

# Lines in Practice: Thinking Architectural Representation Through Feminist Critiques of Geometry

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*To design, negotiate, quantify, legislate and produce buildings, architecture uses a highly codified system of drawing that is based in Cartesian geometry. The work of three feminists, Donna Haraway, Julia Kristeva and Luce Irigaray uncovers problems and limits of geometry and raises questions for its unchallenged use within the architectural discipline. The work suggests figurations—imaginaries for change—that might be productive for critical architectural ‘representations’. How have artists and architects disrupted linear conventions, and what implications might these challenges have not only for how architecture is represented but how it is practiced?*

**Keywords:** Architectural representation, architectural practice, geometry, feminism, Donna Haraway, Julia Kristeva, Luce Irigaray.

*(I sit alone at my drawing board, trying to design a building. There are memories of smells, the echoes between walls, textures in my fingertips; raised voices arguing their case, quiet gestures of resistance, faces lit in anticipation of possibilities. But my pencil can only draw the lines of habit. Lines, more lines, on white, until the configuration resembles other drawings of buildings I have seen. It is ready to be built, but all I see are the omissions—no history, no location, no corporeality, no contestation—between the geometries. Can there be another place to begin?)*

It is by now well understood that architects work not with the building itself, but with the drawing. And in negotiations with clients, consultants, quantity surveyors, statutory bodies and the public, the architectural drawing is the predominant vehicle for discussion. The site analysis, the configuration of the building in plans and sections, its elevation and surrounding context, the detailed drawings of construction are all represented through the conventions of orthography. This system has become, at least in the West today, ‘an instrument that appears to be a neutral and universal medium for architectural design’ (Robbins, 94:47).

Like any representational system, the orthographic drawing cannot faithfully translate its object. It emphasizes the geometric qualities of the building-to-be as it appears in ideal Cartesian space, rather than, say, the corporeal. But because, like the music score or film script, architectural representation precedes its object, it is also prescriptive. The drawing both determines and limits the possibilities of the

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building, and suggests what is 'proper' to the design discipline. As Robin Evans writes, the drawing 'is not so much produced by reflection of the reality outside the drawing, as *productive* of a reality that will end up outside the drawing' (Evans, 1997:165). The architectural drawing and the geometric lines it uses, need then to be thought in terms of their role in practice.

The role of the geometric design drawing has developed historically. Its importance grew during the Renaissance as part of architecture's affiliation with the ideal sciences. The orthographic system was only fully consolidated during architecture's professionalization following the French Revolution (Pérez-Gómez, 1983). Edward Robbins has suggested that, 'the drawing hides its own historical specificity and the social construction of its 'essential' nature and place in architectural practice' (Robbins, 1994:47). For Robbins, it is simply the ubiquity of the drawing in the architectural process, that hides its specificity and makes alternative ways of working rare, but it seems to me that the particular use of geometry, itself the paradigm of the possibility of universal and neutral truth, may operate in this hiding, and contribute to our blindness of the drawing's contingency.

Carol Burns, applying ideas from cartography, suggests how the site plan hides its politicality although, like the map, it is supposed to be an objective analysis of a territory. For Burns, the real political issues that may be at stake can be covered up by geometric representations and silenced during the design process. Because the site is posited as 'a neutral mathematical object' the mode of representation 'fosters the impression that the land and the space are independent of political motive' (Burns, 1991:149). If we consider that since Descartes privileged the geometric method as a means of ascertaining truth, and used the ideal line as a model for his disembodied thinking subject, geometry has been the foundation for objective truth, then geometric representations could indeed have special neutralizing authority.

Maps and site plans represent what already exists (as well as constructing reality to some extent, see King, 1996). But the question of geometry's role in representation becomes more complex, when we consider design drawings that *only precede* their object. Although architects do sometimes imagine 'real' buildings when they draw, they also conceive buildings through, and sometimes only in reference to, the ideal lines of geometry. What might be the political implications and operations of *generative* geometric representation?

## FEMINIST CRITIQUES OF GEOMETRY

I explore this question through feminist critiques that provide important critiques of Cartesianism and 'figurations'—tactics and imaginaries for change. Each section starts with a theoretical approach to geometry that uncovers some of its omissions and repressions. Each approach offers a figuration, which is explored through examples of alternative representations and the repercussions of their use for architectural practice. When the ubiquity of the geometric drawing is challenged some of the political operations it hides are exposed.

Catherine Ingraham's work on the relation of architectural drawing to the ideal lines of geometry has been very influential. By asking what is improper to the discipline (sexuality, materiality, matter, irrationality, ambiguity, the female body etc.), Ingraham's work is particularly productive territory for a feminist inquiry. Following Derrida's work on written and spoken language (Derrida, 1976), Ingraham looks at a series of relationships in the architectural discipline that constitute its 'linearity'. These are the geometric lines themselves, the boundaries they form between oppositions (this/not that), and the belief in the possibility of an unmediated translation between drawing and building (this *maps onto* that). Together these form the 'burden of linearity' that constructs what is 'proper' to architecture and 'is a source of power'. Through readings of Derrida (1976; 1989) Husserl (1989) and Lacan (1997), she questions the ideality, universality and the Cartesian subjectivity at work in the tightly tangled knot of linearity (Ingraham, 1991; 1998).

But Ingraham does not explore feminist critiques of geometry and she is rarely explicit about her position. When asked to consider her theoretical practice as a woman, she suggests for example that 'women are on the surface of architecture. They are nothing to architecture', echoing the Lacanian model of the feminine as mirror or lack. Later it is Derrida's version of the feminine as other that appears when she writes that 'women, like writing, are always in an already fallen position with respect to architecture' (Ingraham, 1996:156–157). Ingraham's compliance with these models that define woman or the feminine only in terms of the masculine is frustrating, given that feminism has offered a range of alternatives. So I want here to examine the work of three quite different feminist theorists, who each offer a critical account of geometry.

Donna Haraway's work in science studies is informed by a feminist critique of objectivity, that owes something to the history of the women's movement and its discovery that any definition of 'woman' was partial and would exclude some women—the 'true' definition was only a sign of power relations. Haraway's account of 'spatialization', the Cartesian grid thrown over the world, suggests that even the ideal sciences such as geometry are social. She proposes an alternative to the objective viewpoint, the 'modest witness' who is aware of the contingency of any position she occupies.

I turn to Julia Kristeva's writing on geometry and the semiotic in painting to ask how representations might avoid spatialization. Kristeva is not always considered a feminist, but with Kelly Oliver, I understand Kristeva's work as outlining ways to unsettle the conflation of the maternal body (that we must all abject to become subjects), with the 'maternal container' (woman)—a conflation that results in the hatred and oppression of women (Oliver, 1994:6). Kristeva's account of color in painting (as opposed to line) suggests the need for representations that engage the subject, rather than producing closure. For architecture, that always negotiates between many subjectivities, her insight is particularly pertinent.

Luce Irigaray's work on geometry goes further in investigating the ways that geometry precludes relationality, and reinforces the dominance of singularity within

our culture, the singularity that is masculine and denies a space for the feminine. Irigaray calls for an ethics that could embrace two, and suggests how sexual difference and relationality are denied within mathematicized codes.

The feminisms and the disciplines of these three are diverse. But architecture is a complex hybrid that demands an interdisciplinary approach. In the intersections between their work on geometry and architectural practice, I hope to find other questions and places to begin.

## GEOMETRY AND OBJECTIVITY: HARAWAY ON SPATIALIZATION

*(Descartes sits alone in a stove-heated room, trying to shut out all else but that which will appear indubitably true in his mind. There is, for him, already a method that is certain; the reasonings of the geometers. But their chains require a starting point. Descartes thinks... It seems to him that there are no objects simpler, none 'more distinctly representable in imagination and sensation' than the relations between straight lines.)*

For Descartes, it is both the ideality of geometric lines and the method of geometry that allow him to ascertain an objective truth that can exist outside place, history and subjectivity. Furthermore, his substitution of the geometric line with the algebraic equation enables all things that can be represented by letter (stars, bodies, wind, time) to be submitted to the laws of geometric relation. The method, objects, and relations of geometry become the paradigm for science (Descartes, 1954; 1968).

As a goal and as a possibility for knowledge, objectivity has been extensively questioned by feminist critics (Harding, 1986; Flax, 1991; 1993) who point out that no knowledge can be neutral. The 'narratives of objectivity' (such as the geometric representation of the world) 'have a magical power—they lose all trace of their histories as stories, as products of partisan projects, as contestable representations, or as constructed documents in their potent capacity to define the facts' (Haraway, 1997:24). Descartes, of course, appealed to geometry for this very quality—and there is not enough space here to discuss how objectivity or universality of geometry is itself open to question. More important to feminist critics of science are the uses of 'the narratives of objectivity' and the subjectivities and contestations they deny.

Haraway insists that mathematics is no less a situated knowledge than any other, and is put to political use in a process she calls spatialization (following Turnbull and Watson, 1993). Through spatialization, knowledge is presented as value and metaphor free. She describes Watson's example of the spatializing of Aboriginal land through the Cartesian techniques of western map-making. The lines of the map omit the layers of indigenous meaning and inhabitation and have an objective authority that renders the political forces at work invisible, and presents the process of land appropriation as neutral and uncontested (Haraway, 1997). Haraway does

not suggest that all linear renderings spatialize, but the architectural drawing also lends itself particularly well to denoting property and quantity, through its emphasis on line and dimension. Within the fixity and objective status of the drawing there is little place for partiality and contestation.

Robbins has pointed out the voices of people involved in the process, both financiers, designers and builders and those who will inhabit the building or be excluded from it, all disappear in the unifying lines of the drawing. He suggests that the drawing enables a split from tectonic questions and devalues the labor and knowledge of the builder (Robbins, 1994). Similarly, sites and materials can be drawn with no understanding of their political and economic contexts. Since these drawings constitute the building for most of the architectural process, and are the tools for architectural conceiving, the absences and denials within them are significant. They can easily become altogether overlooked within architectural thinking. Architecture is not only represented, but also conceived through 'spatialization' and its denials.

#### **LINE OF CONTINGENCY: THE DRAWING AS MODEST WITNESS**

Haraway offers a way of resisting spatializing practice. In her inquiry into technoscience she adopts the figure of 'modest-witness' who reviews the facts not as the traditional (male) observer of science but is a 'a more corporeal, inflected, and optically dense... kind of witness. The modest witness is no mirror of reality, but is visible and present in the telling of the stories of science' (Haraway, 1997:24). She remembers to tell 'the dreams and achievements of contingent freedoms, situated knowledges' and is 'suspicious, implicated, knowing, ignorant, worried and hopeful' (Haraway, 1997:3).

Could the architectural drawing become a 'modest witness' to the building and the parties, sites and stories involved in its making and inhabitation? The drawing might move from its supposed status as a mirror or blueprint for reality by undermining the sedimented codes that construct its authoritative status. Rather than tell one 'true' story of consensus, it might remember and acknowledge multiple, even contradictory versions of reality.

Artist Kathy Prendergast reworks maps and takes out information such as labels, context or manmade structures, so that the arbitrary and abstract nature of cartographic codes becomes visible and our attention is drawn to their contingency (McKee, 1999). Prendergast's drawings expose spatializing conventions, but part of the difficulty with adopting Haraway's notion of the 'modest witness' for the architectural drawing arises because it is a figuration particularly suited to analysis rather than construction (just as Haraway's own work may provide a feminist analysis, say of experimental procedures, without putting forward a feminist method of experimentation). Nevertheless, a 'modest' form of witnessing in the early stages of the architectural process might both make codes visible, and allow issues that are usually ignored, to materialize in the finished object.

In Sarah Wigglesworth's project for her own house/office the kitchen table took on significance because it was the place where the domestic and the professional came together. Using the architectural plan, Wigglesworth produced a series of critical drawings that followed the table setting from its proper and ordered layout at the start of a dinner party to its eventual chaos (Wigglesworth and Till, 1998). Through a miming process, the drawings revealed the everyday that is omitted in the ideal order of most architectural representations (see Figure 1). The drawings were translated into the design plan of the home/office so that the disposition of elements avoided following a functional logic.

The practice Muf (partners are Liza Fior, Juliet Bidgood and Katherine Clarke) produced an equally interesting 'first drawing' for their project for improvements to Southwark Street—a long neglected street that now brings visitors to the newly opened Tate Modern (see Figure 2). This standard isometric employs a series of dotted lines to describe 'the territory for negotiation across the boundaries of ownership and responsibility between', Muf explain, 'ourselves, the official and unofficial client, the building owners, the designers of adjacent projects, the highways department'. It investigates not only the built boundaries that appear on the site, and the official property lines, but also the territorial exclusions and ambiguities that occur between multiple groups and site 'occupiers', and Muf write, 'aims to make space for other knowledge to influence the design process, for example the expertise that comes with living somewhere for twenty years or being aged five' (Muf, 1998:128–129).

The inclusion of multiple knowledges in Muf's analysis appears also to have influenced the design process, particularly in their continuing interest in territorial negotiation. Part of their proposal included the 'borrowing' of an office car park for evening football by marking out the lines of the pitch, unfortunately unrealized despite lengthy negotiations. Materially, the ambiguity of the territories marked out by the dotted lines was realized in the continuous folding of road and pavement surface, that is intended to allow pedestrian appropriation of the ground at the mouth of a small side-street and is a reminder of the nearby beach of the Thames.

'Modest witnessing' could subvert the 'strong objectivity' of the more analytical drawings that are produced in the early stages of the design process. Because of the nature of architectural design, these drawings often become productive, in as much as they provide demarcations and reminders that are often utilized in the solution. However, the examples given here do not move away from the geometric conventions of orthographic drawing or challenge the use of Cartesian drawing as the only mode to conceive the building.

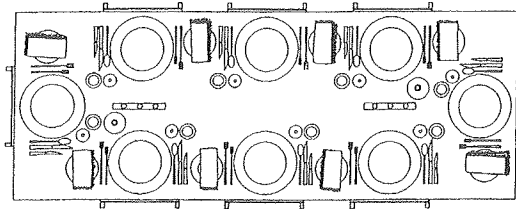
## GEOMETRY AND IDEALITY: KRISTEVA AND THE SEMIOTIC

*(Descartes sits alone in a stove-heated room, trying to shut out all else but that which will appear indubitably true in his mind. He feigns that he has no body, that*

Figure 1: Sarah Wigglesworth. Dining Table drawing series for the Straw Bale House. Courtesy of Sarah Wigglesworth Architects. The 'architectural' order of the dining table is transformed through use. The representation of the disordered plane transforms into the plan for the new house.

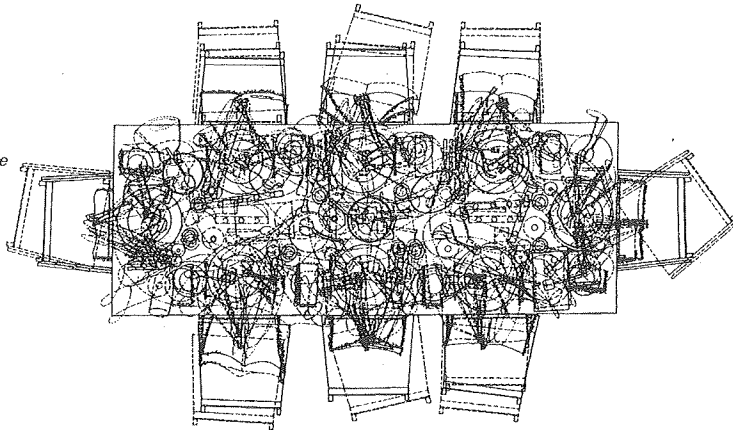
**The Lay of the Table**

An architectural ordering  
of place, status and  
function  
A frozen moment of  
perfection.



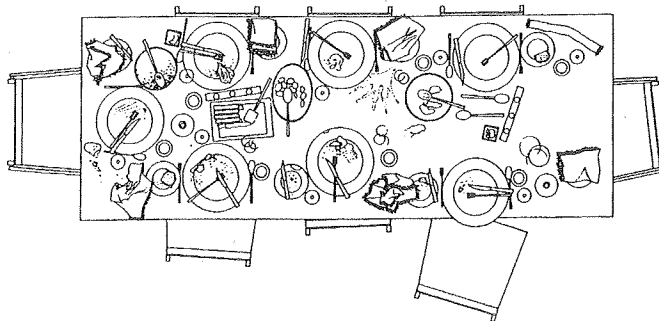
**The Meal**

Use begins to undermine  
the apparent stability of  
the (architectural) order  
Traces of occupation  
in time  
The recognition of life's  
disorder.



**The Trace**

The dirty tablecloth,  
witness of disorder  
Between space and time  
The palimpsest.



**The Lay of the Plan**

Recognition of an/other  
system of order  
Domestic clutter filling the  
plan(e).

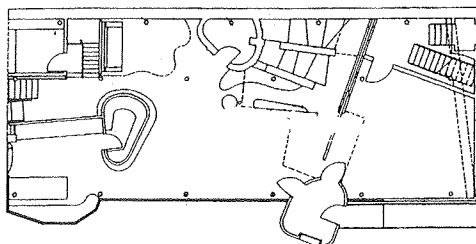
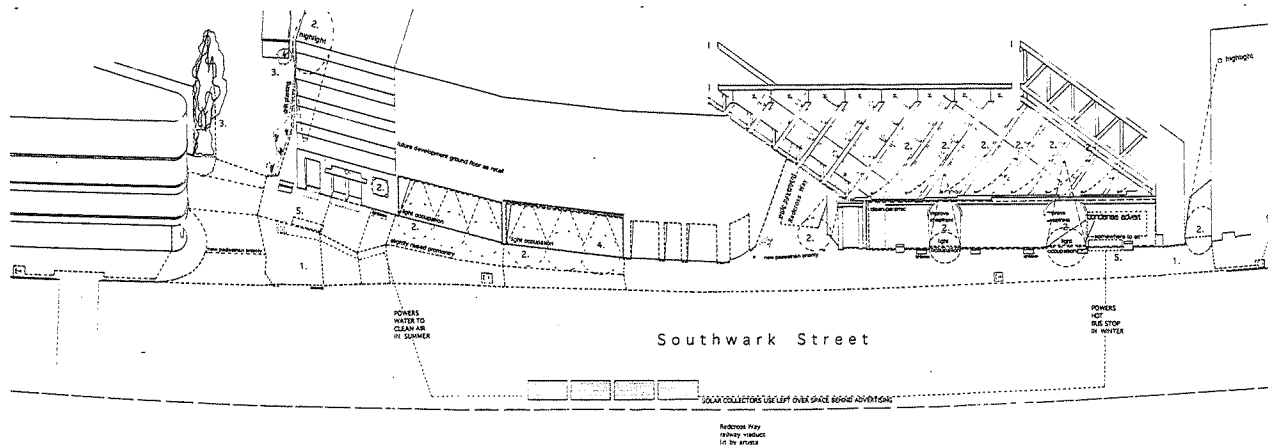


Figure 2: Muf Architecture/Art. Territorial drawing for Southwark Street. Courtesy of Muf Architecture/Art. Dotted lines register potential territories of negotiation.





*there is no world and that no place exists for him to be in. For these things are doubtful. But it is his thinking self, like the ideal line, that is immaterial and certain.)*

The line is indubitable in as much as it is geometrically defined as extension without breadth and is therefore not open to the uncertainty of the material world. It does not change whether awake or dreaming, nor according to one's beliefs, nor according to time and place. As Claudia Brodsky Lacour describes it:

'Descartes' architectonic line, however, is a specifically one-dimensional construct without plastic reality. It does not illustrate the forms of nature, but...it translates thought onto an empty surface. It reiterates nothing and represents no pre-existing process, but commits an unprecedented form to being (Brodsky Lacour, 1996:7).

In Descartes' work the line becomes the figure through which his thought of ideality can be understood and communicated. The surface that receives the line becomes an abstracted emptiness that is no less ideal. Once drawn the line acquires a materiality that leaves it susceptible to erasure—it is already fallen and open to doubt.

For Kristeva, in her work on painting, geometry remains a code that tends towards the univocity of the symbolic law, because of the near-invisibility of the semiotic. As in language, the bodily logic of meaning (the tones of voice, its rhythm and cadences) can threaten the stability of symbolic meaning and our sense of bounded subjectivity. To reveal the semiotic, as in poetic language that uses repetition, assonance and nonsense sound, is also to recall the ambiguous relationship with the maternal body that we repress at our peril (Kristeva, 1984a).

Kristeva describes how no image is present in the 'pulverized' non-linear texture of Jackson Pollock's *Milky Way*:

Images are suspended, symbols avoided. And nor is the resultant *space* a symbolic space; it does not depend upon geometry or on geometric forms which derive, as has been said so often, from the articulations of human *speech*. Pollock's space is infra- and supra- formal, infra- and supra- linguistic, infra- and supra- symbolic. I call it semiotic (Kristeva, 1992:36).

Pollock's painting has a structure, a rhythm, spatiality and meaning that is in excess of the symbolic. These modes of representation are, like the 'materiality' of the voice in spoken language, always present but are only made transparent in some paintings.

Descartes' ideal line, then, might be seen as indicative of a longing for the symbolic, a line that must withstand the threat of the semiotic through the emptying of its materiality. Why do architectural drawings copy the ideal lines of geometry and not

the messy substantiality of the buildings they represent? Is there, perhaps, a similar longing at work in the use of these ideal lines that are reduced only to a trace of light in the virtual space of the computer? If, as Kristeva insists, we need to challenge the denial of the semiotic within our culture, rather than abject the threat the maternal body poses to the stability of the symbolic, in order to free women, then how might the semiotic mode (always already there but tending towards invisibility in the ideal lines of the geometric drawing) be revealed in the architectural drawing?

### CROSSING INTO THE LINE: DRAWING IN THE SEMIOTIC

Ingraham has described linearity as 'the 'line' of passage and division, the 'threshold' or boundary condition'. She goes on to note that 'we generally cross over rather than into the line itself' (Ingraham, 1991:66). In Kristeva's terms crossing *over* the line suggests the acceptance of its symbolic mode, while crossing *into* the line suggests the confrontation with the de stabilizing semiotic.

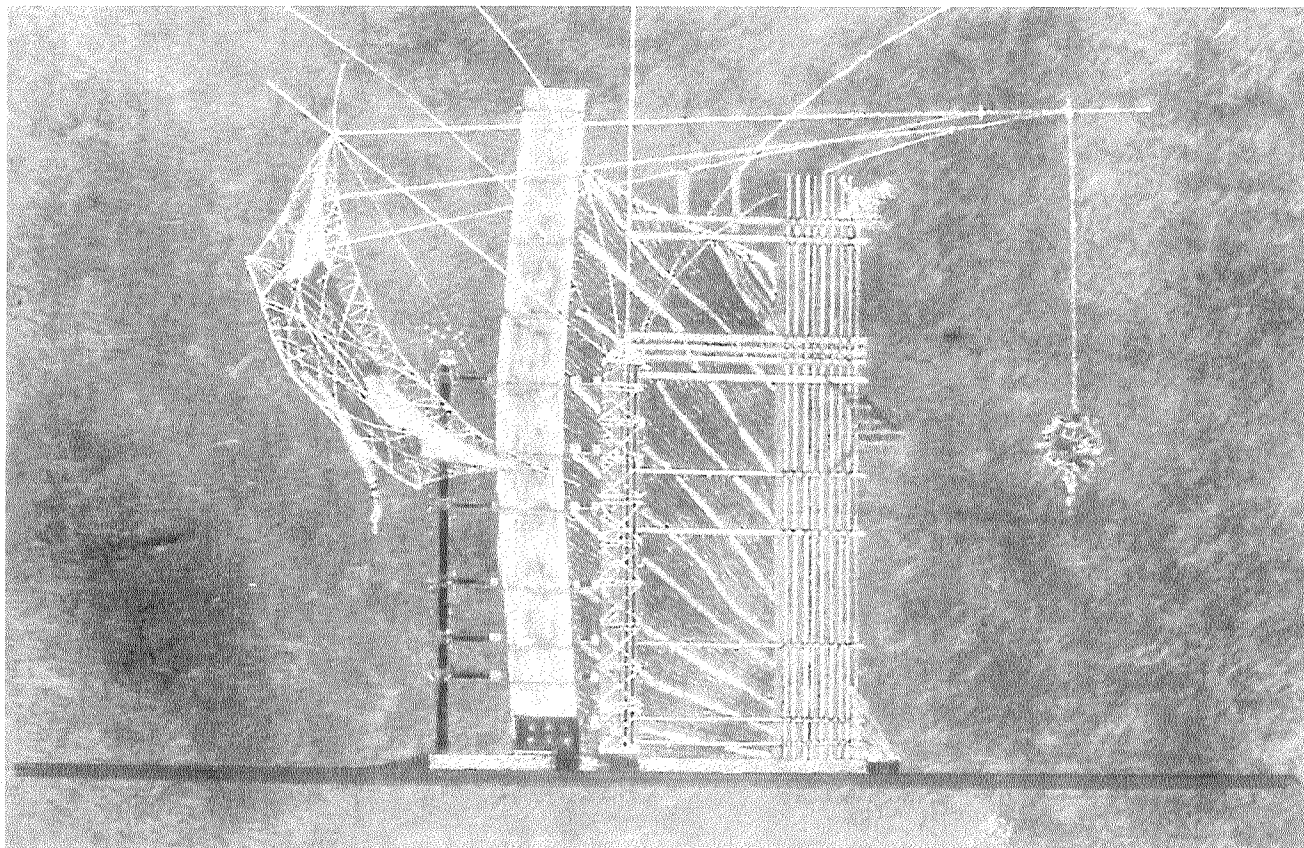
Ingraham takes an ordinance survey map and enlarges it until its lines become porous fleshy substance; their materiality is emphasized, so that they can no longer be read as codes or simple boundaries. Like the painterly lines of Willem de Kooning and Helen Frankenthaler, these lines are both volume and border, or caught between both; symbolic and visibly semiotic.

For the artist Bracha Lichtenberg Ettinger, 'a line produces a meaning and its breakdown' (Lichtenberg Ettinger, 1993:65). Her paintings explore the semiotic space of the 'Matrix' where there are 'relations-without-relating on the borderspaces of presence and absence, subject and object, me and the stranger' (cited in Pollock, 1995:130). She photocopies documents, paints or traces over the fragile ink of the copy, producing images where 'photos become abstract zones of light, shadow, opacity, transparency...The truth-value attributed to the document is infused with doubt and the idea of a precise thing collapses. Multiple possibilities open up' (Lichtenberg Ettinger, 1993:22).

Kristeva's attention to the semiotic has been very influential for artists such as Lichtenberg Ettinger and for critics interested in recovering the maternal body (Betterton, 1996; Pollock, 1996). It is harder to imagine how drawing in the semiotic could operate within architectural practice even if architects might long to realize the indeterminacy of Lichtenberg Ettinger's images. The architect Christine Hawley, for example, has described how she is 'increasingly irritated by diagrammatic objects, by geometric or analytical self-satisfaction' and longs instead for the ambiguous or dematerialized boundary, and the possibility of 'ambivalent space.' She asks how material ambiguity can be investigated in a drawing that is dependent on line (Hawley, 1996:167).

Jennifer Bloomer was also interested in conveying materiality and tactile qualities in the 'dirty drawings' she produced with organic inks on rough paper (Figure 3). The crafted constructions described were built, but the nature of the drawings made

Figure 3: Jennifer Bloomer. Dirty drawing: elevation for 'Tabbles of Bower'. Courtesy of Jennifer Bloomer. The metallic inks and natural paper used emphasize the material qualities of the construction, rather than its geometries and dimensions.



accurate dimensioning impossible, and allowed the making process to be open to interpretation (Bloomer, 1992).

If ambiguous methods of representation are utilized within architecture, albeit partially as Kristeva has described, they will, like Bloomer's dirty drawings, demand a different process of realization. 'Crossing into the line' is a tactic that requires a different engagement with clients, consultants, statutory bodies, and builders. Aspects of the building could not be put forward as a *fait accompli*, but would demand negotiation and active involvement; not objectivity but inter-subjectivity.

#### GEOMETRY AND THE UNIVERSAL: IRIGARAY AND SEXUAL DIFFERENCE

*(Descartes sits alone in a stove-heated room, trying to shut out all else but that which will appear indubitably true in his mind. Quite alone. Reforming his own thoughts. Trying to build on a foundation which is wholly his own. He will describe his solitary meditations in his book 'Discourse on the Method of Properly Conducting One's Reason and of Seeking the Truth in Sciences'. A strange discourse—this 'discourse of one'.)*

For Descartes his thought can only be valid if it relies on nothing outside him, yet at the same time it must be universally true for all people, at all times and in all places. How then, can the ideal be communicated? Husserl recognized this problem and resorted to the idea of a shared co-consciousness necessary both to the possibility of language and the conception of the ideal (Husserl, 1989). According to Brodsky Lacour it is the already fallen figure of the drawn line that enables Descartes to escape his 'discourse of one' and communicate his thinking (Brodsky Lacour, 1996:72).

Descartes both needs the drawn line and suppresses its materiality, just as he has cast out the external world, history and his body. Geometry too, as Michel Serres has shown, casts out its own internal irrationalities (Serres, 1982). Ingraham describes how 'geometry must perpetually be won away... from animality, irrationality, impropriety, disease and death' (Ingraham, 1998:85). For Luce Irigaray, it is sexual difference that is expelled from 'the discourse of one'.

Irigaray questions the Cartesian claim that 'truth and scientific laws are *neutral* and *universal*', and that 'the subject who enunciates the law is... irrelevant, bodiless, morphologically undetermined' (Irigaray, 1993a:133). Her project calls for a reinterpretation of everything in terms of the relations between two, 'beginning with the way in which the subject has always been written in the masculine form, as *man*, even when it claimed to be universal or neutral' (Irigaray, 1993a:6). Descartes' discourse of one might then be seen not as neutral but as leaving no place for the feminine.

In Irigaray's re-reading of Aristotle she explores the question of place, suggesting that woman is seen as place; place for the man and for the child. But she asks, where

is woman's place—'the nest in her for her' (Irigaray, 1993a:35)? Rather than think in terms of place *and* interval (that could be woman's place) man prefers to think of his place, and the realm of ideas and numbers that are situated in no place 'even though they must borrow 'matter' from place if they are to exist' (Irigaray, 1993a:38). Geometry is part of man's holding out against the 'interval', his refusal of a place for her. Interval, fluid, breath, mucous become figurations for the place of relationality in Irigaray's writing. And it is 'mucous that has been taken out of numbers' (Irigaray, 1993a:110). Geometry 'must be perpetually won away' from the non-ideal in man's refusal of a place for woman.

In Irigaray's radical philosophy relationality can only be founded within an imaginary that makes a place for both masculine *and* feminine. Geometry works to deny the possibility of two that her project demands. Rather than concentrate on how the 'discourse of one' that values ideality leaves no place for woman, I want to explore how geometry in architectural representation might preclude relationality.

## LINES IN CONVERSATION: DRAWING WITH COLOR

Both Irigaray and Kristeva have suggested that color operates differently to geometry. For Kristeva color can be at once culturally endowed with symbolic meaning and at the same time operate beyond the symbolic, in the semiotic where it destroys 'unique normative meaning... in order to have the subject come through' (Kristeva, 1984b:221). Confronted with color (in Giotto's painting) the subject must cling to the symbolic to hold the unity of the self together, but cannot withstand the force of the semiotic:

Color is the shattering of unity. Thus it is through color—colors—that the subject escapes its alienation within a code (representational, ideological, symbolic and so forth) that it, as a conscious subject accepts (Kristeva, 1984b:221).

For Irigaray, color also 'constitutes a given that escapes from the subjective realm' and acts as a reminder of the 'fluid' or prenatal experience; the 'pre-conceptual, pre-objective, pre-subjective'. Color can only be seen in contrast with other colors (Irigaray, 1993a:156–8)—it can only be understood relationally.

Architects draw with color but rarely does it exceed the linearity of the representation. Will Alsop's paintings are an exception. In them, indeterminate blocks of strong color that vie with each other overwhelm the building's sparse delineation (Figure 4). Paints drip and bleed into each other. What is most interesting however, is the role they play in what Alsop calls 'designing a conversation' (Alsop, 1993:15).

Alsop began to use these paintings after a competition deadline forced him to produce a series of images in a short period of time. He discovered that they encouraged conversation and that 'there was room for contribution from the person, the user, the client', that allowed the conversation to lead somewhere outside his

Figure 4: William Alsop. Painting for Hotel du departement. Photograph: Roderick Coyne, courtesy of Alsop & Störmer. The building's form and proportions are visible through color and paint, and lines are almost absent.

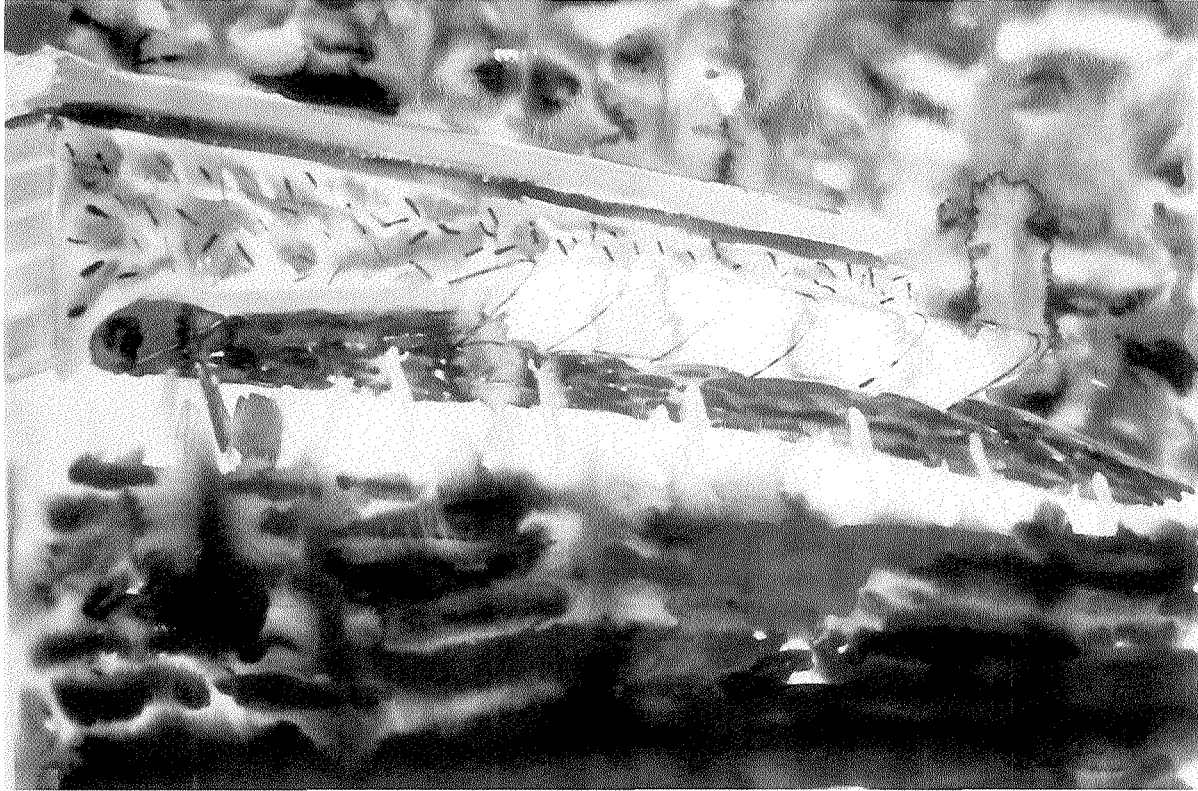
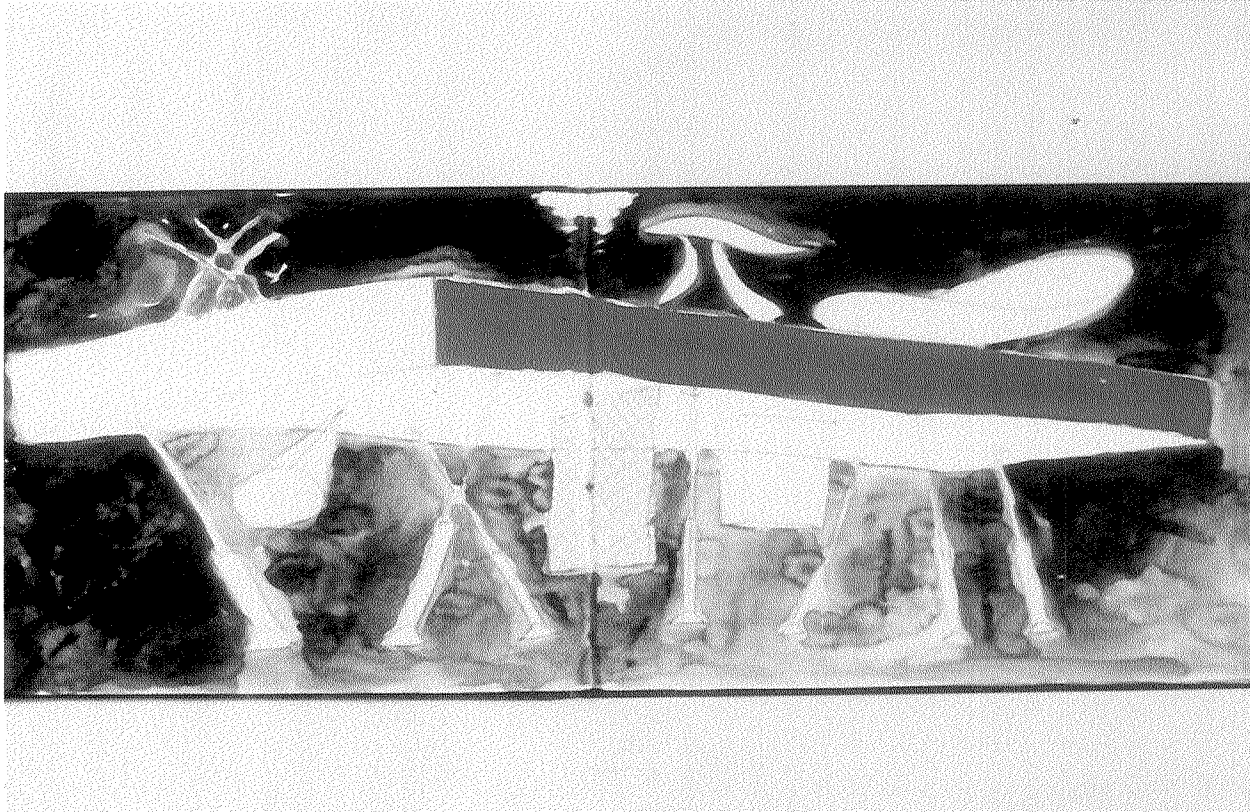


Figure 5: William Alsop. Painting for C/plex. Photograph: Roderick Coyne, courtesy of Alsop & Störmer. At the time this unusually graphic painting was produced the functions contained in the suspended forms had not been specified.





own creative input (Alsop, 2000). The paintings have now become an integral part of the office's design process, used in discussions with all parties involved, including consultants. And as the practice gains a reputation for 'new-style community architecture' communities also participate in the making of drawings particularly by using PhotoShop.

In a current project in West Bromwich, C/plex for community arts practice Jubilee Arts, Alsop's paintings are on display and visitors' conversations revolve around possible ways of inhabiting the spaces, and creative speculations about the building's use (Figure 5). According to Brendan Jackson of Jubilee Arts, the paintings are a more effective form of communication than 'coded' orthographic drawings that are difficult to decipher, surprising given that Alsop's paintings are quite abstracted (Jackson, 2000). Alsop says that the orthographic drawing appears fixed and precisely worked out. It has an authority that makes 'people feel threatened' (Alsop, 2000). Resisting orthographic drawing both frees the design from a set of pre-existing principles and appears to open up conversation.

Kristeva has suggested that Giotto used color to create the impression of volume 'without recourse to geometric determination'. His use of color avoids the 'identification of objects' and instead triggers 'the instinctual and signifying resources of the speaking subject'. In other words, the painting 'reaches completion *within the viewer*' (Kristeva, 1984b:231).

A similar 'completion' may be engendered by Alsop's use of color. The paintings resist the closed use of a symbolic code, and instead engage the viewer in an active process of constructing meanings. Within the movement between bodily code and cultural code a space is held open for subjectivity.

## LINES IN PRACTICE

Alsop's painting practice suggests that alternatives to orthographic drawing might indeed open up the possibility of relationality in architectural representation, but Irigaray suggests that color might also allow the expression of sexual difference. In 'Flesh Colors' she makes a plea for the use of color (and sound) in psychoanalytic therapy, that might allow for the qualities of 'flesh, gender and genealogy' denied in 'non-figurative writing, arbitrary forms and formal codes' (Irigaray, 1993b:160). Language, as the dominant form of expressing meaning in psychoanalysis, precludes sexual difference, and in order to encompass it other modes of expression that avoid bi-polar oppositions, such as color and sound, are needed.

Each of the examples I have described also shift the mode of representation. The drawings that act as 'modest witness' only begin to destabilize the fixity of the orthographic drawing. Wigglesworth needs not one drawing, but a series to describe the table (see Figure 1). Muf use the nuances of the dotted line to articulate the ambiguities of territory (Figure 2). Lichtenberg Ettinger's matrixial drawings 'cross into the line', infusing images with doubt so that 'multiple possibilities open up'.



Bloomer's dirty drawings disrupt the precision of conventional orthography and demand a less closed interpretation of the way they are to be built (Figure 3). Alsop's paintings use color to avoid determination and design instead 'a conversation' that makes a space for the desires and contestations of the participants in the architectural process (Figures 4 and 5).

It appears that subtle shifts in the mode of representation challenge the omissions and denials of the geometric drawing, and make space for the partiality, semiotic, and relationality that these three diverse feminisms call for. The examples given are not direct demonstrations of these theoretical approaches—as critical practices they are productively read through them and their overlaps.

Most interestingly they also affect the way that architecture is practiced. For Muf, the territorial drawing requires acknowledgment of multiple understandings of the site, and produces a project where negotiation remains key. Their talking heads video '100 Desires for Southwark Street' recorded the aspirations and experiences of professionals, local residents and workers (see Figure 6). It constructed 'the first site for a shared ground' (Muf, 1998:127) and far exceeded the normal process of architectural consultation. For Alsop and Störmer, the central use of painting requires 'friends'—consultants, clients, statutory and funding bodies—who are sympathetic to working in a fluid non-linear manner.

More radical experiments with modes of representation that avoid a reliance on univocal Cartesian geometry might move away from the drawing altogether, and challenge the conventions of architectural practice still further. Doris Lessing's description of her childhood home is a piece of prose that can also be read as a working drawing. She details the manner of the house's construction, the materials used and their origins, but also the makers—people and animals—involved in the making. Smells, touch, her ambiguous relation with the house, the traces of its making, the stains and changes over the years are all present in the many layered text (Lessing, 1968). Muf's video work might also be seen as a 'drawing'. Perhaps voices, sounds, gestures can also describe a building.

The feminist critiques of geometry that I have touched on here each look at geometry within specific practices; Haraway is concerned with the way geometry constructs the appearance of objectivity in science, Kristeva identifies the ways it may exclude the semiotic in painting, and Irigaray compares it to the use of language in psychoanalysis that denies sexual difference. The geometric codes of the orthographic drawing are also lines in a specific practice. In thinking them through these critiques, we might pause to consider these 'lines of habit' and find new places to begin conceiving architecture, that can lead to reconceivings of the highly determined process by which architecture is designed, realized and practiced.

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Figure 6: Muf Architecture/Art. Stills from the video '100 Desires for Southwark Street'. Courtesy of Muf Architecture/Art. 'What is your wildest dream scenario?'



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