Contested Presents:

Critical Perspectives on "Real-Time" Management

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The real-time perspective has served as the foundation for the formation of new economy companies, as well as the adoption of e-commerce business models. Regis McKenna's (1997:3) book, *Real Time,* seized the day, as it opens with the invitation: "Imagine a world in which time seems to vanish and space seems completely malleable. Where the gap between need or desire and fulfillment collapses to zero. Where distance equals a microsecond in lapsed connection time." The ideal for McKenna is to eliminate time entirely, to shrink to zero the gap or temporal distance between desire and the object of desire. With the emergence of digital technology, time-negation is becoming a reality, for digital technology compresses the distance between "here and there," "now and then."

Time compression of this sort, which for McKenna is the cause of celebration, is for Paul Virilio a matter of deep concern. "With acceleration, " writes Virilio, "there is no more here and there, only the mental confusion of near and far, present and future, real and unreal—a mix of history, stories, and the hallucinatory utopia of communication technologies" (Virilio, 1995a: 35). Geometry is negated with real-time technology, as one can be near anything in cyberspace, no matter what the distance. Hence, the need for cumbersome networks of distribution is abolished, and much physical movement can be eliminated. For example, commuting is replaced by telecommuting; attending meetings is no longer necessary with the availability of e-mail, groupware and video conferencing; going to school is seen as a laborious inconvenience in light of the choices that distance learning now offers.

Real-time technology compresses temporal distances, creating a sense of "instantaneity" by processing information at increasingly faster speeds. Its concern, however, is with the future, which it aims to control through digital technology. In effect, the future is replaced by a despatialized, dehistoricized, and detemporalized present (Jameson 1997; Adam, 1988). A temporal orientation that is fixated on instantaneity places limits on our attention span. Knowledge is reduced to knowledge of the present, a bundle of information that can be instantaneously consumed. In so-called real-time, there is no history or future—no time available for serious reflection or creative imagination. Nowotny notes this trend:

> We are about to abolish the category of the future and replace it with that of the extended present…The category of the future is shrinking towards becoming a *mere extension of the present* because science and technology have successfully reduced the distance that is needed to accommodate their own products. (1988:14-15, emphasis in original)

Interestingly enough, the accelerating forward trajectory of real-time has its source in the past, and its acceleration is only the continued acceleration of past routines. Information processing necessarily depends on programs that are stored in computer memory, which are coded in the past. Managers operating in real-time are forced to "think and act immediately" (McKenna, 1997), yet instant responses necessarily fall back on learned routines and unconscious cognitive biases (Purser, Pasmore, Tenkasi, 1992). Operating in real-time thus makes the future more unknowable than ever. Rather than developing the ability to engage the changing realities of their situation, managers find themselves trying to map learned routines and algorithms onto what time presents.

Their instant responses always comes a moment too late, and fast is never fast enough. The real-time manager is caught in a continuous instant-replay, with each performance demanding greater speed and efficiency. The “speed-slippage-more speed” model is a vicious causal loop, intensifying the inadequacy of a limited attention span.

Real-time is a model of reality, an approach which is based on what Arendt (1958/1998) called the “means-end paradigm,” according to which the aim of any action or strategy is to do whatever it takes to bring about a desired result. In this model, time is conceptualized as an obstacle to the attainment of future desires. McKenna (1997) goes on to further define what he means to operate and do business in “real-time”:

> Almost all technology today is focused on compressing to zero the amount of time it takes to acquire and use information, to learn, to make decisions, to initiate action, to deploy resources, to innovate. When action and response are simultaneous, we are in real time. (p.4)

Typical innovations and applications of real-time technologies are heralded in the popular business press and digital zines as a positive advance by both consumers and producers alike. Rarely are such real-time technologies assessed for the disorienting effects they may have on our personal, social and collective perceptions. Even McKenna (1997) recognizes that real-time technologies will alter our cultural sensibilities, but his rhetoric bespeaks of an uncritical, inexorable economic and technological determinism:

> These instances of instant satisfaction change our frame of reference. They provide different patterns and signals for setting expectations and for judging what is reality, what is truth or fiction, what is good or bad service,

> what is satisfaction. The cultural and value-laden patterns of our society change as we are taught by our environment to adapt to new ways of doing things. (McKenna, 1997:5)

McKenna does not discriminate between our sense of time passing--what I refer to as lived time, or “psychological time”--and compressed clock-time. Indeed, McKenna (1997) not only conflates clock-time with lived time, but he privileges clock-time and its associative links to technology as deterministic of our consciousness. He defines his position, stating:

> Real time is what I am calling our sense of ultracompressed time and foreshortened horizons in these years of the millennial countdown. The change in our consciousness of time is the creation of ubiquitious programmable technology producing results at the click of the mouse or the touch of the button or key. Real time occurs when time and distance vanish, when action and response are simultaneous (McKenna, 1997:4-5).

McKenna’s *Real Time* is among a genre of management books that dictate the need for greater speed and acceleration in organizations, and highlight the importance of challenging time limits. These books share a common and flawed assumption: objective, physical time is superimposed onto lived/psychological time, and conceptualized as time per se. In other words, the ideas put forth in these books do not distinguish the acceleration of technological time from our psychological time consciousness. For example, McKenna’s conception of real-time has a psychological time component as evidenced in his observation of "our sense of ultracompressed time," but he devotes the entire book to a discussion of economic and technological

imperatives for shortening clock-time units. Further, the implicit conceptualization of time as money is treated as incidental and unproblematic. Adam (1998) argues that associating time with money actually has the effect of “detemporalizing time,” making it into quantifiable commodity that is decontextualized and disembodied from events. Mechanized and commodified time is dissociated from the contingent flux of everyday life.

Real-time promises autonomy and independence from the flux of life, but its method for doing so is to deliver us up to the constructs of the past. As Adam (1998) puts it, real-time does not depart from the mechanistic principle of repetition without change—a standardized order that is intolerant of all variation. In addition, once time is equated with money, human consciousness is entrained to the rhythms of the dominant economic order, conditioned to follow the demands for the maximization of speed. In this respect, the real-time perspective can be viewed as a temporal regime, characterized by such assumptions that time is exclusively objective, decontextualized, and external to human consciousness. In essence, McKenna and other authors of “fast” books in this genre have priviledged clock time, albeit an accelerated version, and commodified it, ignoring the fact that human and social time cannot fully be explained by the former.

Dromospheric Pollution and Chronoscopic Time

Real-time technologies are radically altering our everyday experience of space, time and knowledge. Spatial distance and temporal relief are collapsing, while our creative intelligence is diminishing. Space feels more claustrophobic, if it was closing in

on us. In a context of increased capacity for instantaneous communications, time is accelerating and knowledge is becoming more voluminous, but simultaneously more superficial, as our attention is distracted and overloaded. The benefits of digitalization appear to be a double-edged sword. We are attracted to the convenience of being technologically connected in “real-time,” yet we are often overwhelmed by the increased demands that come with being wired, plugged in (Gleick, 1999). In this respect, our “real-space” is increasingly being crowded out by the network of digital devices at our fingertips—e-mail, cell phones, voice-mails, palm pilots, and the Internet. Enticed by the increases in efficiency that these real-time technologies offer, we also tend to feel more stressed out by the increasing demands made on our time and attention. New advances and changes in the world happen with such rapidity that we find it difficult to keep up. With little time available to digest experience, or reflect on intentions and actions, knowledge that could improve the quality of our lives seems out of reach.

As alluded to above, perhaps the greatest danger and threat to our temporal ecology is the erosion of human judgment (Postman, 1993). The ultracompressed time-speed of this temporal environment demands instant reactions to events. The time required for sound human judgment, communal reflection and deliberation--the sort of relief necessary for making sense of the world--is simply not available in real-time. Consider this futuristic scenario which illustrates the loss of temporal relief on the human mind:

> You can call for a dual-language text of Marcus Aurelius, or the latest paper in Malay on particle acceleration. Your reading can be interrupted by the appearance of a friend in your portfolio, a look at the actual weather

> in Djakarta, a film clip of Lyndon Johnson's inaugral, or, for that matter, anything, summoned by voice, available instantaneously, and billed to your central account… The man of 2016…is no longer separated from anyone. Any of his aquaintances may step into his study at will—possibly twenty, thirty, forty, or fifty a day. If not constantly interrupted, he is at least continually subject to interruption, and thus the threshold of what is urgent drops commensurately. …No matter how petty a matter, a coworker can appear to the man of 2016 in a trice. Screening devices or not, the modern paradigm is one of time filled to the brim. Potential has always been the overlord of will, and the man of the first paradigm (modern) finds himself distracted and drawn in different directions a hundred times a day…
>
> (Helprin, 1999:263-265)

We have given little serious consideration to the fact that the new information economy is producing an invisible form of pollution with very real consequences—what Paul Virilio (1997) calls "dromospheric" contamination. The term dromospheric comes from the Greek *dromos*, meaning a race, running. Dromospheric pollution has to do with the unperceived contamination of "time distances" and compression of our "depth of field" (Virilio, 1997:40). Just as physical pollutants released by the old economy exceed the carrying capacity of the Earth's ecosystems, the temporal pollutants that are being released by the new economy are exceeding the carrying capacity of the human nervous system. The will-to-speed unleashes the absolute speed of real-time technologies, annihilating real space. The result: a loss of appreciation for the vastness and qualities of space, a dimension which provided protected intervals of time, periods

of delay and relief between events and action. Management now occurs in a technologically mediated landscape, in the virtuality of *nonspace,* and in the temporalities of *distraction* (Morse, 1998:102).

Real-time technologies are, in effect, distorting and diminishing our perceptual "depth of field." According to Virilio's theory, a fundamental perceptual distortion is occurring due to a mutation of our cultural aesthetic. We are moving from the passive, small-scale optics of geometric linear perspective, to the active large-scale optics of digital media. Small-scale optics--which is derived from linear perspective art in the Renaissance--is an extension of human vision as expressed in painting, photographs and film. An apparent and visible horizon serves as a key point of perceptual orientation for making sense of scale and perspective, and a deeper horizon grounded in our collective imagination is instrumental in deriving meaning from our situated experience. For some thing or object to exist, it literally must stand out against the background of a horizon. The depth of field in small-optics is based on the preservation of spatial distance, giving rise to such distinctions as "near vs. far," "here vs. there," etc. In contrast, with real-time/large-scale optics, time moves at the speed-of-light, erasing distinctions based on spatial distance. Having instantaneous access from any point in space to virtually any other point in a "real-time instant" renders such spatial notions as "near vs. far," "here vs. there," meaningless. The result: a distortion of our depth of field and fundamental disorientation.

The "trans-apparent horizon" of digital media supersedes physical and cultural horizons, where "…the far prevails over the near and figures without density prevail over things within reach" (Virilio, 1997:26). Moreover, real-time technologies introduce a

“bug” or mental virus into perceptual field as a new horizon (trans-apparent) generated purely by digital media and electronic transmission of images (trans-appearances) that takes hold over the normal boundary line of the physical horizon, and also plays havoc on the deep horizon of our collective imagination and memory (Virilio, 1997).

In what amounts to a fundamental con-fusion of natural, collective and technological horizons, Virilio posits that dromospheric pollution, if left unabated and unregulated, will lead to a sharp loss of cultural memory and a degradation of collective imagination. Lamenting this loss, Virilio (1997) states:

> …a practical consequence of the emergence of a third and final horizon of indirect visibility (after the apparent and deep horizon): a transapparent horizon spawned by telecommunications, that opens up the incredible possibility of a “civilization of forgetting,” a live (live-coverage) society that has no future and no past, since it has no extension and no duration, a society intensely present here and there at once—in other words, telepresent to the whole world. (p.25)

In contrast, McKenna, rejoices this state of affairs, as he exclaims:

> We will increasingly find that the technologies of speed will not give us the time to see or plan beyond the horizon. We will have to think and act in real time. We cannot choose to do otherwise (1997:6).

“We cannot choose to do otherwise?” This technological imperative sounds dangerously totalitarian. For McKenna, the demand for speed overrides human intelligence and judgment. Fast decision-making in real-time requires instant answers. In order for us to “adapt,” we will have to develop a hyperintelligence (we have no choice), which is not situated in the horizon of human-scale optics, but in the

transapparent horizon. Hyperintelligence is pure algorithmic knowing, indifferent to, and decontextualized from, local spatio-temporal horizons. The totalitarian overtones are indicative of the fact that the techno-fundamentalisim inherent in the real-time perspective will redefine and alter the very meaning of human intelligence. To think and act in real-time terms requires a certain kind of willful blindness to the past and future.

From Chronological to Chronoscopic Time

Virilio (2000; 1997; 1995a; 1995b; 1991; 1986) has gone to great lengths to show that the essence of postwar telematics involves the virtual elimination of both spatial and temporal distances. Speed is no longer limited by moving across geographic distances by means of physical transport—that is, movement through chronological time. Rather, speed is equated with real-time data transmission moving at the speed-of-light—giving rise to what is now understood as instantaneity. Virilio characterizes this digitalized speed-up as a shift from chronological to chronoscopic time.

A key driver of chronoscopic time is the shift to digital interactive media--the conduit for an instantaneous mode of production and consumption. This shift entails a dramatic transformation in forms of cultural communications, in our sensibilities and conception of knowledge, which are imperceptibly changing our lived experience in space and time. As communication is increasingly being transmitted through the media of digital, real-time technologies—where vast increases in speed and expanded volume are key drivers—the form of everyday culture shifts to keep up with the rapid transmission and exchange of information. Not only does cultural life becomes increasingly commodified as it is forced to adapt to the frenzied pace of chronoscopic time, but basic capacities for sharing meaning—the stuff culture is made of—begin to

atrophy (Rifkin, 2000). Instead of sharing meaning, or engaging in what Borgmann (1984) refers to as “focal practices,” cultural activity is reduced to the transmission of information—for the expressed utility of procuring one’s ephemeral desires and increasing consumption (Simpson, 1995).

Chronoscopic time, however, is still bound to and dominated by a clock-time world, but it represents a movement away from a cultural rhythm based on analog and spatial sequences, to a world punctuated by distinct, identical, still, digital time units (Rothenberg, 1993:205). Symbolically, such a shift from chronological to chronoscopic time is analogous to the difference in how time is read-out on an analog versus a digital watch. Chronological time is apparent in the mechanical and sequential movement of the analog clock, as we “tell time” by noting the spatial location of hour and minute hands. Unlike their analog counterparts, digital clocks continually flash an instantaneous read-out of the temporal present-instant. Digital clocks flash a “real-time” display, erasing the sense of transitional sequential movement. In some respects, we do not so much “tell time” when looking at a digital clock, as much as the clock “tells us.”

The shift from chronological to chronoscopic time involves a radical change in temporal orientation, and the very means by which we make sense of our lives. In a chronological world, time as duration was coupled with space as extension. Calendars and clocks served as the dominant means for regulating and synchronizing political, social and economic activities. The emergence of a chronoscopic world parallels the advance of electronic data transmission technologies, which send and receive signals at the speed-of-light. This amounts to a new time standard based on real-time capability

for instantaneity, and an accelerated perspective focused on intensive duration of the "the real" moment replacing extensive duration of history.

The extensive time of history, chronology, and narrative sequence implodes into a concern and fixation with the real-time instant. What used to comprise a narrative history—sense-making based on knowledge of the past, present and future--contracts into the buzz of a flickering present. For Virilio (1997), the metaphor of "photographic exposure" replaces the sensibility of time as a succession of moments of present duration and that of extension in space. Digital media produce a temporality akin to photographic time, where time does not so much pass or move sequentially as it erupts, is exposed, and breaks the surface (Virilio, 1997:27). Rather than making sense of time through the unfolding of a narrative (before, during, after), time is perceived more in terms of abrupt and discontinuous irruptions of varying intensities (underexposed, exposed, underexposed). Virilio claims that real-time technologies have an effect of narrowing our time sense, refocusing our attention exclusively on the present, or what Benjamin (1994) simply calls, "now-time." Thus, a key feature of real-time technologies is that they function as a sort of monochronic filter that screen or cut out concern for the past and future. Noting this trend, Virilio (1997) states:

> …the time of the present world flashes us a glimpse on our screens of another regime of temporality that reproduces neither the chronographic succession of the hands of our watches nor the chronological succession of history. Outrageously puffed up by all the commotion of our communication technologies, the perpetual present suddenly serves to illuminate duration. (137)

High impact media messages are designed to captivate attention, narrowing our temporal orientation to a flashing series of now-moments. Bombarded by a constant stream and barrage of media images, a distracted form of hyperattention emerges, as the real-time instant of economic transaction eclipses the consumer's sense of situated presence in time (Wood, 1998). Indeed, in chronoscopic time the postmodern subject is constituted as a dutiful consumer, what Deleuze and Guattari (1977) would call a "desiring machine," or Baudrillard's "operator without subjectivity or interiority," a human terminal who clicks a mouse to satisfy every passing whim and desire.

Because time in chronoscopic environments is experienced as flashes, a "series of pure and unrelated presents" (Jameson, 1997), it becomes increasingly difficult to construct and weave together one's life as a coherent narrative (Sennett, 1998). Postmodern temporality:

> …can be characterized as an attitude toward time or an experience of time that….places emphasis upon maximum intensity in time, not the living in time that would be a form of praxis, but a more passive fascination or playing…The result is a flashing pointillism, a lived experience as a series of disconnected intensities. Not being able to commit to a future or to take the past seriously, the postmodernist makes do with the present. (Simpson, 1995:144).

As Paul Klee put it, "To define the present in isolation is to kill it." Virilio likens the psychological experience of chronoscopic time to a sort of "time freeze."

Temporal Alienation in Real-Time

In the chronological epoch, modern collective malaise was expressed in terms of alienation. Alienation manifested in forms of withdrawal or feelings of estrangement from one's spatial surroundings, for example, alienation towards poor working conditions, urban sprawl, and large impersonal bureaucracies. Other psychological maladies such as depression were symptomatic of such spatial alienation. Metaphors for depression are primarily spatially oriented, "feeling down," "downtrodden," "under the weather, "etc. In chronoscopic environments, temporal alienation becomes more salient. Wood (1998) describes temporal alienation as a mismatch or discordance between rational/clock-time and lived time. Similarly, McGrath (1988) notes the importance of such mismatches between rhythms of clock-time and subjective time as sources of stress in organizational settings. Temporal alienation is contingent on two key factors which are inversely related: (1) the degree to which one obeys clock-time; and (2) the sense of one's own presence (Wood, 1998:97). In other words, the more one tends to embody and obey the mechanical/digital rhythms of clock-time, the greater the feeling of loss of situated presence in time.

Common symptoms of temporal alienation are chronic stress, various forms of rage (which are expressive of an intensified impatience), and work-addiction. Such behaviors are rooted in the temporalities of distraction—consolidated and perpetuated by habitual routines enacted in the daily operation of digital real time technologies. Just as the mechanical clock commanded and regulated social behavior in the industrial era, the real-time perspective transmitted by digital media is also taking command of social and organizational life. Consider, for example, how telecommunications and computing

technologies have blurred the boundaries between work and home. People now talk about having “24/7” access, meaning, of course, that with the electronic prostheses of cell phones, e-mail, voice-mail, faxes, pagers and palm pilots that they are continuously “plugged in” to the global information network. Even Steve Jobs, the man who made it his mission to get a Apple computer on everyone’s desk, confesses how intrusive these devices have become in his own life, and just how obsessive-compulsive his behavior has become as a result of having “24/7” access:

> Technology cuts both ways. It’s a double-edged sword. …with high bandwidth to my home in place, people can send me e-mail over the Internet and I receive it instantly. What this means is that they learn very quickly that, if I want to, I can respond immediately, even if I am sitting at my computer at home at midnight. But this also means that if I don’t respond instantly, there’s no cover for me to hide behind. So, at nine o’clock at night, when I’m with my family, it’s very hard to resist the urge to take fifteen minutes and go check my e-mail. It really has invaded my personal life, I have to say. It follows me everywhere, there is no escape anymore. (Jobs, 1997)

What Jobs fails to recognize is that the increase in technological bandwidth has led to a subsequent narrowing of his temporal world. He, like millions of others, are ensnared by the demands of “real time,” are experiencing a diminishing sense of “real presence” in lived time. One wonders even when Jobs is with his family in the evening, if he is really “there,” “fully present”?

The automatisms associated with the habitual use of real time technologies are not only insidious, but also pervasively demanding of conformity (Morse, 1998:118). As Jobs admits above, the compulsive checking of e-mail throughout the day is now a common occurrence and expectation in managerial work. Distracted attention and compulsive behavior are highly correlated with immersion in real time work environments. Performing tasks half-aware, talking on the cell phone while driving in traffic, and so-called "multi-tasking" activity – are not only signs of temporal alienation, but also illustrate productive forms of discipline that are not imposed, but self-initiated, requiring very little surveillance. Morse (1998:118), drawing from Foucault's *Discipline and Punish* (1979:103) the disciplinary power of real time technology (and its associated mental states of temporal distraction) are built upon an "empire of the habitual"—and "layer upon layer of built environment and representation," or what she refers to as "zones of ontological uncertainty."

Chronoscopic temporal environments tend to foster what appears to be a postmodern form of malaise—what Rappaport (1990) calls "telepresssion." The symptoms of telepression combine a cognitive hyperactivity that is immobilized and fixated on the present. As outer events are accelerating at a rapid pace, telepression manifests as a defensive reaction to an unknown futurity. Describing the typical profile of the telepressed individual, Rappaport (1990) states:

> The future of this type of individual does create an illusion of successful future extension. …they have "marks" on their time lines that give the appearance of plans. The typical problem, however, is that the future is narrowly defined in terms of present business plans, so that the future is

> usually not very distant. In addition, this “near-future extension” is often crowded and unrealistic. The overconcentration of goals makes the temporal experience of this person disjointed because time moving too quickly means time not personally controlled. It is precisely this sense of no control that causes the feeling of “inauthenticity” that Heiddegger expounded in his philosophical work. The experience of desynchronization with objective time creates the general feeling that there is no clear purpose to life. (191-192)

Rappaport’s clinical observations are suggestive of an often overlooked relationship between time and meaning. Indeed, knowledge of time is intimately tied to meaning and the quality of our lived experience. The consumer lifestyle is a good example of temporal alienation. For the consumer, the relationship between time and meaning is weak and superficial. Knowledge of time is limited to the point-of-sale, that ephemeral “real-time” moment of “instant gratification.” Mass consumerism, or “affluenza,” may be a contributing factor to what seems to be a growing telepression epidemic.

Nihilistic attitudes toward life in the new economy are becoming more widespread. Relationships and activities are viewed in instrumental terms, subject to a calculative means-end analysis, "What’s in it for me?” Media reports on dating behavior among Silicon Valley entrepreneurs show many of them deferring it indefinitely, while others approach it as a rational exercise in cost-benefit analysis. Writing before the Internet boom, Rappaport (1990) seems to have put his finger on the temporal pulse of

the emerging E-commerce economy. His comments on telepression are worth quoting at length:

> …images of life beyond the present are stereotyped in terms of career and money. In the broader cases of telepression, the future is more fully blocked, with content that is often just as stereotyped, but in a less predictable way. In either case, the problem centers on the question of whether an individual feels his life is meaningfully propelled by a viable constellation of values. When one lives without a clear value structure, it is both difficult to direct life in the long run and difficult to experience the sense of meaningfulness that comes from following a prescribed course. It is possible to sail a boat, for example, without charts or a compass. However, the absence of a chart prevents the possibility of a journey. One is limited to "day" sailing, so that new destinations and new challenges are out of reach. Eventually the same seascape and circumstances will produce a tedium not unlike the absence of meaning associated with a present-centered existence (Rappaport, 1990:192).

Today we hear a lot about those who are consumed by the present, and try to make their living off of it, the so-called "day traders." Certainly, we could surmise, that the future was blocked for the crazed Atlanta, Georgia day-trader, who gunned down innocent people, behaving quite unpredictably in the face of what must have seemed like a meaningless dead-end. Sennett's (1998) latest critique on the personal consequences of the new capitalism goes to the heart of temporal alienation. For Sennett, temporal alienation in the new economy, where there is "no long term,"

manifest in the demise of character. Character, according to Sennett (1998:10), is shaped by the "ethical values we place on our own desires and on our relation to others." The loss of long-term commitments, the destruction of loyalty, and the inability to delay gratification—the byproducts of "flexibility"—in reality makes character development difficult and sets our inner life adrift. Yet, the lack of temporal attachments is propagandized (by those who stand to benefit) as the sort of "competencies" needed to flourish in the new flexible economy. For Sennett (1998:62), such an appetite for flexibility that demands weak temporal attachments is pathological, as it encourages a greater tolerance for fragmentation.

Reimagining Time

Clock-time can be thought of as an "extension," which, according to Hall (1984:129), is an "externalized manifestation of human drives, needs, and knowledge". Extensions function like language in culture, and when they take on a life of their own, we are engaged in what he calls "extension transference." Extension transference is apparent when the substitute takes the place of the process that was extended. Commenting on how this occurred with clock-time, Hall (1984:131) states. "This principle is illustrated by the way in which we have taken our biological clocks, moved them outside ourselves, and treated the extension as though they represented the only reality"

Industrialization of culture was imbued with the clock metaphor, which permeated images of social organizations. With the real-time perspective, extension transference shifts to the computer, our new cultural idol. Extension transference involves a kind of collective amnesia. Clock-time is a collective representation for organizing social and

economic activities, which has become abstracted and detached from its roots in consciousness. This process resembles what Barfield (1988) refers to as *modern idolatry.* We commit idolatry in the way we relate to clock-time and its real-time compatriot, for we have forgotten that temporal phenomena are in actuality a collective representation—a human creation—an extension of a deeper topography of time. We are not idolaters because we create idols, but because of our blind worship of externalized clock-time. We are left with a modern picture of time that ignores the central role of human consciousness and imagination, and in so doing, treats time as an independent, external phenomenon (which we have to slavishly adapt to).

Given the insights of twentieth-century physics, it is commonplace to know that the activity of the observer is implicated in what is observed. While perception relies on sense organs, it is human consciousness that perceives. It is also an epistemological truism to recognize that the phenomenal world, the world of appearances, is not to be equated with the ultimate reality. When we see a "chair," ultimately what is "really there" is but a pattern of moving particles. Barfield's (1988) famous analogy of the rainbow can help shed light on the epistemological issue having to do with temporal phenomena. When a rainbow appears in the sky, we can all point to it. But in reality, if we actually walk over to the end of the rainbow, and look directly at it, there will not be anything actually there. What we call a rainbow is the conjunction of particles of water, the sun, and human vision. Like a chair, the rainbow is a collective representation. It is not a hallucination, for we all claim and agree that we see such an entity called a rainbow.

We can extend this analogy to time, since time is also a collective representation. While we all can point to the clock and agree that time is passing, if we go to look

directly for time, we cannot find it. Even our sense of the present is a conventional notion, a relative term. If we attempt to look for the present, it slips away. Time appears to be always moving, never fixed. The “present” (and for that matter the past and the future) is very much like the presence of a rainbow, the outcome of a very powerful collective representation. Moreover, the present is not independent of some object that changes as we normally assume. So called “real-time” appears to be a counterfeit. As Morse (1998:23) states, “real time depends for its very existence on the creation of unreal time that can mimic the clock.”

One reason time is such a slippery concept to understand, is because it is not based in matter. Our conventional approach is to treat time as some independently existent objective referent. This seems misguided, as we do not have any sense organs for perceiving time. Noting this fact, Adam (1998) argues that in order to appreciate the complexity of time, we need to embrace our sensual embodiment and tap the evocative power of our imagination. As she states:

> Since we have no sense organ for time, we need—even more than for the landscape perspective—the entire complement of our senses working in unison with our imagination before we can experience its working in our bodies and the environment. Such an effort at the level of imagination is needed if we are able to take account in our dealings with the environment (Adam, 1998:55).

It is interesting to note that “pre-perspectival” cultures (Gebser, 1985) were not detached from their own collective representations as we are with our perspectival worldview. Barfield notes that for us moderns, “…the only connection of which we are

conscious is the external one through our senses. Not so for them." (p.11). Given our bias toward the senses, it is understandable then why we have so little connection and such a superficial relationship to time, which, is not material in nature. This leads us to consider the epistemological link between time and mind, between human beings and phenomenal world may be of a different, perhaps "super-sensory" order. That order, as suggested by Barfield, is that of *participation*, or, to use Coleridge's term, the "primary imagination." To function as moderns, we have suppressed our awareness of our participation with the representational nature of the phenomenal world as a whole, including that of time. Our dominant mode of thinking relies on models (constructed from analytical thought about thought), and then we perceive such models as if they were actually and literally true (rather than as representational and relatively true). In this sense, we have gained the ability of scientific rational analysis, attained the powers of perspective by positioning ourselves as separate from phenomena, but all at the expense of maintaining a nonparticipatory consciousness. As noted above, this has been the function of modern idolatry. Thus, it should come as no surprise that time has been regarded as totally independent of our own consciousness and why such empty notions as "real-time" can be accepted uncritically.

Recognizing the role of participation and imagination in the figuration of temporality leads us to consider other topographies and textures of time. Our dominant cultural concept of time has been limited to the topographical surface—a spatialized view of time—which has led to our propensity to idolize outward-directed extensions. As an alternative, a focus on the participatory nature of temporal perception can help us to "own" and take more responsibility for our own extensions, for human consciousness is

correlative to phenomenon. Critical to this process is an examination of how primary imagination (or figuration) constructs our collective representations of temporal experience. Rather than limiting our participation to the surface of time, participatory consciousness offers us a way of exploring the complex topography of "whole-time." Reimagining time to be a complex, multi-dimensional whole can serve as a counterbalance to the real-time perspective with its insatiable appetite for speed, power, and negation of lived human experience.

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