetical symmetries, such as a twinkling left eye, a scar on one side of the chin, or a mole on one upper lip, are the norm. Likewise, our two hands are not perfectly symmetrical but antithetically symmetrical due to lateralization (or handedness) and reflective function (vs. static reflection). Not only is hand physiology marked and unmarked due to specialization, but hands do not match simply by rotating one 180 degrees (in which case one faces front and the other back). Thus, in human experience, marked symmetries, not pure symmetries, are the norm. The modern fixation with bilaterality has also obscured our conceptual awareness of relationships across the transverse plane. This fixation appears to be due to an analytic bias introduced as late as the 18th century (Hon & Goldstein 2008), one that is not only conceptually foreign to ancient civilizations but also to many traditional societies around world in contemporary times (see Levinson & Brown 1994; Danziger & Pederson 1998; Danziger 2011). This is not to say that relationships of markedness or "lateralization" across the sagittal plane are foreign in these same cultures, however. On the

contrary, at a conceptual level, antisymmetry seems to be more familiar or salient in human cultures than mere symmetry.

By recognizing relationships of markedness and analogy (the former especially salient in laterality, the latter in transversality), we are also placed in a position to recognize the semiotic square as a dynamic space directly modelled after embodied semiosis. These patterns are mapped on to the square in Figure 6. The partly-imagined, partly-perceived relational patterns that hold between hands and arms above the transverse plane, and feet and legs below it, are proposed as visceral surrogates of analogy that also give us our more abstract senses of implication and correlation. These modes of experience are simultaneously implicated in lateralization, the visceral surrogate of markedness, giving us our sense that the two members of a given binary pair are, conceptually and culturally speaking, anything but equal.
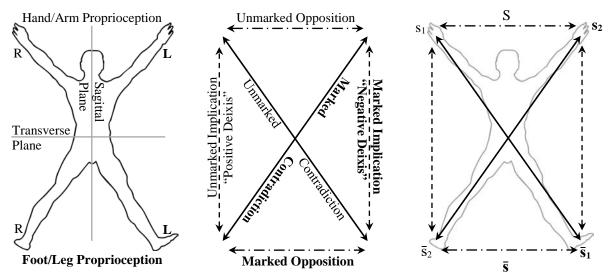

Figure 6. Laterality and Transversality and as the ground of Markedness and Analogy in the semiotic square. Marked relations are listed in bold

As Jameson makes clear, filling out the oppositional template requires careful consideration to the placement of terms:

> above all, the very order in which those terms are arranged; … makes a fundamental difference, in other words, whether the founding binary is ordered as white versus black, or as black versus white. The square is in that sense not symmetrical but "temporal" or positional, and the placement of the terms (obviously this initial formulation will already imply something like dominant/subordinate, center/margin, self/other), like that of mathematical equations (or the lobes of the brain, or right and left hand), is not indifferent but actively determinant in astonishing ways (that very astonishment playing its own part in the unexpected lessons we find ourselves learning in this process). (1987: xv)

Little does Jameson expect that his analogy with the right and left hand may actually be no analogy at all, or rather one crucial feature of embodied cognition that grounds all analogy. Failure to recognize these points can contribute to the ideological binds they weave in our subconscious.

6. Mirror Chiasmus and "Double-Binds"

It is well known that ideology and presupposition go hand in hand. To assume the legitimacy of any given binary pair is usually to presuppose one member of the pair to be unmarked, having normal or privileged status. In western ideologies this leads to the presumptive ascendancy of "white" over "black" and "male" over "female" that inform the loathsome, hidden architecture of racism and sexism. Recognizing that these

profoundly simplistic and often harmful binaries are rooted in the mechanics of lateralization may go a long way toward calling them into question. And calling the deep structures of a given cultural narrative into question is one of the most enduring and valuable functions of the semiotic square.

Consider the homologies between handedness and gender that emerge from the two embodied diagrams in Figure 7. In light of the argument framed above, it is no mistake that Masculinity, which is culturally (and ideologically) associated with strength, is in turn mapped on to the right hand, a key source domain for the very concept of strength cross-culturally, while marked femininity tends to correspond with the weaker left hand.
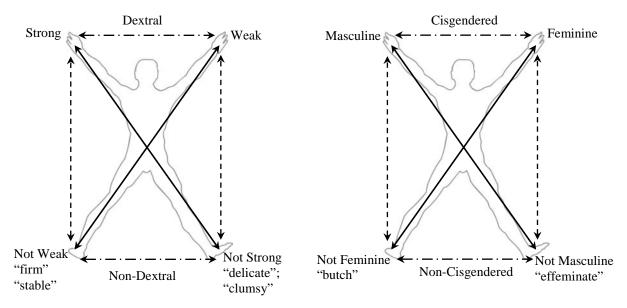

Figure 7. Embodied homology between handedness and ideological gender binaries in English.

Right vs. left footedness is also implicated. The marked status of the left foot relative to the right is encoded in familiar idioms like "have two left feet" (clumsy) vs. "get off on the right foot" (stable); but when mapped on to socially constructed gender binaries we find a surprising reversal: the effeminate male becomes doubly marked and the butch female less overtly marked. Naturally, identifying such reversals is more unsettling than satisfying, calling into question the presupposed categories with which each is related above the waistline. Whatever else these dynamics may mean, at this level of development, for anyone other than the most privileged, the square looks more like a trap than an escape from cultural norms, especially to the degree that such relations remain hidden, invisible or merely assumed due to social construction.

At this level of development, the embodied structure corresponds with Anthony Paul's "mirror-chiasmus", best typified in tokens such as Shakespeare's infamous line: "fair is foul and foul is fair" (*Macbeth* 1.1). This type of chiasmus Paul finds to be "characteristically associated with mental blockage, stasis or paralysis" (2014: 23). Likewise, as Greimas scholars from Jameson (1987) to Broden (2000) to Corso (2014) insist, the semiotic square represents ideological closures that inform the deep structure of a given cultural text or social system:

> [The semiotic square] constitutes a virtual map of conceptual closure, or better still, of the closure of ideology itself, that is, as a mechanism, which, while seeming to generate a rich variety of possible concepts and positions, remains in fact locked into some initial aporia or double bind that it cannot transform from the inside by its own means. (Jameson 1987: xv)

The term "double-bind" originates with Bateson et al. (1956) who argue that these situations, in which "no matter what a person does, he 'can't win'" (1956: 251), if intensified and prolonged, can lead a person

to "become a clown, a poet, a schizophrenic, or some combination of these" (1956, Bateson 1969[1972]: 272). It is useful to recall in this connection, however, that one of the most conspicuous features of a true double-bind is its very hiddenness—the fact that those who are bound within it do not yet recognize it as bondage (Laing 1967, 1969). Recall Laing's enduring formulation of the rules of a socially enforced double-bind (slightly modified below from 1969: 41):

> Rule A: Don't
> Rule A.1: Rule A doesn't exist
> Rule A.2: Do not discuss the existence or nonexistence of Rules A, A.1 or A.2.

Further explication of double-bind theory in these sources draws attention to a fourth, condition-and-consequence-oriented rule that can be summarized "or else …!"—invoking the threat of active punishment or the withdrawal of vital support, as typified in the fate of those who are abandoned by parents or excommunicated from religious groups. Rendered in composite with Laing's Rule A, this might be verbally represented in statements such as "be *normal* or else…!" or "I'll love you *if and only if* …". In fact, Laing's classic formula might be better framed as a tetralemma—not a double-bind but a "quadratic bind" and mapped, instead, onto the logical relations of the semiotic square:

> Rule s_1: Don't (normative prohibition)
> Rule s_2: Or else …! (normative punishment)
> Rule $\bar{s}_1$: Rule s_1 does not exist (and don't mention this—or else …!)
> Rule $\bar{s}_2$: Rule s_2 does not exist (and don't mention this—or else …!)

This revision also serves to make the circular trap of the double-bind more transparent. As Jameson puts it, ideologies "are all in one way or another buried narratives" (Jameson 1987: xiii). What the semiotic square provides is a tool for unburying such narratives. By calling into question Rules $\bar{s}_1$ and $\bar{s}_2$, we can peer directly into the dubious authority of Rules s_2 and s_1. Given the entrenched nature of double-binds and our frequently deep investments in cultural ideologies, such exercises are unlikely to be pleasant or enjoyable, perhaps even inducing Paul's (2014) feeling of "mental blockage, stasis, and paralysis". My practical argument here is that we may be more successful in undertaking such uncomfortable activities (and moving through them) if we are able to root the features of the square in aspects of our embodied experience. Furthermore, to the degree that this embodied experience is itself situated in the everyday and made apparent with help from the imaginative arts (such as storytelling, song, music, dance, poetry and film), to that degree we may be more likely to find success, or ideological breakthrough. This practical proposal is reflexive with my more theoretical proposal above, given that the validity of both claims would function in a reciprocal, or mutually supporting, relationship. These dynamics are illustrated in the next section.

7. Mundane "Quadratic" Binds and Ideological Breakthroughs

As I have argued above, far from being a static, timeless diagram, the semiotic square appears to be an active projection or manifestation of "our real-life, real-time kinaesthetic experience of movement" (Sheets-Johnstone 2011a: 118), rooted more specifically in body memories of dynamic structural relations that emerge from distictively human experiences of kinaesthesia and proprioception, correlative with the constraints and affordances of upright posture. If this is so, the X at the center of the square is an "embodied X" (Pelkey 2014)—a waking manifestation or sleeping artifact[3] best typified in spread-eagle posture. Hence the theoretical/phenomenological inquiry at the heart of this essay: i.e., whether or not the embodied X might help us make better sense of the semiotic square. In this section the argument takes a more practical

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[3] This distinction is rooted in the work of Cornelia Müller (2008).

turn into the realm of the mundane, asking an inverse question: i.e., could the semiotic square help us make better sense of the embodied X? Indeed, this question is partially answered above; and although neither question is exhaustively answered in this paper, I will at least show how the semiotic square can help us make sense of one very specific instance of spread-eagle posture—an instance that appears suddenly in a decidedly *un*-academic context: a popular country music video.

In 2014, the Grammy award for Best Country Album went to country music artist Kacey Musgraves for her 2013 collection entitled *Same Trailer Different Park*. Track 3 of the album is a hit song entitled "Follow your Arrow", a reference to self-orientation or authentic self-discovery in spite of what others may or may not think. Although the song "has garnered attention for its references [to] smoking weed and gay romance" (CMT 2014), its core themes are more basic. These can be summed up as 1) the psychological stress of living under ideological/psycholgical "double-binds", 2) the jolt of identifying them, and 3) the joy of breaking free from them; or as Musgraves puts it: "You're damned if you do / And you're damned if you don't / So you might as well just do / Whatever you want". The official music video for the track was released on December 10, 2013. It features scenes shot off-the-beaten-track in desert regions of the southwestern United States, foregrounding a preponderance of arrow images, most of which are painted on signs to advertise local establishments, such as a motel and a church. Accordingly, the lyrics oscilate between problems of piety and sobriety, on one hand, and problems of body-image and promiscuity on the other. Appearing for a fleeting moment in the very middle of the video soundtrack, behold: a leaping, spread-eagle priest (isolated and reproduced in Figure 8). This instance of the embodied X fades as soon as it emerges in the video, but its significance for the question posed above is potentially profound.

Figure 8. Jumping Priest in Kacey Musgrave's 2013 music video "Follow your Arrow"

Whether or not Musgraves or her producers make such connections deliberately, the use of "arrow" imagery in her song-lyrics and video composition overlap with the use of arrows in the semiotic square in ways that are quite possibly no mere coincidence. Indeed, Greimas' commentators (e.g., Jameson 1987, Broden 2000, Corso 2014) continue to draw attention to the square's salient ability to bring into awareness various kinds of "conceptual blockage or paralysis" (Jameson 1987: xvi), highlighting ways in which cultural ideologies curtail imagination and oppress open inquiry, usually without our conscious realization. In the words of Broden (2000: 33), "Greimas emphasizes formal constraints that are ultimately ideological, rhetorical, and cognitive that tend to close off the free play of textual meanings and to draw interpretations back to recurrent concerns." As Jameson goes on to note, however, this very awakening motivates a parallel activity: puzzling through the arguments of a given square to find one's way "out of the old or given—into which one is locked—somehow desperately to generate … breakthrough" (1987: xvii). Interestingly, in the context of Musgrave's song, the Priest's spread-eagle jump comes not only at the middle of the music track, but also at a point of psychic breakthrough, just as the upbeat chorus cycles into a new round of triumph.

In addition to helping answer the inverse question framed above, a sample content-analysis of the music video can serve at least four further purposes: 1) to provide concrete examples of psychological double-

binds drawn from everyday life; 2) to show how marked and unmarked categories are involved in these double binds; 3) to demonstrate that puzzling through these impossible scenarios can open up surprising escape routes; 4) to provide explicit evidence of a tacit folk-intuition, mapping relationships between problems of this sort and the spread-eagle posture. With this in mind, consider two excerpts from the song lyrics, keeping in mind that country music's mainstream audience is oriented toward traditional mores:

1) "If you save yourself for marriage / You're a bore / If you don't save yourself for marriage / You're a whore-ible person"
2) "If you don't go to church / You'll go to hell / If you're the first one / On the front row / You're self-righteous / Son of a — "

These two excerpts are mapped onto their own respective semiotic squares in Figure 9, both in terms of their deep structure (listed in bold), their surface structure (listed in quotes) and their phenomenological structure (mapped visually). The jumping spread-eagle priest is featured as an overlay in these images in reference to the video's own thematic visual axis. Moving into the first chorus, the song's verbal message pivots on a dual cliché: "You're damned if you do / And you're damned if you don't / So you might as well just do / Whatever you want". Similarly, moving into the second chorus, Musgraves sings, "Can't win for losing / You'll just disappoint 'em / Just 'cause you can't beat 'em / Don't mean you should join 'em." In both cases we find clear references to the psychosocial process of identifying and working through ideological "double-binds".
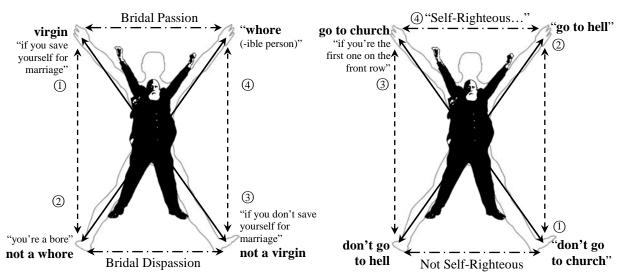

Figure 9. Embodied semiotic squares for two sets of lyrics from Musgraves' 2013 hit song "Follow your Arrow" featuring deep structure in bold, surface structure in quotes and leaping spread-eagle priest who appears momentarily in the middle of the song's official music video.

Note that neither of the two s_1 terms listed in Figure 9 are mentioned directly in the surface structure of the song. They emerge, rather, from digging into the implicature, charting the other terms and asking about the most privileged or normative concept (or Idealized Cognitive Model) at stake: in the first case "virginity", in the second "church-going". This implicit framing of the "normal" is congruent with both its privileged, given or "unmarked" status—corresponding both to dextrality and to some socially constructed rule or prohibition that is so entrenched and obvious that it becomes unquestionable or even invisible, depending on the social strata and history in question.

Next, note that in neither case does the flow of the narrative map on to the movement anticipated in the deep structure (s_1, s_2, $\bar{s}_1$, $\bar{s}_2$); rather, in the first excerpt, the artist opens the stanza with reference (via circumlocution) to the privileged term. She then stays within the confines of the four basic slots of the

template, ensuring that in each case there is a surface construction that maps directly onto the deep structure. This strategy intensifies awareness of the socially constructed cognitive trap, undermining it, or calling it into question in the very act of naming its positional slots. In the second excerpt, the artist's approach to the narrative or Idealized Cognitive Model (Lakoff 1987) becomes more complex. The first term (s_1) is mentioned third, the third term ($\bar{s}_1$) is mentioned first and the fourth term is mentioned not at all. Instead she opts to leave the fourth term empty (but resonantly pregnant in the deep structure), in favor of an explicit reference to the complex term: "self-righteousness". The effect here is more hopeful, providing an intimation of breakthrough. Jameson, in this connection, underscores "the peculiar nature of the fourth term, the negation of the negation: $\bar{s}_2$":

> This must be (when the operation is successful) the place of novelty and of paradoxical emergence: It is always the most critical position and the one that remains open or empty for the longest time, for its identification completes the process and in that sense constitutes the most creative act of the construction. … the place of the great leap, the great deduction, the intuition that falls from the ceiling, or from heaven. (1987: xvi)

If the X-posture is a primary source of the semiotic square, what might it be about the right foot-leg that would make it a potent positional source of irony, relative to the other three cardinal positions of the embodied template? One possibility would be that it is tacitly experienced as both marked and unmarked: marked for being below the transverse plane, unmarked for being on the right side of the sagittal plane.

By avoiding all reference to the fourth term in the surface structure, the artist leaves it open – potentially triggering a latent possibility in the subconscious of her double-bound audience. What if those who do not go to church are in less danger of becoming self-righteous. On these grounds at least, they might be less endangered by the age-old scare-tactic in question. In this case puzzling through the embodied square can lead the puzzler from a perplexing conclusion in the (unmarked, manipulative) upper half of the diagram back to its logical corollaries in the analogous lower half. What one may then find hidden in the deep structure is a proverbial "get out of jail free" card. The artist's direct reference to the complex term, that which emerges from s_1 and $\bar{s}_1$, moves the discussion beyond the scope of the present study. Suffice it to say, though, that breaking the spell of the tortured X may be facilitated by bringing together opposing extremes.

If prolonged and stripped of agency, the spread-eagle posture moves from celebration to torture (see Pelkey 2014). Torture becomes a way of life when ideology frames a subject against a backdrop of impossible contradictions. Actually puzzling through these contradictions can foster experiences of celebratory breakthrough. To identify more carefully the specific mechanisms of the diagram, then, it is necessary to move beyond gestalt representations of the embodied X to more deliberate observations of its vertical, lateral and transverse dialectics—moving from right-to-left and from left-to-right, above and below the midline.

8. Greimas Embodied

It is no secret that the semiotic square provides a visual, geometric manifestation of logical-semantic relationships. With this in mind, as Corso (2014) argues, the virtual absence of discussion in the literature on the visual spectacle of the square is itself conspicuous. It should also be no secret that the human experience of visual geometry is tied to our own specific embodiment (Van Lier 2003, Pelkey 2013a, 2014; Walsh Matthews & Pelkey 2015); but this is an insight that is itself relatively neglected in the literature. We cannot assume from this situation, however, that Greimas and his early interpreters were entirely unaware of the possibility of such connections.

Jameson (1987: xv), for instance, comes close to identifying one aspect of the square's embodied origins in noting that "the placement of terms" in the square, relative to each other, is akin to "mathematical equations … or the lobes of the brain, or right and left hand". Greimas might seem to come even closer to an embodied account in his observation that our "rectilineal" categories "such as upper/lower or left/right" serve to "carve up the framed surface by marking out its axes and/or by establishing the borders of its

various sections … mapping out the possible trajectories that the various aspects of the reading will follow" (1984: 638-639). Indeed, he might even seem to be explicitly stating the otherwise novel thesis I am proposing in this paper when he makes the following observation:

> Since the human body as signifier, is treated as a configuration, it is normal to expect that its mobility will be considered as mainly creating positional gaps and that this polarization of movements will end up in the parallel categorization of contents. (Greimas 1968: 33)

In neither case, however, was Greimas making direct connections with the semiotic square. His discussions of embodied meaning in these cases are focused instead on gestural communication (1968, 1984: 645-646) and the topological aspects of textual and visual interpretation (1984), without reference to the semiotic square itself. He even asserts that it is futile or trivial to inquire into the potential universal origins of natural analogical mappings such as "upper : lower :: euphoria : dysphoria", claiming that identification of the principle itself is all that counts, "not the nature of the invested contents" (1984: 646). This claim, at least, is at odds with the findings and goals of cognitive semantics and cognitive semiotics, two related research programs which have found, on the contrary, that primary metaphor pairs such as HAPPY IS UP, SAD IS DOWN are crucial for understanding the role of embodied relations in human cognition. After all, these relations go on to condition and determine our abstract cultural "knowledge", in ways that are sometimes harmfully superficial and deceptive or even unjust – and at other times in ways that are profound, wholesome and fortifying, opening up new avenues of inquiry and insight. Furthermore, both strains of understanding provide crucial insight into the core question of anthropology: *what does it mean to be human?* Thus far, however, cognitive linguists, and embodied cognitive scientists in general, have not risen to the challenge of embodied movement (much less the full implications of habitual movement in the form or frame of upright posture).

Embodied extremities held in relationships of antithetical symmetry have been the focus of this study, in a bid to reveal the radical source of a hypothesized generative template, widely known as the semiotic square: an "elementary structure of meaning" (Greimas & Rastier 1968: 88) said to inform human culture and cognition. I have argued that the square emerges developmentally through movement and memory in an interdependent relationship with the dynamics of upright posture and our ensuing commitments in actively created space. The resulting cognitive template would naturally involve vertical, lateral and transverse structures that are experientially congruent with the positional slots and relationships of the semiotic square. Such a scenario would provide further support for Bouissac's (2007) proposal that semiotics be approached as a "science of memory", expanding this proposal to include kinesthetic body memory. Furthermore, the body-memory template in question would naturally provide raw material for two of our most characteristic anthroposemiotic devices: markedness and analogy. Finally, these results would validate one of the most fundamental claims of Algirdas Julien Greimas, not only expanding his ideas into new territory but also demonstrating his enduring relevance.

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