TRANSLATION

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The Return of Anamorphism: the Digital Oblique

The proliferation of contemporary digital viewing technologies has the potential to loosen the political order that determines whose view the orientation of architectural form should address. The immersive and adaptable aspect of the three-dimensional digital image, and the affordability of image production and dissemination technologies have two important consequences. These changed circumstances increase who can construct the image and how the image arrests bodily movement. The ensuing proliferation of these new formal vantage points is far more radical than seen in the processes used in many existing digital design practices. This is because these vantage points complicate the formal authority of the single static viewing point and, therefore, the projective logics of linear perspective. The digital image does more than flatten the formal logic of linear perspective. It releases the delineation of form from the tyranny of line and transfers it to the pixel. This has important consequences because, of the various perspective schemas available, the pixel has the greatest affinity to the perceptual logics of atmospheric perspective. Like the use of anamorphic projection in the Renaissance, current digital technologies can disrupt the geometric visual order of linear perspective and contest its claim for experiential truthfulness.

The paper will argue that digital technologies initiate a new set of relationships between drawing technique, geometric ideation, context, perception and form. This paper explores how perspective, presented as a 'factual', 'natural' presentation of the real, sublimates the signifying, representational capacity of the image by acting as if it were simply a faithful index of architectural form. In reference to the use of anamorphism in the centuries following Brunelleschi's 1425 demonstration of linear perspective, the paper discusses how the protocols of the digital image reintroduce the interpretive play of anamorphism, where the nexus between the sanctioned and illicit contests the idea of 'good' geometric form.

Introduction

Linear perspective marks a fixed point perpendicular to the picture plane where all the projective lines in the drawing originate. Providing a monocular representation of the observer's eye, linear perspective renders images that attempt to simulate an anthropomorphic view of form. This capacity for similitude overcomes the image's artifice to the point where it uses this model of vision to anticipate a corporeal experience of a yet to be built form. As indicated in Erwin Panofsky *Perspective as Symbolic Form*, this predictive ability allows the perspective drawing to sublimate of all sorts of ideological beliefs.[1] Yet, perspective merely offers one of an infinite number of possible viewpoints within this constructed visual field. The reworking of projective geometry seen in the aberrant drawing practice of anamorphosis, effectively calls into question the indexical 'naturalness' of form in the image. The capacity for anamorphic images to sit outside of 'what the eye sees' has the potential to recast the relationship between form, image, resemblance and ideology.

The first anamorphic corruption of linear perspective occurred less than fifty years after Brunelleschi's 1425 demonstration of projective geometry on the steps of Florence's Basilica di Santa Maria del Fiore. Using the techniques of linear perspective against itself, these new anamorphic images procedurally undermined the formal truthfulness of the perspective drawing. This fact alone suggests that the operative, subversive dimension of anamorphic projection opens a shadowy interplay between the presentation of the sanctioned and illicit present in all images.

The persistence of linear perspective in three-dimensional software suggests that the orthodoxy of indexical fidelity continues to delimit how architectural form is constructed and assessed. This is hardly surprising given Digital Architecture, as it emerged in the 1990s, focussed on the potential for new procedural logics to furnish novel formal outcomes. At no time was there an overt claim to reshape the discipline's representational forms. Yet, the preservation of these representational forms is striking given the very tangible socio-political and economic changes brought about by the digital transformation. The repurposing of CCTV webcam systems as promotional sites of the city and the pervasive Google image are simply two examples of how new digital viewpoints are complicating the question of orientation and formal address. Not only do these applications of digital image technologies reframe architectural form as promotional content, they also provide an unparalleled capability to co-opt and manipulate this 'content'. This opens new conceptual issues and representational opportunities that require one to rethink how form might strategically address these multiple, 'anamorphic' viewpoints.

The history of anamorphosis reveals a diverse set of ideological motivations within the connection between intent and technique. The development and use of anamorphosis during the Renaissance provides a lens to help understand this nexus. The paper examines how the issue of 'good' form, developed through the reconstruction of the viewer's body as an ideal viewpoint, uses projective geometry to 'naturalize' the image's figurative or descriptive role. Anamorphosis will be used as a

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1   Erwin Panofsky, *Perspective as Symbolic Form* (New York: Zone Books, 1991), 67.

counterpoint to show an alternative way to approach the opportunities associated with the digital proliferation of architectural images. This reframing of anamorphosis will serve as the basis of a new visual paradigm that dispenses with the notion that it is simply linear perspective's subversive other.

Representational Continuities in Digital Drawing

It has been argued that the potential of the digital toolset was linked to the way in which a new array of generative drawing types would transform the procedural and formal logic of architecture. Taking Robin Evans' argument to its ultimate conclusion, these new techniques, tools and procedures promised to recalibrate the discipline through exploiting the formal 'affect' of the drawing.[2] They would allow digital design to supplant the expectation that form figuratively or experientially communicate known socio-cultural readings.[3] This rejection of the preceding century of design thinking steadfastly refused a deferential and parodic predetermination of form to existing or archetypal exemplars. Freed from the problems of referentiality, digital practice would be able to avoid the ideological traps of authorship. Greg Lynn's alignment of digital design techniques to Deleuze's anti-representational thinking was central in shifting discourse away from the production of 'meaningful' objects and towards the procedural logics of formal production. The hope was that the operative, instrumental and performative rationale of process would produce procedurally consistent, but formally unpremeditated, objects. In effect, this was an attempt to resolve the problem of ideology through a procedural removal of authorship. Achieving a semiotic purification of form through process, the representational mediation of new and novel form exemplified a total rethinking of the object's status. In so doing it reopened the basis on which formal legitimacy could be, and was, claimed.[4]

Significantly, the arrival of the new digital drawing techniques did not lead to a re-examination of the discipline's existing representational types. This circumstance tacitly ignored the representational dilemma of the drawing, where it functions as a fabricated artifice while appearing to offer a pure, indexical presentation of the yet to be built object. Architectural production continued to overlook the dilemma that the mediating 'affect' of the drawing is an inescapable disciplinary condition. In fact, this lack of an explicit desire to critique the mode of drawing suggested that the familiarity of these existing drawing types normalised and legitimised the new digital processes and forms. Consequently, the absence of any desire to contest the conventions of architectural drawing not only sublimated this disciplinary dilemma but also continued to assert ideology as a strictly a formal issue. Thus, the resolution of ideology does not undo the internal technical and conceptual logics of architecture's established drawing types.

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2   Robin Evans, "Translations from Drawing to Building," In Robin Evans, *Translations from Drawing to Building and Other Essays, AA Documents* 2 (London: Architectural Association, 1997), 153-93.

3   Greg Lynn, *Animate Form* (New York: Princeton Architectural Press, 1999), 40; Jesse Reiser and Nanako Umemoto, *Atlas of Novel Tectonics* (New York: Princeton Architectural Press, 2006), 173.

4   Greg Lynn, *Animate Form*, 39-40.

The reinforcement of perspective's illustrative role within the digital environment is of particular import. While modelling software offers a greater facility to work within three-dimensional representational space, perspective is still used to review Form during its procedural evolution. At the same time, the transition from manual to the digital interface obliquely accepts the geometric basis of form. The continued privileging of gridded, Cartesian space displays little interest in the many arguments that it brings "phenomenal space into conflict with geometric space".[5] The use of the perspectival model also ignores the gender politics of the gaze, the empirical imperfection of the model, and the loss of the body as an authentic locus of experience. In ensuring the visualisation of form has altered little since the fifteenth century, any conservation of linear perspective serves only to avoid such issues.

Anamorphosis and Figurative and Descriptive Modes of Spatial Representation

Anamorphosis, derived from the Greek 'ana', meaning a transformation 'back to' or 'again', and 'morphe' meaning 'form', is defined as "[a] distorted projection or drawing of anything, so made that when viewed from a particular point, or by reflection from a suitable mirror, it appears regular and properly proportioned; a deformation."[6] Anamorphic projection disrupts the image of good geometric form by altering the perpendicular relationship of the observer's viewpoint to the picture plane and uncoupling the observer's viewpoint from the point of geometric projection. Whereas Brunelleschi's linear perspective presented space as an infinite, homogeneous and highly ordered visual field, anamorphic projection used the internal projective logics of perspective to attack perspective as a truthful account of 'natural' vision. The disruptive and subversive duplicity of anamorphosis reveals the conceptual conceit of perspective, making a prescient example of Georges Bataille's call to "bring things down in the world".[7] Anamorphosis can be considered operative before it is representational because it reinstitutes a tension between the figurative, experiential and the geometric. If "[b]etween retina and world is inserted a screen of signs … consisting of all the multiple discourses on vision built into the social arena", the potency of anamorphosis is that it reminds us that the perspective image is never neutral.[8] For this reason, anamorphosis should not be reduced to a semantic reading of the forms in the image.

While Hubert Damisch argues that the discourse immediately following Brunelleschi's 'invention' of perspective "is often paradoxical, even nonsensical" he is quick to realize that pictorial form

5   Lyle Massey, *Picturing Space, Displacing Bodies: Anamorphosis in Early Modern Theories of Perspective* (University Park, Pa.: Pennsylvania State University Press, 2007), 18.

6   *The Oxford English Dictionary Online*, Online database (Oxford: Oxford University Press, 2012).

7   Georges Bataille, *Visions of Excess: Selected Writings, 1927-1939*, trans. Alan Stoekl (Minneapolis: University of Minnesota Press, 1985), 31.

8   Norman Bryson, "The Gaze in the Expanded Field," In *Vision and Visuality: Discussions in Contemporary Culture, No.* 2, ed. Hal Foster, (New York: New Press, 1999), 92.

provides an important indexical, descriptive aspect of these images.[9] These paintings projectively continue the potency of Brunelleschi's demonstration by allowing the narrative and descriptive roles of the painting to work in tandem. The various 'Citta Ideale' images produced in the late 1400sby the likes of Francesco di Giorgio (1477) and Fra Carnevale (1480-84), evidence the increasing influence the painterly application of perspective (fig. 1) had on resolving the disjunction between phenomenological and geometric space.[10] As W. J.T. Mitchell explains, this functioning between the descriptive capacities of the pictorial image uses a "likeness" to things "in the world" to present the image as a natural and semantically exact mode of communication.[11] In these paintings, the pictorial image is used to "naturalize" the mathematical logic of linear perspective by engaging the viewer with an image of an easily imagined phenomenal experience. Louis Marin demonstrates how descriptive and narrative image forms sublimate the politics and ideology functioning behind these image forms.[12] What Damisch, Mitchell and Marin collectively reveal, is that pictorial semblance deploys the scenic narrative of the image to 'naturalize' projective geometry and thus resolve the conflict between the geometric and experiential. These images exploit the cultural predication to use 'likeness' to construct a propagandizing narrative for geometry. Thus, the hidden 'job' of the image is to present the geometric principles of vision as an immutable account of the experienced vision.

Fig. 1. Fra Carnevale, 'Cittaldeale', Image Museum, Walters Art.
"Fra Carnevale - the Ideal City." edited by
'Fra Carnevale - The Ideal City' - Walters 37677.jpg.
USA: Walters Art Museum & Wikimedia Commons, 2012.
Licensed under CC-BY-4 (some rights reserved, image unmodified),
http://upload.wikimedia.org/wikipedia/commons
/5/5c/Fra_Carnevale_-_The_Ideal_City_-_Walters_37677.jpg,
Viewed 11 May 2014.

If the 'Citta Ideale' images projectively activated Brunelleschi's geometric account of space, the bourgeoning industry in perspective treatises during the sixteenth century still indicated the need to confirm the importance of this schema. As Albert Dürer's 1525 iconic image 'Artist and Nude' reveals, a range of automata were used to assert perspective as a tracing of an object seen through a gridded picture plane. Devoted to promoting perspective, these automata calibrated the body to a gridded representation of space. This promotion of perspective had achieved its aims by the 1583 publication of Giacomo Barozzi da Vignola's *Le due regole della prospettive practica*. This summary of perspectival geometry all but confirmed that the move from resemblance to semblance had been

9   Hubert Damisch, *The Origin of Perspective* (Cambridge, Mass.: MIT Press, 1994), 169-71.

10 Damisch, *The Origin of Perspective*, 196-97.

11 W. J. T. Mitchell, *Iconology: Image, Text, Ideology* (Chicago: University of Chicago Press, 1986), 43.

12 Louis Marin, *Utopics: Spatial Play*, Contemporary Studies in Philosophy and the Human Sciences, trans. Robert A. Vollrath (Atlantic Highlands, NJ & London & Basingstoke, UK: Humanities Press and Macmillan Press, 1984). See also Louis Marin,and Mark Franko, "The Inscription of the King's Memory: On the Metallic History of Louis Xiv," In *Yale French Studies* 59 (New Haven: Yale University Press, 1980), 17-36.

achieved. The visual field, abstracted to a set of mathematical coordinates, applied the ideal of gridded space to "flatten and contain the visual field, allowing the artist to exert control over what is seen and how it will be recorded".[13]

If the use of perspective progressively entangled architectural interiors, geometry and images, the geometric rationalisation of the body, as a quantifiable object within the visual field, did not erase the scenic narrative function of the pictorial image. However, the Church was far more aware of the rhetorical agency associated with 'owning' and utilizing both the figurative and descriptive capacities of these images. For example, Andrea Pozzo's 1685 paintings in Sant' Ignazio di Loyola, Rome, used projective geometry to produce a proselytising image where the painting 'rescues' architecture from its own dimensional limits. Pozzo writes in the preface to *Perspectiva pictorum et architectorum,* the geometric truthfulness of the projective line represented "a ray of light into the heart of Ignatius, which is then transmitted by him to the most distant regions of the four parts of the world".[14] The projective line undergoes a divine figurative conversion by inverting the pictorial use of narrative and descriptive forms. If architecture is enhanced by the image's metaphysical narrative, this narrative nevertheless uses geometry as a 'real' world truth to analogously convert geometry as a profound theological 'truth'.

The first overt manipulation of projective geometry to modify the visual appearance of built form used techniques of accelerated and decelerated perspective.[15] Coined by Jurgis Baltrusaitis, these techniques rotate the planes as they present themselves in one-point perspective. Accelerated perspective inwardly rotates all planes towards the vanishing point, while the inverse occurs in decelerated perspective. Experientially, accelerated perspective visually accentuates the spatial depth, while decelerated perspective applies a 'visual brake' on form to collapse the reading of spatial depth. Serlio's use of accelerated perspective in set design compensated for the physical restrictions of space, while Bernini's Colonnade at St Peter's in Rome used decelerated perspective to visually compress the piazza's depth so as to enhance the visual presence of the Basilica's façade. Both examples demonstrate that these techniques have an inverse perceptual result but different formal, spatial and programmatic 'jobs'. Accelerated perspective produces a geometric illusion of a regular space while the visual compression of space in decelerated perspective emphasises architectural form. This means the former is a spatial technique, and the latter a technique for highlighting architectural objects. As Borromini's Palazzo Spada demonstrates, the illusory effects of these built examples deform form using the same fixed and stable viewpoints as linear perspective. They use projective geometry to image 'good' form. However, like Pozzo's Sant'Ignazio, movement creates an experiential discordance between form and eye that jeopardises the figurative

13 Lyle Massey, *Picturing Space, Displacing Bodies: Anamorphosis in Early Modern Theories of Perspective*, 84.

14 Andrea Pozzo, *Breve descrizione del disegno dellaCapella di Sant'Ignazio, Rome,* 1697 in *Perspectiva pictorum et architectorum*, 2 vols. Rome, 1693 and 1700.

15 JurgisBaltrušaitis, *Aberrations: An Essay on the Legend of Forms* (Cambridge, Mass.: MIT Press, 1989), 5.

or descriptive imaging of good 'form'. Projective geometry's marginalisation of the body, in favour of an ultimately imagistic ideal, can only work by fixing the body in space.

Anamorphosis: Image to Form

It is generally agreed that anamorphic projection first appeared in Leonardo da Vinci's 1485 'Painting of an Eye'. The polemic of Da Vinci's painting functioned through a geometric and representational play on Brunelleschi's abstraction of the viewer's eye. Technically, Da Vinci's primary move was to rotate the picture plane. Importantly, the painting still had only one viewpoint at which the form in the image took shape. It was Albert Dürer's pupil, Erhard Schön who, in the mid 16th century introduced a figured second image in the anamorphic image to address the view perpendicular to the surface. Schön used this second site to open a figurative counterpoint to the sanctioned narrative in the 'main' image. This second transgressive image was a figurative challenge to geometry's 'naturalness' because it required the body to move between the two viewpoints. Understandably, Massey overlooks this movement, given that it is experientially similarity to viewing artwork in a gallery. This does, however, miss the potency of Mark Hansen's discussion of Robert Lazzarini's 'Skull' sculptures. Significantly, Hansen indicates how figural distortion defies the eye such that bodily movement is required to comprehend the object.[16] Obviously, there are significant differences between these two modes of oblique distortion. Unlike the Lazzarini work, Schön's images have two discrete points where the image 'forms' and movement is visually arrested. Yet, it is difficult not to think that Massey understates the bodily mediation required to negotiate the formal and figurative aspects of the two images.

Jean François Niceron's use of the anamorphic grid jettisoned Schön's figurative interests. Operating within a seventeenth century Cartesian paradigm, Niceron radically privileged anamorphic geometry to deliberately conflate geometry, ideology and the real. There is a sense that like Lazzarini's 'Skulls', any figure in the image is a formal register to measure a play with projective geometry. Thus, figures appear without any explicit semiotic intention. Niceron's use of anamorphosis uncoupled the subject's viewpoint from the projective origin, relocating the former relative to the vanishing point and picture plane. The observer no longer 'sees through' into a hypothetical space behind the picture plane. Niceron altered the relation between the vanishing point, the viewpoint and the picture plane by relocating the distance point on top of the vanishing point. This shift in viewpoints undoes the projective space of traditional perspective to validate the 'presentness' and reality of anamorphic space. As Niceron's diagrams demonstrate, this geometric inversion draws the viewpoint into a geometric vortex, making the image extend towards, rather than recede, from the

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16   Mark B. N. Hansen, *New Philosophy for New Media* (Cambridge, Mass.: MIT Press, 2004), 198-99.

viewer.[17] For Massey, this anamorphic viewing condition replaces the abstract figure of the viewer with an actual physical viewer.[18]

Digital Continuities in the Structuring of Perspectival Space

Superficially, the computer screen institutes the same perpendicular viewing relationship as that found in the perspectival image. Furthermore, the resilience of Brunelleschi's representational model is seen in three-dimensional software where form is delineated by projective geometric line. This suggests that digital practice tacitly resolves the conflict between phenomenological and geometric space to accord with the projective logics of perspective. However, there is a crucial difference between physical and digital environments. The physical position of the viewer in the latter operates through a physical spatial displacement between the virtual and real sites. The screen maintains the frontal perpendicular viewpoint. Any oblique anamorphic projection results from rupturing the situational proximity of the viewer between the virtual and real sites and their respective visual descriptions of form. The deliberate reorientation of built form to the camera lens potentially exacerbates the capacity for any consistency between the virtual 'visual' and physical bodily experience of form. Yet it is important to note that these virtual and real sites do more than open very different modes of sensory engagement with form. In respect to the promotional use of webcam systems, there is an expectation for architectural 'content' to present itself to an extensive set of actual and virtual viewpoints. On the drawing board, the perpendicular construction of the image fixes and aligns the phenomenological viewpoint to an idealized, singular geometric viewing point. These new digital viewpoints that are accessible to a range of different viewers with a diverse set of motivations, create new criteria by which to mediate the understanding and presentation of form. The digital proliferation of viewpoint in fact fragments the type of formal and figurative consistency seen in the perspective image.

This is not to say that the digital view, either within software or on the screen, is a purely visual experience. It has often been noted that the immersive, dynamic and filmic aspect of the viewpoint within the computer has no scalar or spatial fixity. This immersive quality is unencumbered by the need for the single viewpoint to accord with a 'real' place in the world. Here, it is worth noting John Macarthur's essay *From the Air: Collage City, Aerial Photography and the Picturesque.* Macarthur adapts Louis Marin's notion of the utopic view to argue that the 'lack' of scale in the aerial photographic provides a utopic view that is not "a no-where, imaginary place, but the real seen from an impossible place."[19] The digital viewing point has the same ability to be located anywhere and

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17 Massey, *Picturing Space, Displacing Bodies*, 56–57.

18 Lyle Massey, "Configuring Spatial Ambiguity: Picturing the Distance Point from Alberti to Anamorphosis," in T*he Treatise on Perspective: Published and Unpublished. Studies In The History Of Art, Center for Advanced Study in the Visual Arts, Symposium Papers XXXVI*, ed. Lyle Massey (New Haven and London: Yale University Press), 170.

19 John Macarthur, "From the Air: Collage City, Aerial Photography and the Picturesque," In *Re-Framing Architecture: Theory, Science and Myth*, ed. R. John Moore and Michael Ostwald (Sydney: Archadia Press, 2000), 115.

nowhere. In this light, the utopic, oblique digital viewpoint undoes the representation of 'good' form by opening a schism in the viewer's positioning of the body and, thus, the very conditions by which form is experienced.

There is a second, related, difference between the manual and digital view. If the digital viewpoints develop new criteria by which to orientate form, then any actual or proposed architectural form functions as image content. It has been mentioned that linear perspective constructs an ideal view through a controlled relationship between the real and ideal viewer and the geometric function and location of the picture plane and origin. The pan and zoom functions operating in both three-dimensional software and the webcam can produce experientially unsettling shifts along the perpendicular. The ability to move the digital viewpoint is vital because it replaces the singular static perspectival image with a sequential montage of views. Sitting somewhere between the techniques of accelerated and decelerated perspective, and Niceron's anamorphic grid, the zoom function compresses or extenuates the eye relative to the screen along the perpendicular line of vision. The numerous, optically mediated, digital viewpoints question the authenticity of Brunelleschi's gridded space and the ideal of a geometrically absolute 'symbolic' form. When combined with the movement of the viewer's eye, the movement in the image on the screen disrupts the fixed relationship between the viewer and object and violates the static nature of the station point.

The notion of architectural form as image content is important because the images derived from software packages and webcams open specific procedural differences that frame how form can be mediated. These differences result from the source of the content and the technical protocols used in image production. While the webcam's pan and zoom functions approximate the operability of the viewport in three-dimensional software, the technological mediation of form has a profoundly different approach to the pixel. Clearly, all digital images are constructed of discrete units of data. This means in the digital environment there is no such thing as a continuous line. Yet, the conservation of model of linear perspective in three-dimensional software asks the pixel to disguise itself as a line. The digital webcam image is less concerned with lines because form is described through individuated packages of colour. The pixel, as a material trace of the world, delineates spatial depth through degrees of colour variation. This form of spatial reading, called atmospheric perspective, is an alternative to the geometric ideal of linear perspective. The true significance of this shift in implied in Brian Massumi's assessment of David Katz's research on colour.[20] In revealing that individuals cannot give a semantically accurate account of colour, Massumi argues that Katz's research demonstrates colour is a "surplus of experience".[21] By extension, any move to use colour as a formal basis has no explicit need for form to symbolically convey a social or cultural message. The use of the digital image as a procedural source of material data also allows the image to do more than be a promotional tool.

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20 Brian Massumi, *Parables for the Virtual: Movement, Affect, Sensation* (Durham, NC: Duke University Press, 2002), 209.

21 Massumi, *Parables for the Virtual,* 209.

If Brunelleschi's demonstration of linear perspective recast the formal basis of architecture, then the conservation of this model continues to limit the formal avenues that were supposedly opened by drawing digitally. The geometry of the pixel, as an alternative reading of form, offers a new projective and formal schema where projective geometry is replaced by atmospheric perspective. The form of this approach is perhaps anticipated in Diller & Scofidio's 2002 'blur building', where what one experiences exceeds what the architect draws (fig. 2). In so doing, it re-embraces the image without reinstalling the figurative polemics of past anamorphic techniques or the parodic plays of postmodernism and deconstruction. This type of project only hints at a potential representational expansion where an array of digital tools map and reconfigure, rather than diagrammatically simulate and machine, contextual conditions into form.

Fig. 2. Diller & Scofidio's 2002 'blur building', Image by Norbert Aepli, Titled: "Expo.02 in Neuenburg, Yverdon, Biel and Murten." File: 20020717 Expo Yverdon 23.JPG, Wikimedia Commons, 2002. Licensed under CC-BY-2.5 (some rights reserved, image unmodified), http://upload.wikimedia.org/wikipedia/commons/thumb/a/a7/20020717_Expo_Yverdon_23.JPG/800px-20020717_Expo_Yverdon_23.JPG5, Viewed 11 May 2014.

Conclusion

If the early advocates of digital design practice turned to process as a way to remove the stain of ideology, then the conservation of perspective tacitly agrees with the geometric idealization of space. The conservation of the perspectival model allows it to continue to frame our understanding of vision, form and form making. Not only does this systematized understanding of space treat the subjective view as highly suspect, but it also marginalises alternative digital practices. The maintenance of perspective as an objective account of objects in the world ensures that the new digital techniques and tools close down alternative approaches to the translation and projection of form.[22]

The organisation of the subjective view to Cartesian geometry uses perspective as a type of 'third-party propriety system', which operates to measure and validate a rational understanding of space. As suggested by Bryson, this is "a conceptual enclosure, where vision is still theorized from the standpoint of a subject placed at the centre of a world."[23] This is significant because, as Ron Broglio argues, "The spacing of space founded by linear perspective and Cartesian philosophy

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22 Massey, *Picturing Space, Displacing Bodies*, 82.

23 Bryson, "The Gaze in the Expanded Field," 87.

facilitate technology's transformation of nature into an object to be possessed".[24] The success of the 'projective' aspect of the perspectival technique relies on locating an ideal viewpoint from which the viewer must imagine through and beyond the picture plane. This visual schema encourages a notion of truthful images that enhance both the ethos of individuated ownership and collective consumption. As Jonathan Crary argues in the *Techniques of the Observer*, the collapse of the objective truthfulness of the Cartesian model did little to challenge its modes of representation. As Crary explains, the plurality of subjective vision was denied by treating the physiological aspects of vision as a scientific standard.[25] The failure of this transition to herald a new political economy or visual reality involved the sublimation of the ideology of universality. Future research could examine how important the maintenance of established modes of representing space was in the standardization of the physiology of visual perception. This research would ask how the maintenance of representational forms allows ideology to corral the material capacities of any technical change.

At this point in time this paper can only suggest that process alone cannot resolve the problem of ideology in the object. Rather, it requires a different mode of drawing. In the case of linear perspective, the digital transformation could do well to retrieve and refashion the subversive and disruptive visual practice of anamorphosis. The ability of anamorphosis to insert a disruption into the image's geometric structure and figurative content splits the location of the legitimised viewpoint to undo the notion of 'good' form. In doing so, a direct physical engagement with the picture plane overturns the imagistic integrity and geometric rationale of linear perspective as an agent of 'truth'. Anamorphic projection removes the formal conceit of the figurative and descriptive constructs of linear perspective, reinstating an awareness of the image's artificiality. It also reintroduces the body and movement by drawing the 'unconscious' viewer into an engagement with the space of the image and the real. This separation of the viewpoint between real and virtual space is not just an oblique movement around or along the 'picture plane'. This is a split in the viewing context; so that viewing of the image on the screen and the 'real' object occurs in radically different spaces and is experienced through very different mechanisms. In both cases, the delineation of form remains a visual experience, but it is 'affective' by both destabilising the viewpoint and asking that the body move within completely different contexts.

The variations discussed in the anamorphic schema indicate how the digital transformation in architecture remains trapped to established forms and techniques of representation. This calls for the development of digital processes that resist sublimating past chauvinisms within the conventional forms of architectural drawing. More significantly, digital anamorphism, in understanding that ideology can reside in the 'process', foregrounds the inherent dilemmas that arise from the social, cultural and economic consequences of the digital transformation.

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24 Ron Broglio, "Connecting Renaissance Linear Perspective and Cartesian Geometry and Optics" (Georgia Tech, School of Literature, Media, and Communication),http://lmc.gatech.edu/~broglio/1102/desc_paint.html., Viewed 28 January 2014.

25 Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge Mass.: MIT Press, 1990), 9.