Otto Paans

Details and Totalities
Exploring the Dialectic of Epistemic Reciprocity

Abstract

This paper presents a sustained reflection on two large urban design experiments. The reflection describes an emergent effect named "epistemic reciprocity". The latter part of the paper grounds its description in a body of design theory. The design experiments were carried out in Pendrecht/Zuidwijk (Rotterdam, NL) and Hellersdorf-Süd (Berlin, DE). Both areas are post-war urban expansions that are in need of an update in terms of urban sustainability. The design experiments were devised to explore and document the spatial possibilities of urban renewal and the epistemic potentials of architectural design. The reflection for this paper deals with the oppositional interplay between details and totality; large visions and tiny details; structural decisions and local details. This dialectic between the details and their totality can be couched in epistemic terms. Between the two opposites, an emergent effect of "epistemic reciprocity" occurs. Without details, the design proposal seems void; yet, it cannot be reduced to a collection of details. Especially in the beginning of a design process, details can be worked out everywhere. It is tempting to develop them in all directions. However, every detail opens up a "cascade of consequences" – an avalanche of considerations requiring attention. Details have role to play but one must decide carefully why working out a given detail is necessary. What does it add to one's insight? And does the cascade of consequences not divert attention away from the overall train of thought? Thinking in-between details and totality engenders a purposive co-evolution between them. All elements of a given proposal can be made to cohabitate a new ontological plane – a kind of panoramic vision in which details acquire the same significance as totalities. Not every detail is useful in every stage of the process. Dealing with totalities and details can be done in such a way that different scales of a given proposal reciprocally support each other. Knowledge from one level triggers insights on adjacent levels. Prudently switching between detail and totality enables these moments of "epistemic reciprocity". The movement of zooming in and out on an idea is not only useful for defining details but is indispensable for developing parallel tracks of thought.

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Introduction

The relations between designed totalities and details have long been a topic of interest in design theory. Schön provides a classical discussion of the detail as a "local experiment" or as part of "a conversation with a design situation".[1] More recently, Nelson and Stoltermann have attempted to describe the role of the "totality" in design processes.[2] Similar attempts to describe the holistic view of architects or engineers have been attempted by De Bruyn and Reuter.[3]

All these discussions attempt to capture something of the dynamic interplay that occurs between a designed totality or overall idea and its details.

The relations between totality and detail are not one-dimensional; neither are the relations between conceptualizing an overall idea and exploring its implications. This paper presents a reflection on these relations in two urban design experiments. It describes an emergent effect that occurs between conceiving a totality and working out its details. Provisionally, I name this effect "epistemic reciprocity".

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[1] Schön 1987; Schön 1992
[2] Nelson and Stoltermann 2014
[3] De Bruyn and Reuter 2011

It is epistemic because it adds to the production of knowledge or – more broadly – a refined understanding. It is reciprocal because both totality and detail are involved in its emergence, each gaining from the development of the other. In a dialectic between totality and detail, a body of new insights emerges gradually.

The design experiments I use to discuss epistemic reciprocity were carried out in Pendrecht/Zuidwijk (Rotterdam, NL) and Hellersdorf-Süd (Berlin, DE). Both areas are post-war urban expansions that need an update in terms of urban sustainability. The design experiments were devised to explore and document the spatial possibilities of urban renewal and epistemic potentials of architectural design.

The argument presented here isas a set of three claims, the first two of which lead up to the conclusive third:

I.   Epistemic reciprocity occurs between totality and details and is two-directional: details are not just elaborated consequences already inherent in a larger idea; instead, we may visualize them as existing on the same *ontological plane*.

II. Knowledge accumulations occurs between totality and detail because elaborating or working-out is a gesture of conscious and purposive *explication*. The more details accumulate around a given idea, the more it can be conceived as a real-world possibility. This gives also rise to a "cascade of consequences". This can be both a pitfall and a developmental strategy.

Conclusion:

III. Epistemic reciprocity does therefore away with the idea of a hierarchy between totality and detail – both are better understood as specific viewpoints that present different characteristics of one set of ideas.

Each section of the paper deals with one of the claims. The urban design experiments provide examples. It should be emphasized that this paper is not intended to present the full scope of the case study areas. The cases provide materials and examples for discussing the three claims outlined above.

I

Detailing is not *post facto* filling in of some blank spots in a given design proposal – as if all the design work had already been done by conceiving the totality. It is tempting to think in this way, as if developing a connective concept or idea was the actual core of the work, but detailing is just a working out of consequences that were – in an embryonic form – already present in the design proposal.

To complicate things even further, it is indeed conceivable that *some* details are just explications of a larger idea; and it is entirely conceivable that *some* details are – in their embryonic form – present in a larger design proposal or concept. However, such cases are not representative of the generative potential of detailing. As starting point, we may cite Marco Frascari's concise description of details:

> *Details are much more than subordinate elements: they can be regarded as the minimal units of signification in the architectural production of meanings. These units have been singled out in spatial cells or in elements of composition, in modules or in measures, in the alternating of void and solid, or in the relationship between inside and outside.*[4]

Frascari speaks here about details in *architecture*, and this limits the application area of his ideas. Nevertheless, the essence is clear: a detail as minimum unit of signification is therefore also the minimum unit of appropriation. Tactile interaction with the built environment runs through details – handrails, the height of steps, crunching gravel underfoot, or textures of plantings. Human beings perceive large spaces via peripheral

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[4] Frascari 1984

vision, but proximally, details force themselves into the perceptual foreground.[5] They are interfaces towards the structure (or, as Frascari notes: a hidden order) of a given design proposal.[6] The "order" they represent is centred around meaning – a handrail *offers* support, a guiding line *invites* to be followed, a series of repeated elements is *interpreted* as a continuous line. Construed this way, the detail provides an interpretive opening for understanding the implications of a larger idea across different scales. In speaking about the quality of artworks, Theodor Adorno asserted the following:

> *It is not possible to conceive the rank or quality of an artwork apart from its degree of articulation. In general, artworks are more valuable in direct relation to how articulated they are, when nothing dead, nothing unformed, remains; when there is no part that has not been passed through in the forming process.*[7]

This point is largely applicable to architectural works as well. In articulation, the built environment is worked out – all its features pass through a formative process. As such, details are not "subordinate elements" – they constitute the core components of an architectural idea. This process becomes visible and tangible in comparing some sketches that lead from an overall idea to its detailing.

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[5] We find this idea worked out from different angles in Polanyi's discussion on distal and proximal perception in Polanyi 2009

[6] Frascari 1984
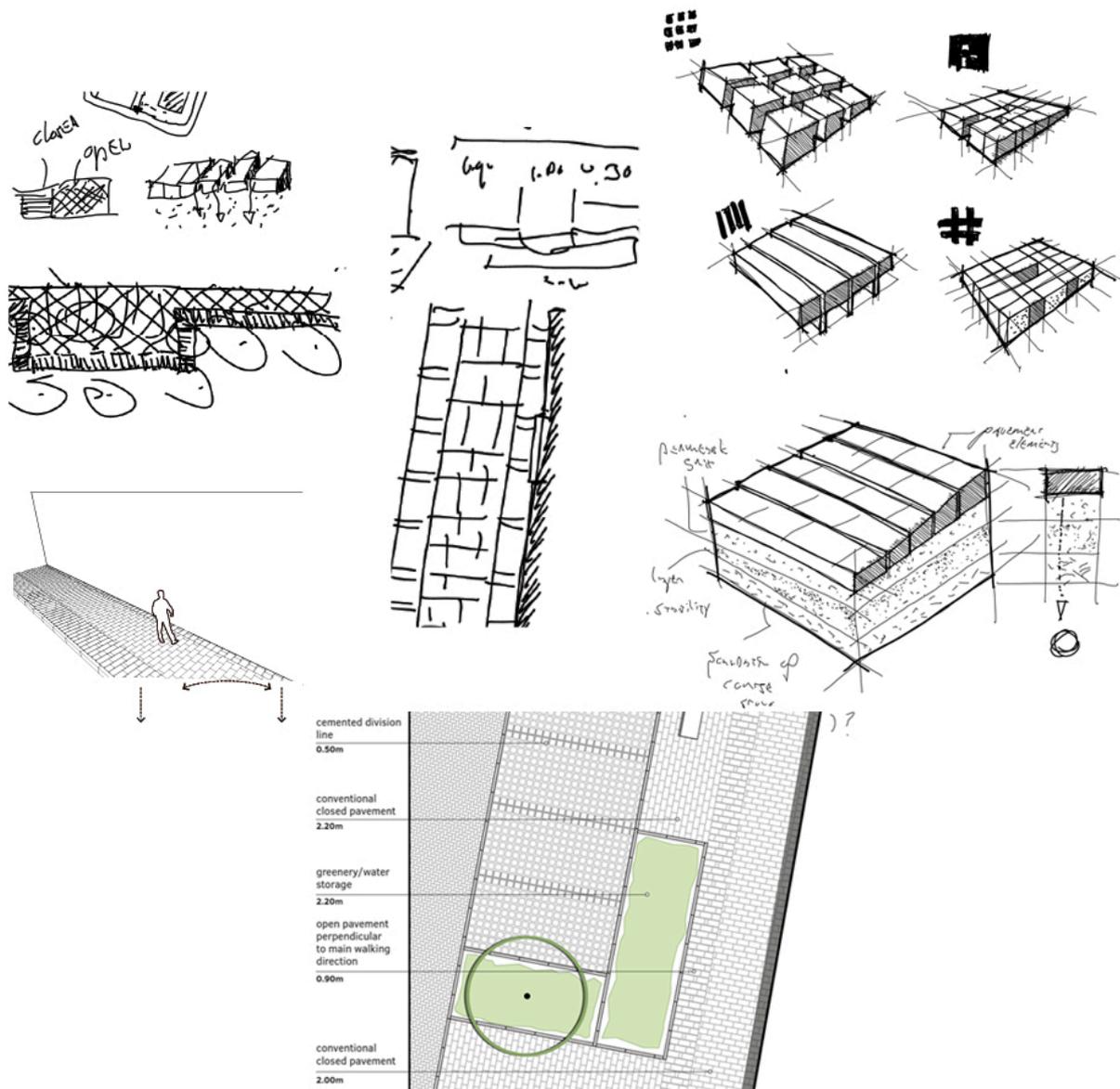
[7] Adorno 2016: 260

Figure 1: Details from the first sketches and principles to a final, worked-out version

In this example (fig. 1), the idea was to contribute to the reduction of urban heat islands by applying a proven strategy: constructing a semi-open pavement through which stormwater can seep to be stored in the ground, evaporating through vegetation when the temperature rises. In the first sketches, the overall idea was to line every footpath with a semi-open strip of pavement. However, in working the idea out, one must select materials, think about dimensions and functionality. Gradually, more and more considerations impose themselves on an idea that starts out as a singular thought. Zooming in on an idea, the macrocosm of the totality is temporarily exchanged for the macrocosm of the detail – the detail becomes a world of its own. At this point, the clear distinction between totality/detail vanishes. The detail is temporarily just as important as the totality. If we put this thought in philosophical terms, we can say that totality and detail exist on the same *ontological plane.* They stand as equals next to each other in one single panoramic view, and in moving from one to the other, a designer does not work top-down, but laterally.[8] A representational technique called *analytique* embodies this thought:

> In this graphic representation of a designed or surveyed building the details play the predominant role. They are composed in different scales in the attempt to single out the dialogue among the plans in the

[8] See Derrida 2001: 3–4 for a discussion of this thought; See also: Paans and Pasel 2018

making of the text of the building. Sometimes the building as a whole is present in the drawing; and generally, it is represented on a minuscule scale, and so it seems a detail among details.[9]

The goal of the *analytique* was to visualize and refine the coherency of a design proposal by juxtaposing its proportions, details and elements. It was a technique in which all materials are made present for the senses on a single, physical plane.

II

Like the main musical theme of a symphony, working out a detail is a form of developing the material present in the totality. In developing these materials, one transforms them. Working out a detail is not just "filling in", but actively explicating its possibilities on different scale levels. As the material of an idea is worked out, it is taken apart and placed in different positions with regard to an overall vision or idea.

In turn, the overall idea accumulates meaning and coherency through its details. Its implications and potentials are adjusted to the level of the user interface. Each element in the detail must have a meaningful relationship to its use, and also a meaningful relationship to the whole. A good design proposal is not reducible to a collection of details; while, conversely, details constitute the quality and meaningfulness of an idea.

The purposive working-out of possibilities is a knowledge-generating activity because it explicates and exhibits the possibilities that are in potential present in large design ideas. The meaningful relations between part and whole are gradually embodied in material choices, considerations about functionality or use, and atmospheric parameters. In detailing, these relations become intelligible. Through purposive notation, they enter a discursive field. One can speak about them and visualize relations between choices made on the level of detail and their "fit" within a larger design idea.[10]

These relations are not just one-way streets. If detail and totality exist on the same ontological plane, then it is possible to move from totality to detail, but also the other way around. The example given in figure 2 shows how such a relation could develop. In sketching out a design proposal for Plein 1953 in Pendrecht, the initial idea was to make the presence of water once again tangible. As Plein 1953 is a central meeting place for the entire neighbourhood, one could think of different way to approach the water surface by making its presence visually or physically felt. One variation on this idea was to add a stormwater drainage system that terminates into the main body of water on the square. Like a spider's web, this network would underline the trajectory of the water and the rational way in which the functional demand for drainage was handled. In sketching out details for the drainage, the concept turned upside down: instead of a network of small drainpipes, the idea of a linear drainage system became the new backbone for the spatial structure of the square.

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[9] Frascari 1984
[10] See for an extensive discussion on this topic Girard and Stark 2002 and Farias 2013
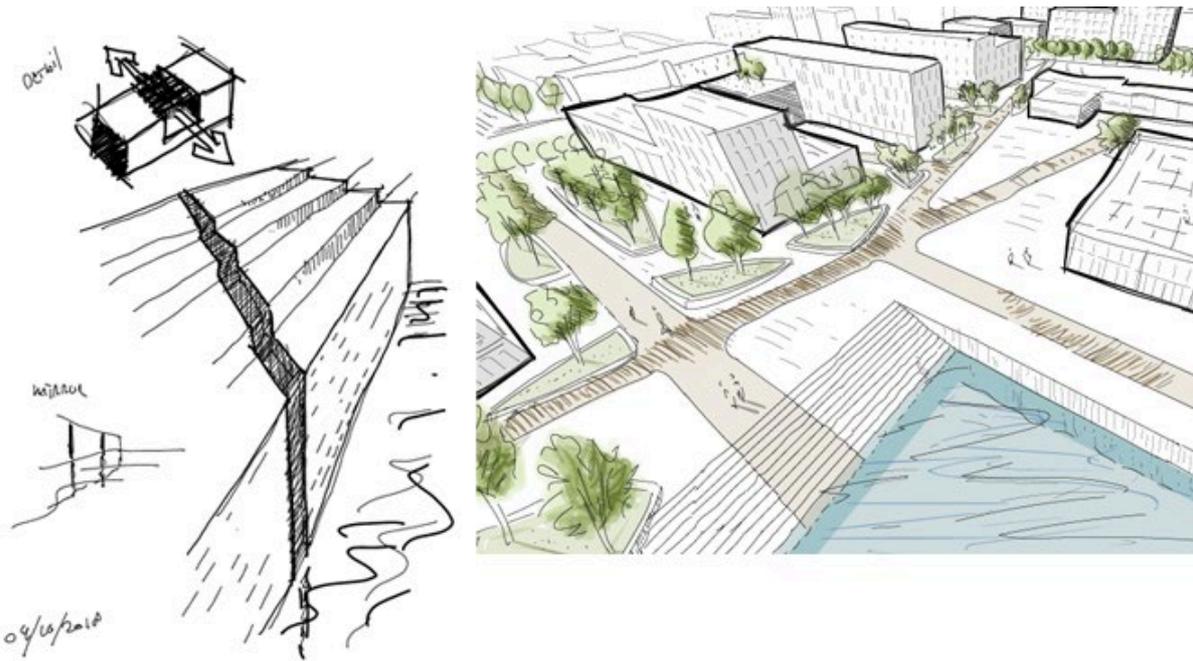
Figure 2: Initial sketch for a drainage concept and its subsequent transposition into a large-scale design idea

The main sketch that led to the overturning of the initial design idea was is included here (fig. 2), left below. The idea of a line touching the water became a new design motive, and magnified to a larger scale, it became leading in the design process. In turn, the idea that the water surface would mirror the drainage system (thereby increasing its visual impact) became a plausible argument for emphasizing the drainage system and using it as fundamental spatial element in the design.

One could object to this argument and maintain that relation between sketches are inspirational rather than epistemic. In other words: one sketch leads to another by way of an *inspirational* connection. This is not *knowledge accumulation* in the sense that one uncovers new facts.

This objection assumes that knowledge accumulation is reducible to producing new facts. Alternatively, one could hold that knowledge accumulation consists also in the elucidation of formerly implicit relationships, uncovering various aspects of a problem, structuring an initial overcomplex assignment or skilfully connecting a series of fragmentary ideas. This is knowledge that is more like "knowledge-how" than the more fact-centred "knowledge-that".[11]

Moreover, this objection assumes that knowledge accumulation progresses through the production of *new* particulars. This viewpoint, however, requires itself some support. One could alternatively say that the search process itself is a form of knowledge generation. Vilém Flusser spoke in this regard of a "searching understanding" (*suchendes begreifen*).[12] In searching-through-sketching, one must grasp the content matter in an exploratory way, as the final outcome is yet unknown.[13] Therefore, the content to be grasped must be created in the very process of grasping. Put differently: grasping and creating are two sides of the same coin.

> *(…) on the contrary, researching is attempting to make the theory [contained] in the inner space of the object congruent with practice.*[14]

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[11] See Ryle 2000 for the original distinction; Hetherington 2011 for a contemporary account

[12] Flusser 1994: 60

[13] This is a plausible response to an old dilemma in knowledge production: if one knows that one searches for X, the search itself is unnecessary; conversely, if one does not know that one searches for X, how will it be recognized when it is found? The classical formulation of this problem is found in Plato's *Meno*, but Flusser's response emphasizes that the relevance of searching itself is severely underestimated.

14) Flusser 1994: 60, author's translation

The core idea is that understanding is achieved through practice, and that theory plays an informing, but not primary role. Experimentation takes precedence over abstract understanding; contemplation is replaced by acting; and evaluation is actively engaging through creation. Flusser's play on the word "informing" is appropriate here: hands in-form the world between them, manipulating them according to the understanding. Yet, the understanding apprehends this new world through the same action of piercing and probing, aided by contemplation. Through in-forming perception, the world as much formed as it is being understood.[15] This sharpens the research process by continually searching for a holistic understanding of objects in which materiality, shape, function and aesthetics are pulled in the frame of reference.
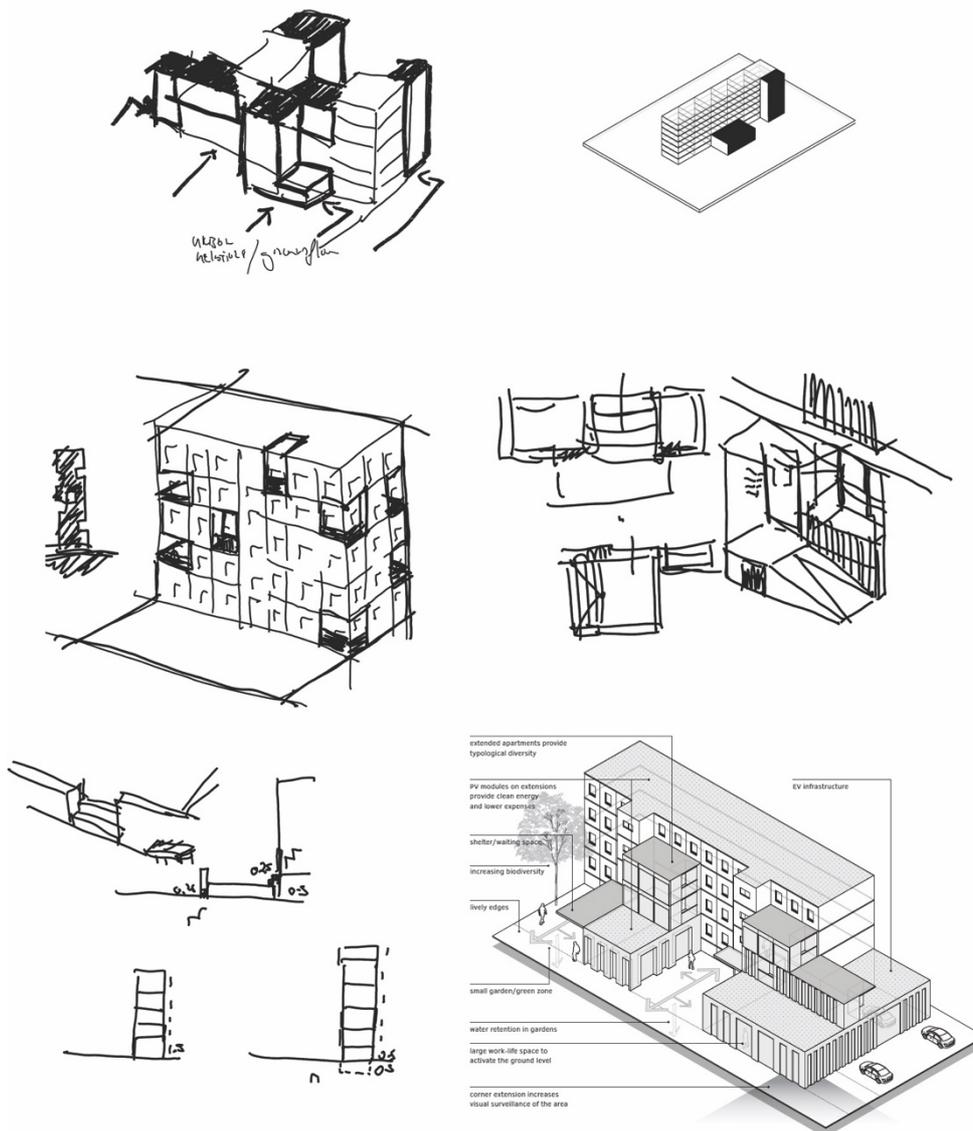

Figure 3: From high-level concept to detailing and design proposal

Even the cascade of consequences and new ideas that detailing invites is in-forming in this sense. The space of possibilities that each detail opens up is explored, creating a "design process in a design process" where one must develop options, understand them and commit to them before moving on. The interplay that ensues between totality and detail provides reasons to choose which options can be best matched at their respective scale levels. A kind of *analytique* or design archive is indispensable here, as consequences that one wants to avoid or mismatches in coherence can be detected early on.

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15) Flusser 1994: 58

III

From the first two premises (sections I and II), it follows that totality and detail exist on the same ontological plane. It also follows that knowledge production is not confined to fact-finding but can consist in other forms of insight. These insights are enabled through systematic design experimentation unfolding at multiple levels in parallel. This parallel development is a way to bring detail and totality together in ways that fit a situation. Yet, thoughtful detailing adds – at its own scale level – coherence and intelligible meaning to the totality. Designing, then, develops the many scale levels of a future world in parallel. Overall design ideas (totalities) intersect on user interfaces (details), creating insights that could not be obtained without a multi-level, conceptional process of making. In this process, in-formation becomes information. The knowledge derived from the searching process can be used for inferential reasoning, discursive practices and reflections on such topics as everyday usage, atmosphere, construction or ecology.

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