

Spatial Metaphor in the Work of Marshall McLuhan¹

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Abstract: Spatial metaphor is central to the layout and development of McLuhan's thought on culture and technology. This paper adapts a framework drawn from cognitive linguistics to describe how McLuhan's concepts of visual and acoustic space serve as structural, orientational, and ontological metaphors. In its ontological role, spatial metaphor provides the metaphysics for McLuhan's tetrad, which he came to regard as an alternative model for studying culture and technology.

Résumé : La métaphore spatiale est centrale à la disposition et au développement de la pensée de McLuhan sur la culture et la technologie. Cet article a adapté une approche tirée de la linguistique cognitive pour décrire comment des concepts de McLuhan sur l'espace visuel et acoustique servent de métaphores structurelles, orientationnelles et ontologiques. Dans son rôle ontologique, la métaphore spatiale fournit une métaphysique pour la tétrade de McLuhan, qu'il en est venu à considérer comme modèle alternatif pour étudier la culture et la technologie.

Introduction

Metaphor is a pole star in the work of Marshall McLuhan, which is to say everything revolves around it. This paper is an effort to chart the contours of a persistent metaphor in McLuhan's work, namely, that of space. More precisely, it applies an analytic framework developed originally in the field of linguistics to illustrate how spatial metaphor is taken up by McLuhan and subsequently influences his study of culture and technology. This framework provides a means of tracing the development of spatial metaphor from its early formulations through to its blossoming at the centre of McLuhan's tetrad.² A better understanding of this development of spatial metaphor in McLuhan's work is essential if scholars are to grasp and apply the insights that McLuhan sought to communicate toward the end of his career.

Metaphor: McLuhan's medium and his message

Literary scholar Donald Theall called McLuhan "a master of metaphor" who recognized how to leverage the power of metaphor for both rhetorical and pedagog-

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ical value. In his critical review *The Medium Is the Rearview Mirror*, published in 1971, Theall described McLuhan's method as follows:

In McLuhanese, his metaphors could be described as providing a "Do-It-Yourself-Creativity-Kit." In this way, even the initially less adequate metaphors [i.e., those that seem to confound more than clarify] can be useful for meditation which will lead to some kind of creative insight. (p. 15)

In other words, McLuhan's use of metaphor demands a kind of U-Think approach to moving ideas. The reader is tasked with connecting seemingly disparate elements. In *Counter blast*, for instance, he prods us with a landscape metaphor to describe the impact of the written word, suggesting that "writing turned a spotlight on the high, dim Sierras of speech" (McLuhan, 1969, p. 14).

Theall described this approach as creating "a pseudo-synecetic group-think method for participation" (1971, p. 15). Here Theall is referring to the synecetic theory of creativity first articulated by William J. J. Gordon in 1961. Gordon based his theory on the notions that creativity involved the co-ordination of familiar things into new structures and that self-reflexive thinking and paradox were strategies helpful to this process. Where the technique is about severing previous cognitive associations in order to inspire creativity, the general theory of synectics is captured in McLuhan's expression "breakdown as breakthrough." Although Theall only alluded to the synecetic theory in passing, it may be worthy of future research in terms of its similarities to McLuhan's own approach to creative thinking.

On the one hand, as Theall has suggested, metaphor is the *medium* through which McLuhan strikes a responsive chord with his readership—it serves as a rhetorical, pseudo-synecetic device to inspire reader participation. On the other hand, metaphor is also a *message* in the work of Marshall McLuhan. Inspired by the views of Cambridge luminary I. A. Richards, McLuhan identified metaphor as a basic operating principle of communication technology: "All media," he proclaimed, "are active metaphors in their power to translate experience into new form" (McLuhan, 1964b, p. 64).³ "The spoken word," for instance, wrote McLuhan, "was the first technology by which man was able to let go of his environment in order to grasp it in a new way" (p. 64). McLuhan believed that the spoken word in effect performs a metaphorical operation by translating sensation into utterance. Most significantly, however, he suggested that the formal properties of speech not only package and deliver experience but necessarily transform that experience in the process. Hence his notion that we let go of environment in order to grasp it in a new way—speech transforms consciousness and our way of getting at the world. According to McLuhan, it is this translation process that makes media "active metaphors" and that engenders new modes of awareness in mind and, eventually, in culture.

In McLuhan's posthumous publications—most notably in the *Laws of Media* (McLuhan & McLuhan, 1988) and *The Global Village* (McLuhan & Powers, 1989)—we discover that he has gone one step further in this medium-as-message idea and has located metaphor at the heart of his laws of media. In effect,

McLuhan's later work fuses metaphor-as-method with metaphor-as-message through spatial metaphor, specifically with the notion of "acoustic space," to create the tetrad—a hermeneutic tool he believed could be used to perform exegeses on all human artifacts (McLuhan & McLuhan, 1988). Theall (2001), in a recent appraisal of McLuhan's work, describes this moment of fusion:

The initial phrase "acoustic space," probed and played with through three decades, [became] itself an artefact (or "medium"), suggestively exploring the metamorphoses achieved through the transformations affected by electric technologies of production, reproduction, and dissemination on the pre-electric technologies of print and visual prints, writing, and visual art. (p. 146)

While the laws of media themselves had been formulated over the course of McLuhan's career, the tetrad represents an innovation in his thought, distinct from the laws upon which it is formed. The tetrad is innovative insofar as it was a means of binding together the laws of media to establish a set of figure/ground ratios—ratios that McLuhan claimed characterized *all metaphorical operations and the relations among the laws of media*. Having made this connection between metaphor and the laws of media through the tetrad, McLuhan (McLuhan & McLuhan, 1988) could then articulate what he believed to be a new approach to culture and technology studies.

All human artifacts are human utterances, or outerings, and as such they are linguistic and rhetorical entities.... The laws of media ... belong properly to rhetoric and grammar not philosophy. Our concern is etymology [*sic*] and exegesis.... This is to place the modern study of technology and artifacts on a humanistic and linguistic basis for the first time. (p. 128)

In this respect, the tetrad represents a capstone to McLuhan's work, where metaphor is used to establish a metaphysical principle governing the world of human artifacts and where spatial metaphor (i.e., acoustic space) in particular played a central role in McLuhan's final formulations on culture and technology.

Cavell (1999) has described the spatial features of McLuhan's work, suggesting that McLuhan presents a model of communication drawn directly from the acoustic space metaphor. Yet Cavell, like others, seems to accept this metaphor with little apparent concern for its development in McLuhan's hands and the progressive influence it came to have in shaping McLuhan's thought. More specifically, an important question remains to be asked of spatial metaphor: what exactly is acoustic space and how did it come to play such a central role in the tetrad?

Spatial metaphor: A review

Existing research provides detailed accounts of the spatial concepts in McLuhan's work (Cavell, 1999; Gordon, 1997; Marchand, 1989; Theall, 2001), but a brief review of McLuhan's basic ideas will serve as helpful background to the analysis presented in this paper. In McLuhan's writing, spatial metaphor appears most generally in the form of a distinction between "visual space" and "acoustic space." The origin of these metaphors can be traced back to McLuhan's association with the journal *Explorations* in the mid-1950s and, more specifically, with those who

contributed to the early seminars that constituted the so-called Toronto School of Communication. For example, the first mention of acoustic space in McLuhan's personal correspondence can be traced to a letter he wrote to Wyndham Lewis in 1954 (Molinaro, McLuhan, & Toye, 1987, p. 245), during the heyday of the Toronto School seminars. Formative influences on McLuhan's thinking about spatial issues during this period include the Swiss art historian Siegfried Giedion, who had written the influential book *Space, Time and Architecture* and contributed an article to an issue of *Explorations*. McLuhan's former student Walter Ong is credited with setting out the basic concept of visual space in an article entitled "Space and Intellect in Renaissance Symbolism," which Marchand claims "provided the key to McLuhan's history of Western Civilization" (Marchand, 1989, p. 127). Theall (2001, p. 141) points to an article by Victor Papanek, which examined the earlier work of Naum Gabo, as setting out early ideas inspirational to McLuhan's acoustic space. Innis' work on space and time influences of communication media (Innis, 1951, 1986) also came to play a formative role in McLuhan's thinking about spatial matters. In fact, it was in his "footnote" to Innis, *The Gutenberg Galaxy* (1962), that McLuhan established a theoretical argument for visual space as a byproduct of the phonetic alphabet and its later intensification with the coming of typography. Throughout his career McLuhan (McLuhan & McLuhan, 1988) drew on the concept of visual space to provide an account of Western history:

Where the phonetic alphabet comes into play, the visual faculty tends to separate from the other senses, making possible the perception of abstract Euclidean space. The rise of Euclidean geometry offers a direct parallel with the rise of phonetic literacy; and phonetic literacy, in turn, is co-existent and co-extensive with the rise of logic. (p. 184)

According to McLuhan, this new mode of perception and of culture is evident in the visual conception of space brought about by the written word: space is viewed as a static container for things and characterized as infinite, divisible, featureless, connected, and homogeneous (McLuhan & Powers, 1989, p. 45). It is, in effect, depicted in the abstract space of geometric figures and in the grid of the cartographer's chart.⁴ Visually biased technology also creates centre-margin patterns of spatial organization and power relations, as McLuhan pointed out in his introduction to Innis' *Bias of Communication* (McLuhan, 1964a, p. 13). The rise of phonetic literacy is seen to be co-extensive with dramatic changes in the spatial sensibilities of artists. McLuhan believed, for instance, that the advent of linear-perspective painting during the Renaissance reflected the mode of awareness created by the printing press (McLuhan & Parker, 1968, p. 12).

In contradistinction to visual space is acoustic space, which McLuhan later subdivided into pre-Euclidean and post-Euclidean forms. Pre-Euclidean acoustic space predates the rise of phonetic literacy and is described as "the natural space of nature-in-the-raw inhabited by non-literate people" (McLuhan & Powers, 1989, p. 45). It is within an emphasis on this preliterate configuration that the concept of acoustic space first appears in McLuhan's work. Introduced to McLuhan through

a colleague, Carl Williams, at the University of Toronto (Theall, 2001, p. 145), it first appeared in the mid-1950s in an article titled "Acoustic Space" written by Edmund Carpenter and Marshall McLuhan (1960), published in the short-lived journal *Explorations* and later included in the 1960 *Explorations* anthology. The definition of acoustic space in this early article eventually became the baseline articulation of the concept.

Auditory space has no point of favored focus. It's a sphere without fixed boundaries, space made by the thing itself, not space containing the thing. It is not pictorial space, boxed in, but dynamic, always in flux, creating its own dimensions moment by moment. It has no fixed boundaries; it is indifferent to background. (p. 67)

In contrast to the static, container-like qualities of visual space, acoustic space comes across as an organic concept, dynamic and contingent in character. With acoustic space there is no empty void to be filled, but rather a space created in the mutual relations between elements as they develop over time. McLuhan explained the idea in a letter to literary critic Harold Rosenberg in 1965 by using an analogy: "Central heating structures the thermal space of a room visually. That is, a centrally heated room has a thermal space that is uniform, discontinuous, and connected. That is visuality as such" (Molinaro, McLuhan, & Toye, 1987, p. 318). McLuhan's analogy suggests that acoustic space might be like that generated by a portable electric space heater. These devices are useful to eliminate drafts largely because they can be used to structure thermal space acoustically: *creating [their] own dimensions moment by moment ... [without] fixed boundaries ... [and] indifferent to background*. In other words, the portable electric space heater changes the spatial qualities of a room by virtue of its location in the room.

The electric space heater may be of some significance insofar as McLuhan believed it was electricity that ushered in the return of acoustic space with the development of the Morse telegraph in the mid-nineteenth century, disrupting the centre-margin patterns long established by typography. McLuhan claimed this to be the case because "electricity has all the properties of the acoustic world: it is simultaneous and everywhere at once" (McLuhan & Powers, 1989, p. 138). On this point, McLuhan disputed Innis' claim to the contrary (McLuhan, 1964a) and proclaimed electricity as the force behind a new era of post-Euclidean acoustic space, making obsolete the visual space created by mechanical typographic technology. McLuhan emphasized the effects of the electric revolution in the arts, science, and philosophy of the early twentieth century as this new acoustic mode of awareness seeped into Western culture. For instance, he suggested that the appearance of Cubism was a clear indication of the return of acoustic sensibilities. He tells us in *Laws of Media* that "Cubism ('multi-locationalism') is one of the painterly forms of acoustic space." Why is this so? Because, he says, "paralleling [the atonal music of Schoenberg], Cubist painting abandons single fixed points of view along with Euclidean geometry and perspective" (McLuhan & McLuhan, 1988, p. 55). McLuhan also considered modern data networks as a form of acoustic space, observing that modern telecommunications demonstrate acoustic proper-

ties: they have the intrinsic nature of a sphere, simultaneously resonating and structured around multiple and interconnected centres, relatively indifferent to background (McLuhan & Powers, 1981; McLuhan & Powers, 1989, p. 140).

From its initial appearance in *Explorations* to its more complex fusion as both method and message in the tetrad, spatial metaphor provides crucial insight into the organization and maturation of McLuhan's thought. In fact, the development of visual and acoustic space in McLuhan's work provides an example of how metaphors can actively shape cognitive processes, leading to new insights and suggesting new avenues of inquiry.

Metaphor: More than mere trope

The study of metaphor in human communication has a long and varied history, yet its rise to a position of respected prominence has been only within the latter half of the twentieth century, most notably in the fields of phenomenology and cognitive linguistics. Ricoeur's work on metaphor is well known in communication studies through hermeneutics and phenomenology, where he assigns it an influential role in his study of language and discourse (Ricoeur, 1986). Communication studies have also looked to new theories of metaphor drawn from cognitive linguistics, where metaphor is taken up as a key variable in studying human communication processes (Ortony, 1993). Media ecology, a field that McLuhan himself spawned, has turned to metaphor for studying modern communications technology (Gozzi, 1999). Recent studies in related fields have also extended metaphor analysis to processes of meaning-making in the professional practice of scientists and inventors (Dasgupta, 1994; Tepper, 1996).

The central common assumption to these recent approaches is that metaphor is worth examining because it is integral to meaningful communication of experience and it provides clues to the development of both ideas and technology. This view contrasts with Enlightenment accounts of metaphor that sought to dismiss it as a distracting embellishment to language. Take, for instance, John Locke's rather sour view of tropes, including metaphor: "If we would speak of things as they are, we must allow that all the art of rhetoric ... all the artificial and figurative application of words eloquence hath invented, are for nothing else but to insinuate wrong ideas, move the passions, and thereby mislead judgement" (quoted in Stambuk, 1998). It was in reaction to this kind of empiricist thinking that phenomenology and cognitive linguistics sought to establish a more constructivist approach to the study of metaphor, one that would recognize and articulate its essential role in shaping human communication and thought.

Among the most influential sources in constructivist accounts of metaphor is a widely cited book, *Metaphors We Live By*, published in 1980 by Lakoff & Johnson. The book emerged out of the discomfort its authors had felt with then-current accounts of meaning in language, particularly with respect to everyday talk and representation. Both had noticed the pervasiveness of metaphor in everyday life and decided to establish what they termed an "experientialist" approach to meaning that was steeped in the power of metaphor on thinking. This starting point echoed the previous work of I. A. Richards (1936) and Max Black

(1962), both of whom rescued metaphor from its marginal role as rhetorical trope to place it at the centre of human communication processes. Since its publication, *Metaphors We Live By* has provided an analytic framework for numerous studies of science, technology, and communication (for a review, see Union of International Associations, 2001), and its central argument is now regarded as a theoretical basis for contemporary research on metaphor.

Metaphor is not just a matter of language, that is of mere words.... On the contrary, human *thought processes* are largely metaphorical. That is what we mean when we say that the human conceptual system is metaphorically structured and defined. [authors' emphasis] (Lakoff & Johnson, 1980, p. 6).

Metaphor, according to Lakoff & Johnson, is an active agent in human cognition, or what we might term an *epistemological fact*. It influences everyday experience by establishing an epistemological referent for all forms of linguistic communication and, indeed, cognition itself. The classic example cited by Lakoff & Johnson is the *argument is war* metaphor, where they point out that the scenario generated by a combat metaphor not only provides a vocabulary for talking about arguments but in fact establishes the epistemological criteria by which argumentation is conceived (p. 4): arguments are won or lost; we successfully defend our position, we launch an assault on our opponents, and so forth. Lakoff & Johnson go so far as to suggest that if we were to have a different metaphorical basis for human disagreements (a dance metaphor, for instance), the act itself might be wholly different in the way it is conceived and executed (p. 5).

The Lakoff & Johnson formula is similar to McLuhan's media as "active metaphors" and could be borrowed to explain one of his lesser-known aphorisms describing this idea: "For man, his knowledge and the process of obtaining that knowledge are of equal magnitude" (McLuhan, 1964b, p. 46). The connection can be drawn out further if we modify the aphorism slightly to read:

For the *human species*, our knowledge and the process of obtaining that knowledge are of equal magnitude *and similar character*.

Given a statement like this, McLuhan's study of media clearly shares some important assumptions with that of Lakoff & Johnson (1980). In particular, it locates metaphor as the principle of "equal magnitude and similar character" that links human knowledge (i.e., "thought processes") to the technological means by which we communicate (i.e., "active metaphors"). Here is the fusing of metaphor-as-message with metaphor-as-medium, an idea also evident in the theoretical model presented by Lakoff & Johnson. This similarity in approaches suggests that we may be able to gain some further insight into McLuhan's use of metaphor by applying the extended analytic framework developed by Lakoff & Johnson to visual and acoustic space. And, indeed, such an exercise demonstrates that McLuhan in fact draws upon three distinct types of metaphor to structure and define much of his conceptual system.⁵

The Lakoff & Johnson framework is established on three principles: experientiality, systematicity, asymmetry. To begin, they argue that all metaphorical con-

cepts are ultimately derived from human experience, either of the body or of surrounding cultural influences (1980, p. 14). Because of this, variance exists in metaphorical concepts across history and across geographical location. In addition to being experiential in their origins, metaphorical concepts are also systematic in their function: they structure human communication in systematic ways. In the case of *argument as war*, the systematicity of the metaphorical concept establishes a “conceptual network of battle” that, in turn, characterizes the concept of an argument and the language “that follows suit” (p. 7). This systematicity is important because it serves to highlight and to hide certain features of experience, establishing an equivalence of structure between two domains (p. 10). This is the means by which metaphorical concepts add value to experience and make it communicable between people. Metaphors introduce a systematic structure into an experience, which then serves to foreground and colour desirable or useful features of that experience while muting unwanted or distracting aspects.

Insofar as metaphorical concepts are systematic in character and therefore serve to highlight and hide certain features of experience, they are also asymmetrical. In other words, the structural transfer of metaphor from one domain to another is never total (p. 12). Highlighting and hiding, by its very nature, introduces residual possibilities for interpretation. In some cases, a metaphorical concept may not fully describe all instances of experience, and Lakoff & Johnson use the *language as conduit* metaphor to illustrate this point (p. 10). While the language as conduit metaphor may serve well in numerous settings (“your words seem *hollow*”), it highlights the transportation function of language and tends to hide the all-important contextual aspects of linguistic meaning.⁶

The principle of asymmetry at work in metaphorical concepts thereby serves to constrain *and* enable meaning. On the one hand, when the intended systematicity of a metaphor and its relevant structures are made apparent, the systematicity serves to constrain (and thereby highlight) meaning to that which is being intentionally sought after. On the other hand, the systematicity of a metaphorical concept can also be used against common sense to purposely invoke uncertainty (McLuhan’s “high, dim Sierras of speech,” for instance). This systematicity thus contains multiple possibilities that may serve to inspire or enable new meaning by way of what psychologist Edward Murray in a different context has called the “semantic boom.” Below, Murray (1987) explains how this state of uncertainty generates new meaning from the fusion of two seemingly unrelated aspects of experience.

In a metaphor the sentential predicate carries with it the meaning that has customarily been attributed to it: the so-called literal meaning. Predicating it, then, to a subject whose field of meaning it bears no relevancy or pertinence [to] is to engage in an absurdity. Yet this is precisely what occurs in the metaphorical attribution. The semantic field of the predicate is appropriate for one subject, not for another; and yet this very inappropriate semantic field is nonetheless predicated of the subject in question. The predication is a semantic impertinence, the absurdity is quite apparent, the conflict is inevitable. But in the midst of this, the literal predication, such as it is, must be held in abeyance, so

to speak, be suspended, while the subject and the new predication *with its field of meaning* stare at each other, as it were, in disbelief. A mediation must take place; and when it does, the logical space between the antagonists falls out and the semantic boom occurs. From this big bang a new world is created and a whole set of reverberations ... is set in motion. (p. 209)

Murray's colourful description of asymmetry at work recalls McLuhan's use of metaphor-as-method. In fact, McLuhan seemed to revel in using the principle of asymmetry for its ability to cleave new meaning out of semantic impertinences, often commenting on the power of such juxtaposition with phrases like "the interval is where the action is" (McLuhan & Powers, 1989, p. 13).

McLuhan also, however, developed an *intended* systematicity of spatial metaphor in order to provide meaningful structure to his own conceptual network, out of which the original notion of visual and acoustic was conceived and later modified. Structural metaphor draws on the principle of systematicity and according to Lakoff & Johnson refers to the means by which "one concept [is] metaphorically structured in terms of another" (p. 14). Take for example the metaphor *hearts of oak*. In this instance, key aspects of "oak" (strength, beauty, etc.) are intentionally and systematically transferred to the otherwise vague concept of "hearts" in order to produce some intended meaning.

Oriental metaphor, in a variation on the structural form, "organizes a whole series of concepts with respect to one another" and is derived from an experiential basis in the body or in culture (p. 14). An example of this type is "profit is up, loss is down; happy is up, sad is down". In this case, the embodied experience of up/down is invested into a metaphorical expression that provides meaningful coherence and orientation between ideas. Oriental metaphors can also be used to structure relations between other groups or networks of metaphors and in this way perform a second-order structural function.

Ontological metaphor serves to provide yet another means of bringing meaning to experience. In this case, metaphor provides a metaphysical grounding for "events, activities, emotions, ideas, etc., as entities and substances" (Lakoff & Johnson, 1980, p. 25), drawing on both structural and orientational aspects. The examples of ontological metaphors provided by Lakoff & Johnson are not entirely convincing on this point, but more recent work done by philosophers of science has demonstrated an ontological aspect of metaphor in scientific discovery and technical invention (Sismondo, 1996). In these cases, metaphor is the means by which researchers construct speculative models of reality that correspond with the phenomena under investigation and eventually lead to real discoveries and effective designs. One writer describes it as a process of "transcendence through metaphor" that provides some further insight into this otherwise elusive notion. Drawing on arguments similar to McLuhan's that knowledge itself is profoundly linked to processes of analogical thinking, the writer suggests that "there is recognition that not only is human experience metaphorical in nature, but also that metaphor is an essential constituent in the structure of human experience." In this ontological form, metaphor is seen to create preconditions for articulating alterna-

tive visions for human possibilities, and is in this sense “a vehicle for transcendence and freedom” (Union of International Associations, 2001; see also Richards, 1998).

Spatial metaphor operates throughout McLuhan’s work in structural, orientational, and ontological forms. In using these forms to study visual and acoustic space, one can better discern how he organized and propelled his study of culture and technology. Spatial metaphor in its structural function establishes a systematicity of visual or acoustic qualities that McLuhan then transferred to culture and technology. Spatial metaphor in its orientational function builds upon the systematicity of the structural metaphor to establish a set of oppositions, or dialectical relations, between visual and acoustic qualities. For instance, McLuhan took this dialectical relationship to be evident in the movement of history. Finally, and perhaps most significantly for contemporary research in technology studies, spatial metaphor in its ontological function helps to illustrate what McLuhan believed to be the true nature of causality at work in all media—a metaphysical account—serving as the foundation for his laws of media and their connection to the tetrad.

Spatial metaphor as structural metaphor

Paul Levinson (1999, p. 26), commenting upon McLuhan’s method of discovery, claims that metaphor provided McLuhan with an “engine of ideational generation,” which often confused as much as it clarified. Although there is nothing remarkable in this observation itself, Levinson adds some value to it when he points toward the source of confusion and misinterpretation often associated with McLuhan’s more popular metaphors.

The problem with McLuhan’s metaphors ... is really not that they were metaphors, *but metaphors newly minted*. Much of the world—including, sadly, the academic—just did not know what to do with them. Worse, and especially in the early days, they did not want to try.” [emphasis added] (p. 27)

According to Levinson, McLuhan’s newly minted metaphors were difficult to interpret because their “informational structures” were at odds with common sense at the time. As a result, critics were faced with a problem of intended systematicity or “equivalence” in reading McLuhan’s metaphors, even though McLuhan always worded his metaphorical expressions very carefully (p. 26). By way of example, Levinson demonstrates that McLuhan wrote of the world as being recreated “in the *image* of a global village” as opposed to claiming that the world *was* a global village. Levinson claims that critics who mistake the partial and intended equivalence for a literal equivalence of meaning fail to see the relationships being highlighted by the metaphor. To McLuhan’s credit, we find ourselves today much more at ease with many of his metaphors, able to quickly identify with the intended systematicity, for much of what he was grasping at in the 1960s has become commonplace experience decades later. Nevertheless, as Levinson adds, in many instances “just what the equivalence was, and is, is of course worthy of further research, discourse, and contemplation” (p. 28).

McLuhan's newly minted metaphors included visual and acoustic space. And perhaps here, more than anywhere else in McLuhan's work, we can identify with the problem of intended systematicity, or what Levinson termed "equivalence." How could it be, for instance, that an electronic data network could be *acoustic* in character? What is the intended systematicity in such a metaphor? In order to understand the more figurative meaning of visual and acoustic space, we must first recognize that McLuhan developed these spatial metaphors through a succession of equivalence transfers. In this way, visual and acoustic space evolved to provide the complex structural metaphors that came to organize McLuhan's overall conceptual system.

Recalling Lakoff & Johnson (1980), we are reminded that in its structural function metaphor serves to transfer, in a systematic way, the elements of a known domain into an unknown domain. This function provides the basic operation upon which McLuhan established his study of culture and technology. Spatial metaphor in its structural function served to provide a systematic transfer of structure in two steps: from the body to space, and then on to technology and culture. We find the principles of experientiality and systematicity at work in this process of transference.

In its early incarnations, McLuhan's spatial metaphor was established through a systematic transfer of the (relatively) familiar structures of sensory experience to an otherwise undefined notion of space.⁷ Out of this process, this undefined notion of space underwent a semantic boom when fused with the properties of visual and acoustic experience. This first step in the formation of McLuhan's spatial metaphor is evident in the early writing on acoustic space in *Explorations*, where McLuhan and Carpenter provided proto-ethnographic accounts of the spatial worlds of Inuit and other oral cultures. Here they posited a fundamental difference between the spatial worlds of the eye, the ear, and the other senses (Carpenter & McLuhan, 1960).

In the second stage of equivalence transfer, the newly minted properties of spatial metaphor then served to provide the systematic structure for describing *entire societies* and their relation to technology in terms of visual or acoustic qualities. McLuhan (McLuhan & Parker, 1968) supported this step by contending that cultural changes were reflected in spatial sensibilities unique to historical periods and bound up with the dominant technology of those periods.

Today, with the decline of the role of visual power in an age of electronic circuitry and participation in many nonvisual dimensions of space and time, Western populations are once more inclined toward involvement in cosmic energies in their arts and sciences.... Whereas with the Renaissance it was the encounter with the new pictorial visual space that created discomfort and dismay, the reverse is true in our time. It is the rediscovery of nonvisual, multisensuous spaces that bothers and confuses us. (p. 28)

This two-step transfer of structure allowed McLuhan to first draw upon the principle of experientiality to transfer aspects of the human senses to the notion of "space," thereby minting two new metaphors for himself based on a distinction

between visual and acoustic modalities. Having grounded the new metaphors in the human body, he then executed a second transfer of equivalence by extending the qualities of visual and acoustic space to the larger domain of culture and technology. In this second step, spatial metaphor was now useful for a wider function. It could go beyond characterizing the experience of individuals within culture to describe the qualities of cultures themselves. Spatial metaphor thus became associated with different historical periods and, in turn, could provide an *ex post facto* account of the causal relationship between media, culture, and mind.

Much of the secondary literature dealing with visual and acoustic space in McLuhan's work suffers from an inadequate understanding of this second step in structural transference. This is a particular problem for analyses of acoustic space, because it is a truly novel metaphor in our culture, where space is generally taken to be a visual concept. Most of us can identify with space as a visual concept, but thinking of it in terms of acoustics is another matter altogether. As a result, most of the secondary accounts of McLuhan's spatial metaphor have difficulty treating acoustic space beyond its oral/aural, or sonic, equivalence. Although valuable in other respects, these accounts ultimately become tangled in the initial structural metaphor based on sensory experience and therefore fall short of being able to elaborate acoustic space in its abstract electronic equivalence. Levinson himself fails to provide a satisfying account of the Internet as acoustic space because of his preoccupation with its sensory equivalence (1999, p. 49). Other instances include R. Murray Schafer's treatment of acoustic space as the basis for his soundscape studies (Schafer, 1993) and Eric Davis' interpretation of acoustic cyberspace (Davis, 1998). In order to understand visual and acoustic space in their more abstract equivalences, we must recognize that they also served as orientational metaphors in McLuhan's work.

Spatial metaphor as orientational metaphor

Paul Grosswiler (1998) has demonstrated significant "confluences" between McLuhan's method and Marxist dialectics, noting that McLuhan's dialectical theory (as Grosswiler terms it) "can be best understood in relation to his concepts of visual and acoustic space" (p. 7). This is because throughout McLuhan's work we find an emphasis on historical movement—what Grosswiler calls a persistent sensory dialectic—from the ear to the eye and back again. McLuhan parallels this movement with the historical shift from preliterate to literate to post-literate Western cultures marked by pre- and post-Euclidean spatial periods. In his later work, McLuhan adds further parallel dimensions to his dialectic framework in the form of the figure/ground of Gestalt psychology and the left/right hemisphere studies of the brain, all of which are associated with a dichotomy between visual and acoustic space (McLuhan, Hutchon, & McLuhan, 1977; McLuhan & McLuhan, 1988; McLuhan & Powers, 1989).

McLuhan also used spatial metaphor to orient his repertoire of probes with respect to visual or acoustic modes. Terms such as linear, logical, mechanistic, typographic, Newtonian, Euclidean, and efficient causality were all associated with visual space. These in turn had their counterparts in resonant, emotional,

quantum, electric, and formal causality associated with acoustic space. Visual and acoustic space provided McLuhan with an orientational metaphor by which to categorize all matters of culture and technology into oppositional relationships. Table 1 summarizes many of the qualities that McLuhan distinguished by their association with either visual or acoustic space.⁸

Table 1: Qualities McLuhan Organized by Spatial Association

Visual	Acoustic
sequential	simultaneous
asynchronous	synchronous
static	dynamic
linear	non-linear
vertical	horizontal
left brain	right brain
figure	ground
specialism	holism/generalism
tonal	atonal
isotropic	anisotropic
container	network
mechanical	electrical
particle	field, resonance

With each development in McLuhan's work, and most notably in the later developments, we discover that spatial metaphor is consistently used to orient two distinct groupings of phenomena within the dialectical framework. This application of spatial metaphor in an orientational function is clearly an instance that Lakoff & Johnson (1980) observed in their work, where the internal systematicity of metaphor is used to establish relations between and among a wide range of concepts. In this manner, McLuhan appears to have developed spatial metaphor into a second-order structural form to organize a vast network of ideas he had taken from other fields.

The second-order structure of spatial metaphor in McLuhan's work is evident in the semantic impertinences that begin to appear with the orientational metaphor. As demonstrated in Table 1, McLuhan moved far beyond human sensory experience as the intended systematicity and began to draw upon different kinds of equivalences when referring to visual and acoustic space. This seems to be the case when acoustic space is attributed with qualities that bear little relation to the experience of sound, such as those associated with electricity and quantum physics.

The orientational function of spatial metaphor in the work of McLuhan is important because it leads us to the equivalences upon which visual and acoustic space later came to be understood in his thought. Lakoff & Johnson (1980) define orientational metaphor in a synchronic sense as something that structures con-

cepts in relation to one another. As Table 1 suggests, this is clearly one of the functions that spatial metaphor performs in McLuhan's conceptual framework. On the other hand, spatial metaphor also provides a different sense of orientation, as in the sense related to a compass heading, or forward movement. An appreciation of this sense of orientation as it relates to movement suggests how spatial metaphor may have led McLuhan to his later thoughts on the tetrad.

Spatial metaphor as ontological metaphor

In his work on the laws of media and the tetrad, McLuhan (McLuhan & McLuhan, 1988) ultimately sought to move toward a communication model that could more adequately describe the effects of electronic media. Moreover, he felt that it had to correct for the shortcomings of previous models that failed to capture the true dynamics of electric media. A new approach to studying culture and technology would have to operate based on the principle of resonance—a quality attributed to the right hemisphere of the brain and to acoustic space.

For use in the electric age, a right-hemisphere model of communication is necessary, both because our culture has nearly completed the process of shifting its cognitive modes from the left to the right hemisphere, and because the electronic media themselves are right-hemisphere in their patterns and operation. The problem is to discover such a model that is yet congenial to our culture with its residuum of left-hemisphere tradition. Such a model would have to take into account the apposition of both figure and ground instead of concentrating solely on an abstract sequence or movement isolated from any ground. (p. 91)

Not only did McLuhan feel that a right-hemisphere model was appropriate for an electronic culture, but one gets the additional sense from his later writing that he felt acoustic space to express the true principle of causality at work within media and, for that matter, at work within all human artifacts. The tetrad itself, he claimed in *Laws of Media*, is uniquely innovative because it is the first analytic tool to operate on the principles of acoustic space and as such is the only device able to characterize the multiple and simultaneous effects that artifacts unleash on the world (i.e., “the apposition of both figure and ground”).

With the tetrad, McLuhan drew on spatial metaphor in its orientational function to support a dialectical relationship between visual and acoustic space but also to suggest that the former was but one element of the latter. Acoustic space is thus developed into an ontological metaphor and provides the pivot point on which turns McLuhan's call for a new communication model. In other words, having established the abstract equivalences and internal coherence between visual and acoustic space, McLuhan then set out to demonstrate that the metaphysics of media are in fact acoustic in character. Based on this claim, he then argued that a truly insightful model for studying *any* technology must operate based on those metaphysical principles.

McLuhan's reasoning stemmed from what he believed to be the skewed cognitive basis that literacy perpetuated in the West. In his view, typographic media represent a distortion of sensibility because they overextend the activity of the left

hemisphere. Therefore, visual space, being a byproduct of typography, cannot but provide a distorted account of media effects. From this McLuhan deduced that analytic tools based on the principles of visual space are inadequate for describing media in full profile because they can only partially account for their operations. To put it another way, McLuhan, using the gestalt concepts, claimed that these tools focus on figure at the expense of ground.⁹ McLuhan even took care to point out that initial efforts by artists, scientists, and philosophers to grapple with the resurfacing of acoustic space in the early part of the twentieth century were still restrained by the powerful influence of visual media (McLuhan & McLuhan, 1988, p. 63).

McLuhan's late version of acoustic space is an ontological metaphor inasmuch as it establishes a metaphysics of media that are ecological in character. In a letter to Claude Bissell in 1971, McLuhan wrote of this insight that was to preoccupy him until his death a decade later.

Entelechy or *energeia* is the recognition of the new actuation of power brought about by any arrangement of components whether in the atom or the plant or the intellect. Pens and swords and sealing wax which actuate human potential, creating specific new patterns of energy and form of action—these, along with all technologies . . . , have for 2500 years been excluded from philosophical study. They were *written off*. That is, the Greeks and their followers to the present time have never seen fit to study the entelechies generated by human arts. . . . In the electric age when the actuation of human energies has gone all the way into the organic structure of life and society, we have no choice but to recognize the entelechies of technology. This is called *ecology*. [emphasis in original] (Molinaro et al., 1987, p. 429)¹⁰

Not only does McLuhan's work achieve internal coherence through the dual role of spatial metaphor in its structural and orientational functions, acoustic space in its ontological role provided the inspiration behind an approach now known as media ecology research (Media Ecology Association, 2001). Through a succession of transfers of equivalence, McLuhan developed spatial metaphor from a descriptive concept into a revelatory probe insofar as acoustic space has suggested an alternative communication model that has since been adopted by communication scholars.¹¹

Conclusion

Understanding spatial metaphor is central to understanding the layout and development of McLuhan's thought on culture and technology. This paper has adapted a framework drawn from cognitive linguistics to describe how McLuhan's concepts of visual and acoustic space serve as structural, orientational, and ontological metaphors based on principles of experientiality, systematicity, and asymmetry. In its ontological role, spatial metaphor provides the metaphysics for McLuhan's tetrad, which he came to regard as an alternative model for studying culture and technology. Some of the confusion in grasping and applying McLuhan's later insights, especially those associated with acoustic space and electronic networks, is swept away when the Lakoff & Johnson framework is

applied. In particular, the framework demonstrates how McLuhan developed visual and acoustic space into complex forms through a succession of equivalence transfers and applications.

This is but one preliminary study of spatial metaphor in the work of McLuhan. There are other possibilities for further research along the lines established in this paper. For instance, there is a need to explore McLuhan in the context of technology assessment, a field that has recently recognized the value of metaphor for structuring social interventions in the early stages of technology design and development (Tepper, 1996). In this regard, scholars might consider the proposition that technology assessment was immanent in McLuhan's project, and that his development of spatial metaphor, especially its contribution to his laws of media and the tetrad, may have some application for constructive approaches in technology policy research.

Notes

1. Several parts of this paper were first presented at the McLuhan Symposium hosted by the University of Ottawa in May 2000.
2. McLuhan's tetrad is a "bundling" of his four laws of media into a set of figure/ground ratios. McLuhan's laws of media state that all media have four inherent properties: amplification, obsolescence, retrieval, and reversal. McLuhan claimed that his laws, once assembled in the tetrad, could provide a systematic method for studying the effects of technology on society. For a detailed discussion, see McLuhan & McLuhan (1988).
3. W. Terrence Gordon in his biography of McLuhan suggests that the media-as-metaphor notion was directly inspired by I. A. Richards' views on knowledge acquisition as an act of interpretation or "translation." McLuhan attended I. A. Richards' lectures during his years at Cambridge University.
4. Curiously enough, Global Positioning System (GPS) technology could be seen as a tetradic reversal in this development, using as it does an acoustic medium that applies visual space as its content.
5. McLuhan himself avoided calling his ideas "concepts," and preferred to use the more phenomenologically oriented term "percepts."
6. I might add that McLuhan himself criticized the Shannon-Weaver model of communication based on a similar point. Cavell (1999) addresses this subject in more detail.
7. While his notion of space was "undefined" in the sense of being unarticulated, McLuhan was in effect playing off the common sense and unexamined notion of space that the reader is likely to assume (i.e., visual space).
8. I would like to thank Robert Logan from the Department of Physics at the University of Toronto for his kind contribution to this "periodic table" of elements.
9. This also appears to be the basis for the great historical schism that McLuhan saw between Bacon and Vico. The grammarians, symbolized by Bacon, were fixated on principles associated with visual space, while Vico and the rhetoricians fought a losing battle trying to maintain the presence of their acoustic sensibility and poetic wisdom in the arts and sciences (McLuhan & McLuhan, 1988).
10. For further discussion of entelechy in McLuhan's work, see Onufrijchuk (1997).
11. See, for instance, the McLuhan-inspired journal *Media Ecology*, available on-line at: http://raven.ubalt.edu/features/media_ecology/me_home.html.

References

- Black, M. (1962). *Models and metaphors*. Ithaca, NY: Cornell University Press.

- Carpenter, E., & McLuhan, M. (1960). Acoustic space. In E. Carpenter & M. McLuhan (Eds.), *Explorations in communication* (pp. 65-70). Boston: Beacon.
- Cavell, R. (1999). McLuhan and spatial communication. *Western Journal of Communication*, 63(3), 348-363.
- Dasgupta, S. (1994). *Creativity in invention and design: Computational and cognitive explorations of technological originality*. Cambridge: Cambridge University Press.
- Davis, E. (1998). Acoustic cyberspace. *Nettime*. URL: <http://www.nettime.org/net-time.w3archive/199804/msg00066.html> [March 25, 1999].
- Gordon, W. J. J. (1961). *Synectics*. New York: Harper & Row.
- Gordon, W. Terrence. (1997). *Marshall McLuhan: Escape into understanding*. Toronto: Stoddart.
- Gozzi, R. (1999). *The power of metaphor in the age of electronic media*. Cresskill, NJ: Hampton Press.
- Grosswiler, Paul. (1998). *The method is the message: Rethinking McLuhan through critical theory*. Montreal: Black Rose Books.
- Innis, H. A. (1951). *The bias of communication* (1991 ed.). Toronto: University of Toronto Press.
- Innis, H. A. (1986). *Empire and communications*. Victoria, BC: Press Porcepic.
- Lakoff, George, & Johnson, Mark. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Levinson, Paul. (1999). *Digital McLuhan: A guide to the information millennium*. New York: Routledge.
- Marchand, P. (1989). *Marshall McLuhan: The medium and the messenger*. Toronto: Random House.
- McLuhan, Marshall. (1962). *The Gutenberg galaxy: The making of typographic man*. Toronto: University of Toronto Press.
- McLuhan, Marshall. (1964a). Introduction. In H. A. Innis (Ed.), *The bias of communication*. Toronto: University of Toronto Press.
- McLuhan, Marshall. (1964b). *Understanding media: The extensions of man*. New York: McGraw-Hill.
- McLuhan, Marshall. (1969). *Counter blast*. Toronto: McClelland & Stewart.
- McLuhan, Marshall, Hutchon, K., & McLuhan, E. (1977). *City as classroom: Understanding language and media*. Agincourt, ON: Book Society of Canada.
- McLuhan, Marshall, & McLuhan, Eric. (1988). *Laws of media: The new science*. Toronto: University of Toronto Press.
- McLuhan, Marshall, & Parker, Harley. (1968). Through the vanishing point: Space in poetry and painting. *World perspectives*, vol. 37. New York: Harper & Row.
- McLuhan, M., & Powers, B. (1981). Ma Bell minus the Nantucket Gam: Or the impact of high-speed data transmission. *Journal of Communication*, 31(3), 191-199.
- McLuhan, M., & Powers, B. R. (1989). *The global village: Transformations in world life and media in the 21st Century*. New York: Oxford University Press.
- Media Ecology Association. (2001). *Media Ecology Association Home Page*. URL: <http://media-ecology.org> [November 20, 2001].
- Molinario, M., McLuhan, C., & Toye, W. (Eds.). (1987). *Letters of Marshall McLuhan*. Toronto: Oxford University Press.
- Murray, Edward. L. (1987). Imagination theory and phenomenological thought. In E. L. Murray (Ed.), *Imagination and phenomenological psychology* (pp. 175-220). Pittsburgh: Duquesne University Press.

- Onufrijchuk, R. (1997). *Object as vortex: Marshall McLuhan and material culture as media of communication*. PhD dissertation, Simon Fraser University, Burnaby.
- Ortony, A. (Ed.). (1993). *Metaphor and thought* (2nd ed.). New York: Cambridge University Press.
- Richards, C. (1998). *Computer mediated communications and the connection between virtual utopias and actual realities*. Paper presented at the proceedings Cultural Attitudes Towards Communications and Technology '98, University of Sydney, Australia.
- Richards, I. A. (1936). *The philosophy of rhetoric*. New York: Oxford University Press.
- Ricoeur, P. (1986). *The rule of metaphor: Multi-disciplinary studies of the creation of meaning in language*. London: Routledge & Kegan Paul.
- Schafer, R. M. (1993). *Voice of tyranny/Temples of silence*. Indian River, ON: Arcana.
- Sismondo, S. (1996). *Science without myth: On constructions, reality, and social knowledge*. Albany, NY: State University of New York Press.
- Stambuk, A. (1998). Metaphor in scientific communication. *Meta*, 43(3). URL: <http://www.erudit.org/erudit/meta/v43n03/stambuk/stambuk.html>.
- Tepper, A. (1996). Controlling technology by shaping visions. *Policy Sciences*, 29, 29-44.
- Theall, Donald F. (2001). *The virtual Marshall McLuhan*. Montreal: McGill-Queen's University Press.
- Theall, Donald F. (1971). *The medium is the rearview mirror*. Montreal: McGill-Queen's University Press.
- Union of International Associations. *Significance: Cognitive role of metaphor*. URL: <http://www.uia.org/metaphor/12sigmet.htm> [November 21, 2001].