# The Arrow—Directional Semiotics: Wayfinding in Transit

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*Airport language is a spectacle, an interface for social relations between humans and machines. Signage intensifies social relations—reconfiguring territories of geophysical/architectural space into territories of recognition that speak to a productive power of language that is fundamentally non-representational. Airports are walked, the signs don't accompany or reflect upon the airport, they are machined into it. The traveller navigates through a highly textually mediated space where the signs not only enact semioticised territories but also directly intervene into the material machinic processes of travelling. As Guattari (1992: 49) might say, these point-signs 'don't simply secrete significations'. They activate the bringing into being of ontological universes.*

*This paper focuses on 'signage' in a quite expanded yet also limited sense. It focuses on the increasing standardisation of the signifying semiologies of transit wayfinding systems which signal the primacy of pragmatic interactivity in the communicative event of walking the airport. If the controlling semiosis of non-places is, as Augé (1995) notes, the dominant space of supermodernity, then a thorough consideration of such signifying technologies would seem in order. This paper focuses on one of the most ubiquitous signs at the airport: the arrow.*

*The airport's arrow is an asemic figure through which perhaps to read the semiotic technologies of the airport itself. The arrow is both a tool and a trope for the imperatives of global transit: it turns place into passage, striates space into controlled flows, and urges the traveller to 'move on'. It is a point sign that leads the way to a consideration of the technologies, both semiotic and a-semiotic, that provide the navigational and behavioural guidance that is increasingly in evidence, not only at the airport but in all public spaces.*

## Signs

There is a sign for almost everything at the airport. No matter where one is in the world, pictograms, arrows and locational markers announce the familiar processual logic of the airport. These signs create a globalised navigation system, a visual interface through which one moves. These signs don't merely represent the airport, they create it. In other words, the textualised cartographies and myriad jurisdictions of the airport are to be obeyed, not believed.

The airport is a total space, or, in Augé's words, a non-place: 'The link between individuals and their surroundings in the space of non-place is established through the mediation of words, or even text' (Augé 1995: 94). The airport is not explored

Figure 1. Arrivals, Sydney Airport, March 2002.

through landmarks, it is navigated through signage. Within the terminal space itself, reference towards its actual geophysical location is minimal and generally a metonym of the kitsch kind. I have been told that Anchorage Airport has a stuffed polar bear in its lobby. At Sydney International, in a café overlooking the apron, stands a rather large sculpture of a green and golden bell frog—a huge piece of colourful community art courtesy of the airport management.[1]

Any other references to location are for sale in the shops: stuffed koalas, Aboriginal Art, Vegemite and macadamia nuts. The retail sector of the airport refers to the outside of the terminal in a riot of colours and wacky fonts.[2] The rest of the airport turns in on itself in standardised fonts and pictograms and refers no further than the runway and road. The airport is endophoric, endlessly pointing within itself. The place where you are, say Singapore or Sydney, is an attraction/distraction from the space you are in; you can engage with place if you have the time or money, but the space needs you to move.



Figure 2. Sydney Airport, Public eating space (Level 2) 2002.

Airport signage is a spectacle, an interface for social exchanges between humans and technology. Signage virtualises the social relations of individuals into the anonymity of crowd control, reconfiguring territories of geophysical/architectural/cultural space into territories of recognition and action that speak to a productive power of language that exceeds representation. The total space of the airport is non-Euclidean—it works on flow not position, movement not identity. The signs in an airport point clearly at the problems of a discourse analysis that would try and understand them solely as the markers of absent pre-existing stable territories. Airports are walked. The signs do not accompany or reflect upon the airport they are machined into. The deictic functionality of most airport signage necessarily stitches its users into a complex affectual process of being in the airport. Part of this process of being-in the space is an active engagement with its signs, most clearly seen in directional signage. The traveller navigates through a highly textually mediated space where the signs not only enact semioticised territories but also directly intervene in the material machinic processes of travelling. As Guattari might say, these *point-signs* 'don't simply secrete significations … they activate a bringing into being of ontological universes' (1992: 49). These signs cannot be measured because their work never ceases. An arrow is a sign that has no referent; it assembles movement, it doesn't identify things.

It is this move from nominality to processuality, from being to becoming, that marks the semiotic enquiry of this paper. In Guattari's 'mixed semiotics', the point-sign is the indicative matter of an a-signifying semiotic machine, a machine that, like the arrow, both enacts and exceeds signifying processes. In English, the term 'point-sign' is a homomorph—a figure that can change syntactic class without changing its shape. Homomorphs emerge in temporal/spatial grammatical relations. In its nominal form, *the 'point'* is a fixity—a stable point in the semiotic order. In its verbal form, *they 'point'* enacts a process of moving towards/away (even if only in one's head). Pointing is the process of release from a point that nevertheless relies on the stability of the point in order to function. At the airport the point is made visible through the arrow—keep moving. The arrow is a graphical sign (a mode of semiosis) which nevertheless signals the primacy of pragmatic interactivity in the communicative event of walking the airport.

## Principles of Wayfinding

Signage, known in the professional literature as wayfinding, is a spatial mode of interactivity. Graphical signage cools down the anxiety of unfamiliar terrains and replaces it with a familiar authority—the sovereign structures of transit systems. Within airports, managing spatial flow is crucial. An airport processes traffic; it is a machine for capturing and controlling flows at the most literal and abstract levels. The movements of people, machines, and cargo are kept steady and separate. Moving in relay from point to point, each must connect at certain points and then continue along fixed paths and at fixed speeds. All movement is controlled, from the planes on the apron to the corralling of passengers in retail areas. Increasingly,

navigational and behavioural guidance are apparently required, not only at the airport but in other public facilities.

Airport signage is thus a growth industry, the subject of countless industry papers, forums, and technological development. Airport operators are moving increasingly towards an international standard in signage, based on a new canon of mutually supportive signage guidelines and highly influenced by landmark signage systems at Singapore's Changi and Amsterdam's Schiphol Airports. Texts such as *Guidelines for Airport Signing and Graphics*, commissioned by the Federal Aviation Administration and first published in 1994, are increasingly influential in the US national airport system, as is its 'sister' text, the 'British Airports Authority (BAA) Signs Manual', whose standards have been increasing adopted by both BAA and non-BAA operated airports across Britain and elsewhere (O'Connor 1993). Even that bastion of the *laissez faire* aviation industry, New York's JFK Airport, is now under the aegis of the Port Authority of New York and New Jersey (PANYNJ), implementing signage standards across its multiple-owned and controlled terminals. The dialects of individually owned and operated airports are being upgraded to majoritarian standards. Colours, fonts, lighting, placement and sizing are moving towards an internationalised stability in semiotic wayfinding technologies. In other words, the interface of international aviation is becoming a mono-language. It looks and (tries to) behave the same wherever you go.

According to the professional literature (e.g. Hart 1985), airport signage has three major functions:

(1)  direction and orientation;
(2)  identification of locations;
(3)  information: on arrivals and departures; baggage delivery; government regulations (customs, immigration and security); connecting transport; and special services, such as car rental, tourism and conventions.

Wayfinding is conceived of as spatial problem solving. The pragmatic imperatives of wayfinding are therefore to design systems which enable the traveller to form, in the language of the professional literature, a 'cognitive map' of the space and to execute 'action plans'. The philosophy of corporate wayfinding focuses on facilitating 'decisions' that have to be made by the traveller to reach a final destination:

> Decisions must be executed, they have to be transformed into behaviour. More importantly, each decision has to be transformed into correct behaviour at the right place. It is not simply enough to turn left, you must turn left at the appropriate intersection. (TCRP Report 12 1996: 4)

Leaving aside for the present the semantic slippage such literature structures between 'decisions' and 'commands' (and the more likely space between them), one might merely note that the 'cognitive map' that the traveller forms in order to make 'decisions' is formed by the imperative to move and a series of inclusions and exclusions that direct one's path. For example, the traveller can reach the next point in the relay, if she doesn't smoke here, if she leaves her trolley behind there, if she

proves her innocence at 'security' thresholds. Each warning and prohibition has a contractual finality that many travellers may not be aware of. Like the possible side-effects warnings on medical products, or the 'conditions of use' in software, these messages are buried within the packaging. Direction, not conditions of use, is the primary focus of airport signs. One is always following the ubiquitous arrow, being urged forever on.

This constant movement presents logistical challenges for the semiotic technologies of transit. Wayfinding entails creating signage systems that are clearly legible from expected sightlines, understandable to people who don't speak the national language, or the 'international' one (English). Signs are designed and placed for multiple movements and universal address. As Canetti (1984) notes, signs turn individuals into crowds. Yet each journey in the airport is in some way singular: everyone's journey is different, each has a differing itinerary, travellers are in varying states of hurry, height, distress, literacy, vision impairment, mobility impairment—whether carrying large suitcases or being in a wheelchair. Signage needs to speak to all of them; all passengers must recognise the institutional injunctions. This can be difficult.

Besides the obvious problems of multiple kinaesthetic and proxemic possibilities that occur at the airport, there is also a problem of recognition and understanding. If the passenger sees the sign and even if he recognises that it is for him, will he understand it? A case in point would be the airport pictogram. Like Esperanto, pictograms are modified European: restaurant pictograms display plates, knives and forks (not bowls and chopsticks, or hands), our universal female generally wears an a-line knee-length skirt (who herself is a sign for toilet), and arrival and departure signs are designed to follow the vectoral logic of left to right literacy systems, such as English.[3] Thus the unity and supposed international transparency of pictograms are clearly the imposition of a cultural/logical homogeneity in probably one of the most culturally heterogenous spaces in the world. Signage designers concede that many pictograms 'are accessible only to people who live in a technical world' (Simlinger, in O'Connor 1993: 4). Like all interface systems (most famously Microsoft Windows), the alpha-numeric pictographic register of signage stabilises both system and user. Thus the international traveller must in many ways become that 'technical world' user in order to access the system effectively.

Wayfinding also crucially requires plotting predictable paths and 'decision' points within the signage systems. For instance, at Sydney International travellers are presented with a series of 'decision' points. Do they want arrivals or departures? If departures, then signs point to check-in facilities and toilets (in other words the traveller is presented with the most basic of choices). Only after the check-in has been breached will the traveller be offered multiple options of departure gate, cafés, duty-free stores, prayer rooms and the like. Thus a type of hub-and-spoke system in streamlining movement operates in the air and on the ground.[4] This flow control is not just invoked through signage but also through architectural features: dual carriageways on airport approach, escalators, stairs, entrance and exits, check-in counters are (ideally) designed and located so that they provide a 'natural signing' to their functions. The traveller's relationship with the signs slips from representa-

Figure 3. Kansai Airport, Osaka, 2002.

tion into production; when a passenger walks an airport she is navigating the material embodiment of information architecture.

## Direction—Flow

Airport signage organises the space into controlled flows and in many ways the airport provides laboratory conditions for a consideration of what, if any, conceptual distinctions still hold between the objects of architecture and the processes of interactive media. The airport seems clearly to demonstrate the need for a shared conceptual language between media and architecture. An airport is not just a building, nor is it just a process; it is what Lars Spuybroek (in Lootsma & Rijken 1998: 76) might call an 'event space'—an event space defined not in terms of its temporality, nor its locus, but in terms of its virtualised relations of continuity and chance. The distinction between the building and its signs, between the text and the territory, becomes indistinct through the act of traversal in these complex multidimensional spaces.

In an airport the passenger is a navigator more than a reader, scenes are made and unmade, universes open up and close down in a series of architectural and semiotic reveals as she moves through a space that is a map—as politically charged as any map, and as banal as everyday life. Maps may be built on principles of segmentarity (longitude, latitude, pixels, points and locations, etc) but they are, in use, fundamentally about movement and connections, about becomings rather than beings. In other words, the movements that cohere the map make the space. The space is not just a frame for the movement, and the visual map itself 'represents' much less than what it actually 'does'.

> A process of autopoiesis rather than of mimesis, cartography actively enacts, assembles, and brings forth concrete existential territories as well as incorporeal universes of reference, without presupposing any static image of the earth to begin with. (Bosteels 1998: 166)

As the passenger wayfinds through the airport she experiences transit—the movement from point to point guided by signs. It is not possible to think about the signs

Figure 4. US airport, March 2002.

of transit spaces without considering the primacy of movement—spaces which Augé, in homage to de Certeau, coins 'non-places'. According to Augé, when de Certeau mentions 'non-place', it is to 'allude to a sort of negative quality of place, an absence of the place from itself, caused by the name it has been given' (Augé 1995: 85). Proper names, according to de Certeau, impose on the place 'an injunction coming from the other' (Augé 1995: 85). Here we seem to remain in text, but in Augé's next move we encounter territory. 'Every itinerary', he says, 'is in a sense diverted by names which give it meanings (or directions) that could not have been predicted in advance.' He adds, 'these names create non-places in the places, they turn them into passages' (1995: 156). Thus a process of transformation is radically foregrounded if one considers the signs not just as markers of absent and ideologically invested things, but also as the makers of events in themselves. In other words, passages require rethinking cartography rather than deconstructing the map. To return to Bosteels:

> When what is happening is perpetual movement, to use Deleuze's words one more time, then the cartographies of the unconscious indeed become the territory: 'the map expresses the identity of the journey and what one journeys through. It merges with its object, when the object itself is movement.' (Bosteels 1998: 167)

Nowadays we are increasingly all travellers, suburban shoppers, global citizens or refugees, following arrows and signs, trying to efficiently navigate the procedures that synchronise daily activity and collective behaviour. We move through and by these semioticised acts: the forms, the arrows, the prohibitions, the diagrams and the maps. To reiterate a previous point, we obey the signs; whether we believe or not is in many ways irrelevant. Each time I am frisked at the airport, it is done ostensibly with my welfare in mind; if I don't consent to being protected, I can't get on the plane. As Gil notes:

> [B]elief cannot be summed up by an adherence to a banal type of illusion,

Figure 5. Sydney Airport, March 2002.

> because it impinges on an 'object' in which the subject itself is included.
> (Gil 1998: 20)

At the airport, evocative tourist promotions juxtapose with sparse security zones (like immigration), which are buttressed by lush retail franchises. A promise and a threat become indistinguishable as a system of control modulates the varying and endless moments of voluntary servitude in a life of endless transit.

## Stability

Movement produces inherent instability. At the airport, the potential for catastrophe ensuing from non-proceduralised movement is intense. An operations car crossing a runway without clearance could collide with a plane, bags without visible, scannable tags can be sent to Auckland instead of LA, the passenger can miss a connection because she went to the wrong gate. Signage is one of the dominant technologies to stabilise the confluence of people and machines. It is an interface—a 'naturalised' system of semioticised acts that on the whole must be learned in order to be 'intuited'. Such interfaces release us from the burden of understanding (or accessing) a machine in its entirety—we traverse fragments of these complex machines in controlled trajectories. As airports around the world increasingly become privatised and thus answerable to the 'bottom line', the airport must process movement as smoothly as possible. The throughput capacities of airports in terms of all of their traffics, such as planes and cargo (for landing fees and maintenance services) and passenger traffic (for retail stakeholders) must be increased. Stabilising the interactions between the various machine bodies at the airport is crucial to accelerating throughput and capacity.

  At all levels of airport operations signage dominates operational behaviour. Airside, painted lines of varying colours, length and paths designate a strict demarcation of traffic. These visual markings are supported through protocols of safety and

security, identification and authorisation, licensing and unionisation. When a plane is at its gate, a cleaner may traverse the red lines painted on the tarmac, an airport public relations manager may not. Landside, the connecting passenger recognises the green sign for the transit passengers (e.g. at Schiphol Airport) and behaves accordingly. Thus the interface invokes processes of incorporeal transformations and interconnections between material and semiotic systems. Animate and inanimate, people, cargo, avgas, data, animals assemble in a complex hub of exchanges immanent to each in a network, and through a series of material and semiotic technologies (like lines on the airside apron, or directional signage) stabilise the inherent instabilities of movement into the controlled flows of traffic.

## The Arrow

We need this stability, for our safety, for our security, so that we can be processed through this particular technocultural network. At the airport the arrow is a tool for movement and a tool for stability. The arrow seamlessly leads from home to highway to airport in a triumph of collective behaviour and identity. But the arrow doesn't just stabilise the person into 'the traveller' with concomitant predicable paths and contractual responsibilities, it also determines specific procedures for movement, for transforming our relationships and personal status. In a world where forward movement is privileged, where 'stasis' in one's job, personal psychology, or real estate holdings is seen as decline, the arrow is a trope as well as a tool in this 'supermodern' world of constant transit. The arrow is a curious phenomenon, like the pointed finger of Canetti's 'flight command', it admits no turning back: *move* or be devoured, because the 'technical' (read global capitalist) world is upgrading.

The privilege accorded to the trope—metaphor in particular—has been, according to many critics, such as Gil (1998) and, perhaps most influentially, Deleuze & Guattari (1998), disastrous for the study of language. The trope has, like all tropes eventually do, ceased to *turn* the language; rather, it has *become* it—a dialectic based on the sublation of forms of substitution that leads inexorably to yet another semic plane in a structured set of semantic associations, in other words, to a more primal metaphor. Gil's work on infralanguages (1998) suggests a way out of this impasse, but here I would like to approach the issue of the relationship of signs and bodies in space from a position that merely shows how one sign—the arrow—defies the attempt to identify relations of text and territory as more or less stable.

As Volosinov (1986) argued, the sign is not an artefact, it is a phenomenon of the material world; it is dynamic and material and cannot be isolated from event space. The arrow defies the kind of hypostatisation of linguistics that Volosinov loathed. Directional not identifying, arrows engage in a process of turning informational spaces into passages; the arrow transforms information into an order. In other words, it is impossible to think about an arrow purely in terms of its meanings. The relationship of the arrow to its material circumstances is always immanent; its action (its extralinguistic something) is internal to its form.

An example: 'departures' is a word from elsewhere. Whenever I say it, it feels like a quote—a quote from written language—from a register of transportese, as foreign
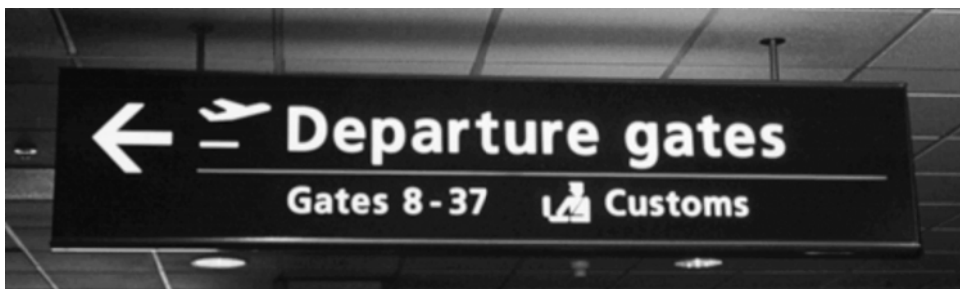
Figure 6. Sydney Airport, March 2002.

as *Abflug, Entrata, Sortie*—a word that I adopt and inflect when I am a traveller. A word that when uttered turns me into a traveller. Collocating with this quote is the arrow. The arrow inflects the discourse of another into my trajectory—where I am at that moment and where I am going. If I wanted a grammatical analogy with a twist to describe this semioticised experience, it is like a spatialisation of free indirect discourse.

Free indirect discourse occupies a logico-semantic space in grammar called projection (cf. Halliday 1994) in which a clause functions not as a direct representation of (non-linguistic) experience but as a representation of a linguistic representation (Halliday 1994: 250). The relationships of free, direct and indirect discourse are usually schematised showing the transformation from free discourse through to free indirect discourse in terms of a semioticised spatio-temporal distance from the original utterance (*free discourse*). Thus a cline of semiotic dissolution tracks from the original utterance to the quote (*direct discourse*), where the utterance remains intact, but where its context has changed, to the paraphrase (*indirect discourse*) where person, tense and other deictic markers shift the original utterance into the spatio-temporal frame of the paraphrase, to *free-indirect*, where quoter and quotee grammatically merge.

Free discourse:          I've brought the tickets (said at the gate 12)

Direct discourse:        She said, 'I've brought the tickets'.
                         (reporting)     (reported)

Indirect discourse:      She said that *she had* brought the tickets.
                         (reporting)     (reported)

Free indirect discourse: *She had* brought the tickets (she was sure of it)

For Volosinov (1986), free indirect discourse was the apotheosis of dialogism in language—an active relation of one message to another 'crystallized into language forms' (1986: 117). It is '[w]ord reacting on words' as he put it (1986: 116). Deleuze and Guattari seem to channel Volosinov in *A Thousand Plateaus* when they note: 'Free-indirect discourse highlights how language "goes from saying to saying" rather than between something seen and something said' (1998: 76). Free indirect discourse spotlights a feature in all language—that in some way we all speak in tongues. This is as true for direct discourse as free indirect discourse.

> All words have the 'taste' of a profession, a genre, a tendency, a party, a
> particular work, a particular person, a generation, an age group, an hour.
> Every word tastes of the context and contexts in which it has lived its
> socially charged life. (Bakhtin 1981: 293)

Thus all words are tied both to use and life as well as signification. All words
enunciate something other than meaning because they are intrinsically founded in
collective assemblages. Under these circumstances the grid of signification con-
structed to serve a linguistic preoccupation with coding—of specific presences
representing specific absences—is unable to deal with the concept of complex
continuity which is endemic in free indirect discourse. Hence Deleuze & Guattari's
(1998) regard for Volosinov's work on free indirect discourse as a feature of
language where many voices speak as one with 'no clear distinctive contours' to
discern its speaking subjects. Volosinov claimed that in free indirect discourse, 'the
dike [between reporting and reported] ruptures, as it were, and authorial intonations
freely stream into reported speech' (1986: 146).

Essential in rupturing the dike is deixis. Deictics such as arrows (roughly,
come/go, here/there), demonstratives (this and that), tense and personal pronouns,
are disparate grammatical systems which are all anchored in the contextual specifics
of discourse, not the signifying semiotics of language. As shown above, the visible
contours of the free to free indirect discourse matrix is deixis. This schema assumes
a *prior* position for free discourse: in grammar one putatively moves from free to
indirect discourse, but in language use this move is rhetorical rather than actual.
Nevertheless, deictic functionality highlights a moment of contextually specific
assembling. Deictic elements are identified by Ricoeur as *asemic*. He explains the
term thus: 'the word "I" has no signification in itself, but it is an indicator of the
reference of discourse to the one who is speaking' (Ricoeur 1986: 75). Deictics are
anchored in a discursive present, and the present, like 'I', designates itself in the now
of the utterance. In the hybrid language of airport signage, pictorial, alpha-numeric
and fragmented, the arrow pulls us in, and in the same graphical gesture points us
away from that spatial/temporal moment that we are in. The arrow doesn't fix
positions on the grid, it modulates a continuity of movement.[5] The arrow works
flush with the real—it is not solely a technology for making the text 'mine', but for
making the text move me. A complex of forces move through the sign which relate
a more complex reality than the essentially hermetic world of signification. If you
stop the arrow in mid-flight to gauge its position, it never reaches its target. If you
only look at where it landed, you can only ever retrospectively surmise the points
along its path. Brian Massumi says: 'a thing is when it isn't doing' (2002: 6). If we
accept that signs do as well as mean, then semiotics needs a major ontological
revolution in order to account for the a-signifying elements of time, space, rhythm,
movement, bodies and so on that thoroughly work the sign.

According to Guattari:

> [A]-signifying machines continue to rely on signifying semiotics, but they
> only use them as a tool, as an instrument of semiotic deterritorialization
> allowing semiotic fluxes to establish new connections with the most deter-

ritorialized material fluxes. These connections function independently of whether they signify something for someone or not. (Guattari 1996: 150)

The concern of airport signage is not representation; it is movement. These signs, like links and buttons on computer interfaces, conjoin semiotic and material flows in a world where the informational and the material increasingly stream through each other. The realm of belief, so tied to the politics of representation seems to be, increasingly and ineluctably, converging with a command semiotics of protocols and direction. The signs impose 'semiotic coordinates' on the traveller which both order the words of travel, authority, security and so on (thus creating an airport syntax from multiple texts), and they also form the conditions of travel. In an airport you can only navigate by the signs.

> [I]t is in this sense that language is the transmission of the word as order-word, not the communication of a sign as information. Language is a map, not a tracing. (Deleuze & Guattari 1998: 77)

The information architecture of the airport is a diagrammatically conceptualised space, which guides movement and behaviour. The deictic properties of the arrow stitch text into the materialities of an embodied context that are never ending.

If the airport is the city of the future (Sudjic 1992; Virilio & Lotringer 1983), then here is a glimpse of that which semioticians of the future must contend. The future is written in a Fruteger font on a high-contrast background; its syntax is fragmentary, its illocutions are overwhelmingly exercitive, there are arrows and pictographs everywhere. This proto-city is simultaneously information and architecture, sign and act, direction and instruction. The arrow modulates movement into traffic across multiple fields of exchange—data, people, machines, commerce, education. It is, simultaneously, tool and trope of the control society.

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## Acknowledgement

## Notes

[1]    The green and golden bell frog, *Litoria aurea*, is an endangered species, once common in the Sydney basin. Two centuries of rapid urbanisation have all but destroyed its natural habitat. One of its remaining breeding grounds is located on the once toxic Sydney 2000 Olympic site at Homebush Bay. Canny lobbying by scientists who know the market value of a symbol pitched the local species *Litoria aurea* against the global invader, the IOC and its local deputy, SOCOG (which had planned to relocate the breeding grounds ) and won—sort of. The frogs were not relocated, the breeding grounds were spared and rehabilitated. The near-extinct frog now has refuge in a pocket of urban consolidation (the Olympic site) and was incorporated as emblem for the 'green games'.

[2]   Under locational signage, it should be noted that 'uniformity must be maintained through-out the terminal, except for corporate logos'. (Hart 1985: 132)

[3]   That is, 'departure' pictograms generally show the plane, tilted up by a moderate degree, in what could be called a release vector; the plane's nose points right. The image is inverted into a 'holding vector' for arrivals—the plane's nose points left and down. Many non-Western airports resist this standard. At Kansai Airport, for instance, the plane icons are reversed to follow Japanese semiotic vectoral logic.

[4]   Hub-and-spoke systems have dominated aviation for the past 20 years. The world's two busiest airports, Chicago's O'Hare and Atlanta's Hartsfield are hub airports. This may be changing. Recent trends in the USA suggest that point-to-point direct routes are challenging the profitability of hub-and-spoke systems.

[5]   Brian Massumi (2002) uses Bergson's analysis of Zeno's arrow to discuss the metaphysical paradoxes of position and movement:

> The flight of the arrow is not immobilised as Zeno would have it. We stop it in thought when we construe its movement to be divisible into positions. Bergson's idea is that space itself is a retrospective construct of this kind. When we think of space as 'extensive', as being measurable, divisible and composed of plotting possible positions that objects may occupy, we are stopping the world in thought. We are thinking away its dynamical unity, the continuity of its movements. We are only looking at one dimension of reality. (Massumi 2002: 6)

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## Images

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