Hypergraphic – Superstudio –
A Manifesto for Digital Landscape Architecture

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Abstract

Hypergraphic – **Superstudio** is a marriage of discrete terminologies aimed at forming a manifesto and pedagogic grouping. Such formation arises from what is to be argued as a representational crisis in Digital Landscape Architecture. Drawing (Digital & Analogue) involves an imaginative and speculative activity – of seeing possibilities (CORNER, 1992). It is theoretical, abstract and also tactile – it arguably mediates between the conceptual and productive (AMOROSO & HARGREAVES, 2012). Given the role that drawing plays within wider information design, paradoxically it has received little attention and research in Landscape Architecture. Given this lack of critical attention, it is worth forming new methods and new insights in this area leading towards a transdisciplinary digital landscape – for effective information systems.

Such unification of disciplines (NICOLESCU, 2002) is not without context and is applicable to Digital Landscape. **Hypergraphics** (or Hypergraphy) as process, was developed by the Lettrist movement in the 1950s, Lettrist's worked towards a critical synthesis of visuals and writing, from poetry to cinema. Hypergraphics, a form of post-writing, supplements the means of expression through an ensemble of communicative signs (ISIDORE, 1964; FORD, 2005). Lettrism continued its experimental activity in the form of Psycho – Geography (GUY DEBORD 1955) and its criticism of the undertows of the then Parisian urbanism. Adopting such design methods arguably provides efficient communication of complex landscape sites. Founded by Natalini & Toraldo di Francia in 1966, **Superstudio** concerned itself with such political questions such as 'What is Architecture?' (RINGEN, 2004). **Superstudio** sought a form of architectural practice focused upon conceptual, cultural and theoretical criticism of the built environment. By extension, this paper is focused on the development of a Landscape Architecture Superstudio interested in the theoretical, the conception and criticism of built landscape in digital form. Such a manifesto is built marshalling specific representational cases from Sketchpad (SUTHERLAND 1963), Geographic Markup Language (GOLDFARB, MOSHER, LORIE, 1969) and Habitat (LUCAS FILM, 1986) in which each computational invention marked radical changes to the digital realm and evidences a continuing requirement for invention.

While each of these terms developed out of particular cultural contexts, as Harvey states, "at the representational level the emergence of spatial concepts is inextricably bound up with the structure of the culture in which spatial concepts are being developed" (HARVEY, 1969, p. 194). Given Harvey's assertion a manifesto for Digital Landscape is focused on the development of a Landscape Architecture **Hypergraphic – Superstudio** interested in both critical ideational activity and effective digital communication, recognising the cultural and research milieu in which production took place.

1   Introduction

"(Studying under Gropius), I soon appreciated the basic idea of the Bauhaus
that the arts were not segmented." (SAFFA, 1991)
Lawrence Halprin

The push and pull between professional bodies, universities, and design firms with varying interests in the environment, competition and public perception has affected the position of landscape today. This effect has led Landscape to something of a peculiar position. This position arguably has led to a paradigm which is leading to a strange restriction on the ability of landscape design to respond in meaningful ways to changing climate, cultural and economic conditions. To solve, or at least move beyond the paradigm, we need to look outside of the discipline itself, or realistically pull back the basis – roots and segments- in which the discipline has constructed itself today. Thus my justification of a manifesto is not just for the sake of breaking the shelf on the manifestos of urban design, but to talk about an intention and motive to make landscape architecture representation more focused and considered in both academic and professional practice (CORNER, 1992). It is a manifesto, as I believe there is a sense of urgency in its task. Part of the realisation of the manifesto is in the area of digital landscape and fabrication.

That is to say, the process by which landscape design emerges and is constructed 'becomes' through drawing. We primarily design using drawing which then moves into something else, and provide questions and possibilities on solutions for urban issues and threatened environment. We need to focus research and the communication that the drawing continues to play, to analyse the characteristics of the Rhizome "a map not a tracing" (DELEUZE & GUATTARI, 1988, p. 12) perhaps equivalence to what Kundera calls a "poetic mediation on existence" (KUNDERA, 2005, p. 35).

Representation as part of the design process is an area in which to locate these roots. Both concept and ideational activity at the early design stage, but also the signifier in which the public constructs the image of place from built production – "Referential art is, by its very nature, reduced from its referents"(EVANS, 2000). Common constructed representational debates focus on analogue to digital transition, building a debate about the fidelity of digital production and the artistry and directness of hand drawing (MITCHELL, 1989). But this is arguably an irrelevant moot point. The movement or transition between representation and production is the real issue – how we make images about landscape using varied tools.

Selection and appropriation are more pressing concerns for generating ideas. Lawrence Halprin's assertion in the opening quote, of the conjoined nature of artistic production is key to enriching Digital Landscape. Thus the aim of the talk is to enrich digital landscape by looking at key computational inventions and artists movements. There are two ideas located within this enrichment. First that such computational invention led to specific hardware and software advances, and secondly that the artistic movements have brought interesting approaches and *USES* of such technology.

Openly admitting that such postmodern relativistic methods of combining and selecting parts of completely different design narratives and histories is questionable, the hope at least is to begin at a representational level a method of working that combines multiple approaches in the goal of creating and communicating information (thus the choice of a

manifesto format) (NICOLESCU, 2002; NICOLESCU, 2008). If this is achieved then perhaps the method could be forgiven as moving towards a transdisplinarity as "goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge" (NICOLESCU, 2002, p. 44). This is similar to what can be called courage of technology, a risk, as Ivan Sutherland would state (SUTHERLAND, 1996, p. 7).

Fig. 1:   Aberdeen City Gardens, Satellite Image, Competition Resources, Malcolm Reading Consultants and Neale Smith 2011

For the recent design competition in the UK for Aberdeen Gardens (2011), ideas generated by firms at a representational level constructed landscape in a peculiar virtuality. Aberdeen receives on average 856 mm (33.7 in) of precipitation annually or 71 mm (2.8 in) each
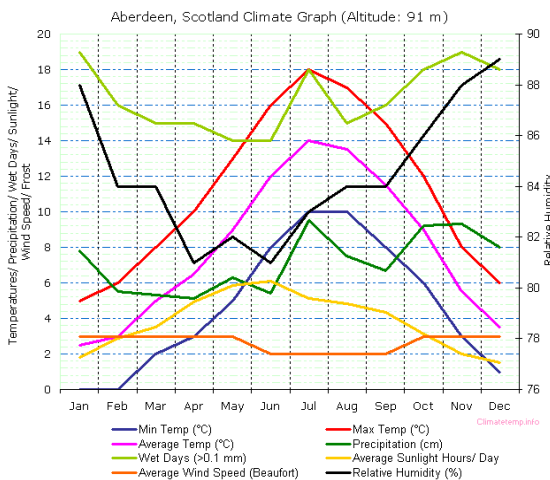

Fig. 2:   Aberdeen Climate, Met Office UK (Office, n. d.)

month. However, the majority of visualisations created a climate akin to a Portuguese summer. At the same time, public reception drives such consumption for this productivity, undermining the credibility of such visualisations of considered representations of design intent.

Fig. 3:   West8 Competition Entry Page 3, Aberdeen City Gardens (visited 3/5/2012; http://www.malcolmreading.co.uk/architecturalcompetitions/citygarden)

Such work's effectiveness for communication of ideas limits its own possibility – a construct which shows freedom, however limited within its own prison of standardised representation. Paradoxically the GUI computational tools to allow such construction have marked a very different and more radical history of invention. Such representation is important to challenge as it links with wider landscape issues, as Christopher Tilley states,

A centred and meaningful space involves specific sets of linkages between the physical space of the non-humanly created world, somatic states of the body, the mental space of cognition and representation and the space of movement, encounter and interaction between persons and between persons and the human and non-human environment (TILLEY, 1997, p. 10).

2   Lettrist Movement and Psycho-Geography

Lettrism sought a new form of communication which blended various arts; poetry, cinematography, print and painting. Essentially aiming and reacting to bring poetry to the everyday. Predominantly lettrism's outputs focused on notational styles. Maurice Lemaître (SEAMAN, 1983) also described HyperGraphics as "ensemble of signs capable of transmitting the reality served by the consciousness more exactly than all the former

fragmentary and partial practices (phonetic alphabets, algebra, geometry, painting, music, and so forth)" (FORD, 2005, p.20). Lettrism continued its experimental activity in the form of Psycho – Geography through a break off group. As Guy Debord terms "the study of the precise laws and specific effects of the geographical environment, consciously organised or not, on the emotions and behaviour of individuals" (DEBORD, 1955). Here, Situationists opened new graphic communication and critic of capitalist society architecture and urbanism out of a distinction of a particular undertow or psychological – geographical relief of urban centres which apparently discourage or enable certain movements and activities (MCDONOUGH, 2002, pp. 55-87).

Exploring maps as constructions and perceptions of space, the work (notably in the Naked City 1957) conveyed maps figured as narratives rather than as tools of "universal knowledge" (MCDONOUGH, 2002, p. 61). As Debord states, "the production of psycho-geographical maps may help to clarify certain movements of a sort that, while surely not gratuitous, are wholly insubordinate to the usual directives" (KNABB, 2007, pp. 5-8). The most constructive example from the Situationist international was the notation of the 'derive' or drift, in which atmospheric points or locales connect with others at unrecognised scales forming a composite map of fragmentation states and drifts between and around obstacles. This work created at a representational level and abstract reduction of the Parisian space to social relations, but this in itself, was more 'truthful' than the presented fidelity of a 'whole' Parisian map seeking a totalising impossible eye or 'voyeur' (FOUCAULT, 1991; CERTEAU, 2002) in which the terrain is laid bare. The maps became the art of actions and narratives, of localised scales which are hard to interpret. Such work runs with Henri Lefebvre's description of the production of space in which capitalist conditions contributed to a condition of the segmentation of space. Lefebvre's complete lifelong project sought to unify the abstract, perceived and lived (LEFEBVRE, 1991). Such work in a digital landscape context is challenging, as remote sensing data constitutes the same 'totality' in landscape design, post Ian McHarg (1920-2001) the desire to gather and simulate 'wholesale conditions of working', transforming the complexity of landscape into a 'neutral' or simulacrum theatre of operations for new production. What can be extracted from these earlier movements is the use of more localised and refined individual notions and perceptions of space towards more collective in the urban realm (REYNOLDS & FITZ-PATRICK, 1999).

Such activity is useful in contemporary digital context, where such notational systems can be applied. For example, Lawrence Halprin (1916-2009) movement notation – 'motation' apropos Rudolf Laban, Noa Eshkol & Abraham Wachman, John Cage, Morton Subotnick and of course Anna Halprin has arguably proved invaluable in landscape design. Given its fusion I am currently working on digital Mobile Application of 'Motation' which has a form of public participation in landscape planning developing a device which attempts to consider time and space, combining people and environmental movements or what could be called the 'choreography of the city' (HALPRIN 1972). Lettrism and Psycho-Geography challenge the objectivity of mapmaking and provides possibilities for a radical cartography to be liveable and familiar. These are new challenges for urban design processes in the study of the tactics or stories of users and their particular drawings and mappings, lines and crossing of stories, re-appropriations, narratives, movements, metaphors and second geographies for the city and for the urban designer themselves – "what the map cuts up, the story cuts across" (CERTEAU, 2002, p. 129).

Fig. 4:   Paul Cureton, Movement Notation After Lawrence Halprin, Digital Mobile & Tablet Development, Pre-Alpha Stage, 2013
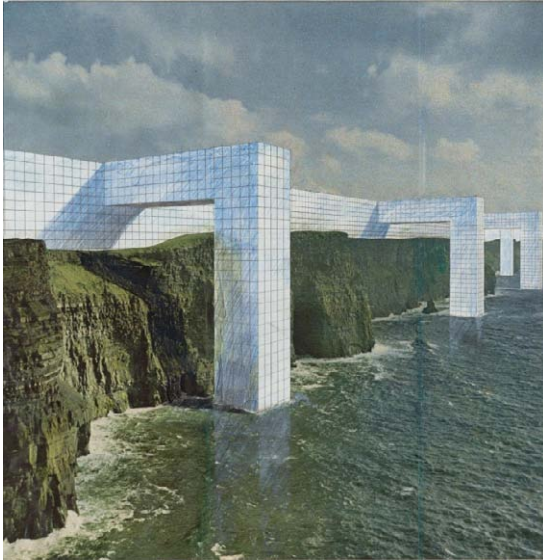
3   Super Studio

Fig. 5:   The Continuous Monument, An Architectural Model For Total Urbanisation, 1969

Superstudio was founded in Florence, Italy, by Adolfo Natalini and Cristiano Toraldo di Francia – recent graduates of the Florence School of Architecture – in 1966. Emerging from a critical cultural mielu,

> [Superstudio] saw that architects need to be involved in a different kind of thinking about what their profession is… Rather than just creating luxurious objects, or introducing people into the world of consumer objects, they should be worried about such political issues as, 'What is architecture?'
> (RINGEN, 2004).

Alongside similar groupings such as Archigram and Archizoom, Superstudio primarily conducted research outcomes in paper form. Utilising and layering photos they developed ideas about an all-encompassing architecture, the 'continuous monument' a black and white grid occupying all landscape thus rendering the world uniform (GARGIANI & LAMPA-RIELLO, 2010). This work marks an exemplary case for the development of critical ideational activity. The idea of the Superstudio was that an architectural practice could be conceptual and theoretical, concerned with cultural criticism rather than the production of buildings (BYVANCK, 2005). By extension the paper is focused on the development of a Landscape Architecture Superstudio interested in the theoretical, conception and criticism of built landscape. Superstudio's 'Anti Design' was a reaction against the failure of modernism and architecture in which the group blamed modernism for economic and environmental degradation (LANG & MENKING, 2003).

Corner identifies the need to address the estrangement of theory and practice from poetic value, in the constitution and embodiment of culture, stating that in landscape architecture

"contemporary theory and practice have all but lost their metaphysical and mythopoetic dimensions, promoting a landscape architecture of primarily prosaic and technical construction" (CORNER, 1991, p. 116). Superstudio and Corner charts a method of working for digital landscape production, as further critical of its own outputs.

Further critical intention of digital landscape form is based on Bernard Tschumi's idea that "The paper representation of architecture will have the sole purpose of triggering desire for architecture" (WINES, 1988, p.186). Adopting such a motive as Tschumi states places Landscape architecture in new territories in which it can act.

Fig. 6:   Paul Cureton, Design for Desertification, '21st Century Rural Museum', Lisbon, Porto, Coimbra, November – July 2012- 2013, Group Exhibition

Such ambition formed part of experimental representation in this project. In Fig 5, Design for Desertification, a simple DEM model is combined with multiple data sets, unitary design philosophies of Buckminster-Fuller – an initial twist on hyper-graphic production but also bringing critic and attention to landscape practices and futurological land uses of segmented operations. Here, projections envisage the major centres to be flooded, vast areas victim of high temperatures, and limited liveable space.

Fig. 7:   Paul Cureton, Design for Desertification, '21st Century Rural Museum', Lisbon, Porto, Coimbra, November – July 2012- 2013, Group Exhibition

This is further explored in a distorted 17 metre by 2.5 metre world desertification map, titled 'Meantime ... Desert Poetics' overlaid with text by ecological artist David Haley and Portuguese poet Luis Quintais. The map was created from 283,000 tiled images, geo-referenced and reconstructed. Showing the world from within (mirrored map) the curved installation, centres visitors to the centre point of the earth. The suns position in the form of sequenced spot lights, light the panels as the same time the sun moves around the world. The impossibility of the view of the earth from within masks the real issue of an enveloping desert from which landscape is consumed.

It is worth making reference to three specific moments of computer invention that have had an impact of digital landscape production – Sketchpad, GML and Habitat. Each computational invention marked radical changes to the digital realm and evidences a continuing requirement for invention. This histories yield certain developments, like Hypergraphics and Superstudio that have a practical impact on digital landscape USE.

4   En Route to a Simple Line – Sketchpad (Ivan Sutherland 1963)

Fig. 8:   Sketchpad developed beginning in 1961 by Ivan Sutherland at MIT is unveiled (Ref: Sutherland, Ivan E. Sketchpad: A Man-Machine Graphical Communication System. Proceedings of the AFIPS Spring Joint Computer Conference Washington, D.C., 1963, p. 329-346)

Sketchpad marked a specific computer development history. Sketchpad, based on the idea of napkin sketches, refined to more and more finished engineering drawings, formed the idea of the invention of the program. Working with a light pen, predecessor of the mouse, the user could point with the pen and interact with lines displayed on the screen. Ultimately, Sketchpad developed a graphical user interface that mediated between human and computer with real application to engineering solutions (SUTHERLAND, 2003, p. 3).

One of the earliest successes was to draw a cross which tracked the movements of the light pen (SUTHERLAND, 2003, p. 54). The cross formed the basis of the start of a line. This is what we can see still today in the use of AutoCad. The programming involved commands

with buttons, for example pressing a button would fix the cross hair to a selected point to begin drawing a line. Further programming developed points, arcs, lines linked together to form objects (Blocks!). These could be stored in a library, scaled and rotated. Development of new displays and refresh buffers, as well as the might of large industrial conglomerates helped develop real world applications in aero and car manufacture.

Particular developments in patching and content awareness of imagery (moving and still) will push graphical interfaces further towards increasing virtuosity, most prevalent in Adobe CS7 and 8 future phases. Developments with new interfaces and more intuitive devices such as 3D immersion, Google glasses and Wacom's will increase the virtually in our delay lives. However, such sensory contact with landscape change and form is important to maintain. For example, in the Eye tracking drawings of Michel Paysant (CURETON, 2013). Landscape form is delimitated using eye trackers, primarily developed for people with limb paralysis, in a landscape context, the representation still maintains a connection with human construct. We view the lines of the eye as it moves around the page, unfocused, distracted, messy, un-glossed and unpatched. A truer representation of landscape experience than the uses of contemporary technology tools built with a propensity to stylise. Sketchpad was not such a product, it was more pragmatic.

5   Geographic Markup Language (Goldfarb, Mosher, Lorie 1969)

The Geography Markup Language (GML) is the XML grammar defined by the Open Geospatial Consortium (OGC) to express geographical features. The GML specification can encode dynamic features, spatial and temporal topology, complex geometric property types and coverage's (BRINK et al., 2012). GML has different goals compared to Hypergraphics or Superstudio. However, GML (GOLDFARB, 1973) serves as a modeling language for various geographic systems as well as an open interchange format for geographic transactions on the Internet. Users are also able to augment geo-spatial information supplied by a data producer with data of their own, creating new feature instances or modifying existing feature instances. The ability to integrate all forms of geographic information is key to the utility of GML. The ability of the democratisation of this language shows a successful vehicle and method in which new ideas can be shared and distributed.

Note that the concept of feature in GML[1] is a very general one and includes not only conventional 'vector' or discrete objects, but also coverages (see also GMLJP2) and sensor data. The geometries of those objects may describe, for example, roads, rivers, and bridges. InTIME (Marcoux & Sevigny, 1997) was the experimental version of the variant GML, and the core invention:

> The principle of separating document description from application function makes it possible to describe the attributes common to all documents of the same type. ... [The] availability of such 'type descriptions' could add new function to the text processing system. Programs could supply markup for an incomplete

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[1]   The key GML geometry object types in GML 1.0 and GML 2.0, are the following: Point, Line, String, PolygonGML 3.0 and higher also includes structures to describe "coverage" information, the "raster" model, such as gathered via remote sensors and images, including most satellite data.

document, or interactively prompt a user in the entry of a document by displaying the markup. A generalized markup language then, would permit full information about a document to be preserved, regardless of the way the document is used or represented (GOLDFARB, 1996).

This coding and development was important as it brought a cultural significance to light. GML – has as a cultural effect – the ability to become 'the reconciliation of national differences' the portability of the file format between GIS allows trans-national working and opens up possibility in geographical knowledge sharing. Such ability to share and construct has not materialised as much as was intended. At a coding level, XML open source has the philosophy of Richard Buckminster- Fuller,

> … Because the meaning of design is that all the parts are interconsiderately arranged in respect to one another and because all the generalized principles are omni-interaccommodative which is to say that none ever contradict any others … (FULLER, 2008, p. 122).

Developments in OpenStreetMap which has its own XML, challenge and provide exciting connectivity, though such working remains constrained it the lack of 'purposeful' projects from the public at large. Software such as Mapbox is democratising what was a technical art form, though landscape architecture's role within this digital cartographic impulse needs to come to the fore, as in the GML case, founded on the basis of cross national dialogue and connectivity and sharing of data.
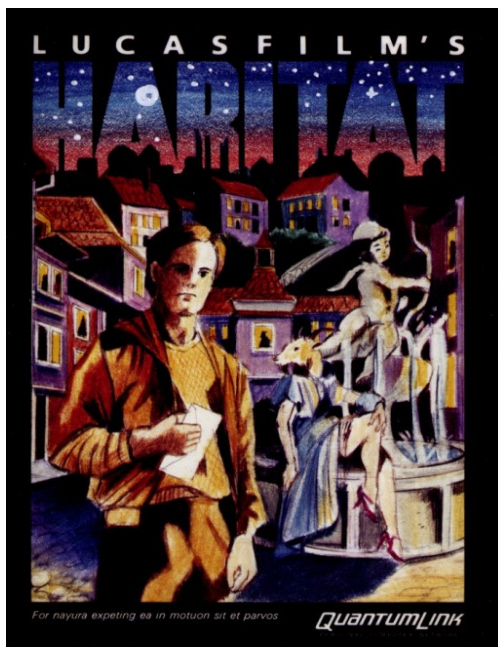
6 Habitat (Lucas Film 1986)

Fig. 9:   A typical Habitat scene & Concept art for the box cover
(© 1986 LucasArts Entertainment Company)

Quantum link was an online service for the commodore 64. Q-link enabled an interactive graphic resort island game called Habitat while in beta-testing. Later it was renamed Club Caribe. Lucasfilm's Habitat was created by Lucasfilm Games, a division of LucasArts Entertainment Company, in association with Quantum Computer Services, Inc.

> Habitat is ambitious in its scope. The system we developed can support a population of thousands of users in a single shared cyberspace. Habitat presents its users with a real-time animated view into an online simulated world in which users can communicate, play games, go on adventures, fall in love, get married, get divorced, start businesses, found religions, wage wars, protest against them, and experiment with self-government (BENEDIKT, 1991, p. 76).

Habitat as a software program made cyberspace a communications medium. It tested initial cyber development and the morality of its avatars and their interactions. As the developers Chip Morningstar and F. Randall Farmer stated (BENEDIKT, 1991), the introduction of weapons within the game led to a civilised area (gun free) and a 'wilderness' area (anything goes) in which players would be robbed and shot. In essence such development allowed networked operations and participation in virtual worlds. Such networkability will be key to future software operations and the democratisation of GIS systems and data.

The Habitat game trialled the first community within cyberspace. It is an example showing the results of interactivity, and such interactivity across practices will become more important in developing a greater forum of challenges and constraints of previous works. People define the parameters of their experience and such enabling of new digital realms is important to address the pressing ecological challenges what we make in the virtual and real.

7   Conclusion

Future motives for digital landscape architecture could be based on the following discussed principles. Lettrism sought new approaches to constructing images and increasing representational techniques could bring to the fore greater dialogues with the wider public. Psycho geography sought new mapping conditions and likewise greater interaction between fabrication and public participation which can yield a wider input into public space.

Superstudio sought a critical dialogue through representation and thus must be key to future work, creating, challenging, and developing ideas and applications working against standardisation. As Henri Lefebvre has warned in architectural production,

> ... we produce only the reproducible, and hence we only produce only by reproducing or imitating past production...because reproducibility is what ensures the renewal (or reproduction) of existing social relations (LEFEBVRE, 1991, p. 377).

Taking a moment out from the history of computer science we can see particular moments which mark unique inventions in the digital world, which would have profound impacts on future interfaces. Sketchpad allowed and marked the way to draw and interface with computers. The graphic interface would democratise our work to wider audiences and users. GML allowed the development and reference of geographic images to make real world visualisations at multi-scales, and most importantly in a standardised format to increase digital mapping systems availability and sharing of information systems. Habitat paved the way for increasing networking and tested the first virtual world. Its function and subversion by users gave first insights into future virtual worlds and the use of avatars in gaming environments. Such context can be appropriated for both software and hardware development, but also for the use of such tools for digital landscape.

The fate of digital landscape architecture can be located in the context of the computer instruction manual for Habitat which warned that the players and characters involved lost – "the spirit of adventure died away, and we became more and more content to do nothing" (LUCAS FILM LTD, 1987, p. 7).

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