This article considers key strategies deployed in the history of drawing since the 1970s and how these work towards interfaces between the corporeality of the artist and the materiality of the drawing itself. Connections between such interfaces and Umberto Eco's typology of modes of sign production are considered in relation to each key drawing strategy. Such connections may contribute to semiotics for drawing which takes into account the growing importance and complexity of corporeality-materiality in the face of what Elizabeth Grosz has called the profound "somatophobia" (1999:5) of the Western dualist philosophical tradition. Contemporary drawing critiques this tradition through its multifarious practices, while exploring its own parameters to become a transcognitive activity involving modes of signification and materials and bodies mutually productive in the act of making.

**Key words:** drawing, semiotics, corporeality-materiality

**Kontemporere tekenkuns: 'n beskouing oor die semiotiek van liggaamlikheid-materialiteit**

Hierdie artikel handel oor sleutelstrategiee in die geskiedenis van tekenkuns sedert die sewentigerjare van die twintigste eeu en hoe hulle medebepalend is van die verband tussen die kunstenaar se liggaamlikheid en die materialiteit van 'n tekening. Verbindings tussen sulke skakels en Umberto Eco se tipologie van wyses van produksie van tekens word ten opsigte van elke sleutelstrategie behandel. Sodanige verbande sal waarskynlik bydra tot 'n semiotiek vir tekenkuns wat die toenemende belangrikheid en kompleksiteit van liggaamlikheid-materialiteit in ag neem, waarna Elizabeth Grosz verwys as die diepgaande "somatophobia" van die Westerse dualistiese wysgerige tradisie. Kontemporere tekenkuns lever kritiek op hierdie tradisie by wyse van die veelvuldige praktyke wat dit kenmerk, terwyl dit gelykydig eie parameters eksplorieer ten einde 'n transkognitiewe handeling te word wat modusse van signifikasie, sowel as materiaal en liggame betrek. wat gesamentlik in die handeling van kuns maak produktief is.

**Sleutelwoorde:** tekenkuns, semiotiek, liggaamlikheid-materialiteit

**Students in the fine arts have traditionally been expected to attend the life-drawing class, where observational drawings of nude models and of still-life objects were produced. One justification for such exercises was that they would teach students (and thus future artists) to look adequately at the world around them, and that this act of looking would make it possible for them to represent that world on a two-dimensional surface. In the twentieth century, another justification was that drawing could make it possible for students or artists to then translate from such renderings to a vocabulary of abstract forms, especially in painting; or to use such renderings as a basis for graphological expression through personal 'handwriting' or gestural marks on surfaces. (See Leymarie, Monnier & Rose 1979: 244, 248; Fisher 2003: 217; and Berger 2005: 1-10.) These expectations respectively harked back to the history of drawing as a practice positioned as 'preparational' and 'incomplete' within Western arts guilds and academies from medieval to modern times; to a modernistic focus on the language of visual abstraction; and to the expressive, emotive freedom gained within the context of abstract expressionist painting by the 1950s and early 1960s.**

While students and artists at that time still worked towards fulfilling such expectations, other initiatives were already afoot which would shift the centre of gravity for drawing towards its own domain, although it would still be deployed within the practices of painting, sculpture and architecture (and later increasingly so within other media as well).

Working towards a definition of its own domain, drawing since the 1970s operated against the history of Western art, in which it has traditionally been under-acknowledged in favour of painting, sculpture and architecture. Even today, drawing is seldom offered as a major subject in
tertiary art schools, and is often still seen as a support discipline aimed at facilitating outcomes in other areas. Jean Fisher writes: "From medieval to modern art, drawing mostly constituted a propaedeutic moment, a passage for the realization of the major work of painting, sculpture, or architecture. It was an exercise, the testing field that prepared for the final work." (2003: 221) However, since the 1970s, drawing has incrementally claimed a central place for itself within much of international contemporary arts practice. At the same time, a growing body of scholarly research on drawing has uncovered some of its complexities, while also connecting it to other fields of interest such as, for example, to semiotics. (See, for example, De Zegher et al 2003.)

International networks of scholars and artists who focus on drawing exist today as expanded fields of interest functioning across geographical and disciplinary boundaries. For example, the International Drawing Research Institute operates between the Glasgow School of Art, the College of Fine Arts of the University of New South Wales in Sydney, the China Central Academy of Fine Arts in Beijing; and artist-academics involved (e.g. Robert Palmer, Roger Wyatt, Blair Cunningham and Gordon Hookey) have been in residency at the School of Art in Dunedin, New Zealand, where the author of this article works as a drawing researcher. Another example of drawing's recent international collaboration is the connection between the United Kingdom Power Drawing Project and the Drawing Australia Research Program (DARP) at Macquarie University in Australia. Such projects take drawing seriously. Eileen Adams, who leads the project in England, writes, for example: "Drawing provides the means for learning to see. In this visual world, drawing provides a vivid shorthand, It is an extraordinarily versatile tool in many subject disciplines, ranging from tiny sketches containing big ideas to whole sets of drawings that give all the information necessary for building a house or an aircraft." (2001: 2)

Roaming between such differences in scale, this article explores key strategies of drawing since the 1970s with regard to interfaces between the corporeality of the artist and the materiality of the drawing. Connections between these interfaces and Umberto Eco's typology of modes of sign production - also presented in the 1970s - are considered in relation to each strategy. Such connections may contribute to a semiotics for drawing which takes into account the growing importance and complexity of corporeality and materiality in drawing, while it has been exploring its own parameters over the last fifty years.

In signalling the importance of corporeality in contemporary drawing, it should be acknowledged that such an importance is not, by any means, limited to this practice. Against a background of what Elizabeth Grosz has called the profound "somatophobia" of the Western dualist philosophical tradition since Plato and Aristotles through Descartes and his legacy (1999:5), many have worked towards a reconsideration of the importance of the corporeal. Phenomenologists from Edmund Husserl (1859-1938) to Maurice Merleau-Ponty (1908-1961) to our contemporary John Searle (2002) have included "the body as a requirement in any act of cognition [and] phenomenological discussions of...the lived body or 'body-subject'...are the basic touchstones of any thorough discussion of human corporeality." (Berdayes, Esposito & Murphy 2004: 10-11). Critical theory has also played an important role in the reconsideration of corporeality. In considering the body in relation to writing in a critique of dualist philosophies, Vicky Kirby, for example, speaks of "corporeographies generated through the labor of the trace." (1997: 81) Within the field of 'somatics', 'bodywork' as an active engagement of the corporeal is deployed in therapies. In this context, Thomas Hanna and Don Johnson point out that somatic approaches have much in common with critical theory and recent contributions to phenomenology. (1970 & 1994) This article explores how corporeality is crucial - in various and
specific ways - to contemporary drawing strategies and how it interfaces with the materialities of drawing.

The exploration of materiality is, also, not specific to contemporary drawing. The history of modern art involved self-reflexivity in terms of the materialities of specific practices, with Clement Greenberg’s insistence on the canvas as a flat support for paint as 'itself being a notable example (1940/1994:558 ). More recently, Paul Carter writes: "The 'creative process' is not in the least mystical. The decisions that characterise it are material ones...It realises (it releases) the inventiveness of matter...they give back to time its materiality, the sense of temporal process." (2004: xi-xii) Hans Ulrich Gumbrecht points to a theoretical shift in the humanities during the second half of the twentieth century "from interpretation as identification of given meaning-structures to the reconstruction of those processes through which structures of articulated meaning can at all emerge." (1994: 398) In this regard, he argues that theorists should no longer pursue final and therefore unchanging explanations, but rather should "create provocations for changes in perspective. Focusing on the processes through which meaning can emerge - the materialities of communication rather than the insubstantialities of interpretation - stimulates [this] constant change..." (1994: 400, my emphasis) In this article, such materialities are explored in relation to contemporary drawing strategies interfacing with various and specific corporealities. Emma Dexter reminds us of the ideas of Paul Klee, the early twentieth-century artist who theorised drawing from a practitioner's perspective. Klee's book, The Pedagogical Sketchbook (1925) "...connects drawing with all the physical phenomena of the world. Klee used the working relationship of bone and muscle, the flow of the bloodstream, waterfalls, the flight of birds, the motion of the tides as examples of 'coordinated linear motion'.” He argued furthermore that an understanding of physical acts leads into an understanding of drawing outcomes. (2005: 6)

Corporeality and materiality are argued as being inseparable into discrete considerations. Gumbrecht continues to say that the notion of materialities of communication "brings into view...situations where couplings between human bodies and communication technologies produce specific subject effects." (400). Elsewhere, John Law writes that it would be

"a mistake to imagine that materials are passive while people are active. Instead materials (human, textual and technological or artefactual) define one another and hold one another in place. All, in other words, contribute to the performance...[and if] this 'semiotics of materiality' is accepted, then there are no fixed distinctions between...subjects and objects. Instead, [relational] effects - including objects, subjects and knowledge - are all produced." (2003: 11)

He continues to argue that this is precisely why it is so important to study how they are produced. This article explores how the body of the artist and the specific materialities of contemporary drawing are mutually productive.

A semiotics of corporeality-materiality is already suggested in Umberto Eco's typology of modes of sign production (1976:217-260) and this article connects its exploration of contemporary drawing strategies with his typology. Eco posits "physical labour" as the prerequisite for sign production. From this follow four modes of production: recognition, ostension, replication and invention, each involving corporeality-materiality in different "activities" and each being identifiable through a number of "ratios." (218 & 220) When considering changes in contemporary drawing in relation to Eco's typology, his axes of recognition: imprint; ostension: sample; replication: vector; and invention: map’ seem relevant (see below).

While arguing that drawing has undergone significant changes since the 1970s, it is also important for its understanding to remember where Bernice Rose points out that contemporary drawing since the 1970s has acted "...in relation to previous styles and to previous notions and
conventions of drawing by reappraising them at what may be described as an ironic distance, by isolating their specific conventions, conceptualizing them, and recreating them as [a form of] paraphrase." (1979: 247) She adds: "Remembrance of the past is iconographically integral to the new language of art. Within this general idea of agreement, there is an enormous range of play inherent in the new mode, and drawing, with its enormous potential for overwriting, has become a primary vehicle for this..." (1992: 12) An engagement with its own history speaks through the drawing revolution after the middle of the previous century. The axes of signification mentioned above and discussed below respectively refer to older, historical drawing practices: axonometric projection for architecture; Alexander Cozens' late eighteenth-century 'blot' drawings; drawn sinopie as preparation for fresco paintings; and the use of text and image in the creation of the format of the treatise. These references will be indicated with regard to particular works in each section below.

DRAWING STRATEGIES and SIGN PRODUCTION

Recognition: imprint

Figure 1
Horst Kiechle with Margaret Roberts, 2003, 3D computer-modelled test of a straight line interacting with the interior space of Mt Eden house in Auckland: 200 segments (image courtesy of the artists).

One strategy focuses on drawing proceeding within the expanded field of the landscape, city or interior, as where Walter de Maria imposed long 3-inch wide perspectival lines on the surface of the Mohave Desert in 1968; or where Australian artists Margaret Roberts and Horst Kiechle modelled a straight line interacting with an interior space (see figure 1).

De Maria walked the expanse of the desert to place his famous labour-intensive convergent lines on its surface. Roberts and Kiechle's modelling process initially used the information determined by physically working out where a straight line went in a given interior space, to create a 3D computer model which simulated both the space and the line, thus enabling the shape of the line, as seen from different positions, to be converted into an image. (Later, the physical process of working out the line was made redundant when Kiechle devised a computer program which produced the line with only the measurements of the physical space and direction as to where and how a line would start and stop. The Mt Eden house model was an early test of that program, see figure 1.)

The author has been privy to one of the initial experiments of line-making using a direct physical method in the creation of such work by Roberts in Dunedin. Having broken an arm immediately prior to the commencement of a drawing installation, she explained to students to climb up and down ladders and together they worked out where to connect salient points of the architecture, and thus where the line would go. They had to tear off strips of masking tape to complete long lines of connection. What looks smooth in subsequent computer modelling (see figure 2), was not so in the actual space (see figure 3). The directions of the line were determined by where and how it started and by the changes of plane in the interior space, using a simple process of string and newspaper. As with earlier experiments with this process, the
line was then marked out with other materials, which, in this case, was wallpaper-lining and red oxide powder. This process of marking out did not affect the shape of the line. Rather it aimed to link the abstract nature of a straight line with the physicality of the architectural space that bent it into its found shape. The red oxide also has a very physical quality. The participants thus found themselves engaged with the materials and working with their bodies in the space; *discovering* the line created by the shape of the space and thus giving agency to the space as the artist says she had intended. (2006: s.p.)

![Figure 2](image1)

**Figure 2**
Margaret Roberts, 2000, *The Infinity Line* as it would appear, if it could be seen, from directly above the Foyer gallery, 3D computer-modelled images by Horst Kiechle (also see figure 3, images courtesy of the artists).

![Figure 3](image2)

**Figure 3**
Margaret Roberts and collaborators, 2000, *Infinity Line*, in *Meeting Lines* (including paintings and text by Liz Coats) in Foyer Gallery, Otago Polytechnic, wallpaper, masking tape and red oxide, one view (image courtesy of Roberts).

Roberts has said that she finds the domination by the visual image disturbing as this domination often goes hand in hand with an undervaluation of the body's kinaesthetic movement.
that in the contemporary Western cultural value system, the space of representations is valued more highly than the space we physically occupy. This does not mean to say that the former has no value at all, but that the space of representation (such as within an image) is regarded as more significant. The effect of this is an underlying acceptance of the destruction of physical space, which ultimately is the whole planet. (2006: s.p.)

In an essay called "The Nobility of Sight", Hans Jonas contends that sight is the sense of simultaneity, capable of surveying a wide visual field in one moment. He argues that it is intrinsically less temporal than the other senses and that it thus privileges static essences over dynamic becomings. "The very contrast between eternity and temporality rests upon an idealization of a 'present' experienced visually as the holder of stable contents as against the fleeting succession of nonvisual sensation." (1982: 145)

In alignment with phenomenological aims, it is such a dualism which Roberts works to problematise in her drawing installations. The artist and her collaborators have to work with their bodies in kinaesthetic and haptic ways to realise the image, which is then 'seemingly' given full presence in the computer-modelled drawing. However, even this drawing is never finally 'present' and it remains dependent on the position of the body of the artist or audience, because there are many versions of it: as it would be seen from directly above the gallery space (see figure 2); as it could be seen from a nearby hilltop; as it might be seen from across the road; and so forth. The artist says:

When the space has sufficient complexity, the labour pays off, as the space then produces interesting line drawings when the data - i.e. the location of where lines hit the changes of planes in the room - is imported into a 3D computer-modelling program, and flat line drawings are produced by determining positions from which the line is to be viewed. The difference for viewers is that they see the actual line from a position within it, whereas the flat image allows the line to be seen from outside of it, which is something beyond the capacity of the human eye (unless the architecture was transparent). The 3D computer program allows us to 'see' imagine what the line would look like from actual positions outside of the line, i.e. from positions which can be named in real space, such as what it looks like from the office, or the taxi rank. In using the computer program to show us these drawings, we are employing the program in the service of the actual, rather than at its expense. (2006: s.p.)

Various views are thus combined in the computer-modelled drawing related to Roberts' Mt. Eden, Auckland Project (see figure 1).

When one explores the digital compositing deployed in the animated drawings of New Zealand artist Kurt Adams, the smooth line of Roberts' and Kiechle's computer-modelled drawings make way for work which strives to incorporate the smudge and the other 'imperfections' of the hand-drawn. Adams writes: "the simplicity of pencil and paper, the satisfaction of the once white page becoming smudged and dirty, my hands have as much charcoal on them as the marked surface...using a computer in this way is difficult." (2005: 8) He draws digitally to create a large archive of discrete elements and creates discrete digital soundbites. These are then introduced into an enormous 39-minute moving image and sound environment through a complex rendering process utilising thirty computers at a time. The dramatic black, white and grey result on large screen envelops the audience in a land- and cityscape through which sound becomes visual and drawing becomes audible.

Adams writes that painter Claude Monet walked across bridged ponds, diverted water to create veined reflections of [water-] lilies. Adding and subtracting from the orchestrated landscape, he surrounded himself in canvas; painting a picture already designed to be painted... This feedback is a method I also use. Initially drawing from real life I then began to draw in front of the screen. Sketching from my own fabricated habitats...[engaging] with Brian Massumi's descriptions of ... virtual... 'infoldings and outfoldings, redoublings and reductions, punctual events falling away from themselves.' The digital noise and artefact ruptures the surface of my drawings, the artificial horizon aches under erasure and relocation, the grey porridge mountains curdle with pencil...a concrete garden shimmering like an enormous futurist machine [made with] Utopian playdough..." (2005: 2-3)
The reader realises how the language used here strains to relay the corporeal impact of the drawing on the artist and the audience.

Lev Manovich contends that the vertical position of the body and the horizontal line of the horizon as two orientating directions apply also to our relationship with the digital screen as we bring our own anthropological framework to it, although the screen itself does not privilege any particular axis. (2002: 158) However, the complexity of Adams’ drawing compositing requires working with inaccessible points of view, with ratios and coordinates. He writes that these induce a nausea in the making process (8). A similar somatic nausea is induced in the audience and this is augmented through scale. Standing in front of a large projection of the work, the author of this article had the experience of being physically 'sucked into' the enfolding drawing, of losing her vertical orientation in the process, of needing to sit down, and of finding it difficult to walk straight afterwards. The author was reminded of Suzannah BiernofF’s use of the phrase "the corporeal sublime", where she discusses the bodily experience of being sub-limis or 'under' or 'up to' the limit of our own unstable physical borders. (2001& 2002: 65 & 73)

Where Roberts' drawing installation had involved her collaborators with a kinaesthetic and haptic experience in their temporal making of the work; Adams' digital-scape draws the audience into the architectures of its own making processes. In both cases the activity of "recognition" is foregrounded as discussed by Eco in his typology of sign production. Recognition occurs when an object or event is identified as the expression of a sign content and when the sign is correlated to a physical causality functioning as its content (221). Such configurations bring
into play the ratio of "imprints" where Eco endeavours to explain their complexity as events playing out across time, rather than as single-coded units of signification (222). Elsewhere, he complicates them further by likening them to "projections". Again, the temporal and the directional play important roles: "projection [compels] one to map backward [and to engage in] the reverse procedure, that is, to map from the projection to an unexisting and supposedly projected entity." (257) Yve-Alain Bois has also called such drawing "projective", that is, "they depict something that has been imagined before it is drawn, as opposed to being found through the process of making..." (Hoptman, 2002: 12)

The drawings discussed above involve a conceptual plan realised in ways which reference the historical format of the axonometric drawing for architecture. An example of such drawing is one by Baldassare Peruzzi (1481-1536) in pen and ink and red chalk over black chalk of St. Peter's in Rome (see Leymarie, Monnier & Rose, 1979: 124). Axonometric projection occurs when an object or line is projected at right angles on a plane set up obliquely against three principal planes of projection, thus creating, for example, a cube or half-section or groundplan (singly or in combination).

It is argued here that the 'axonometric' projects by Roberts and Adams discussed briefly above function in semiotic terms primarily - but not exclusively - within the "recognition: imprint" (including projection) axis of Eco's typology. It seems that Michael Newman connects to this axis where he explains that in drawing each stroke is a sign of the hand's agency and its withdrawal, unlike in painting which covers its surface and hides its moment of making. He writes that drawing's "...peculiar mode of being lies between the withdrawal of the trace in the mark and the presence of the idea [or plan] it prefigures." (2003: 95)

Ostension: sample

On another axis of his typology of modes of sign production, Eco discusses the activity of "ostension" and "sample" as one of its ratios. He writes: "Ostension occurs when a given object or event...is shown as the expression of the class of which it is a member...When only part of an object is selected to express the entire object (and thereby its class) this constitutes a choice of sample...a sample can [also] be taken as the sample of 'samples'." (225-26)

Contemporary drawings behave as samples of a class within the limits of a coded language. Just as we can read a map through understanding the codified relationship between the map and the geographical terrain it refers to, so too can we read a drawing through understanding its codified relationship with the art historical and -theoretical terrain within which it is located. Jean Leymarie acknowledges the codified nature of drawing before commencing with an analysis of samples: "[Drawing] is a thing as mysterious and primordial as language itself..." (1976: vii, my emphasis) Drawing strategies in recent practice since the 1960s can be seen as subsets of a visual language with its own rules, codes and communicative outcomes. However, one of these strategies foregrounds drawing as "sample" in an activity of ostension.

In the 1970s, Cy Twombly, for example, presented his drawings with chalk, oil and gouache on cardboard as connective acts across a ground. One can follow the rhythm of the artist's hand as it moved to create the line, which becomes dense enough in places to be read as tonal surface. The limits of the cardboard borders do not contain the movement and their appearance seems arbitrary, as if the hand could - and maybe did - move beyond them. Such drawings had as immediate background the - already mentioned - notion of drawing as 'graphology', or as a personal handwriting with expressive possibilities, so popular in the 1950s (see Leymarie, Monnier & Rose, 1979: 248). Through access to the discipline of Eastern calligraphy, Twombly 'cools' this down so that the artist's hand is still very much evident, while the excesses of
expressionist drawing are avoided. In 1992 Rose would write with reference to drawing since the 1970s: "Drawing today is not a vehicle for self-expression...style and autography [also read: graphology] are no longer synonymous, yet drawing...affirms that the artist's hand still counts..." (10) In this regard, New Zealand artist Josephine Regan currently works in ways reminiscent of Twombly's drawings.

Chalk in hand she creates lines across grounds and connects dense lines into tonal surfaces. The small drawings (see figures 6 & 7) often seem to ignore their borders, again as if they might be continuing beyond them. Regan creates many of these drawings and she calls them an "occupation", a way of keeping busy, of continuously working. (2006: s.p.) Earlier this year, she exhibited some of the drawings in long lines or in grids of ninety-three units (see Figure 8). Through this exhibition it became clear that each drawing functions as a sample of a class of objects; that the dynamics of Regan's practice lie in her continuous immersion in the act of drawing, and not in any singular outcome.

Working continuously with line itself as manipulated through the hand moving across a ground is a key focus here. Rose writes: "The line itself is always seen as line even as it merges with other lines to build tone, even when confined within the scheme defined by the motif." (1979: 243) Line has also been seen as tracing 'process', as so famously insisted upon by artist Richard Serra (see Hoptman, 2002: 11-12).
It has, however, been demonstrated that line can be subsumed within surface as can be seen in some of Twombly's drawings and in those of Regan imaged within the grid above; and it can become almost impossible to distinguish individual lines. Theorist Vílem Flusser considers the relationship between line and surface. He talks about how surfaces have become ubiquitous and metaphorically ever more important in our surroundings today; as against the importance of lines in the Cartesian model. He argues that in our era of visuality we seize the totality of a picture's surface at a glance and then proceed to analyse it; that is, we work from synthesis to analysis; while reading along a line works from analysis to synthesis, just as we have to follow a written text if we want to get to its message:

"this points to the difference between the one-dimensional line and the two-dimensional surface: the one aims at getting somewhere; the other is there already, but may reveal how it got there. This difference is one of temporality... the times involved in the two processes are different... we may say that the reading of pictures takes less time because the moment in which their messages are received is denser; it is more compacted. It also opens up more quickly..." (Flusser, 2002: 23)

Reading works by Twombly and Regan involves both synthesis and analysis in Flusser's terms. Different temporalities are engaged with as one imagines the movements and counter-movements of the artist's hand. Understanding each outcome as a sample of such engagements prevents one from focusing on any singular outcome rather than on the operational connections between them. Where Norman Bryson considers the artist's hand and line drawing, he suggests a "continuous incompleteness" and he writes of

"a hand that is about to make its first trace on the surface...the present of viewing and the present of the drawn line hook on to each other, mesh together like interlocking temporal gears; they co-inhabit an irreversible, permanently open and exposed field of becoming, whose moment of closure will never arrive." (2003: 150 & 153)

Having recently seen Regan's drawings as single units, as stacked as a deck of cards, as exhibited in long lines, and as presented together in grids; the author of this article thinks of them as samples and remembers where John Law and Vicky Singleton write: "Perhaps there is simply something diffuse about the object itself. Perhaps it simply slips, slides and displaces itself. Perhaps its boundaries move about from one location to another, and do not stay still. Perhaps they ebb and flow". (2000: 14) Fisher writes about the act of drawing by hand on paper as a process of becoming rather as one that results in discrete objects and subjects: "I am becoming-paper, becoming-ink...the drawing is becoming-thought...the work becomes thought that thinks itself through the material [and the hand]." (2003: 220)

As the drawing as sample is de-objectified in such a process, the body of the artist likewise becomes de-subjectified. Paul Klossowski argues that when drawing is free from the subject "there is only one body and its own enjoyment comes into meaning directly from itself." (1968: 61-62) In the case of drawing as sample, the corporeality of the artist and the materiality of the drawing collapse into one another. Catherine Clément calls this process of desubjectivation, "syncope", or a movement in time and countertime experienced with "rupture" (1994: 236); and Fisher makes the connection between drawing as continuous movement and the free play of endless, incomplete possibilities (2003: 220).

With regard to Regan's drawing discussed briefly above, a particular historical antecedent comes to mind in this respect, namely the late eighteenth-century blot drawings of Alexander Cozens (1717-1786). Rather than urging his students to careful rendering - whether of casts or live models and scenes - through the establishment of classicising contour lines, as was the norm in late eighteenth-century academies (see Boime, 1971: 25); Cozens advocated a 'shortcut' in his now famous A New Method of Assisting the Invention in Drawing Original Compositions of Landscape (1785). In this publication he advocated for the use of splashes and patches of ink and for drawing as "swift", "suggestive", "instantaneous", "accidental" and "casual". (See Cramer 1997: 112-129.) It is with Cozens in mind that Bryson writes that:
"the process leads...first the material signifier, marks on paper [by hand]; then afterwards, the
signifier...the nominal referent." (Bryson, 2003: 153 and see Jansen, 1968: 468 for an example
of Cozens' work.)

It is argued here that in reference to Cozens' ideas, the work by Regan discussed briefly
above function in semiotic terms primarily - but not exclusively - within the "ostension:
sample" axis of Eco's typology. It is thus no surprise that the artist insists (2006: s.p.) on the
'unimportance' of each of the drawings and that she shows as many as possible of them at
any given opportunity: they are samples only and in a sense, the 'detritus' remaining after a
significant affective experience in which the process led the way.

**Replication: vector**

Sol Le Witt's work from the 1970s also refers back to older, historical traditions of drawing
as deployed in sinopie (large preparatory drawings for frescos) in order to lift the drawing
out of the sketchbook or off the page towards a sculptural and architectural scale. Rose has
drawn attention to a number of key issues with regard to Le Witt's work: his use of the diagram
or plan as notational elements of drawing; the merging of the conceptual and corporeal; his
"participatory aesthetics" - as the work had to be performed by others; and the use of the grid as
a covert or "erased' ground on which other ideas could be projected (as sinopia had historically
formed the basis for murals)." (1992: 13) An example (see Leymarie, Monnier & Rose, 1979:
88) of the format of the sinopia is the preparatory drawing for *The Virgin of the Annunciation*
by Ambrogio Lorenzetti (1319-1348). The word 'sinopia' is derived from the city of Sinope in
Asia Minor where a red oxide (haemetite) came from which was mixed with water to create a
wash applied directly to the surface. (89)

More recently, some drawing installations by Margaret Roberts - although not the *Infinity
Line* discussed earlier in another context - work with the same issues - as well as with the red
oxide of sinopie as a material - albeit in different ways.

*Red Check* (see images below) was a project very specifically situated in the Tin Sheds
Gallery in Sydney, which has since been dismantled. This space had been part of the site of
political protests in the 60s and 70s, protests now all but forgotten in the current conservative
climate of that country. Roberts' project worked to revitalise that space, to recall the past life of
that space to remind her audience of what it stood for. At the same time her project problematised
the domination by the scopic image in Western art (as was also the case with *Infinity Line*).

Before her audience arrived on opening night, Roberts had created red checks reminiscent
of the gingham used for country picnics on the floor of the gallery. Her drawings were quite
precise and orderly within a grid. White hand-towells were hung on pegs on the walls. Two
swings were suspended from the rafters. When the audience arrived, this orderly image became
gradually contaminated or activated (depending on one's point of view). Feet walked the red
oxide across the boundaries of the gingham and bodies swinging high in the space created
diagonal movements, sometimes even propelling the participants near the opposite walls
or close towards the rafters; without, however, being able to touch the walls or the rafters.
Footprints on walls were made through audience members putting one foot at a time against the
wall to leave a mark. At the end of the evening and after the opening night, the scene resembled
an abattoir, a space where a blood ritual had taken place, a littered playground or an automatic
drawing. The audience had become participants in playing the piece, sometimes even in wild
abandonment: no distance while looking at artworks on the wall or plinth; no discrete isolation
between art and body; no domination of the haptic desires of the body by the scopic image. The
limitation of the power of the image for the sake of corporeal involvement was - in this case
- aimed at bringing the audience closer to the active involvements of the earlier inhabitants of
that particular space.
Figures 9-12
Margaret Roberts, 2004, Red Check, Tin Sheds Gallery, Sydney, opening night, red iron oxide drawings on floor, handtowels on pegs on the walls, and swings hanging from the rafters; photographs by Chris Fortesque (top and bottom) and middle one by Jan Carter (images courtesy of the artist).
Roberts says:
I like to use real space or found space because it is partly outside my control; it is full of life and anything can happen there. I would like to acknowledge that quality of the spaces I work in. It makes the work a type of experiment - one lays out a work and then brings the world into it and sees what kind of engagement follows. I think that this attempt at engagement is there in other work of mine as well. That is how I think of it when I am making it. I love the notion of incorporating other people's processes, their lives, into the work." (Schmidt, 2006b: s.p.)

Mia Campioni adds that Roberts "forces us to stay with what is there, and not to seek to separate out or distance ourselves from what we can experience directly...Being in it as it were." (1998: 6-7)

The use of the diagram or plan as notational elements of drawing; the merging of the conceptual and corporeal; a "participatory aesthetics"; and the use of the grid as an 'erased' ground on which other ideas or actions could be projected, link this project with the earlier work of Le Witt. In terms of Eco's typology of sign production, such practices seem aligned with the activity of "replication" and the "vector" as one of its ratios.

Eco writes that replication involves combinational units taking on features of (overt) codification through stylisation, examples being rasters, musical types, mathematical signs and macro-ambiential features (such as movement in an architectural space or between items in an archive). (237-245) Contemporary drawing is highly coded in conjunction with a recognition that all representational outcomes are constructed by practitioners and audiences, rather than being merely reflective of objects and events. So confident is contemporary drawing of its replication of code that it can play with the limits of its own language. An example is when Mel Bochner organised an exhibition in the codified space of a New York art gallery in 1966 with the title: "Working Drawings and Other Visible Things on Paper Not Necessarily Meant to be Viewed as Art." Dexter writes: "For this show he borrowed numerous drawings and other works on paper...working drawings, a bill, a mathematician's calculations and a page from Scientific American." (2005: 7) Bochner then photocopied these items and presented them as artworks on plinths. Visitors were left to wonder where the art was and arguably it was in the idea that drawing shares vital characteristics with other modes of learning. Drawing happily embraces other modes of learning and new technologies and often makes them the subject-matter of its own outcomes. An example is where Australian artist Donal Fitzpatrick incorporates the effect of the photocopier in his drawings in such a way that the drawings become a coded archive of a copying process, rather than being reflections through an observational act. (See Schmidt 2006a: 84)

As a ratio of replication, the vector involves "a spatial direction in the written phase and a temporal one in the uttered one... [and] is neither a sign nor a complete expression in itself...but rather a productive feature that, in conjunction with others, contributes to the composition of the expression." (Eco: 241) Roberts' Red Check projects - and Le Witt's drawing performances - work with a material presentation or preparation (a "written phase") which is then followed by a temporal phase when their audience plays or performs corporeally to complete the piece. The work deploys macro-ambiential features through performance within combinational units: geometries within grids and in Le Witt's case, the use of serial systems in all possible permutations in order to create a "syntax for...systematic drawing...on the basis of linguistic description." (Rose 1979: 248.) It is thus argued here that the work by Roberts discussed briefly here function in semiotic terms primarily - but not exclusively - within the "replication: vector" axis of Eco's typology.
Eco discusses a fourth semiotic activity as "invention" - with one of its ratios being the "map" - where he writes: "We may define as invention a mode of production whereby the producer of the sign-function chooses a new material continuum not yet segmented for that purpose and proposes a new way of organizing... in order to map within it the formal pertinent elements] of a content-type." (245) Eco considers the map as a way of translating a non-physical reality into a physical continuum; he acknowledges the conventional nature of the map, while assigning to each mapping exercise - if it is truly a mapping exercise - the invention of something which "is not yet culturally known." (249) The history of geographical maps bear this out, as key moments in this history - e.g. the Ebstorf Map; the Mercator Projection; the Petersen Projection - respectively signalled new and radically different cultural constructions of power relationships through their physical mapping of our planet. In The Power of Maps (1996: 113), Dennis Wood writes about map knowledge as knowledge that does not come to us naturally but through complex and intensive cultural invention.

In terms of drawing practice in the 1970s, the work of Joseph Beuys - where he created his dense mindmaps, tracing ideas and arguments with chalk on blackboard - is relevant here. Bernice Rose writes: "For Beuys drawing was the ideal instrument for conceptualization and therefore for invention and instruction..." (1992: 18); and that his work "placed the body center-stage [with drawings being] extensions of the body in performance." (13) Beuys mapped the connections he made between ideas drawn from history and theory onto blackboards, while an audience was privy to his performance and could debate the ideas generated. Following his lead, many other artists have since deployed the mindmap as a drawing strategy, an example being the work of Scottish artist Blair Cunningham (see figure 13 below).

Figure 13
Blair Cunningham, 2002, Untitled, drawing with silver pen on blue background, approx. 10 x 20 cm (image courtesy of the artist).
There are big differences between the large scale, freely improvised works of Beuys and the small mindmaps created by Cunningham. However, they share the combination of image and text; the use of directional elements to connect fragments and indicate process; and the deployment of graphs to signal entities or moments key to their argument. Where Eco discusses maps, he includes graphs as a sub-ratio through which spatial points display information about a correlation which is not spatial, for example a box standing in for a social theory or for a body of knowledge (257-58). Drawn mindmaps refer to the older, historical format of the treatise, an example being Abraham Bosse’s *Traité despratiques géométrales etperspectives* of 1665 (see Leymarie, Monnier & Rose, 1979: 23, plate 2). On such earlier pages we see combinations of image and text; the use of directional elements to connect fragments and indicate process; and the deployment of graphs to signal entities and moments key to the argument

In our era, the involvement of the artist’s body when creating mindmaps can vary from expansive and performative movements (Beuys) to the meticulous and contained motor action of the hand (Cunningham) to the manipulation of a mouse or keypad when using a mindmapping software programme like "brain" or "inspiration" (see figure 14 below). Again, the materials (or tools) used and the bodies involved are mutually productive; and again, their interfaces align - albeit not exclusively - with a semiotic activity and ratio posited by Eco. In this case with his "invention: map" axis.

![Figure 14](image_url)

**Figure 14**


(Image courtesy of the artist).

**Conclusion**

This article set out to consider how the body of the artist and the specific materialities of contemporary drawing are mutually productive; and to read such productivities to Umberto Eco’s four modes of production: recognition, ostension, replication and invention, each involving corporeality-materiality in different "activities" and each being identifiable through a number of "ratios". When considering contemporary drawing in relation to Eco's typology, his axes of "recognition: imprint; ostension: sample; replication: vector; and invention: map" became relevant. Making connections between drawing and his typology is predicated on an agreement with many current researchers - such as Graeme Sullivan (2005: 129) - that knowing in the
visual arts is a "transcognitive" activity, an activity that involves language, context, modes of signification and the materials and bodies mutually productive in ways particular to an arts practice (such as drawing).

With regard to the various drawing projects discussed, Eco's axes suggest a basis for a semiotics of contemporary drawing, although the author of this article signals in each case that projects are not necessarily exclusively aligned to one axis. (Also see the brief discussion on projects by William Kentridge below.) In working towards its own semiotics over the last fifty years, drawing has, also - at the same time - referred to historical antecedents, while becoming increasingly involved with post-media, interarts performance and immersive environments, as suggested in various ways by some of the works discussed. Such involvements play into the semiotics of drawing (see, for example, Roberts' Red Check).

Projects building on the interdisciplinary aspirations of the 1970s to such an extent that they involve all the semiotic axes identified by Eco, are to be found in the recent work of South African artist William Kentridge. He is currently exhibiting his 7 fragments for Georges Méliès - an early French filmmaker - at the National Gallery of Victoria in Melbourne, Australia; and his Black Box/Chambre Noir at the Deutsche Guggenheim in Berlin.

As has been the case with many of his animations, the work is again the result of drawings made, erased, redrawn and filmed intermittently into sequence through a short walk between drawing board and camera. For these projects the boundaries between the artist’s own body and the drawings are, however, increasingly erased. Jason Smith writes about the Méliès cycle: "...they form an immersive environment...[depicting]...the artist at work in his studio or interacting with one of his signature animated drawings. The main protagonist of Kentridge's films is the artist himself...in the studio as creative laboratory...images and graphic phenomena emerge and disappear before our eyes, as a torn self-portrait of the artist magically reintegrates and morphs into him..." (2006: 6)


For Black Box/Chambre Noir, Kentridge projects images onto a miniature theatre. Within the frame of the theatre, the projections act as an axonometric imprint articulating the architectural space of the stage. Drawing as sample is represented by the artist's use of 'pentimenti' or visible corrections and changes, signalling the contingent status of the drawing within a larger process. Drawing as vector plays into the project through combinational units such as rasters, musical types, mathematical signs and macro-ambiental features (see Eco: (237-245). Combining the conventions of the late nineteenth-century and early twentieth-century panorama; the associations of various musical types of the time; the mathematical bases for a range of mechanised objects as experimented with at that time; and the macro-ambiental features of the playground fair from the era, the artist creates an interarts performance in order to 'awaken' his audience to the 1904 German genocide of the Herero in Southwest Africa (now Namibia). Avoiding the homogenising activities of many anthropologists and ethnographers of that period, he uses the format of the treatise and deploys the map to juxtapose drawing and writing in order to alert us to the specific locations, acts and individuals involved.


A semiotics of contemporary drawing can be grounded in an analysis of particular projects and the ways in which corporealities-materialities are mutually productive in such
instances; while acknowledging that particular projects can move across typologies of sign production (such as posited by Eco in the same decade when drawing embarked on a quest for its own parameters). Such a semiotics can gain by considering contemporary drawing as both a distinctive practice operating on a range of axes of signification and as an interarts activity which implicates the methodologies of other materialities (and thus of other registers of embodiment). Working towards such a semiotics seems indicated as contemporary drawing - precisely due to its interdisciplinary tendencies - is an unstable field of operations, which can benefit from close analysis of its methodologies and functions (rather than from any fixed definition). However, exactly because it is an unstable field of operations, it seems to be in perpetual excess of the systems of sign production - including that posed by Eco - which can assist as markers or tools for its close analysis.

This article has briefly explored particular projects in terms of Eco’s axes of signification and in relation to the interface between corporeality-materiality. Other connections between drawing strategies and semiotic production have been suggested by many drawing researchers, for example by Catharine de Zegher and others in *The Stage of Drawing* (2003). A comprehensive semiotics for drawing is, however, still in the making and - in a bow to the processual and contingent nature of much of contemporary drawing since the 1970s - the author of this article hopes that such a project will have due regard for its continued and productive *incompleteness* and *excess*, which partly defy the very semiotic systems which can be used as tools for its analysis.

**Works cited**


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