N.E. Thing Co. Ltd.
The Logic of Sensitivity

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N.E. Thing Co., *Iain Baxter using Telecopier to Transmit Artwork* (ca. 1969-70). (Photographer: Brian Dyson)

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A Note to Users

> N.E. Thing Co. predicts that the new galleries of the future will not be what we know them now [sic.] – but will be *Television Stations*, and *Radio Stations* and *Communications Companies*. (N.E. Thing Co., 1967, "Some Thoughts," u.p.)

The electronic format of the *IB&raisonnE* affords a unique opportunity for experimentation with new modes of interactive, open-ended scholarly communication. This essay—a component part of the *IB&raisonnE—will be*, *is being*, *has been* issued incrementally in draft form as an invitation for comment and review by users. Revisions and drafts of subsequent sections will be issued in the coming months as they become available. At a later date, these draft sections will be knitted together into a single, revised manuscript, which will likewise be made available via the *IB&raisonnE*. Please submit comments to the attention to the author: alauder@yorku.ca Or, post to the project blog: <http://www.andraisonne.blogspot.com/>

Introduction

> I.B.M. or any of those companies are just totally all over the place. And they're into a level of sophistication that behoves us all to really understand, otherwise they're going to— .
> (BAXTER& in Robin White 1979: 11)

Information plays a conspicuous role in the art of N.E. Thing Co. Ltd. (NETCO), the conceptual project and business venture created and founded by IAIN BAXTER& in 1966. NETCO was legally incorporated January 16, 1969 and co-administered with Ingrid Baxter until the Company's dissolution in 1978 (N.E. Thing Co., January, 18, 1969). Prior to the establishment of N.E. Thing Co. as a registered name in 1967, BAXTER& employed the moniker N.E. Baxter Thing Co.—and the futuristic handle IT before that—as an "umbrella" for the manufacture of "products": vacuum-form or inflatable plastic landscapes whose weightlessness anticipated the experiential artifacts of the leisure economy predicted by futurologists such as Marshall McLuhan and Alvin Toffler (Paynter June 21, 1970: 1; Lippard June, 1969: 5-6; McLuhan 1968: 119; The British Columbia Gazette, January 30, 1969: 291; Toffler 1970: 234; Tomas 2010: 219).[1]

With the formation of N.E. Thing Co., this Pop-inflected production was rapidly phased out in favour of dematerialized techniques of information processing. Henceforward, the Company traded in "Sensitivity Information": a distinctive cybernetic choreography for corporate actions. This informatic commodity was documented by Company personnel using certificates and information sheets that cannibalized institutional conventions of notarization and information storage (Bonin in Lauder December 2010: 36).

NETCO's transition to a post-studio practice registered an early awareness of the "Age of Information" forecast by McLuhan (Fleming 1982: 32; McLuhan 1964: 36). BAXTER& became familiar with the ideas of the Canadian media theorist through his participation in the 1965 McLuhan-themed Festival of the Contemporary Arts at the University of British Columbia, where he was then employed as an assistant professor (Knight 1995: 7, 10). Ken Allan (2004, 2010) has begun the process of tracing McLuhan's influence on BAXTER& and N.E. Thing Co. In the wake of new electronic technologies, McLuhan predicted an end to the specialization of sense and sensibility enforced by mechanical technologies:

> In the electric age, when our central nervous system is technologically extended to involve us in the whole of mankind and to incorporate the whole of mankind in us, we necessarily participate, in depth, in the consequences of our every action. (McLuhan 1964: 4)

McLuhan's exploration of shifting sensory ratios and an emergent global consciousness under the impact of electronic media constitutes a distinct point of departure for the information experiments of NETCO relative to the technological contexts of early information and computer art analyzed by Michael Schwab (2003), Edward Shanken (2009) and Stephen Wilson (2002). As an attempt to represent information as embodied experience, Sensitivity Information belongs to the posthuman genealogy studied by literary scholar Katherine Hayles (1999). Rather than theorizing information as an abstract quantity or applying macro-political frameworks, NETCO adopted the approach—unusual enough for Conceptual Art in the years prior to the impact of feminism, and extremely unusual for art produced "in the mode of information" even today—of documenting the information behaviours of everyday life in post-industrial society (Poster 1990).

Long before the publication of de Certeau's influential *The Practice of Everyday Life*, NETCO was busy at work "bring[ing] to light the models of action characteristic of users" (de Certeau 1984: xi-xii). NETCO's Sensitivity Information brought into representation the "tactics" of ordinary people appropriating the "strategies" of technocratic structures to "make do" (ibid: xiv-xv, xix). This is the meaning of NETCO's "celebrat[ion of] the ordinary" (N.E.Thing Co. in Shaw 1993: 25). In sharp contrast to the consumers of manufactured commodities who remain the focus of de Certeau's study two decades later, as early as 1966, NETCO began setting its sights on the everyday actions of information users. It is within this framework of improvised resistance to

totalizing systems that NETCO's poetic "re-use of marketing structures" (ibid: xv) is situated here. Like the cybernetic management theories of Stafford Beer, NETCO's occupation of business models is properly understood as an exercise in "subpolitics"—a prescient attentiveness to the "the human element in the information processing industry" (BAXTER& June 26, 1970; Beer 1972; Pickering 2010: 282). NETCO's scientifically-inflected practice was also coterminous with the ludic production of aesthetic information by a "creative microgroup" envisioned by French psychologist Abraham Moles—whose *Information Theory and Esthetic Perception* was available in English translation in 1966 (Hermann 2010; Moles 1966 [1958]: 180). As an aesthetic and social intervention within technocratic systems, NETCO's information tactics reveal a sensitivity to the cultural politics of information that resembles the "daily deployment of informational tactics" described by Tiziana Terranova, for whom such tactics "address not simply the individual statement and its intertextual connections but also the overall dynamics of a crowded and uneven communication milieu" (2004: 54). NETCO's information tactics were deployed in the noisy channels of the new service economy.

While there is no question of direct influence, de Certeau's thick descriptions of the "room to maneuver left for consumers by the situations in which they exercise their 'art'" are invoked to clarify aspects of NETCO's practice that remain under-theorized in previous studies (de Certeau: xvii). The actual sources of NETCO's tactics lie in McLuhan's belief in the redemptive possibilities of media artifacts as well as BAXTER&'s reading against the grain of concepts such as the "banal" and "kitsch" in the work of Moles. Yet, De Certeau's writings offer a coherent framework for making sense of NETCO's highly original *bricolage* of McLuhan and Moles to produce what de Certeau has termed "a *therapeutics for deteriorating social relations*" (de Certeau: xxiv). NETCO's satirical practice sought sustainable ways of making do within existing structures rather than revolution. In a 1975 interview, Ingrid Baxter underlined NETCO's departure from the Marxist perspective that was orthodoxy in many conceptual circles: "I don't see it as getting out; out is the wrong word. It's getting deeper *in*, if anything. […] We're sold *in*" (Baxter in Capilano Review Fall/Spring 1975/1976: 170-71).

Unlike the artist-researcher partnerships facilitated by the Bell Labs engineers of Experiments in Art and Technology (E.A.T.), N.E. Thing Co.'s exploration of information did not grow out of a technical knowledge of computer science or information theory, nor did it constitute a mere "dabbling" with new technologies (Wilson: 36). The Company's playful and satirical approach to information is more appropriately classed with Lev Manovich's preliminary, and usefully broad, definition of "info-aesthetics" as encompassing "those contemporary cultural practices that can be best understood as responses to the new priorities of information society: making sense of information, working with information, producing knowledge from information" (2008: 6). In keeping with this description, NETCO explored the impact of information technologies and information theory on perception and everyday life. In de Certeau's language, NETCO pitted the Philosopher's discourse against the knowledge claims of the

Expert (de Certeau: 6). In employing "ordinary language" to study everyday information behaviours, NETCO undertook a "radical critique of the Expert" that disrupted institutional boundaries—even disturbing fellow critics such as Lawrence Weiner (de Certeau: 9; Lippard Winter 1969-1970: 668).[2] Following de Certeau, NETCO's "science of the ordinary" can be aligned with the intensified interest in "linguistic behaviours and uses" found in the later work of Ludwig Wittgenstein (though it should be emphasized that Wittgenstein was not an influence on NETCO) (de Certeau: 11, 13).

The ontic-ontological orientation of NETCO's language games stands out from the representational concerns of the Vancouver School. The Company's aloofness from the analytical economy of *critique* which has dominated North American art discourse for the last forty years may be responsible for its absence from recent histories of conceptualism. Dennis Durham has attributed NETCO's divergence from orthodox (analytical) conceptualism to NETCO's lack of exposure to the critical discourse of Minimalism (Durham 2011: 24). Isabelle Hermann has suggested that BAXTER&'s irreverent humor also played a role (Hermann 2010: 11). For all its irony, the work of Graham, Wall and Wallace has no place for the irrepressible absurdity which drives BAXTER&. However, fashions change. Today, the art world is once again shifting its attention to *synthetic* practices and theories of ecology, information, media, ontology, organization and systems. A renewed interest in NETCO—which explored all of these areas in depth—appears in tandem with this trend.

Further differentiating the Company's "sensitive" approach to information technologies from the hardware-intensive strategies deployed by such early adopters as Sonia Sheridan, museum initiatives such as the Los Angeles County Museum of Art's Art and Technology Program, and corporate-sponsorships such as the Xerox Palo Alto Research Centre (PARC), NETCO's projects primarily took the form of artist-initiated interventions within real-world systems that were intended to enhance the artist's opportunities for creative expression in a cultural environment dominated by proprietary media (Harris 1999; Kirkpatrick 2006; Tuchman 1971):

> You can't penetrate certain structures unless you have—a structure that looks like their structure. So by having the N.E. Thing Co. over the years I've been able to move like that. (BAXTER& in White 1979: 12)

NETCO's user-friendly conception of information may represent the earliest deployment of information in the visual arts that corresponds to the expanded and "social" definition of information recognizable to most IT users today.

Like British telematic artist Roy Ascott (Ascott 2003), NETCO also demonstrated an atypical tendency to theorize the effects of information. Yet, it must be stressed that NETCO's theoretical activities were resolutely intuitive and unsystematic (akin to McLuhan's dictum "observation minus ideas"): NETCO's pseudo-cybernetic approach to systems was always *hands on* (McLuhan in Marchand 1998: 130). NETCO theorized through reflective practice. NETCO's statements on information grew out of a performative imperative to "discover

distinct properties or effects and the means of putting them into operation" (N.E. Thing Co., "Operations Statement," 1967: 1). This dialogical orientation aligns the production of N.E. Thing Co. with calls from such critical information theorists as Donald M. MacKay (1967: 13-15), John M. Budd (1995), Ron E. Day (1996), Gary P. Radford (1998, 2005) and Jonathan Rose (2003) for alternative models of information.

The informational tactics of NETCO "researchers" presage recent conceptualizations of information as affect (Booth-Butterfield and Booth-Butterfield 1990; Clore and Tamir 2002; Clough 2004; Clough, Goldberg, Schiff, Weeks and Willse 2007; Terranova 2004) as well as research on human information behaviour (Courtright 2007; Sonnenwald and Iivonen 1999; Spink and Cole 2006), information ecology (Huvila; Nardi and O'Day 1999; Strate 2010; Williamson 1998), media ontology (Kittler 2009), and personal information management (Cushing 2010; Das and Loui 2009; Marshall 2008). Finally, NETCO's "social" use of the network and it's deployment of the non-human actor of the corporation as an aesthetic agent aligns its practice with an Actor Network Theory (ANT) approach to the study of social interaction on the web (Mika 2006) as well as critical methodologies for the study of social media (Ekstrom, Julich, Lundgren and Wisselgren 2011; Lamb and Kling 2003). NETCO's non-specialist information practice enriches our understanding of the possibilities for employing information as a creative and interdisciplinary lens in the humanities and social sciences in addition to filling important gaps in histories of both conceptual and information art.

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Designed to enhance efficiencies in telephony, Claude Shannon's quantitative model of information was the dominant paradigm during the period of NETCO's activity, as it remains today (Hayles 1999). Shannon defined information as a measure of the *uncertainty* in a message. His classic 1948 article "A Mathematical Theory of Communication" proposed a statistical definition of information as the degree of choice between signal and noise in a given message. Semantic meaning is notoriously left out of Shannon's equation: "semantic aspects of communication are irrelevant," he declared (Shannon and Weaver 1962: 3). His probabilistic definition relied on a structural model of communication in which information is conceptualized as passing through a "channel" composed of a sender, a medium and a receiver. "Information" is basically a quantitative measure of the *capacity* of the channel: the amount of uncertainty which is it capable of transmitting.

In contrast to critics such as Eve Meltzer who equate information with cognition, facticity or classification, the work of NETCO reveals a prescient understanding of information as what Terranova has termed "communication beyond meaning" (Meltzer 2006: 120; Terranova 2004). Far from denoting a factual content, strictly speaking, information is *non*-sense.[3] Viewed through the lens of Shannon's information theory, the greater the certainty or redundancy in a message (what we ordinarily think of as "content"), the less *information* it actually

contains (Gleick 2011: 329). Paradoxically, it follows that those who make knowledge claims with greater certainty are, from an information-theoretic perspective, the information *poor* (as will be explored below, it is this insight which is the motor of NETCO's critique of the specialist.) Susan Artandi clarifies this point, noting that when viewed from a pragmatic perspective, "negative information is in fact information" (July/August 1973: 244). NETCO's early awareness of the non-semantic and, indeed, nonsensical character of information will be revisited in greater depth below with reference to Zen and the writings of Gilles Deleuze on the paradoxes of sense and sensation (Deleuze 2003 [1981]; 2004 [1969]). NETCO's *koan*-like performances and statements merge a Zen pedagogy derived from Allan Watts with a reading of information as aesthetic uncertainty derived from Moles (Moles 1966 [1958]; Watts 1985 [1957]: 88-89). The "pure nonsense" which emerges from the *koan* as a technique for provoking creative "doubt" coincides with the noisy character of information (Watts 1985 [1957]: 106, 146).

By way of a brief introduction to the information art of NETCO, McLuhan's riposte to the information-theoretic definition of "noise" illuminates the Company's prescient recognition of the fundamentally non-representational character of information: "what they call 'NOISE,' I call the *medium*" (McLuhan in Cavell 1999: 350). Similarly, Philip Leider reported that BAXTER&'s conceptualization of information as a medium grew out of the artist's intuition that McLuhan's provocative description of electric light as "pure information" generated new possibilities when applied to the ambient sculpture of Dan Flavin (Leider June/July 1967: 7; McLuhan 1964: 8). This insight marks the moment of BAXTER&'s departure from the parodic appropriation of contemporary art *qua* commodity fetish which defined the Pop-inflected conceptualism of IT (cf. *Pneumatic Judd* (1965))—which Lucy Lippard aptly described as "art-about-art" (Lippard June 1969: 5). Henceforward, for BAXTER& "art is all over" because, when viewed from the perspective of McLuhan's critical reworking of classical information theory, everything hums with the noise of information. The instant that BAXTER& accepted McLuhan's proposition that the environment is an art form, *anything* could be art.

McLuhan's notion of "acoustic space" was also influential in shaping BAXTER&'s environmental understanding of information (BAXTER&, conversation with the author June 3, 2011; McLuhan 1954: u.p.). D.C. Williams first described the non-Euclidean structure of acoustic space in the pages of McLuhan and Edmund Carpenter's journal *Explorations*. "Auditory space," he wrote, "has no point of favoured focus. It's a sphere without fixed boundaries" (Williams 1955: 17). This non-perspectival understanding of space, subsequently popularized by Carpenter and McLuhan (1960), fuelled the spatial theories of McLuhan from the mid-1950s onwards (Cavell 2002: 51). Carpenter and McLuhan associated the multi-directional, audile-tactile properties of non-visual space with both the pre-literate culture of the Inuit and the post-literate condition of electronic media users. Building on this theorization of pre- and post-perspectival spatial models, BAXTER& improvised a non-hierarchical personal information space by "scanning," "selecting" and "assembling" artifacts from the

consumer environment in a fashion recalling Moles's informatic description of the human operator as an aesthetic "receptor" (Moles 1966 [1958]: 8, 59, 60, 161). Fusing Carpenter and McLuhan's synaesthetic definition of acoustic space with Moles's understanding of sensation as information, BAXTER& *bricolaged* a personal "repertoire of symbols" appropriated from his information context into a mobile "field of freedom" for aesthetic decision (ibid: 37, 131).

Critics of the "conduit metaphor" in information theory have argued that Shannon's model achieved and maintained dominance because its probabilistic definition of information reduced problems in communication to a manageable set of variables (Day 2000; Hayles 1999: 67). The tractability of Shannon's model made it attractive to exponents of cybernetics, the science of communication and control pioneered by MIT mathematician Norbert Wiener. Cybernetics experienced a vogue in computer science, management and military circles from the 1940s through the 1970s (Hayles 1999). It applied Shannon's models of communication and information to concrete problems in systems design. As Hayles has shown, cybernetics frequently conflated human and machine behaviour, even extending mechanistic analogies to psychological phenomena: "Transforming the body into a flow of binary code pulsing through neurons was an essential step in seeing human being as an informational pattern" (Hayles 1999: 61). Together, Shannon's theory of communication and cybernetics participated in a re-inscription of corporeal and psychological channels as information circuits. In Eve Meltzer's words, "sense perception is reconfigured as data transmission" (Meltzer 2006: 123). McLuhan was early in recognizing the effects of this trend: "[w]e see ourselves being translated more and more into the form of information," he wrote in 1964 (McLuhan 1964: 57). NETCO followed McLuhan in translating actions performed by its human operators into the informatic code of Sensitivity Information.

N.E. Thing Co.'s concept of SI represents a highly ambivalent response to the informationalization of the body. In keeping with cybernetic principles (Wiener 1961 [1948]), SI instituted an equivalence between the computational and the corporeal. The symbolic interchangeability of the body and its technological "extensions" assumed the form of a context-independent code for expressing states of activity that parodied then-current machine readable languages (McLuhan 1964).[4] Yet, SI also implied a dependency on the human operator that resisted full acceptance of the cybernetic strategy—namely, through the requirement that code be processed "sensitively" (presumably a qualification reserved for human actors or else the humane corporation) (N.E. Thing Co. 1993 [1969-70]: 42).

Setting the stage for subsequent students of network culture, NETCO's interventions targeted the channels of cultural, financial and social transmission—be they the dematerialized network of the Vancouver-based startup Facsend[5] or the hallowed chambers of the Vancouver Board of Trade—rather than the semantic content broadcast by those channels. NETCO's informational investigations constituted a series of tactical interventions within the infrastructure of the nascent information economy which turned the evacuation of meaning performed by information theorists against itself. Eschewing

representational concerns, the information art of NETCO focused on the ontological problem of how media constrain what messages come to be in the first place (*what* can be represented as opposed to *how*) and, in turn, how communication channels shape how that content is circulated. NETCO's occupation of a medium—the corporation—to "penetrate" the structures of the Network Society sets the stage for the interventions within informational milieus studied by contemporary scholars such as Terranova (BAXTER& in White: 12, 15). The Company's participation in the 1970 conference of the Data Processing Management Association in Seattle, like its transmission of 10- and 30-second Company announcements via CBXT Television in Edmonton and cross-Canada via CBC radio in 1971, is evidence of NETCO's intervention within the dynamics of an emergent transnational informational milieu (N.E. Thing Co. 1978: u.p.; Young 1971). "Very few (Artists) or Visual Informers (As NETCO refers to them) qualify," wrote NETCO in 1967, "when it comes to the means by which their concepts are disseminated. […] The nature of today's VSI is global and immediate and open to all, thus it is the challenge of the Artist to seek other means […] to allow for more sensitive broadcasting" (N.E. Thing Co., 1967, "Some Thoughts," u.p.). The information tactics of NETCO attest to "the power of the invention to displace the closed horizon of the communication channel" (Terranova 2004: 70). Staking a claim on the communication channel re-appropriates possibilities for creative expression in the Information Age.

If McLuhan's adage—"the medium is the message"—resonates like a mantra through previous literature on NETCO's media interventions, connections between the ecological dimension of the Company's practice and the holistic thought of McLuhan have received less attention. Nathalie Blanc and Julie Ramos (2010) and Isabelle Hermann (2010) have begun to investigate the ecological aspects of BAXTER&'s practice, but the properly informational character of NETCO's ecological tactics remains relatively unexplored. I propose that looking to the work of McLuhan's mentor, Harold Adams Innis—particularly its focus on the "staple"-character of the emergent "information industries" (Innis 2008 [1951]: 83)—bridges the gap between the medium theory of McLuhan and a fully ecological perspective. Robert E. Babe has argued that McLuhan's holistic reception theory fills an important gap in the ecological thought of Innis (Babe 2008: 12, 15). Ecology is also central to Arthur Kroker's geo-political analysis of both Innis and McLuhan in *Technology and the Canadian Mind* (1984). Kroker's perspective is echoed by Ronald Deibert, who—pointing to Innis's contention that "geography provides the grooves" of economic development (Innis 1946: 87)—dubs Innis's outlook "non-reductive physicalism" (41). The legacy of Innis's ecological orientation is evident in McLuhan's understanding of media as "environments" (McLuhan February 1967: 6).[6]

McLuhan's ecological framing of media had a particular resonance for contemporary artists, since the Canadian theorist argued that the technological environment is itself an art form; correlatively, he posited that artists are producers of "counter-environments" (ibid: 5; Allan 2010).[7] The anti-environment produced by the artist throws the normally invisible contours of the everyday environment into relief (McLuhan 1966). In periods of environmental change, the

environment itself becomes a "teaching machine" and the *work* of art is "the training of perception" (McLuhan 1966: 56, 1968: 124). Marie Fleming has interpreted NETCO's concept of Sensitivity Information as just such an exercise in sensory training (Fleming 1982: 37).

McLuhan's environmental approach to communications framed his ecological critique of Shannon's conduit paradigm. Richard Cavell has interpreted McLuhan's critique of Shannon as an insistence that "context is part of communication" (Cavell 1999: 356). Derrick de Kerckhove has similarly observed that McLuhan replaced Shannon's conception of "matching" messages sent and received with a "transformation of the source and target simultaneously" (de Kerckhove 1981: 8). For McLuhan, communication meant "participation in a common situation" (McLuhan April 1954: 6). This contextualist view of communication as "making" echoes the critical information theory of British researcher Donald M. MacKay (1922-1987) (Cavell 1999: 349). Whereas Shannon proposed a context-independent definition of information, MacKay insisted that information was relational (Hayles 1999: 53). Setting the stage for the informational *ACT* and *ART* certificates of the N.E. Thing Co., MacKay's dialogic approach to information reintroduced the semantic content of communication ignored by Shannon through a translation of information into *action* (ibid: 56):

> From a physical point of view, the two-way interaction of people in dialogue (as distinct from purely manipulative monologue) introduces a coupling between the physical states of their cognitive mechanisms. They thus become effectively one system for purposes of mechanistic analysis, so that to this joint cognitive system, no matter how many people are involved, the foregoing argument applies. No party to a dialogue can logically regard any of the others as a fully determinate system. (MacKay 1967: 13-14)

Although MacKay's alternative to Shannon's reductive model did not gain currency in the United States due to the complexities which it generated in application, he was an outspoken critic at the influential Macy Conferences and remained a leading information theorist in Britain (Hayles 1999: 56). It is therefore plausible that McLuhan was aware of his work. Certainly, as Fred Botting (2004) has demonstrated, their respective approaches to information make for fruitful comparison. MacKay's dialogic information theory resonates with McLuhan's analogical formulation of communication in the following passage from "Radio and TV vs. the ABCED-Minded":

> There is necessarily discontinuity in metaphor. There has to be a leap from one situation to another. If I say: 'I'll take a rain-check on that,' I am breaking the wire of direct reply: 'Sorry, can't make it,' and creating an independent circuit. […] The new circuit sets up a drama which reshapes and controls the initial situation. (McLuhan June 1955: 16-17)

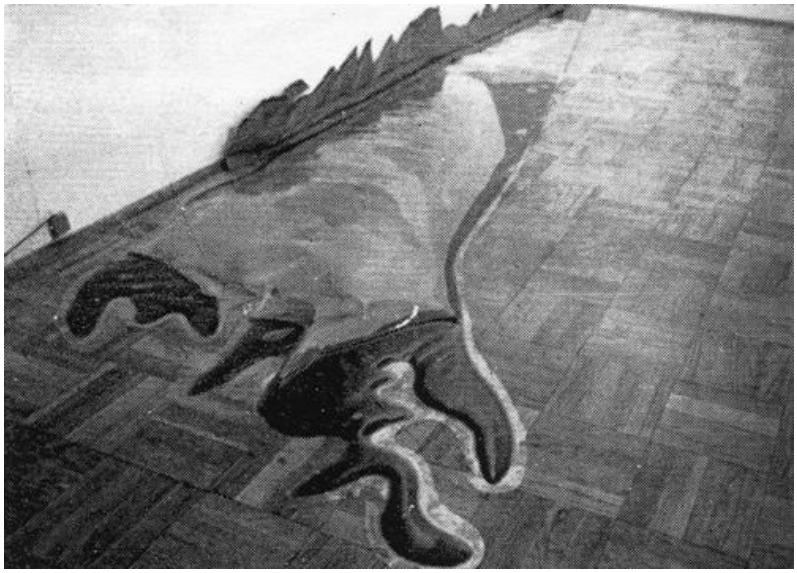
Both MacKay and McLuhan associate the indeterminacy of information with the fundamentally contingent and performative nature of communication generally in a manner that resonates with the pedagogical art of NETCO.[8] The work of Moles—which builds on MacKay's insights—may have assisted BAXTER& in developing the non-linear model of information which underlies the Socratic method of NETCO (Moles (1966 [1958]: 19). NETCO substituted the cybernetic "mondo" of the Zen master proposed by Watts for the metaphor of circuit or system invoked by MacKay and McLuhan (Watts 1985 [1957]: 87, 136-38). This fusion of cybernetics and Zen resembles the "nonmodern ontology" developed by British cyberneticians, who, like NETCO, combined a non-dualist understanding of experience derived from Eastern traditions with a performative understanding of cognition (Pickering 2010: 13, 18).

Critics of Innis and McLuhan have consistently charged their work with technological determinism. Yet, contrary to the determinism espoused by contemporary media theorist Friederich Kittler—who has notoriously posited that "media determine our situation"—the writings of Innis and McLuhan alike consistently guard against a reductive reading (Kittler 1999: xxxix; McLuhan 1962: 3). I follow students of Innis such as Deibert, who interpret his work as an exercise in "ecological holism" that privileges the "interaction of contingent variables in human history" (Deibert 2007: 5, 36). Menahem Blondheim's interpretation of Innis's writings as articulating a "dynamic of inverted determinism" (2007 61)—in which the relative bias exerted by a new medium is conceptualized as setting in motion a challenge from the margins that generates a crisis or rebalancing of social forces—complements the interpretation of Innis found in these pages. Blondheim's inverted determinism is consistent with Arthur Kroker's dualist reading of Innis: "the bias of one medium toward decentralization," writes Kroker, "is offset by the bias of another medium toward centralization" (1984: 103-04). A recurring theme in following sections will be the dynamic interaction of organism, environment and technology treated by Innis and McLuhan as it resurfaces in the informational tactics of NETCO. NETCO's ecological approach to the contemporary information landscape suggests that the Company properly belongs to the specifically "Canadian tradition of pragmatism" identified by Kroker (1984: 105). NETCO's pragmatism consisted in a "search for survival strategies" under conditions of dependency (ibid: 100). Looking to geography and technology as resources, NETCO improvised an information ecology to cope with the stress of life in a marginal economy.

* * *

This paper is structured as an inventory of information concepts produced by the N.E. Thing Co.'s "visual informers" (Deleuze and Guattari 1994; McLuhan 1967; N.E. Thing Co.1993 [1969-1970]: 42). It sets out to situate those concepts within their conceptual and social conditions of emergence. The result is a "toolbox" for information users everywhere: a compendium of actions, affects, concepts, effects and "way[s] of using imposed system[s]" which can be (re)activated and

(re)deployed anytime and anywhere (de Certeau 1984: 18; Foucault 1994 [1974]).



N.E. Thing Co. *Inflated Streamscape* (1968)

I. The "Information Landscape"

> 'I'm curious about the trout stream you have for sale. Can you tell me something about it? How are you selling it?'
> (Brautigan 1967: 168)

Floating amidst the flotsam and jetsam of Richard Brautigan's delirious 1967 novella, *Trout Fishing in America*, is the memorably absurd image of a "USED TROUT STREAM" (ibid: 168). A student of biology and zoology prior to completing graduate degrees in education and fine arts (Hermann 2010), BAXTER& responded to the environmentalist overtones of Brautigan's picaresque landscape. A dialogue with Brautigan is evident in the vinyl landscapes manufactured by BAXTER&'s company, N.E. Thing Co. Ltd., in the late 1960s such as *Inflated Streamscape* (1968). In keeping with the commercial logic of Brautigan's trout stream—marketed to anglers by the foot—*Inflated Streamscape* "poaches" commercial materials from the leisure industries, reassembling the readymade textures of commodities into new configurations (de Certeau 1984; Shaw 1993: 26). Like other inflated landscapes by NETCO, this work invites viewers to "add[ ] an extra dimension of awareness" to their environment by playing with (proprietary) information (BAXTER& in Cameron 1968: 84).

BAXTER& has been described as "the visual Marshall McLuhan of our times" (Silcox 2004). However, as proposed in the introduction above, his

engagement with themes of ecology and commercialization suggests an affinity with another member of the Toronto School of Communication: Harold Adams Innis (1894-1952). An Innisian orientation is conspicuous in the artist's neologism “Information Landscape” (BAXTER& 1999: 4.). Like the “infoscape” of BAXTER&, the geography charted by Innis was one defined by conditions of technological dependency—a reliance on technology for economic, political and cultural survival in unfavourable conditions (Kroker 1984: 92). Arthur Kroker has argued that Innis proposed a vision of Canada as “a country formed in the image of the ‘staples commodity,’” Innis’s preferred term for the natural resources which fuelled the expansion of colonial interests in British North America (94). In successive studies of staples industries such as fur, cod and timber, Innis documented how Canadian institutions have been shaped in the image of the commodities and technologies which fuelled—and necessitated—their development (Kroker 1984: 115). For instance, *The Fur Trade in Canada* (1999 [1930]) argued that Canadian federalism was modelled on the governance structure of the Hudson’s Bay Company—a commercial entity established by a colonial power to extract the natural resources of northern North America in support of a manufacturing-based domestic economy (Kroker 1984: 94).

> Concentration on the production of staples for export to more highly industrialized areas in Europe and later in the United States had broad implications for the Canadian economic, political and social structure. Each staple in its turn left its stamp, and the shift to new staples invariably produced periods of crisis in which adjustments in the old structure were painfully made and a new patter created in relation to a new staple. (Innis 2007 [1950]: 24)

BAXTER& would have absorbed Innis’s ecological approach to the media of communication through his intensive reading of McLuhan, the self-proclaimed heir and promoter of Innis's ideas following the political economist's untimely death in 1952. In *The Gutenberg Galaxy*, McLuhan went so far as to claim that his work was a mere “footnote” to Innis (McLuhan 1962: 50).

Long in advance of futurologists such as Daniel Bell (1973), McLuhan followed Innis in turning his attention to the growing role of information technologies as an economic motor in North American Society: “[Innis] became aware that the modern world, having solved the problem of commodification, has turned its technology to the packaging of information and ideas” (McLuhan January-March 1954: 42). McLuhan was interested in information as the “staple” commodity of the post-industrial economy: “technological media,” wrote McLuhan in *Understanding Media*, “are staples or natural resources” (McLuhan 1964: 21). McLuhan’s writings reveal an early awareness of “the business of moving information” as the dominant activity in contemporary society, an awareness which he inherited from Innis (McLuhan 1964: 9). Following McLuhan, NETCO was also interested in how the movement of information was reshaping society: “business is interested in pushing information around so that the keenest of its character, the practicality of its energy, results in profit and goods flow. […] This

is where the artist enters and with his sense of play and pureness of vision is able to take all this practical information and handle it sensitively" (N.E. Thing Co. 1993 [1969-70]: 42). Like McLuhan and Innis, BAXTER& was interested in how the movement of information was reshaping perception, institutions and even the environment in its own image (as the staples of fur and timber had earlier done). BAXTER& applied an ecological lens to respond to the changing ecology of the new information economy.

BAXTER&'s ecological approach is evident in a 1979 interview with Robin White. "I work very much in terms of the environment," stated BAXTER&, "it's a way that I've functioned for a long time" (BAXTER& in White 1979: 2). Earlier, New York critic Lucy Lippard discussed the ecological orientation of BAXTER&'s ephemeral earthwork practice (Lippard June 1969: 3-4). (Significantly, Lippard stressed that BAXTER&'s ecological interests predated those of most contemporary artists) (Lippard Winter 1969-1970: 669). In contrast to the static conception of ecology disclosed by the contemporaneous earthworks of Robert Smithson, BAXTER&'s ecological studies at the University of Idaho generated an "optimistic embracing of the dynamics of rapid change" (ibid: 4). BAXTER&'s putting into practice of ecology to cope with the effects of "electric speed-up" parallels the function of "biological principles of 'growth and decay'" deployed by Innis to study the effects of staples on the long-term evolution of societies (Kroker 1984: 107; McLuhan and Nevitt 1972: 64) Influenced by the "social ecology" of University of Chicago sociologist Robert E. Park (1864-1944), Innis applied a naturalist perspective to model the dynamic interaction of economic, social and geographic factors (ibid: 108). Robert E. Babe has compared Innis's holistic approach to media with the ecological studies of Canadian environmentalist David Suzuki (a former colleague and neighbour of BAXTER&'s during his tenure at the University of British Columbia) (Babe 2008). Like Innis and Suzuki, BAXTER& adopted the "outlook of the 'biologist'" in his representations of the contemporary landscape (ibid: 107).

Early evidence of a distinctly ecological perspective is visible in allover drawings by BAXTER& dating from 1962-63 that simultaneously resemble engineering diagrams and biological systems: spiky but distinctly organic forms interpenetrate in a fashion suggesting the interaction of life-forms with their environment. These drawings fuse the skilled draftsmanship of the engineer (the artist's father was an engineer) with BAXTER&'s earlier training in zoological illustration for his contribution to the 1961 Naturegraph imprint, *Wildlife of the Northern Rocky Mountains* (Baker, Larrison, Yocom and BAXTER& 1961).

N.E. Thing Co., Study for *Bagged Canada Coasts* (1967)

Much as Innis imagined the Canadian landscape as a "big commodity" (Kroker 1984: 118), NETCO works such as *Bagged Canada Coasts* (1967)—featured on the cover of the June/July 1967 of *artscanada* magazine—transform the transcendental landscape associated with the Group of Seven into a consumer plaything. Here Brautigan's absurdist landscape returns as commentary on the commodified state of Canada's "technological nationalism": a manifest destiny built upon a drive for resources spurred by consumer demand in distant imperial centres (Kroker: 10). Pursuing a trajectory initiated with BAXTER&'s earlier vacuum-formed landscapes, NETCO's inflated landscapes perform the critical activity of pointing to processes by which natural resources are converted into profit in a post-industrial society.

If, as Nancy Shaw has argued, the Company's inflated landscapes speak to the commodification of "affective labour" in a dematerialized leisure economy (Clough *et al* 2007: 60; Shaw 1993: 26, 30), Charity Mewburn (1999) has studied NETCO's exploration of the lingering importance of Canada's resource sector in the post-industrial era vis-à-vis the 1969 N.E. Thing Co. project, *Arctic Circle* (1969). *Arctic Circle* developed as part of a trip to Inuvik (in Canada's Northwest Territories) organized by the Edmonton Art Gallery in tandem with its exhibition *Place and Process* (Lippard Winter 1969-1970: 665). Ingrid Baxter and IAIN BAXTER&, along with Bill Kirby, Lucy Lippard, Harry Savage and Lawrence Weiner, were flown to Inuvik in order execute and document outdoor actions and temporary work over a two-day period (ibid). NETCO's intervention in the Canadian arctic, according to Mewburn, "reveal[s] the commodifying practices that have historically constructed 'the North'" (Mewburn 1999: 7). Mewburn

draws attention to the function of NETCO's information sheets as a support for the hypostatization of geographic space (ibid.). Similarly, Shaw argues that the Company's engagement with geographic systems underscores the arbitrary and instrumentalized character of cartographic conventions (Shaw 1993: 31). The "grid" of information clears out a speculative space in preparation for processes of colonization and commodification of resources. Mewburn's critique of spatial technologies recalls Innis's discourse on power. Innis's later writings were concerned with the "monopolies of space" generated by the media of communication (Innis 2008 [1951]: 128):

> [T]he modern obsession with present-mindedness […] suggests that the balance between time and space has been seriously disturbed with disastrous consequences to Western civilization. Lack of interest in problems of duration in Western civilization suggests that the bias of paper and printing has persisted in a concern with space (ibid: 76)

During the period of Innis's communications studies, the monopoly of space which threatened to overwhelm the delicate equipoise of Canadian confederation was an expansionist American imperialism (2004 [1952]: 14). In essays such as "A Plea for Time" and "The Strategy of Culture," Innis advocated a policy of cultural protectionism consistent with the goals of the 1951 Massey Report in order to safeguard Canadian interests at the margins of empire (2004 [1952]: 1-19; 2008 [1951]: 61-91).[9] Calls for protectionism pitted the continuity of distinct cultural traditions across time against the threat of spatial monopoly from without.

William Wood's interpretation of NETCO's marginal tactics as "a resistance to the centripetal pull of artist's and the art world into the 'capital cities'" (1993: 11) is remarkably consistent with an Innisian framework, although Wood invokes McLuhan:

> NETCO adopted a contemporary, McLuhanist agenda […], accentuating how communications systems permit broad access and broadcast possibilities for the margin to speak to the centre (16).

Whereas McLuhan pronounced that electronic media produce a "centre-without-a-margin" (McLuhan 1962: 213),[10] Innis was keenly attentive to the contest for control of space and time played out between metropolitan centre and periphery. In some passages Wood approaches an Innisian reading of the margin:

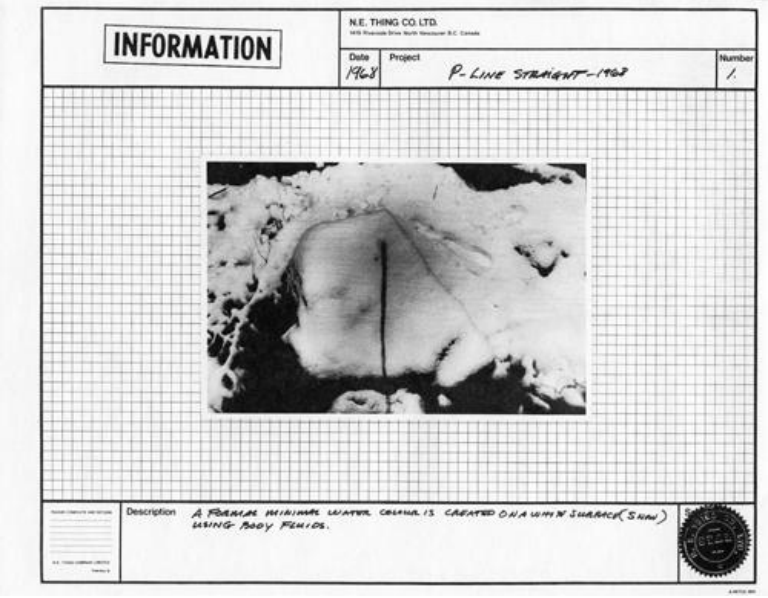
> The Canadian dependence on natural resources—encapsulated so acutely in the clear-cut forests of B.C.—is, one might say, fetishized, disavowed in the bank notes, consoling the carrier of the bill that there is still some exploitable land out there, or, worse, sustaining the illusion that Canadians have not totally dominated and capitalized upon the environment (Wood 1993: 17).

Despite such statements, Wood ultimately frames NETCO's practice as a liberationist decentering of colonial power.

Whereas Wood views NETCO's arctic venture as a deterritorializing gesture, Innis's post-colonial critique reminds us that empire has always derived its power from the margins. Lippard's account of her participation in the trip which occasioned *Arctic Circle*, on the other hand, is incredibly attentive to the Innisian genealogy of Inuvik and environs as a product of colonial trade routes and staple industries:

> Inuvik is a new town, begun in 1954; it is new, and deplorable, type of town, owned by the government and oil companies, built as a 'showplace' to replace the dying Fort towns, or trading posts. (Lippard Winter 1969-1970: 666).

Viewed through an Innisian lens, NETCO's "territorial claim" on the arctic remediates an everyday encounter with the environment (pissing by the roadside) as a critique of the neo-colonial regime of resource extraction discussed by Lippard, Mewburn and Wood. NETCO's *Territorial Claim* (1969) equates waste expelled by the human body with pollution generated by primary industries (such as the petroleum concerns whose presence dominated the Inuvik landscape), insisting that a resource such as oil is not an infinitely exchangeable commodity lacking context and qualifications but, rather, a resource inexorably tied to geography: to a specific place, ecosystem and history. (This point is underscored by Nancy Shaw's interpretation of *Territorial Claim* as a reflection on boundaries vis-à-vis the work's allusion to Farley Mowat's classic tale of the North, *Never Cry Wolf.*) (Shaw 1993: 32) Given *Territorial Claim*'s earlier incarnation as a satire of high-modernist pretensions ("a formal minimal watercolour," as BAXTER& later dubbed the 1968 piece *P-Line Straight*), *Arctic Circle* must be read simultaneously as an ecological counter-reading of formalist constructions of the art object as purged of content and context alike: *Territorial Claim* insists that art is inextricable from its environment and from site-specific conditions of reception.

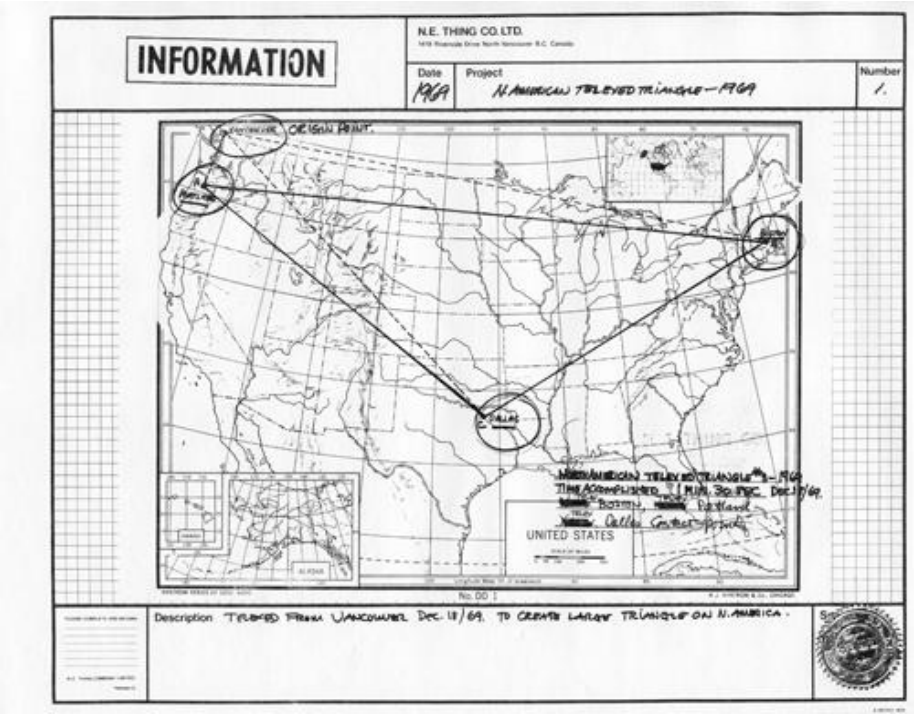


N.E. Thing Co., *P-Line Straight* (1968)

If the gesture of urinating on the snow draws attention to the environmental byproducts generated by the commodification of staple resources and art object alike, the subsequent integration of Company documentation of the same action within an informational framework (NETCO's information sheets) underlines the informationalization of commodities in the post-World War Two period—described by Innis as the emergence of "information industries" (Innis 2008 [1951]: 83). Similarly, the *Telexed Triangle* series executed by NETCO in 1969-1970—including a transmission from within the arctic circle addressed to friends of the Company's executive in Halifax and Vancouver—temporarily gave shape to McLuhan's reading of later Innis as a shift in perspective "from the trade-routes of the external world to the trade-routes of the mind" (Lippard Winter 1969-1970: 670; McLuhan Autumn 1953: 385). Echoing McLuhan's gloss on Innis, NETCO's *Telexed Triangle* series registered a new consciousness of the Age of Information and of the new, informational *mentalité* generated by information theory and IT. The ordinary experience of long-distance communication among friends as registering the impact of processes of globalization on everyday life—as opposed to the meta-commentary on art centres posited by Wood—is the true content of what Ingrid Baxter termed NETCO's "aesthetic of distance" (Baxter cited in Shaw 1993: 33).

Company documentation of these transmissions reworked medium-theory constructions of "information" (as defined by the material characteristics, and limitations, of information technologies) by transforming the branching nodes of the Vancouver-based Facsend network into idealized "conduits" resembling Shannon's influential diagram of the information channel as a corridor (Facsend, "The Facsend Network," 1969; Shannon and Weaver 1962 [1948]: 5). In advance of the Internet, NETCO employed the Telex to define the dematerialized edges of a purely conceptual type of networked drawing (wherein "line" is

coextensive with the shortest route between the locations of the sender and receivers of a given electronic message), thereby playfully equating the medium-specific criteria of formalism with the medium theory of Shannon. This confusion of disciplinary criteria effectively exploded both sets of values, allowing the pure nonsense of environmental information to emerge as the excess of communication available to the user. This gesture should not be confused with an analytical process of assigning limits. Rather, it collapses analytical frameworks in order to engage in a synthetic ontology of information. NETCO's critical approach to information reintroduces contingency and the agency of the receiver into classical information theory by insisting on the ability of the user to redefine the network as well as the context-dependent nature of that network.



N.E. Thing Co. *North American Telexed Triangle* (1969)

NETCO's *Telexed Triangle* series actualized the Company's earlier McLuhanesque vision of an imminent "world wide global connectability situation" (N.E. Thing Co. 1967. Some Thoughts: u.p.). At the same time, the series foregrounded the material and geographic conditions of possibility for that newfound connectivity through the Company's inclusion of maps and information sheets within its corporate documentation apparatus that both process the environment as information and reveal information itself to be inextricably embedded within geographically constructed spaces. Documentation of the Company's pioneering Telex interventions thereby visualized the dialogical and ecological information theories of McLuhan and MacKay introduced in the

previous section. Furthermore, as noted by Mewburn (1999: 7), NETCO's documentation drew attention to the informationalization of the north as a precondition for the expansion of new monopolies of space. Yet, the resemblance between the information behaviours recorded by NETCO's information sheets and a family scrapbook—a likeness underlined by the Company's incorporation of "seals" derived from Good Housekeeping—ensured that the Company's exploration of the politics of information always maintained a personal scale (Fleming 1982: 40). This scale served to emphasize that everyday behaviours and objects function to define a personal information space; correlatively, the modest scale of NETCO's informational apparatus reinforced that the actions and instruments available to the average user empower them to make sense of and transform that space.

Lippard has noted the curious temporal dimension of BAXTER&'s spatial art: "Baxter's is not the traditional *occupied* or conquered space in which an object exists. It is a space partially dependent upon the receiver's experience of space and words, and greatly dependent on time" (Lippard Winter 1969-1970: 670). For Lippard, this temporal aspect of BAXTER&'s practice assumed a specifically oral character: "Baxter utilizes the oral tradition within the network of technological media" (ibid). Lippard's observation underscores the important role of dialogical communication in the Telex-mediated spatial interventions of NETCO: anticipating Internet communication, the transmissions sent by NETCO personnel to define the edges of its *Telexed Triangles* assumed the form of textual messages that encouraged the participation of the receiver in an open-ended conversation (several of which are preserved today in the Iain Baxter Fonds [sic.] at the Art Gallery of Ontario in Toronto). NETCO's deployment of temporal techniques redolent of oral communication to comment upon the role of information technologies in forging new monopolies of space in the Canadian north suggests parallels with Innis's appeal to temporal, and specifically oral, modes of communication as an antidote to the destructive effects of American imperialism in "A Plea for Time" and other late essays. Furthermore, NETCO's deployment of the "secondary orality" facilitated by Telex to define the coordinates of a *spatial* intervention underlines the Company's critical approach to, and dialogical reworking of, classical information theory (Ong 1988 [1982]: 3). The oral dimension of the Company's Telex communiqués revises the linear communication model of Shannon in a manner recalling the dialogic information theories of MacKay and McLuhan discussed in the introduction. The personal character of these transcontinental communications (among friends) emphasized the everyday and immediate impact of the new global information network described by McLuhan.

NETCO's intuitive engagement with the Innisian theme of monopoly—a notion likely gleaned from McLuhan's many references to Innis's concept in *Understanding Media*—in its *Telexed Triangle* series subsequently resurfaced in the Company's performance, *Monopoly with Real Money*:[11] a monopoly game played with real money, in place of the play money of the Parker Brothers' board game, staged at York University in 1973. The space of the university amplified the symbolic space of the board—itself a sort of cartoon representation of the

marketplace—as a site of information production. Whereas the *Telexed Triangle* series echoed McLuhan's elaboration of Innis's prediction of a looming shift from a manufacturing economy to a knowledge economy, *Monopoly with Real Money* substituted the earlier series' exploration of the effects of the information industries on the production of space at the margins of manufacturing economies for a commentary on the accumulation of information as the engine for monopolies of power in a knowledge economy. By staging the performance at a university, NETCO followed Innis's lead (via McLuhan) in underlining that monopolies of power generate "monopolies of knowledge" in addition to proprietary spaces as their byproduct (Innis 2004 [1952]: 74).

Rather than closing off its exploration of the information landscape with a critical gesture, NETCO's ecological interventions resonate with McLuhan's redemptive gloss on the media by appropriating environmental change as a "teaching machine" for the "training the of perception" whose purpose is augmentation of the user's capacity to refashion their surroundings (McLuhan in Museum of the City of New York 1967: 4, 52). Rather than environmentalism *per se*, NETCO's position *vis-à-vis* the works explored in this section should thus be seen as an ecological harnessing of information and processes of transformation latent in the environment to enhance the user's capacity for active intervention. Finally, NETCO's documentation of its ecological interventions draws attention to the role of everyday information behaviours such as playing with commodities or scrapbooking as simultaneously sensitizing the subject to their environment and encouraging a sensitive (dialogical and open-ended) engagement with information ecologies at a human scale. As Nancy Shaw has written, "the Baxters [sic.] transformed abstract and instrumentalizing concepts into the realm of the everyday, disrupting the objectivity of the rationalized grid that presupposes a homogeneous subject, and a static space that ignores time and history" (Shaw 1993: 32).

"We up your aesthetic quality of life, we up your creativity. We celebrate the ordinary" (N.E. Thing Co. in Shaw 1993: 25). The information landscape operates by amplifying the creative capacities of the user. To the extent that the works discussed in this section engage in *critique*, they do so in the sense of questioning the capacity of formal systems to contain their symbolic contents (be they art object, commodity, or data transmission), rather than as an analytical definition of limit or a critical investigation of institutional discourse.

N.E. Thing Co., President Seated at Telex Carrying Out 50,000-mile Transmission (1969)

II. Active Information

> The ontological goal of the work of art is always to give the receptor a little too much information.
> (Moles 1966 [1958]: 162).
>
> I'd rather call myself a visual informer.
> (BAXTER& in White 1979: 9)

IAIN BAXTER& has identified the aesthetic information theory of French psychologist Abraham Moles (1920-1992) as a primary influence on his—and, by extension, N.E. Thing Co.'s—reconfiguration of classical information theory as Sensitivity Information (BAXTER&, conversation with the author, June 23, 2011). It is from Moles that NETCO derived its understanding of the "work of art as a creator of sensations" (Moles 1966 [1958]: 2). Moles's major publication, *Théorie de l'information et perception esthétique* (1958), was available in English translation from 1966. BAXTER& first encountered the theories of Moles early in his tenure at Simon Fraser University (where he was employed as an assistant professor from 1966 through 1970). Though widely collected by university libraries across North America, it is notable that BAXTER&'s sustained interest in, and extended working out of concepts drawn from, Moles's *Information Theory and Esthetic Perception* is exceptional among artists of his generation (at least as reflected in the current literature on conceptual and information art). Furthermore, BAXTER&'s reworking of Moles stands out for having taken the French theorist's concepts out of the world of computation.

Moles's *Information Theory and Esthetic Perception* takes Shannon's

quantitative definition of information—as the degree of choice among variables—as its starting point (ibid: 24), but reintroduces the concept of "value" and its capacity to affect the behaviour of the recipient of a message (a maneuver which Moles borrows from Donald M. MacKay) (ibid: 19). For Moles, value is synonymous with the "unforeseeable" or *improbable*, which adds to the receptor's existing repertoire of knowledge (ibid: 19, 129). Moles's concept of value is fundamentally a notion of information-as-affect (information as the measure of the capacity for a message to affect a receiver): "a postcard of a wide view, no matter how clear it may be, affects us less than a prominent foreground and a characteristic view taken by a talented photographer" (ibid: 62). The more unforeseeable a message is, the more we are affected by it.

In contradistinction to classical information theory, Moles distinguishes between what he terms the "natural" channels of sensory perception and the "artificial" or technological channels which are the exclusive concern of Shannon and his followers. Moreover, Moles emphasizes the role of the receptor in shaping and constraining the content of messages sent and received (in opposition to Shannon, whose celebrated diagram of the information channel posits a neutral conduit wherein "noise" arises as interference from an external source, whereas transmitters and receivers are theoretically capable, in Shannon's scheme, of reproducing any given message point-for-point) (Shannon and Weaver 1962 [1948]: 3). "[T]he receptor's structure and particularly his difference thresholds determine the elements of the sensory message" (Moles 1966 [1958]: 38). Like MacKay (and McLuhan), Moles's critical information theory emphasizes the role of context and the agency of the receiver in the process of *informing* message content. In consonance with MacKay and McLuhan, Moles's contextualist reading of information is thus properly environmental and ecological in orientation.

Moles's conception of the human operator as a "receptor" had important consequences for NETCO's sensitive approach to information (ibid: 59). At a basic level, the receptor is posited by Moles as a "scanning apparatus" that probes the environment in search of information (56). However, Moles observes that human perception rarely operates at this atomistic level. Rather, he proposes that "*to perceive is to select*" (ibid: 60, emphasis in the original). Indeed, the nervous system is nothing but "a machine for selecting" (ibid: 91). The receptor receives information as sensation (ibid 22), from which it selects *forms*: "In the operation of choice arises the concept of form: abstraction from the complexity of nature" (ibid: 60). Forms stand out from the noisy flow of information received by the human receptor by virtue of their relative redundancy: "To create an elementary form is to assure in the message a redundancy" (ibid: 65). Form implies predictability and foreseeability.

Moles proposes that the receptor actively "assembles" a "repertoire of symbols" which, in turn, influences the amount of redundancy, or *knowledge*, which it, the receptor, brings to bear on the selection of form in future messages both sent and received (ibid: 62, 124, 161). Consistent with the ecological information theories of MacKay and McLuhan, Moles thus distinguishes between linear "scanning pure and simple" and a contingent "human mode of perception"

(ibid: 62). Moles thereby introduces into information theory a recognition of the subjectivity of the receptor, and its power to shape and constrain message content, which is entirely absent from the neutral "conduit" model of Shannon: "each [receptor] has his repertoire, and each finds his own redundancy and originality" (ibid: 125). The receptor, according to Moles, assembles the symbolic contents of perception into larger aggregates, or "super-signs," thereby producing a hierarchy of forms, each defined by its own repertoire of knowledge (ibid: 125-26, 161).

Perhaps the single most influential dimension of Moles's theory on the informational paradigm of BAXTER& and NETCO was its distinction between semantic and aesthetic categories of information. As we have already seen, Moles associated redundancy with the prior knowledge brought to bear by the receptor on message composition and reception. Moles argued that the aesthetic value of a given message diminishes in proportion to its redundancy: "[i]f the receptor has complete knowledge of the message to be transmitted to him, that is, is he 'knows' this message a priori, the information is null, the redundancy is 100 per cent, the message is uninteresting and banal as, for example, the pictures on postage stamps" (ibid: 126). Semantic information tends to be logical and structured (high in redundancy), while aesthetic information is defined as high in information or "originality" (ibid: 22, 128). Furthermore, whereas aesthetic information is subjective and lacking in utility, semantic information serves to "prepare *actions*" (ibid: 129, 130, emphasis in the original). (It is notable that Moles's formulation of semantic information resembles Henri Bergson's definition of habit in *Matter and Memory*, as the subject's selection of virtual images for the purposes of coordinating actions.)

Moles's dichotomy parallels NETCO's practice of designating environmental information as either *ACT* (Aesthetically Claimed Thing) or *ART* (Aesthetically Rejected Thing) according to whether a given information content constitutes "*Practical Information*" or "*Sensitivity Information*" (N.E. Thing Co., "Some Thoughts," 1967: u.p.). Beginning in 1968, NETCO personnel *scanned* their environment for actions, objects and documentation which they *selected* and subsequently *assembled* into a corporate system of notarization (complete with Company seal). Much as semantic information prepares the subject for utilitarian actions and decisions in Moles's scheme, NETCO's *ACT*s valorize the everyday actions of users as they are carried out (and documented) within the instrumentalized field of what Vancouver artist Jeff Wall has termed the "defeatured landscape" (Wall in Wallace 2005: 56). Correlatively, in Moles's system "a message becomes personal in the field of esthetic information," much as the NETCO term *ART* designates the condition of passive absorption—or low participation—rejected by the Company's visual informers. NETCO's user-driven practice thus appropriates Moles's categorical distinction while reading his categories against the grain:

> INFORMATION is usually, or tends to be, confronted with and dealt with in either a practical or sensitive manner. Thus INFORMATION which is handled in this pure or sensitivity way culminates in SI (Sensitivity

> Information) in general context, and eventually leaves its mark on our life as culture. (N.E. Thing Co., "Glossary," 1966: u.p.)

Whereas Moles explicitly rejects the banality of semantic information as "uninteresting," NETCO vaunts everyday actions above the "untranslatable esthetic information" privileged by Moles (ibid: 126, 136). However, NETCO's distinction between Practical Information and Sensitive Information should not be mistaken for a simple reversal of Moles's hierarchy. Sensitivity Information transforms practical activities equivalent to Moles's definition of semantic information by handling them sensitively:

> This is where the artist enters and with his [sic.] sense of play and pureness of vision is able to take all this practical information and handle it sensitively and end up with *Sensitivity Information* […]. (N.E. Thing Co. 1967, "Some Thoughts": u.p.)

A work typical of NETCO's valorization of the banal, *ACT #66 Fire Break, Northern Ontario, East of Dryden, Ontario, 1968* (1968), celebrates the semantic information disclosed by an engineered fire break in a Northern Ontario forest.

N.E. Thing Co., *ACT #66 Fire Break, Northern Ontario, East of Dryden, Ontario, 1968* (1968)

Unlike the "originality" communicated by the personal information privileged by Moles, the schematic fire break documented by NETCO in *ACT #66* communicates a high degree of redundancy. Yet, there is nothing goal-oriented or utilitarian about this work: NETCO's act of selecting a banal subject and incorporating it within its corporate assemblage has voided its practical contents,

thereby producing an image which prepares the receptor or user for creative activity.

Dennis Durham likens NETCO's *ACT* and *ART* certificates, which he characterizes as "nomination acts," with the readymades of Marcel Duchamp (Durham 2011: 43). Durham usefully introduces McLuhan's distinction between "low definition" and "high definition" media to frame the Company's engagement with the banal and functional as necessitating viewer participation to complete the "message" of the artwork (Durham 2011: 77; McLuhan 1964: 22-23). McLuhan's formulation of low definition as a measure of the relative degree of user participation necessitated by the greater or lesser redundancy of a given medium was likely derived from his critical reading of information theory—in particular, Shannon's definition of entropy as a measure of information (Gleick 2011: 219; McLuhan 1964: 5). Entropy is properly understood in information-theoretic terms as a measure of randomness or uncertainty (the greater the complexity, the greater the entropy in a given information system)—a definition consistent with McLuhan's linking of low definition with the relatively greater degree of involvement required to interpret a message characterized by low redundancy. Yet, Durham's analysis appears to invoke the thermodynamic definition of entropy employed by Robert Smithson; namely, the dissipation and stasis characteristic of heat death (Gleick 2011: 337-38).

Drawing on Smithson, Durham reads an early NETCO cibachrome lightbox, *Ruins* (1968), as an entropic landscape in the sense of *lacking* in sensitivity information (Durham 2011: 170). Although *Ruins*—like *ACT #66*—clearly demonstrates NETCO's engagement with the banal terrain of the "defeatured," or information, landscape, by conflating McLuhan's notion of low definition with thermodynamic entropy, Durham concludes that the work is lacking in information. In fact, the functional landscape of *Ruins* instantiates the effects of NETCO's reworking of Moles's hierarchy: the Company's focus on the banal deliberately interrupts conventional conditions of reception—a reversal of Moles's privileging of the aesthetic designed to generate new "sensitivity information dynamics" (N.E. Thing Co., "c o n c e p t," 1967: u.p.). Nancy Shaw has successfully captured the ambivalent tension between banal subject matter and dynamic involvement which characterizes NETCO's *ACT*s:

> The N.E. Thing Company filled its Cibachrome signs with images of habitation and detritus; with the nonproductive spaces that bear the traces of an everyday space that is dynamic and heterogeneous. (Shaw 1993: 29)

Somewhat contrary to common sense, by privileging banal, *high definition* objects—high in redundancy and therefore, at least on a surface reading, *low* in participation (in McLuhan's scheme) and low in information (in Shannon's sense)—NETCO appeals to an active stance on the part of the beholder. In opposition to the formalist values promoted by Moles, the semantic—or "practical"—information disclosed by the banal objects documented by NETCO prepares *actions* rather than aesthetic contemplation. Moreover, the *ACT*s

themselves instantiate the activity of NETCO's researchers; that is, the Company's "selection" of symbolic forms from the "repertoire" of the information landscape. *Ruins* is thus rich in sensitivity information precisely because SI emerges as a measure of the relative capacity of an action, image or object to prepare the viewer for future activity within the defeatured symbolic field of the contemporary information landscape (hence the eminently suitable designation *ACT*).

NETCO's investigation of the latent value of everyday actions anticipates Moles's later writings on praxiology with Elizabeth Rohmer (Moles and Rohmer 2000). Much like the earlier *ACT*s of NETCO, Moles and Rohmer's "science of actions" explores the "*interaction between man* (or men) [sic.] and *the world* in which he is situated" (ibid: 120). Similarly, Moles's late writings on design (Spring 1985, Spring 1986, 1988) reveal a focus on actions and functional environments/objects that reverses his earlier prioritization of personal information in *Information Theory and Esthetic Perception*. Christophe Domino has previously linked BAXTER&'s use of plastic with Moles's writings on commodity design (Domino 2005: 74). Like NETCO's *ACT*s, Moles's writings on design "take an inventory of the world of actions, and […] relate it to the sensorial (visual, sound, and so forth) symbols, on the basis of the identifiable forms they contain and which in turn will guide future action" (Moles Spring 1986: 45). Coterminous with NETCO's project of exploring the information affects and behaviours of everyday life as reflected in the utilitarian schema of the contemporary information landscape and its functional contents, Moles sought to document the "*action landscape*" composed of "everyday life actions" (ibid: 50, 52).

Much as Moles framed the receptor's selection of forms from the myriad messages which compose its informational milieu as a process of "learning from the environment," NETCO understood the information landscape as incorporating the potential to be a McLuhanesque "teaching machine" (McLuhan 1960: 75; Moles 1966 [1958]: 60). In NETCO's reworking of Moles, the visual informer operates through a creative, and sometimes critical, deployment of the "stereotype" of *clichés* that it assembles from the symbolic repertoires of its environment (Moles 1966 [1958]: 161). In contradistinction to Moles's derogatory reading of the banal as kitsch, NETCO affirms the power of the *cliché* to inform users about their environment. The *cliché*'s power to inform derives from the fact that the stereotype is inextricable from the environment from which its symbolic contents have been selected (even once those contents have been incorporated into a new assemblage which overcodes their values): although symbolic information is indeed lost through processes of assemblage and overcoding, the schema which prepare user actions remain legible even in the new stereotype. This active information remains a resource for the user.

While on first reading the banal objects and textures documented by NETCO in such works as *Ruins* would suggest, as Durham has argued, that they are relatively lacking in information—at least as this concept is defined by Shannon and Moles (because high in redundancy)—the Company's transvaluation of Moles's aesthetic hierarchy voids traditional categorical

distinctions of their sense. The result is an overcoding of the redundant objects of the post-industrial environment with nonsense values culled from disparate registers in the hierarchy of symbolic repertoires. The resulting overcoded values resemble the noisy character of information-rich messages in Shannon's system.

This gesture of enriching the information potential of the environment through a travesty of symbolic categories echoes Moles's comments on the aesthetic possibilities inherent in combining forms appropriated from incommensurate levels in the symbolic hierarchy: "one of the most general methods of experimental esthetics: studying forms by mixing them up" (Moles 1966 [1958]: 79, 125). Whereas Durham proposes a linguistic frame for interpreting NETCO's *ACT* and *ART* certificates (as "nomination" pieces), I would argue, rather, that Moles's description of the human receptor as "selecting" forms from its informational environment "to accept or reject" provides the key to this series (ibid: 79). True to the premises of information theory, selection or choice is the operative principle underlying the *ACT* and *ART* certificates: "the structures of esthetic information are primarily statistical rules which restrain choice, while the structures of semantic information are primarily symbols which may be repertoried and transcribed" (ibid: 172).

Nancy Shaw's reading of NETCO's *ACT*s as "claiming industrial architecture for the aesthetic record" suggests another conjunction between the logic of sensitivity underlying NETCO's *ACT*s and *ART*s and the aesthetic theory of Moles (Shaw 1993: 31). Where Shaw identifies a satire of industrial economies of scale in NETCO's documentation of "the minimal structures of industrial architecture" (ibid), I would propose that the Company's engagement with functional design reveals a preoccupation with the loss, or at least diminution, of personal information under the impact of "metadesign." Larry Busbea has studied Moles's *Théorie des objets* (1972) as instantiating an attempt to apply the principles of semiotic analysis to the "total design" of environments in France during the 1970s (Busbea Autumn 2009: 104). In contrast to the prevailing system of consumer kitsch, Busbea explains that "Moles envisioned a new system design based in sociology and statistics that would allow functionalism to encompass not just a rudimentary and directly physical notion of use, but a more nuanced idea of semiotic function that comprehended the social and communicative uses of things' (ibid: 112). In keeping with Jean Baudrillard's early critique of metadesign *qua* ideology analyzed by Busbea, NETCO's transformation of *clichés* gleaned from the contemporary information landscape into a MuLuhanesque teaching machine through a travesty of Moles's aesthetic categories may be read as a *koan*-like operation of turning the information theorist's functionalist project inside out. This gesture draws attention to the flux of the environment as well as to the possibilities available to the human receptor for reassembling the designed environment for creative reuse (Baudrillard in Busbea Autumn 2009: 103).

This reading of NETCO as critiquing the emergent system of metadesign formulated by Moles agrees with Christophe Domino's gloss on BAXTER&'s use of plastic as a commentary on the contemporary "system of objects" (Domino 2005: 66). Finally, NETCO's critique of the functionalist spaces promoted by

Moles and other proponents of total design represents a continuation of the Company's earlier riposte to Minimalism through its informatic extension of Flavin's industrial environments.

Notes

1. IT was a collaboration with American artist John Friel (1939-72). In addition to IAIN BAXTER& and Ingrid Baxter, NETCO participants included Brian Dyson (the graphic designer of NETCO's ubiquitous information sheets and of some of its trademark publications), Duane Lunden, and Paul Woodrow (Director of Special Projects for NETCO's DPMA intervention) among others (BAXTER&, conversation with the author June 3, 2011). NETCO personnel also occasionally operated under such monikers as SIDCO and ICOME (Grescoe January 25, 1969: 15; N.E. Thing Co. December 21, 1970: 1).

2. In 1969, Lippard noted NETCO's tendency to "repel purists in any area" (Lippard 1969: 6).

3. "Information is such only because it displays some pattern of redundancy and frequency that allows a channel to distinguish it from noise" (Terranova 2004: 56). Terranova underlines that "the dynamics of information take precedence over those of signification" (ibid: 55).

4. Appropriately, NETCO's corporate directory included an "extension" department (Lippard 1969: 5).

5. The Facsend network—"the first publicly accessible facsimile transmission network serving Western Canada"—facilitated NETCO's remote participation in a 1969 exhibition at Paula Cooper Gallery in New York (Facsend April 22, 1969, May 18, 1969).

6. Kroker portrays McLuhan as a "radical ecologist" (66).

7. Ken Allan has compared NETCO's *Environment* (1969) to McLuhan's notion of the counter-environment in an unpublished paper (Allan 2010).

8. "I'm into an educational stance as an aesthetic" (BAXTER& in White 1979: 11).

9. The 1951 Report of the Royal Commission on National Development in the Arts, Letters and Sciences, commonly referred to in English Canada as the Massey Report.

10. "Electric speeds create centres everywhere. Margins cease to text on this planet" (McLuhan 1964: 91).

11. See: N.E. Thing Co. Ltd. 1973. *Monopoly with Real Money* [colour Super 8 filme], http://archives.library.yorku.ca/iain_baxterand_raisonne/items/show/1743 (accessed June 22, 2011).

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