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The virtual city: perspectives on the dystopic cybercity

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Introduction

3D computer modelling is increasingly relied upon as a decision-making tool in the visualisation of urban infrastructure by architects, planners, and developers. 3D computer-generated geometry relies on perspective and its derivatives, isometry and axonometry, to provide the illusion of spatial depth. Hence, architects, planners, and developers unwittingly base their decisions on the agreed instrumentality of a perspectival space that has its origins in the fifteenth-century Italian Renaissance. This approach extends into other forms of city visualisation too such as those portrayed in photography, cinematography, animation, computer games, and so on. As a manifestation of Panofsky's 'window on reality', the contemporary use of perspective perpetuates a perspectivist ideology that pervades much of Western visual media in general¹.

To begin to understand how perspective has become such a large part of the architect's practice and subsequent depictions of the modern city we need to explore the rise of this method for organising the world visually. Hence, this article offers: an historical overview of the rise of perspective and the concomitant rise of the scientific method which claims to underpin its validity as an organisational method; and, the semiological influence of perspective as a way of thinking, and how it is reflected in post-photographic images of the city. It concludes with a brief discussion on the finitudes of virtual reality and how these might be interpreted historically.

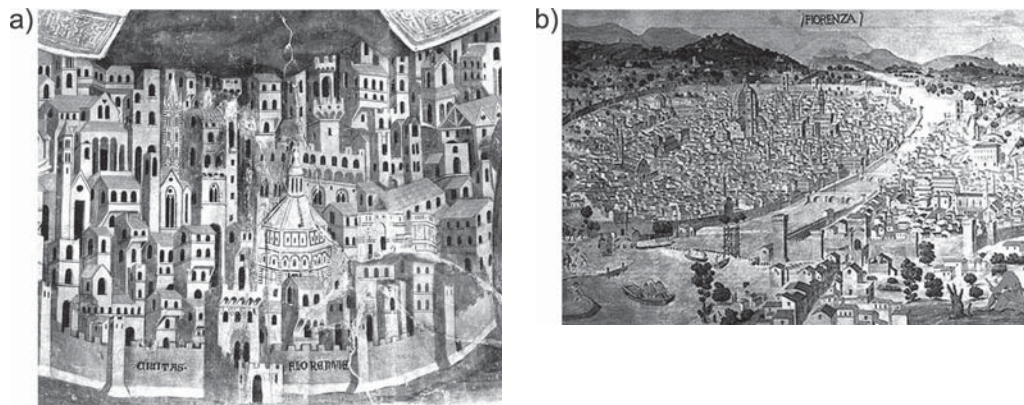
An historical perspective

According to Lefebvre, during the late Gothic period in Tuscany there began a transition from representational space (an image of the world: religion, magic, the metaphysical) to the representation of space (world as image: organised, geometrised, in- perspective)². With the perspectival representation of space came a new production of space. It was a space that was reproducible -- industrious repetition and the mechanical re-production of social relationships were deliberately given precedence over religious works, natural reproduction, and over nature itself and natural time. It is also when we see, for the first time, alienation of the subject 'eye' (in Lacanian terms) from the all-seeing 'gaze of the world-God'³. It was a time when creating the illusion of depth in the illustrative arts was becoming increasingly important.

Emerging from the Dark Ages, the late Gothic Master-artisans were exploring representation in a period of enlightenment and prosperity that provided time to contemplate the deeper meanings of life beyond religiosity itself. Their spatial investigations gave rise to a new realism, which, by the fifteenth century, was coded in a set of rules synonymous with the Renaissance style of perspective we know today.

It is in this socio-cultural milieu that the late Gothic Master-artisans (1350 -1450) such as Giotto di Bondone, Agnolo Gaddi and Ambrogio Lorenzetti were exploring increasingly geometrically organized compositions. Their explorations in creating pictorial depth reflected the search for a better understanding of nature through realistic rather than ritualistic depictions of it. Around the same time, whole towns were being viewed as geometrically organised. Maps and plans began appearing which graphically depicted towns as geometrically organised. Views from a hilltop or a bird's-eye view were used to show the town from a vantage point that lent itself to the depiction of objects at a distance and to-scale (Fig. 1a). The buildings in the towns appear to be extruded from their footprints on the ground (Fig. 1b)⁴.

Figure 1. Unknown Italian Artists' views of Florence 1350 a) and 1480 b).



Coinciding with the notion of the 'observer on the hill', which views the city at a distance, we see also the emergence of the 'distancing gaze of scientific observation. . . the thing seen becoming a spectacle and a specimen'⁵. Thus, these first city plans incorporate a new ideal of knowing a particular knowledge which accords with knowing the world better by removing ourselves from it. The geometrised reconstruction of a world-view saw humankind as separated from rather than in the world they experience. Although people did still experience space as a religious experience, they were beginning to separate its representation from direct experience.

By the mid-fifteenth century, Brunelleschi's peep hole experiments demonstrated how this new world could be faithfully re-presented in its image; indeed, that the image held a certain truth that could be instantly validated⁶. The real import of Brunelleschi's perspectival representation as a method for representing, constructing and thinking about the world was how it henceforth 'conditioned the mind's eye to "see" three-dimensional images' a-priori⁷. In architecture, his drawings were important in that he could use them to help to visualise his architectural forms complete before construction commenced.

Renaissance artisan-engineers were beginning to see a different world than their predecessors, and the world was changing because of the way they saw and represented it. In painting and sculpture, this period marked a major development in Western thought. What emerged was a 'scientifically oriented preference for mechanical reproduction and geometrical constructs in place of creative imagery.'¹⁸ Piero della Francesca's late fifteenth-century *Ideal City* is an example of an increasingly mechanised, or objectified, world view (Fig. 2).⁹

It reflects the intellectual obsession of the time about what could be geometrised. This is an image depicting the culture of organised mercantile capitalism. Following Brunelleschi, Alberti's establishment of the mathematical rules for perspective located the viewer in relation to the scene depicted and provided a 'point-of-view' on the world. There were three main elements to Alberti's perspective vision: the window as boundary; the self looking out to



Figure 2. Piero della Francesca's (1460) *Ideal City*.

the world; and, the world as an 'object' for viewing. The spectator's view through the window was that of a veiled world. The grid in Alberti's procedure organised the visible world in such a manner as to render the world a geometric composition, evenly spaced about a grid. This geometrisation fragmented the world, subdividing it into parts. Alberti's veil or window was the pre-determinant for a mathematically precise linear perspective.

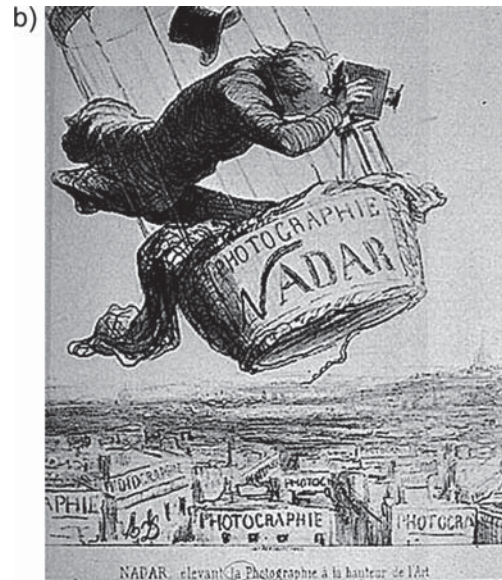
Post-photographic imaginings of the city

According to Romanyshyn, the co-evolutionary, perspective-scientific, world view transformed the world into a spectacle.¹⁰ It objectified, dominated, and purified the way space could be conceived and recorded. Alberti's window, once merely an artistic device, has since become a 'style of thought, a cultural perception, a way of imagining the world.'¹¹ Perspective vision and its artistic technique is now a cultural habit of the mind, transforming the world's landscape. Its grammar and associated metaphor translates into the 'self' becoming a spectator behind Alberti's window. The body is now divorced from the self-as-spectator becoming a specimen, the body and the world, is as a spectacle for the observation of the, now detached, eye in space. The very concept of 'perspective' has become a 'grammar of thought'.

In the eighteenth century, the privileged position of the perspective was used to great effect in the baroque panorama. In the panorama, the image of the city, cleansed of its filth and squalor, was used to bolster the bourgeois view of the world. In the mid-nineteenth century, the chemically fixed perspective, the daguerreotype, appeared. Combined with the later availability of the hot air balloon whole cities could be recorded from above (Fig. 3a and b).¹² Only recently has this view from above been further extended by today's satellite images.

As an historical backdrop to the architect's practice it is possible to see how the certitudes of perspective and its derivatives, isometry and axonometry, codified within their drawings, and later the photograph, made possible the conceptualisation of an increasingly mechanised view of the world.

Figure 3a), b). The first aerial photographs of Paris were taken by Gaspard Felix Tournachon in the late 1850s from a tethered balloon.



By the early twentieth century, this mechanised view of the world, an extension of Descartes' reflex man -- man as machine -- was beginning to be reflected in the city's form (Fig. 4).¹³ Le Corbusier's 1920s Voisin plan for Paris demonstrated a fully mechanised city. Geometrised, as in Desargues' nineteenth-century theorems, his universalising methods ultimately eliminated the uncertainties of intuition from all technical operations related to the construction of the physical world.¹⁴ What began as della Francesca's recording of the ideal city is now an almost complete reversal of the ideal vista which informed a perspectival view, to the perspectival vista shaping the city.

Hidden behind the camera lens, and reconstructed in Le Corbusier's drawings, there is no opportunity to engage in his world other than as voyeur. In cinema, Fritz Lang's (1927) *Metropolis*, reifies a similar dystopic architectural image of the city -- either denuded of humanity or as a space dominated by its orthogonal forms. In Lang's twentieth-century *Metropolis*, perspectivism and modernity have conspired to disenfranchise humankind of its place in the city. This is a consistent theme in subsequent filmic portrayals of the twentieth century 'modern' city. Far from Le Corbusier's *Voisin* utopia, the reality of the industrial, geometrised, mechanised city is self-sustaining and makes room for humankind only as a functional necessity.

According to Aronson the city as image is now experienced as second nature in the cinematographic 'event'.¹⁵ It is the interplay of images on the screen with our memories of real places that Aronson relies on Deleuze's use of Bergson's philosophy to make sense of the cinematic experience.

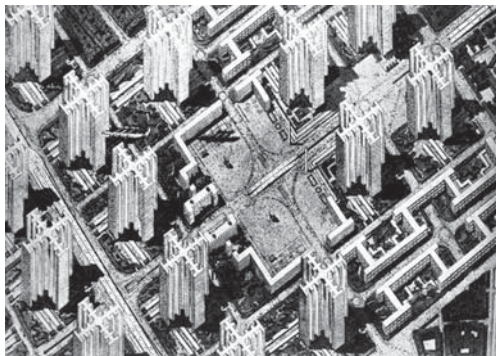
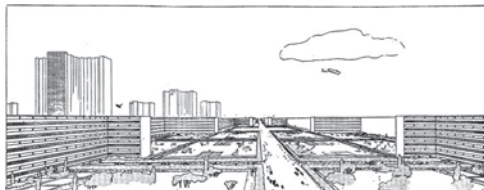


Figure 4. Le Corbusier's *The Radiant City*.

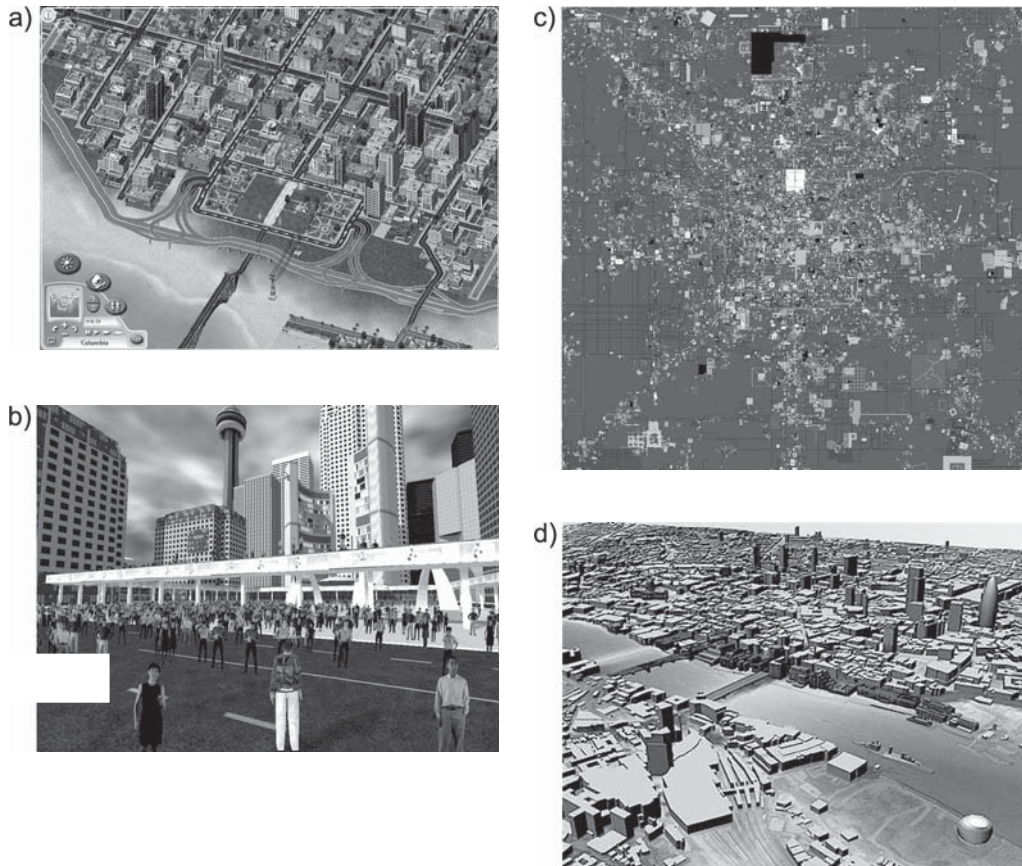
It is the images that actually belong to 'things' in our memory that informs our experience in the cinema and in real life; that there is no longer a distinction between the ontologically different worlds of reality and its representation. We do not imagine what we experience in a film, we live it. The film city is thus an extension of the 'real' city (in Lynch's terms).¹⁶

Hence, as yet another perspectival technology, we can say film both serves to illustrate the dystopian view and creates it. We see it in Ridley Scott's *Blade Runner*, a dysfunctional hegemonically stratified city; Oshii's *Ghost in the Shell*, the nuclear city; and, the Wachowski brothers' (1999) *Matrix* -- a textual city with an architect as the arch-tyrant and godfather. They are all dystopic future cities where the light of day never reaches its deepest depths, reminiscent of Dante's hell. Here humanity is lost in a search for meaning. While these images explicate the dystopic reality of the worlds they try to simulate, the utopian view is present too. Such as in the sanitised worlds of Spielberg's (2002) *Minority Report*, Columbus' (1999) *Bicentennial Man*, and Hanna-Barbara's (1962-1963) animated *Jetsons*.

What all these futuristic films are about is predestiny -- dystopic and utopic. Like della Francesca's *Ideal City*, the nineteenth-century panorama, Le Corbusier's *Voisin*, and the filmic city vision, we find today's architects, planners, and developers using contemporary perspectival technologies -- 3D computer modelling -- to forecast growth and development in their utopian visions of the city. Cleansed of its smog and street clutter, one can get a 'clear' view of ordered development.

Perpetuating the bourgeois view of the city, humanity continues to be conspicuously missing in these models. In this sense, the computer, and its efficient 3D rendering algorithms, has re-established perspective's role as the triumphant contemporary visual medium and ideology in the designer's practice.

Figure 5. a) SimCity's *Columbia Square*; b) i-mmersion's *Virtual Canada*; c) Map of *AlphaWorld 2001*; and, d) 3D model of *Virtual London*.



The emergence of these computer-mediated 3D virtual worlds is the latest extension to the growing arsenal of perspectival media. The mathematical accuracy of these 3D virtual worlds can be seen as a reification of the nineteenth-century epistemological perspectivism -- a visual culture of revealing geometric depth in images of nature leading to the establishment of natural laws and s of the world around us. They are used as contextualised, unified, objective demonstrations of development proposals. However, stripped of their monopoly on the creation of real and fictionalized cities, the architectural vision for habitable spaces is being fast replaced by the same 3D computer technology it employs. For example, in the isometrised computer game world of SimCity `cityzens' can build their own idealised cities (Fig. 5a);¹⁷ and, in the full-blown massive multi-user 3D computer game, we can escape into the world of William Gibson's cyberspace -- a space where computers can go but humans cannot,¹⁸ its citizens becoming simulated corporealities or avatars.

These cyber utopias are played out time and again in the twenty-first century (Fig. 5b).¹⁹ In 2001 the cyberutopia `AlphaWorld' was reported to have more than half a million citizens and covered 400 square kilometres (Fig. 5c).²⁰ The `map' of this city is even more meaningless than the aerial view above Paris or the sketches of Florence were to the citizens of their time. Nothing is recognisable. Cities are about exchange not abstract constructions. It is the social connections that matter. Stuck in the geometrised epistemological perspectivism of the illustration, photograph, moving image, or 3D virtual world, today's `cyber' city poses for the snap shot -- all body and no soul.

Conclusion

While new representation paradigms have come and gone, the almost mythological power of the perspective, its inherent realisms, scientific truths, and ideology, prevails. Laid out on a grid, what would Giotto make of the modern city's inorganic forms? How could he represent them at a human scale? In the age of digital media, the new cybercity is situated at the interconnectors of the information superhighway. Worse than the Los Angeles transit disaster it invokes, the digital agora which it promises is a placeless space where faceless aliases exchange texted messages in an ever-increasingly disconnected world. Where Giotto's explorations in creating depth in his religious frescos once celebrated humankind's place in the world, today's algorithmic perspective has forever placed us outside its frame.

Representations of ideal cities to the city represented -- in the age of digital media -- never before has the city been so influenced by its representation. It stems from an exploration in depth but ironically highlights instead the shallowness with which it can be perceived and conceived. The scientific reductionist method which underlies the simple 3D image makes it a poor medium for conveying the depth of a city's complex human inter-relationships with its environment. Brunelleschi understood this and positioned the human at the centre of his compositions. Where does humankind now stand in the barren landscape of an imagined or digitally reconstructed cyberspatial city?

In the world of the interactive, massive multi-user, 3D computer game it is more the communities that are formed within the game rather than the visualisation of the cities themselves that matters. But again, while it promises all the socio-cultural exchange the ancient agora once did, ironically, it does so through the dehumanising filter of its incumbent digital mediation.

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