

# Phenomenology, architecture and the writing of architectural history<sup>1</sup>

Review of

Alberto Pérez-Gómez, *Timely Meditations, Selected Essays on Architecture*, 2 vols, Montreal: Right Angle International, 2016, and Alberto Pérez-Gómez, *Attunement, architectural meaning after the crisis of modern science*, Cambridge, Mass.: The MIT Press, 2016.

Branko Mitrović

You are still there! Oh, it's quite unheard of.  
We are enlightened now, so take yourselves off!

Goethe, *Faust*<sup>2</sup>

In his Nobel Prize winning novel *The Bridge on the Drina* Ivo Andrić described the struggle of the urban population of the city of Višegrad in Bosnia-Herzegovina against the introduction of house numbers, after the country came under Austro-Hungarian administration in 1878.<sup>3</sup> Previously, for centuries under Turkish rule, houses in streets were not numbered, and the local population reacted with profound mistrust to the decision of the new authorities to put numbers on private houses, and even number all the houses in each street. Perplexed by the new measure, prominent Muslim citizens met and discussed its meaning and whether it derived from the Christian faith of their new rulers, or whether it was a pragmatic policy that announced long-term plans concerning taxation and military conscription. For the rest of the population, the introduction of quantification into the environment in which they lived was simply unacceptable; an entire resistance movement developed that systematically destroyed, removed or painted over plates with house numbers.

It is similar unease about the quantification of space, its history and its implications in architecture, that, one is tempted to think, has also motivated Alberto Pérez-Gómez's scholarship for decades. The two most recent books that I review here present a comprehensive summary of his position. The two-volume

<sup>1</sup> I should like to express my gratitude to Christopher Martin and Nancy Stieber for their help and advice in the preparation of this paper.

<sup>2</sup> Ihr seid noch immer da! nein, das ist ungehört!  
Verschwindet doch! Wir haben ja aufgeklärt!

Johann Wolfgang Goethe, *Faust. Erster und zweiter Teil*. Munich: DTV, 1977, 4158-4159.

English translation according to A. S. Kline, Internet publication

<http://www.iowagrandsmaster.org/Books%20in%20pdf/Faust.pdf>, downloaded on 23 October 2018.

<sup>3</sup> Иво Андрић (Ivo Andrić), *На Дрини Туприја*, Belgrade: Српска Књижевна Задруга, 1961, 162-165.

*Timely meditations* is a collection of papers that have been published over years, while *Attunement* is a programmatic statement of his views on architectural theory and historiography. Among the contemporary authors who promote phenomenological approaches to architecture few have so extensively worked in architectural history and even fewer have theorised their perspectives on historiography. The very size of Pérez-Gómez's opus, as well as its influence, thus deserve a careful consideration.

### **Phenomenology and architectural history**

Phenomenological approaches exercise arguably a much greater influence in contemporary architecture than in any other visual art. They were originally introduced into architectural theory and historiography by a generation of architectural theorists and historians born before World War Two, such as Christian Norberg-Schulz, Juhani Pallasmaa and Dalibor Vesely. Alberto Pérez-Gómez belongs to the second generation of architectural phenomenologists, born in the years immediately after World War Two. Today, phenomenological approaches constitute an established, sixty-years old tradition in architectural theory that has had its own development. One should not expect that these authors are particularly interested in the views of philosophers-phenomenologists who wrote about architecture, such as Roman Ingarden. It is true that Martin Heidegger's essay 'Bauen Wohnen Denken' has been often invoked by some authors such as Norberg-Schulz and that others, including Pérez-Gómez, occasionally make statements about something they call 'Being'. Nevertheless, their work is motivated by their own, mainly architectural interests and they certainly do not strive to apply uncritically the views of philosophers in architecture, its theory or historiography. What is common for the entire school is the emphasis on non-visual qualities of architecture, such as the meanings and symbolism associated with architectural works or various types of synaesthetic experiences. The denigration of visuality (sometimes in the form of protests against 'oculocentrism') goes hand in hand with the tendency to play down the relevance of spatial and geometrical properties of architectural works as well as the significance of geometry for human interactions with spatial objects in general. This negative stance on geometry and mathematics can be seen as a consequence of a wider negative stance on the impact of rationality, science and technology (all of them deemed as 'positivistic') on human existence and the world we live in.

The ground-breaking moment in the history of architectural phenomenology was the publication of Christian Norberg-Schulz's *Intentions in architecture* in 1963.<sup>4</sup> The publication of the book almost coincided with Ernst Gombrich's *Art and Illusion*, and there are important parallels between the two books. Similarly to Gombrich in the case of art history, Norberg-Schulz introduced into discussions about architectural theory the results of then-contemporary theories of perception, especially New Look psychology. The core thesis of *Intentions in Architecture* was the inseparability of perception from the meanings associated with the objects

<sup>4</sup> Christian Norberg-Schulz, *Intentions in architecture*, Oslo: Universitetsforlaget, 1963.

perceived. Norberg-Schulz insisted that all perception is dependent on the conceptual contents associated with the objects perceived, that perception is the perception of meaningful forms and that things are always perceived with meanings.<sup>5</sup> Similarities between Gombrich and Norberg-Schulz do not, however, extend beyond their positions in the early 1960s. While Gombrich subsequently spent decades opposing the collectivist and anti-realist appropriations of his book, Norberg-Schulz in his later writings endorsed Heidegger and promoted the Romantic glorification of place and locality. It is important for us here to understand the historiographical implications of this position in relation to (and in opposition to) which Pérez-Gómez developed his perspectives and from which he derived his method of history writing.

Already in *Intentions in architecture* Norberg-Schulz wrote that the Paleochristian basilica represents Heavenly Jerusalem, that in megalithic architecture stones expressed permanence and imperishability and served as dwelling for the souls of ancestors, that menhirs were understood by their builders as the abode of vital powers.<sup>6</sup> In his later writings we read that the forest of columns in an Egyptian temple represents land and sacred plants, that the nave and the altar in a Christian basilica symbolise the path of salvation, that the columns of the temple of Apollo in Corinth lack entasis in order to express the abstract, intellectual strength of the god, that the pyramid complex in Saqqara symbolises Egyptian cosmos, that the symbol of a pyramid represents the King as the son of Ra, that the (older) temple of Hera in Paestum symbolises chthonic forces and so on.<sup>7</sup> Any architectural historian worth his or her salt can only be bewildered by the sheer arbitrariness of such claims that simply cannot be documented. Without any hesitation, Norberg-Schulz attributed his own fantasies about historical buildings to entire past civilisations, without any attempt to support his claims. Nevertheless, in the final decades of the twentieth century his writings were highly influential in architectural academia. In architectural historiography this influence resulted in a reductive approach that suppressed the study of visual, formal or spatial properties of buildings and privileged the study of narratives, meanings and verbal behaviour associated with architectural works through history. In addition to the wild arbitrariness of Norberg-Schulz's claims, a major problem of this approach was the uncertainty about identity of the individuals to whom he attributed these meanings.

Meanings, one normally assumes, do not exist in the air, independently of the mental states of individual participants in communication. Symbols, sentences or buildings do not have meanings by themselves. In the case of a sentence in French, for instance, we can assume that most French speakers will grasp its meaning—this is why they count as French speakers. But in the case of a building, it is far from clear that individuals who belong to the same culture will associate the same meanings with it. Even if we found a medieval document by an author who

<sup>5</sup> Norberg-Schulz, *Intentions*, 37, 94, 168.

<sup>6</sup> Norberg-Schulz, *Intentions*, 124, 125.

<sup>7</sup> Christian Norberg-Schulz, *Genius loci. Towards a phenomenology of architecture*. New York: Rizzoli, 1980, 51, 52, 56, 66. Christian Norberg-Schulz, *Meaning in western architecture*, New York: Rizzoli 1980, 12, 14, 29.

compared the form of a basilica with the Christian path of salvation, this could be merely the opinion of that author. One cannot attribute it to all medieval men and women and not even to all builders of basilicas in the Middle Ages. It is, however, strong collectivist claims of this kind that Norberg-Schulz systematically promoted—for instance, that primitive men experienced the world as animated, that the Gothic cathedral was heaven for the contemporary men, that Greeks understood light as a symbol of knowledge or that dolmens were understood as representations of the world as a whole at the time they were built.<sup>8</sup> Even if such claims could be documented, the documents could confirm only the views of individuals, while Norberg-Schulz attributed them to all members of entire historical and cultural contexts. In his historical accounts, individuals are mere products of their environment and could not have thought differently from the rest of their context. Norberg-Schulz dealt with such criticism by introducing the bold claim that meanings are not human creations, but that humans merely discover the meanings that pre-exist their discovery.<sup>9</sup> It is then presumably these disembodied meanings, that exist independently of the mental states of individuals, that Norberg-Schulz's historical claims sought to establish. He never presented an argument in order to prove that such extra-mental meanings actually exist at all. It also remains unclear how he could know about the meanings that were accessible to individuals from cultural contexts different from his own. One possible response is that he attributed to himself an exceptional position in history from which he could survey everything, including undocumented meanings. Another response (Spengler made such a claim for his historical work) would be that his own context determined that he write the way he did—in other words, that historians do not strive to establish historical truth, but merely manifest historiographical behaviour appropriate to their context.<sup>10</sup> In both cases, Norberg-Schulz would be absolved from the need to consider sources or documents.

The main difference between Pérez-Gómez's and Norberg-Schulz's historiography is precisely in the way they conceive of architectural meanings.<sup>11</sup> Unlike Norberg-Schulz, Pérez-Gómez does not seek to specify the concept that an architectural work expresses as its meaning.<sup>12</sup> Instead of meaning 'something', he

<sup>8</sup> Norberg-Schulz, *Intentions*, 48, 124. Norberg-Schulz, *Genius Loci*, 31, 52.

<sup>9</sup> Christian Norberg-Schulz, *Mellom jord og himmel. En bok om sted og hus*, Oslo: Pax Forlag, 1992, 110.

<sup>10</sup> More precisely, Spengler said that thinkers think the way they have to. Oswald Spengler, *Untergang des Abendlandes: Umriss einer Morphologie der Weltgeschichte*, Munich: DTV, 2003, vii.

<sup>11</sup> For Pérez-Gómez's criticism of Norberg-Schulz, see Alberto Pérez-Gómez, 'Introduction to *Architecture and the crisis of modern science*', in Pérez-Gómez, *Timely meditations*, vol. 2, 1-36, 5 and Alberto Pérez-Gómez, 'Place is not a post-card: The problem of context in contemporary architecture' in Pérez-Gómez, *Timely meditations*, vol. 2, 127-141, 128.

<sup>12</sup> He provides such contents only rarely and the impression is that he did so in his older writings. In Alberto Pérez-Gómez, 'The myth of Dedalus: On the architect's *metier*' in Pérez-Gómez, *Timely meditations*, 2-21, 13, one reads that '[t]he Minotaur symbolized the architect's technical ability and his power to tamper with the order of the world'. The problems with

points out rather heideggerically, art and architecture ‘enable meaning to present itself’.<sup>13</sup> In his view, architectural works preserve meanings within themselves, and they are not allegories in the sense that they provide understanding of something else.<sup>14</sup> Rather, he claims, meaning is the synaesthetic reaction to architectural works.<sup>15</sup> In his view, the meanings of ‘the most significant architecture’

include sound (and eloquent silence), the tactility of materials, smell and the sense of humidity, among infinite other factors that appear through the motility of embodied perception and are given *across* the senses.<sup>16</sup> [Pérez-Gómez’s emphasis.]

Note that he is not saying that sound, tactility and so on *convey* meanings, but that they *are included* in meanings. He insists that the primary phenomenological, multisensory dimension of meaning is the primacy of materiality, craft and temporal human participation in a building.<sup>17</sup> Historically, Pérez-Gómez claims, until the era of Claude Perrault, this was indeed the traditional view – ‘that meaning appears immediately through embodied, multisensory and tactile perception’.<sup>18</sup> At the same time, in his view, perception, fully understood, is synaesthetic.<sup>19</sup> The nature of the phenomenon of synaesthesia, on which he so extensively relies, however, ultimately remains unexplained. Many people, including myself, would probably be inclined to understand it as a (rare) form of neuropathology, but Pérez-Gómez insists that the synaesthesia he is talking about does not pertain to the situation ‘in which stimulation on one sensory pathway leads to automatic, involuntary experiences in a second sensory pathway’.<sup>20</sup> Rather, as etymology suggests, it is to be understood as the union of senses that somehow relates to world harmony, the German words *Stimmung* and *Gemüt* and various holistic ideas promoted by nineteenth-century Romantics.<sup>21</sup> This explanation is certainly unclear. Pérez-Gómez in fact warns at this point against the expectation of clarity in these

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this statement are the same as those we have seen in relation to Norberg-Schulz’s work: it is unclear how Pérez-Gómez can know what the Minotaur symbolised and for whom.

<sup>13</sup> Alberto Pérez-Gómez, ‘Chóra: The communicative space of architecture’, in Pérez-Gómez, *Timely meditations*, vol.1, 43-78, 72.

<sup>14</sup> Pérez-Gómez, ‘Chóra’, 72.

<sup>15</sup> Occasionally he does say that meanings are *conveyed through* (which would suggest that they are not identical with) synesthetic interaction, but when he makes such statements he still does not specify the meaningful content that is conveyed. See for instance Pérez-Gómez, *Attunement*, 148. In most cases, his statements suggest that he conceives of the synesthetic reaction as the meaning itself.

<sup>16</sup> Alberto Pérez-Gómez, ‘Architecture and the body’ in Pérez-Gómez, *Timely meditations*, vol. 2, 238-252, 246.

<sup>17</sup> Alberto Pérez-Gómez, ‘The historical context of contemporary architectural representation’, in Pérez-Gómez, *Timely meditations*, vol. 2, 208-236, 208.

<sup>18</sup> Alberto Pérez-Gómez, ‘Claude Perrault and the early modern instrumentalization of architectural theory’, in Pérez-Gómez, *Timely meditations*, vol. 1, 216-262, 252.

<sup>19</sup> Pérez-Gómez, *Attunement*, 20.

<sup>20</sup> Pérez-Gómez, *Attunement*, 88.

<sup>21</sup> See the extensive literary section in Pérez-Gómez, *Attunement*, 87-90.

matters—against the tendency to devalue and reduce to irrelevance everything that cannot be rendered using clear and intelligible logic.<sup>22</sup> I am tempted to take this warning seriously and I do not want to suggest that concepts such as synaesthesia, moods, atmospheres and similar, as they have been employed by architectural phenomenologists ever since Norberg-Schulz introduced them into architectural theory, are mere affected obfuscations or fake profundity.<sup>23</sup> However, the problem is that on the basis of Pérez-Gómez's description I cannot identify when (whether) I perceive synaesthetically or not, nor when (whether) other people do—and extended citations of statements by German Romantics are of little help. Consequently, insofar as Pérez-Gómez claims that architecture was traditionally perceived synaesthetically (as we have seen, he says that this was the case at least until Claude Perrault) I am not sure I know what he means, nor how he can know about it. When Palladio, for instance, provided a drawing with dimensions of the villa Rotonda in his *I quattro libri dell'architettura*, did he actually relate the drawings and dimensions to certain *smells* and possibly, even, the *taste* of plaster? (I do not, so am I missing something?) And, again, how can Pérez-Gómez know about it? Saying that buildings can be experienced by other senses (touch, smell) and not only visually is a platitude; it does not justify the claim that our experience of buildings is synaesthetic or that our visual experience is inseparable from these other forms of sensation. (Let alone the problem of documenting the smells Palladio associated with his designs.)

It should be also mentioned that Pérez-Gómez's perspective is as collectivist as Norberg-Schulz's. His universal claims (as undocumented and undocumentable as those made by Norberg-Schulz) include statements such as the claims that in ancient times the space of architecture was the space of ritual, that in the Middle Ages architects did not conceive of a whole building, that prior to Greek philosophy and classical literature, spaces between things were not acknowledged or that before the first century BCE buildings were perceived as natural features, that the Egyptian pyramid was a sacred mountain and the Mycenaean *tholos* was a sacred cave.<sup>24</sup> He also claims that before Descartes and the Enlightenment emotions were external to the human mind.<sup>25</sup> It was only in the nineteenth century, he asserts, that the belief that a person's thoughts and emotions are exclusively within his or her soul became a collective cultural assumption.<sup>26</sup> At the same time, the claim that the meanings of architectural works are content-free and consist in the synaesthetic reaction to buildings has awkward implications that did not arise in Norberg-Schulz's writings. Even if synaesthesia were a normal and not a pathological form of perception, and, for instance, one's visual perception of the shape of a rose were inseparable from the perception of its smell, it still feels inappropriate to say that the synaesthetically perceived shape-cum-smell of a rose constitutes its *meaning*. The meaning of a

<sup>22</sup> Pérez-Gómez, *Attunement*, 90.

<sup>23</sup> Norberg-Schulz did not make these concepts central to his architectural theory the way Pérez-Gómez does, but he did rely on them, see his *Intentions*, 49 and *Genius loci*, 6, 11.

<sup>24</sup> Pérez-Gómez, 'The Myth of Dedalus', 15; Pérez-Gómez, 'Historical context', 211; Pérez-Gómez, *Attunement*, 109.

<sup>25</sup> Pérez-Gómez, *Attunement*, 71.

<sup>26</sup> Pérez-Gómez, *Attunement*, 71.

sentence written on a piece of paper certainly does not consist of our synaesthetic reaction to the colour of the ink in combination with the tactile properties of the paper. It remains unclear, consequently, why synaesthesia should constitute *architectural* meanings (rather than, possibly, convey them). This problem has further implications, for instance, when it comes to the rejection of aesthetic formalism. In the case of Norberg-Schulz, his position is hardly controversial: if, as he suggests, forms of objects are always perceived in relation to the concepts (meanings) associated with these objects, then one certainly cannot attribute aesthetic properties to objects purely on the basis of their forms, independently of the concepts (meanings) associated with them. However, it is much harder to see how Pérez-Gómez can justify his rejection of formalism.<sup>27</sup> Synaesthetic, multisensory interaction with architectural works that he relies on does not seem to depend on the conceptual contents associated with these works; as we have seen, he specifically denies that architectural works have conceptually specifiable meanings. In his view, they resist conceptualisation and their ultimate meaning cannot be recuperated intellectually.<sup>28</sup> If this is so, then Pérez-Gómez's position should allow that aesthetic properties could be attributed to architectural works purely on the basis of one's synaesthetic interaction with such works and independently of any conceptual contents associated with these works. In other words, he is not an anti-formalist, but a formalist with an unusual theory of perception.

## Method

The historiographical model that Pérez-Gómez advocates and relies on is a version of postmodernist anti-realist constructionism that was popular in the final decades of the twentieth century. Speaking in very general terms, this is the view that reality itself, and not merely what people think about reality, is constructed by the beliefs shared by large human collectives, such as cultures or eras. Pérez-Gómez thus does not hesitate to state that 'the objective world does not exist' and that it is an illusion.<sup>29</sup> Similarly, the reality of the modern world, he claims, 'is not independent of our consciousness'.<sup>30</sup> The assumption is that beliefs of an era (we have seen that such collectivist claim are common in his history writing) constitute the reality of that era. This implies that we cannot assume that the world in the past was structured according to the way our modern science says that it functions. It is important to understand what this means. For instance, most historians (including myself) would be inclined to say that it is anachronistic to attribute to Archimedes the belief that gold is the metal whose atoms have 79 protons because our modern atomic theories were unknown to ancient Greeks. Nevertheless, it will be still assumed that gold itself, in ancient Greece, very much like today, consisted of atoms that have 79 protons. Insofar I understand him well, Pérez-Gómez would oppose

<sup>27</sup> See for instance, Pérez-Gómez, *Attunement*, 10, 24, 33.

<sup>28</sup> Pérez-Gómez, 'Chora', 72. However, see note 11 above for a counterexample.

<sup>29</sup> Alberto Pérez-Gómez, 'Abstraction in modern architecture: the gnostic dimension', in Pérez-Gómez, *Timely meditations*, vol. 2, 37-60, 50.

<sup>30</sup> Alberto Pérez-Gómez. 'Place is not a post-card', 134.

this view and suggest that the beliefs and knowledge of peoples of the past really constituted the reality of their era. In this he comes close to Bruno Latour's view that, for instance, it is anachronistic to assume that Ramses II died of tuberculosis because Koch's bacillus was discovered only in 1882.<sup>31</sup> When Pérez-Gómez thus says that 'A Gothic cathedral ... *is* the City of God on earth' [his italics] he is not merely saying that it was *believed* to be so.<sup>32</sup> Similarly, when he says that in the Middle Ages

Humanity literally lived *in* the light of God, under God's benevolent gaze, the light of the golden heaven of the Byzantine frescoes and mosaics, or the sublime and vibrant space of the Gothic cathedrals.<sup>33</sup>

he literally means 'literally'; this is a statement about past reality (and how it differs from our reality) and not merely about the beliefs of people who lived in that reality. This also explains the claim about the externality of human thoughts and emotions mentioned above. As we have seen, he asserts that the understanding that human thoughts and emotions are internal to the human mind became widely accepted only in the nineteenth century. Before Descartes, the idea was unknown, he claims, so thoughts and emotions were actually external (not merely conceived of as external) to human beings. The idea that people before Descartes did not know that their thoughts and emotions were in themselves is certainly extremely dubious (it would be a ground-breaking discovery if someone actually proved that this was the case)—but the point to be noted here is that for Pérez-Gómez this means that thoughts and emotions actually existed outside individuals and their minds. The straightforward counter-response to be made is that thoughts and emotions are mental states, mental states are biological processes that can only exist, and could have only existed, in nervous systems of individuals, regardless of what people believed or did not believe.

The assumption that beliefs about the physical world of every era are true in their time is a fundamental premise for Pérez-Gómez's claim that the physical world as described by the modern scientific worldview is only a possible state of affairs, generated by the intellectual trends of the Enlightenment era. It may be asked whether Pérez-Gómez's writings could be interpreted in ways that preclude post-modernist constructionism and the assumption that because the physical world was conceived of differently in the past, it was different. In that case one would have to attribute to him the view that the physical environment in which humans live is (and has always been) quantifiable. (We shall later see that he dismisses this view as 'delusion'.) One would also have to attribute to him an affirmative view of the progress of modern science, whose main achievements are precisely based on the study of the quantifiable properties of the physical environment in which humans

<sup>31</sup> Bruno Latour, 'On the partial existence of existing and nonexisting objects', in Lorraine Daston, ed., *Biographies of scientific objects*, Chicago: Chicago University Press, 1999, 247-269, 248.

<sup>32</sup> See the discussion in Alberto Pérez-Gómez, 'Introduction to *Architecture and the crisis of modern science*', 1-36, 15.

<sup>33</sup> Pérez-Gómez, 'Historical context', 212.

live—a view that would be extremely hard to square with the general tone of Pérez-Gómez's writings. Rather, his position is much better described as the view that the modern scientific worldview and its world are the (unfortunate, if I understand him well) products of the trends that started with the seventeenth-century scientific revolution, with René Descartes and Galileo Galilei as chief culprits and Peter Eisenman as the ultimate architectural incarnation of this worldview.<sup>34</sup> But before we can embark on the analysis of Pérez-Gómez's project, we should consider the scholarly apparatus that is intended to support it.

If the beliefs about the physical world of an era structure the physical reality of that era, then it is fair to expect that *our* historical knowledge of the beliefs of an era constitutes these beliefs. Let us therefore examine the apparatus that Pérez-Gómez employs in order to generate knowledge about the beliefs of past eras that, in their turn, constituted the physical reality of those eras. I see four major problems that seriously undermine the credibility of his enterprise:

- (a) Excessive (almost exclusive) dependence on secondary sources;
- (b) Arbitrary claims and claims that lack confirmation;
- (c) Plain fallacies including some surprising claims;
- (d) Claims without content (obfuscations and heideggerianisms).

In *Attunement* he does not strive to present arguments of other authors that would support or oppose the claims that he makes. Rather, the book presents the views of other authors, and mainly insofar as these views coincide with the point Pérez-Gómez wants to make. Many paragraphs are thus endless litanies of citations. A typical section (such as the one on pages 91-92) cites Karl Gustav Carus, Étienne Bonnot de Condillac, John Locke, David Hume and Georg Philipp Friedrich von Hardenberg (Novalis). All these citations derive from George Gusdorf's book *L'homme romantique*. Primary sources are hardly ever considered; St Ambrose, St Augustine, Johannes Kepler, Athanasius Kircher, Marin Mersenne, Guarino Guarini, Novalis and Empedocles for instance, are all cited according to what other authors have said about them—and insofar as these authors attributed to them the views that support Pérez-Gómez's views.<sup>35</sup> Contrary views or interpretations are not considered—while it is hard to believe that so many so influential authors have never been interpreted in ways that would sometimes attribute to them views opposed to those of Pérez-Gómez. (Even when primary sources are considered, they are approached through a translation, unless they are in English, French or Spanish.<sup>36</sup>) The problem with the approach that relies exclusively on secondary

<sup>34</sup> The persistent attacks on Peter Eisenman—presumably because of his formalism and views about the self-referentiality of architecture—are a curious aspect of Pérez-Gómez's writings, especially because his own relationship to formalism, as we have seen, is not clear. See Pérez-Gómez, *Attunement*, 24, 180; Alberto Pérez-Gómez, 'Architecture as science: analogy or disjunction', in Pérez-Gómez, *Timely meditations*, 61-76, 73 (note).

<sup>35</sup> Pérez-Gómez, *Attunement*, 45, 57, 58, 59, 60, 65, 109.

<sup>36</sup> The use of French translations of German works, that Pérez-Gómez actually *cites* according to the titles of French translations, is particularly confusing. Novalis simply did not write a book entitled *Grains de pollen*, he wrote *Blüthenstaub* and if the title is translated, it should be

sources is that it allows the author to pick and choose the views that coincide with his own views. It becomes dangerously easy to avoid the need to engage with counterarguments or the views one disagrees with. The reliance on secondary sources also opens gates to various kinds of omissions that make a historian's effort look superficial. Consider the claim (from another book that Pérez-Gómez wrote with Louise Pelletier) that 'Alexander of Aphrodisias was part of the Stoic tradition'.<sup>37</sup> One naturally wants to know how one of the most prominent Aristotelian commentators of classical antiquity could have become a Stoic. The remaining part of Pérez-Gómez's endnote explains how the error came about: it refers to page 9 of David Lindberg's *Theories of Vision from Al Kindi to Kepler*.<sup>38</sup> As it turns out, Lindberg there merely cited Alexander's description of the Stoic theory of vision. He certainly did not say that Alexander was a Stoic. Nevertheless, since the chapter in Lindberg's book is called 'The Stoics and Galen', Pérez-Gómez and his co-author, Louise Pelletier, inferred that Alexander must have been a Stoic. They did not bother to check.

The second problem is the proliferation of arbitrary and unsubstantiated claims. When one thus reads that Giovanni Battista Piranesi 'grasped the original sense of Vitruvius's *venustas*', one naturally wants to know how Pérez-Gómez established this original sense, since this is a very debatable issue in the interpretation of Vitruvius.<sup>39</sup> Why should we accept without any argument, that *venustas* is, as he claims, 'the quality of seduction driven by ethical wisdom (*phrónesis*), this being the issue of architectural meaning' — considering that one cannot find in Vitruvius a statement that would even vaguely resemble or support this claim?<sup>40</sup> (I leave aside the fact that it is not clear what this interpretation means at all.) Similarly unsubstantiated by evidence is the claim that Piranesi's spaces 'seduce in order to manifest the divine *in the world*' [Perez-Gomes' italics], for it is unclear what this manifestation might be or how it can be recognised in Piranesi's drawings.<sup>41</sup> In the case of the claim that for Guarino Guarini

Geometric figures are combined and thus believed to reflect the structure of the natural world, its full synaesthetic meaning — texture, light, smell —

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translated into English and not referred to in French, since Pérez-Gómez's book is in English. (Pérez-Gómez, *Attunement*, 88) Similarly, it is bizarre to cite, in a book in English, Ptolemy's astronomical treatise according its French title *Almageste*; the title of that book in English is *Almagest*. (Pérez-Gómez, *Attunement*, 31) It took me some research to discover that Friedrich Wilhelm Joseph Schelling's book that Pérez-Gómez cites as *Essais* are actually his *Philosophische Briefe*. (Alberto Pérez-Gómez, 'Mind, mood and architectural meaning' in Pérez-Gómez, *Timely meditations*, vol. 2, 254-270, 255.)

<sup>37</sup> Alberto Pérez-Gómez, Louise Pelletier, *Architectural representation and the perspective hinge*, Cambridge, Mass.: MIT Press, 1997, 398, note 19.

<sup>38</sup> David Lindberg, *Theories of vision from Al Kindi to Kepler*, Chicago: The University of Chicago Press, 1976.

<sup>39</sup> Pérez-Gómez, *Attunement*, 122.

<sup>40</sup> Pérez-Gómez, *Attunement*, 122.

<sup>41</sup> Pérez-Gómez, *Attunement*, 122.

construing complex and truly novel buildings, and giving place to atmospheres appropriate to the diverse programs of Guarini's projects.<sup>42</sup>

one can only desire that this claim were properly elaborated. Guarini's extensive treatises have been little studied so far and it would be a ground-breaking discovery if someone showed that he actually talked about synaesthesia. Consider also the claim that in antiquity:

The architect's cosmos was Plato's cosmos, and the philosopher's 'cosmobiology' was the basis for all revelations of meaning in traditional architectural writings. Architecture disclosed truth by revealing the order of the cosmos—the star-dance of the heavens whose regularity was magically revealed to the human gaze—in the sublunar world. It displayed the wondrous order to nature and of our living body through analogy.<sup>43</sup>

One has to wonder which 'traditional architectural writings' he has in mind. Greek architectural treatises that only Pérez-Gómez has access to? How can he document that ancient Greek or Roman architects actually read Plato? What did Greek architects (architectural theorists?) know about Plato's cosmos? What about Greek architects who lived before Plato, including, for instance, the architects of the Acropolis in Athens or temples in Sicily? Why Plato's and not Aristotle's cosmos after all? Or the cosmological speculation of some other Greek philosopher? Why does he not cite the ancient Greek and Roman sources that actually state that architecture 'reveals the truth by revealing the order of the cosmos'? (Note, at the same time, that he is not merely saying that architecture *was believed* to have revealed the order—he is saying that it actually *performed* this action.) Or, consider the claim that

For Palladio, harmony was inextricably associated with temperance, crucial for a healthy life and the full psychosomatic meaning, recognizing the spiritual wholeness necessary for man, whose existence had acquired a newly sacred dimension; the emphasis was in accordance with Christian dogma and its recently acquired Neoplatonic and hermetic associations—reflected most notably in his famous use of temple fronts as facades for secular dwellings.<sup>44</sup>

The claim is supposedly justified by the fact that Palladio mentioned *la bella macchina del mondo* in Book Four of his *I quattro libri dell'architettura*.<sup>45</sup> However, in the section that Pérez-Gómez cites, Palladio invoked the rational structure of the world, 'full of

<sup>42</sup> Pérez-Gómez, *Attunement*, 62.

<sup>43</sup> Alberto Pérez-Gómez, 'Charles-Etienne Briseux: Eighteenth-Century Musical Analogy and the Limits of Instrumentality in Architecture', in Pérez-Gómez, *Timely meditations*, vol. 1, 263-321, 268.

<sup>44</sup> Pérez-Gómez, *Attunement*, 54.

<sup>45</sup> Andrea Palladio, *I quattro libri dell'architettura*, Venice: Dominico de' Franceschi, 1570, according to the photostatic reprint, Milan: Ulrico Hoepli, 2000,

marvellous embellishments' that God 'with boundless generosity, perfected with but a word of command' in order to argue that architects are similarly obliged to use all possible ornaments in the design of temples, and use proportions that bring gentle harmony to the eyes of the observers.<sup>46</sup> Palladio thus actually emphasised the visual (and not synaesthetic) perception of harmonies. His own words preclude a synaesthetic interpretation; also, he does not say anything that would even vaguely pertain to 'spiritual wholeness' or 'psychosomatic meaning'. Finally, there are no documents that would suggest that Palladio's use of pedimented porticos ('temple fronts') on facades of secular buildings had something to do with 'Neoplatonic or hermetic associations'. Their introduction can be explained as a result of evolution in his use of the classical orders after his work on the Basilica.<sup>47</sup>

Problems only get worse when we consider the numerous claims that Pérez-Gómez makes that are known to be false. Many of them pertain to architectural history. Leon Battista Alberti's *concinnitas*, says Pérez-Gómez, summarises 'his [Alberti's] concerns with proportional beauty and metaphorical signification of architecture'.<sup>48</sup> However, a survey all sixteen contexts in which Alberti used the term in his *De re aedificatoria*, shows that *concinnitas* is purely a relationship between

<sup>46</sup> Palladio says: 'E ueramente considerando noi questa bella machina del Mondo di quanti merauigliosi ornamenti ella sia ripiena, & come i Cieli co'l continuo lor girare uadino in lei le stagioni secondo il natural bisogno cangiando, & con la soauissima armonia del temperato lor mouimento se stessi conseruino; non possiamo dubitare, che douendo esser simili i piccioli Tempij, che noi facciamo; à questo grandissimo della sua immensa bontà con una sua parola perfettamente compiuto, non siamo tenuti à fare in loro tutti quelli ornamenti, che per noi siano possibili, & in modo, e con tal proportione edificarli, che tutte le parti insieme una soaue armonia apportino a gli occhi de'riguardanti, & ciascuna da per se all'uso, alquale sarà destinata conueneuolmente serua'. Andrea Palladio, *I quattro libri*, book 4, 3. ('Indeed, if we consider what a wondrous creation [machina] the world is, the marvelous embellishments with which it is filled, and how the heavens change the seasons of the world by their continuous revolutions according to the demands of nature and how they maintain themselves by the sweetest harmony of their measured movements, we cannot doubt that, since these small temples which we build must be similar to this vast one which He, with boundless generosity, perfected with but a word of command, we are bound to include in them all the embellishments we can, and build them in such a way and with such proportions that together all the parts convey to the eyes of onlookers a sweet harmony and each church fulfills properly the use for which it is intended.' English translation by Robert Tavernor and Richard Schofield, published as Andrea Palladio, *The four books on architecture*, Cambridge, Mass.: The MIT Press, 1999, 213.)

<sup>47</sup> Palladio's introduction of the pedimented portico ('temple front') can be explained by the problems he faced in his attempts to achieve coordination between the orders placed on the façade and the proportions of internal spaces. He fully engaged with this problem and managed to resolve it on Palazzo Chiericati, but seems to have avoided it in his later career. In his first major work after Palazzo Chiericati, Villa Cornaro in Piombino Dese, he introduced the pedimented portico ('temple front')—an approach that elegantly avoids the problem of the coordination of the orders on the façade with the proportions of internal spaces that complicated the design of Palazzo Chiericati. See the analysis in Branko Mitrović. *Learning from Palladio*, New York: Norton, 2004, 97-134.

<sup>48</sup> Pérez-Gómez, *Attunement*, 37.

formal properties and has nothing to do with metaphorical signification.<sup>49</sup> Similarly, Pérez-Gómez attributes to Alberti the view that ornament and beauty are parts of architectural meaning and justifies this claim by referring to Chapter Two of the Sixth Book of *De re aedificatoria*.<sup>50</sup> But Alberti did not discuss meanings in that section—this is the famous section in which he defined beauty in a clearly formalist way, as a relationship between parts.<sup>51</sup> Pérez-Gómez's claim that *lineamenti* [sic]<sup>52</sup> were conceived in the fifteenth century as bi-dimensional, orthogonal projections is also false—in the case of Alberti, a complete survey of all ninety-three contexts in which he used the term in his *De re aedificatoria* shows that he used the term to talk about three-dimensional shapes as geometrically defined by lines.<sup>53</sup> Similarly for the claims that Palladio concentrated on 'the all-important "musicality" of classical architecture' and that he 'reiterates the importance of the basic natural Pythagorean numbers as the basis for proportionality, but also includes number five'.<sup>54</sup> This later claim is justified by referring to the section in Palladio's treatise *I quattro libri dell'architettura* where Palladio discussed room proportions.<sup>55</sup> However, Palladio there merely justified his choice empirically—he listed the proportions of rooms that are 'the most beautiful and produce best results'—and did not make any Pythagorean claims.<sup>56</sup> Similarly for the claim that Vitruvius in the second chapter of

<sup>49</sup> Leon Battista Alberti, *De re aedificatoria*. According to Leon Battista Alberti, *L'architettura*, Milan: Polifilo, 1966 (a parallel Latin-Italian edition). For a survey of all contexts in which the word *conncinitas* appears and their analysis see Branko Mitrović, *Serene greed of the Eye. Leon Battista Alberti and the philosophical foundations of Renaissance architectural theory*, Berlin: Deutscher Kunstverlag, 2005, 101-115 and 194.

<sup>50</sup> He says that 'Alberti added ornament (*ornamentum*) to beauty (*pulchritudo*) as a component of architectural meaning', Pérez-Gómez, *Attunement*, 50. The note then refers to pages 112-113 of the English translation by Giacomo Leoni, Leon Battista Alberti, *The ten books on architecture*, London: Edward Owen 1755, reprint New York: Dover, 1986.

<sup>51</sup> See the analysis of that section in Mitrović, *Serene greed*, 101-125.

<sup>52</sup> For some reason Pérez-Gómez uses the Italian plural form. Pérez-Gómez, 'Historical context', 212.

<sup>53</sup> Mitrović, *Serene greed*, 29-72, 177-183.

<sup>54</sup> Pérez-Gómez, *Attunement*, 53, 55.

<sup>55</sup> He refers to pages 58-59 of the English translation by Robert Tavernor and Richard Schofield, Andrea Palladio, *The four books on architecture*, which corresponds to pages 53-54 of the original de Franceschi edition that I am citing here. It is possible that some error occurred in his citation. Pages 58-59 of the Tavernor and Schofield translation present Palladio's discussion of room heights. At the same time, a page before (page 52 of the original edition) Palladio lists his preferred room length-width ratios. Rudolf Wittkower related this discussion to musical proportions (see the next note); discussion of room heights simply gives no ground to talk about 'musicality'.

<sup>56</sup> Palladio merely says 'Le più belle e proportionate maniere di stanze, e che riescono meglio sono sette' and then proceeds to list them. Palladio, *I quattro libri*, 52. ('There are seven types of room that the most beautiful and well proportioned and turn out better:', translation by Tavernor and Schofield, Andrea Palladio, *The four books on architecture*, 57.) The section does not mention Pythagoreanism or music. Mid-twentieth century, following the publication of Rudolf Wittkower's *Architectural principles in the age of humanism* it was widely believed that Palladio's choice of proportions was motivated by Pythagorean, harmonic speculations. This view has been abandoned in the meantime. For a summary of the arguments see Branko

the first book of *De architectura* 'reiterates the Greeks' conviction that architecture must imitate the harmonious articulation of the superlunary cosmos'.<sup>57</sup> First, the identity of the Greek authors who expressed this conviction is unclear—who were they? Where are the texts in which they stated this conviction? Pérez-Gómez cites no documents to substantiate his claim. Second, if the conviction were documented, it could only be the belief of specific authors, not all Greeks. But it is certainly not true (and everyone can check) that Vitruvius wrote about the cosmos behind the Moon in the second chapter of the first book of his treatise. Similarly for the claim that 'perspective was unknown in ancient Rome'—what about perspective in the frescos of Pompeii?<sup>58</sup> Or consider the bizarre claim that '[i]n the Middle Ages architects did not conceive of a *whole building*'.<sup>59</sup> Maybe indeed some very large buildings (such as cathedrals) were initiated without a detailed preconception about the way they would be completed, but the idea that medieval master builders built walls randomly and haphazardly, without a clear idea about the whole building they want to complete, and that they accidentally built the churches or fortresses that we see today—that, for instance, the foundations they made accidentally happened to be able to sustain the weight of the walls and vaults they built on them—is certainly ludicrous.

There are also false claims that Pérez-Gómez makes and that are not related to architectural history. Considering the extensive body of research on visual imagination and mental rotation, one is surprised to read that 'the imagination is *primarily linguistic*'.<sup>60</sup> [Pérez-Gómez's italics.] I've been particularly puzzled by the claim that 'The verb "to see" was reciprocal in Greek; whoever saw was seen, and

Mitrović, 'A Palladian palinode: reassessing Rudolf Wittkower's *Architectural principles in the age of humanism*', *Architectura*, 31(2001), 113-131.

<sup>57</sup> Pérez-Gómez, *Attunement*, 42.

<sup>58</sup> Pérez-Gómez, 'Historical context', 218. In *Architectural representation and the perspectival hinge*, 99, Pérez-Gómez and his co-author, Louise Pelletier, denied that the paintings in Pompeii include perspectival representations. They speculate that the 'manifestation of depth [in Pompeian frescos] seems to indicate a desire to extend lived space and to emphasize the relation between natural places and a geometric, cosmic order, not an intention to subject the whole to a homogenous geometric construction'. The crucial term is to understand this claim is 'homogenous'. (See the analysis of the use of this term later in this review.) If Pérez-Gómez and Pelletier were right, and the whole of individual frescoes were not subject to 'homogenous geometric construction' then there would exist points on Pompeian frescoes such that the distance from one point to another is not the same as the distance from that other point to the first.

<sup>59</sup> Pérez-Gómez, 'Historical context' 211.

<sup>60</sup> Pérez-Gómez, *Attunement*, 197. Earlier (page 186) he introduces this view as Paul Ricoeur's. The meaning of 'primarily' in this context is unclear, but ever since Shepard's and Metzler's experiments about mental rotation, the visual (and not the verbal) imagination has played an important role in the study of imagination. (Roger Shepard and Jacqueline Metzler, 'Mental rotation of three-dimensional objects', *Science*, 141, 1971, 701-703.) The literature on visual imagination is huge. For an introduction, see the collection of texts by Ned Block, ed., *Imagery*, Cambridge, Mass.: MIT Press, 1981 and for a summary of the debate Michael Tye, 'Imagery' and David Hamlyn, 'Imagination' in Samuel Guttenplan, ed., *A companion to the philosophy of mind*, Oxford: Blackwell, 1994, 355-361 and 361-366.

the blind were invisible'.<sup>61</sup> He does not say which Greek verb he has in mind; the verb ὀράω, that is standardly translated into English as 'I see', clearly differentiates between the active and the passive form in various tenses. (For instance, in aorist active εἶδον and passive ὤφθην; perfect active ἑώρακα or ἑώρακα and passive ἑώραμαι or ὤμμαι.) More importantly, the claim illustrates the nonsense of the belief in the primacy of language and the view that human language parcels human reality: it is obviously ludicrous to infer from the fact that the verb 'to see' in some language does not differentiate between the active and passive form that in the reality of these people 'whoever saw was seen, and the blind were invisible'. Or consider the claim that '... contrary to modern misinterpretations, the "ideal" in Plato was never "outside" human, embodied experience'.<sup>62</sup> The claim can only make a reader wonder whether Pérez-Gómez ever read Plato. In *Timaeus* Plato clearly stated that ideal Forms, that exist on their own, are not accessible to human senses (ἀναίσθητα ὑφ' ἡμῶν), but only to reason (νοούμενα μόνον) that is available to gods and only a small number of men.<sup>63</sup> In *Phaedrus* he places them beyond the skies (ὑπερουράνιος τόπος) and says that they are colourless, formless and intangible (ἀχρώματος, ἀσχημάτιστος, ἀναφής).<sup>64</sup> In *Phaedo* Plato says that if someone with wings came to the top of the air, and if his sight were strong enough, he might behold the true heaven, true light and the true earth.<sup>65</sup> Ideal things, according to Plato are precisely *not* available to human embodied experience. Similarly, Pérez-Gómez's claim that according to Aristotelian physics, 'objects changed their being when they moved; an ontological difference existed between rest and movement' is simply nonsense.<sup>66</sup> This would imply that the being of a dog, in Aristotelian terms that-what-it-is-to-that-thing, changes when the dog starts running.

Finally, in the books that I review here, there are a number of sections, statements or phrases, that are simply incomprehensible, and I suspect that they are intended to impress the reader as profound (at least this is my guess, because they sound Heideggerian and often pertain to something Pérez-Gómez calls 'Being'). Consider, for instance, the claim:

... our experience of reality is in accordance with Heidegger's celebrated formula: we are too late for the gods and too early for Being.<sup>67</sup>

<sup>61</sup> Pérez-Gómez, 'The Myth of Dedalus', 11.

<sup>62</sup> Pérez-Gómez, *Attonement*, 112.

<sup>63</sup> Plato, *Timaeus*, according to Plato, *Timaeus Critias Cleitophon Menexenus Epistles*, Cambridge, Mass.: Harvard University Press (Loeb), 1989 (a parallel Greek-English edition), 51D- 52A.

<sup>64</sup> Plato, *Phaedrus*, according to Plato, *Euthyphro Apology Crito Phaedo Phaedrus*, Cambridge Mass.: Harvard University Press (Loeb), 2001, (a parallel Greek-English edition), 247C.

<sup>65</sup> Plato, *Phaedo*, according to Plato, *Euthyphro Apology Crito Phaedo Phaedrus*, 109E-110A.

<sup>66</sup> Pérez-Gómez, *Attonement*, 118, similarly Pérez-Gómez, 'Chora' 65.

<sup>67</sup> Pérez-Gómez, 'Abstraction', 49.

What could this statement possibly mean? How can someone be 'too late for gods' or 'too early for Being'? Using which criteria could one establish that this is the case? Or, consider the claim that we perceive

'the presence of Being, which is also a potential absence or vacuity: an opening to the most abysmal (*das Ab-gründigste*) as most authentic in human artefacts.<sup>68</sup>

Again, what could this statement possibly mean? What could be this 'Being' Pérez-Gómez is talking about? How can we establish what is 'most authentic', or 'the most abysmal'?

I have been similarly at loss to understand what he means when he talks about 'the flesh of the world'.<sup>69</sup> And I can only be puzzled by the claim that

Architecture's well-documented gift throughout history, like poetry's, is indeed to allow humans to perceive their sense in the experience of a coincidence of opposites: Being and non-being beyond theological dogma.<sup>70</sup>

How can one actually know (let alone document!) that humans through their history perceived 'their sense in the experience of a coincidence of opposites: Being and non-being', considering that it is utterly unclear what this collection of words might mean at all?

### **The aim**

Pérez-Gómez does not apply this (lax, one can hardly deny) approach to history writing randomly, but with a very specific aim. His works strive to undermine, through the study of architectural history, a cluster of values and assumptions about reason and rationality that are typically associated with the Enlightenment. As he puts it:

Positive reason has certainly not brought about its promised final truths, nor happiness or fulfilment. Heidegger has spoken about the twilight of reason. Many of his disciples have insisted that we seem to have closed a cycle of sorts, condemned by the order to history to live in the absence of gods. The cycle begun with myth, then became a metaphysics in the form of philosophy and science, i.e. a rational explanation that provided man with

<sup>68</sup> Pérez-Gómez, *Attunement*, 148.

<sup>69</sup> Alberto Pérez-Gómez, 'Poetic language and architectural meaning', in Perez Gomez, *Timely meditations*, vol. 2, 271-289, 284.

<sup>70</sup> Alberto Pérez-Gómez, 'Mind, mood and architectural meaning' in Pérez-Gómez, *Timely meditations*, vol. 2, 254-270, 263.

his 'radical orientation' in the world. It seems today to demand again a form of mythologizing, through literature, poetry and the arts.<sup>71</sup>

However, it can be responded that promises about final truths could not have been made by anyone who genuinely promoted the use of reason in order to establish positive facts. Such a person would be contradicting him- or herself. One needs a specific mindset in order to expect to be able to reach final truths, and such a mindset is antithetical to the idea of the use of reason in order to establish positive facts. Rather, the use of reason to establish positive facts has liberated us from many absurd superstitions and false beliefs. It is similarly unclear that intellectual achievements should be expected to provide happiness or fulfilment. However, they can eliminate, and for the past couple of centuries the use of reason has eliminated, numerous kinds of suffering. It is, for instance, a magnificent achievement of modern science that it has provided us with pain-relieving and life-saving medical treatments. Compared to our situation, in the Middle Ages—an era when, according to Pérez-Gómez, people 'lived in the light of God' (as cited earlier)—people actually suffered tremendously and in horrible pains from medical conditions that require trivial treatments today. The statement that people in such an era 'lived in the light of God' amounts to saying that God is evil. As for Heidegger, he was a Nazi and an evil man. Someone might point out that this should not prevent us from considering his arguments, insofar they are logically valid, based on solid premises and comprehensible. However, when it comes to Heidegger's prophecies, one should certainly expect them to be in line with his ideology. Claims about 'the twilight of reason' were in the interest of his political aims and one should treat them as such. Additionally, there is no such a thing as 'the order of history' that would drive historical events independently of what humans (decide to) do. If people decide to abandon superstitions on the basis of the insights that they reach using reason, then so much the better for everyone. It is also fair to deny that 'happiness or fulfilment' can truly be achieved through superstitions, falsities or the suppression of truth—even though some people may disagree. Novalis, whom Pérez-Gómez occasionally cites with appreciation, thus praised the era when the Pope 'rightly' (he says) suppressed dangerous discoveries in the field of knowledge because, as he put it, such discoveries might lead people to prefer limited knowledge to infinite faith.<sup>72</sup> Other people, including myself, are suspicious about infinite faith and may point out that search for limited knowledge has substantially improved the human lot in recent centuries. Views and values can differ in these matters, but we are here interested to see whether Pérez-Gómez's work in architectural history can provide a basis for the wider theoretical perspective that he wants it to support.

This wider thesis is that the rational structure of the world we live in is merely a possible state of affairs that came about as the result of faith in reason and the expansion of the Enlightenment worldview. The assumption, mentioned earlier,

<sup>71</sup> Pérez-Gómez, 'Myth of Dedalus', 2.

<sup>72</sup> Perez-Gomes does not cite or comment on this particular section. See Georg Philipp Friedrich von Hardenberg (Novalis), *Die Christenheit oder Europa*, in Georg Philipp Friedrich von Hardenberg (Novalis), *Schriften*, vol. 1. Berlin: G. Reimer, 1826, 187-208, 191.

that the beliefs that are dominant in a cultural or historical context also structure the physical reality and the laws of nature operational in that context, is not novel. In the 1920s Hans Sedlmayr thus claimed that the natural world that artists imitate does not stay the same but changes with the changes of the spirit of various eras.<sup>73</sup> Similarly, in his polemic against Gombrich, Norman Bryson claimed that nature is historically constructed.<sup>74</sup> In line with this kind of view, if Pérez-Gómez could show that spatial relationships in the pre-Enlightenment (or pre-Renaissance) era were not conceived of as quantifiable, it would follow that they *were* not quantifiable. His real target thus becomes obvious, since the quantifiability of spatial relationships is one of the core presuppositions that are necessary in order to talk about the rational structure of the world. At the same time, before the scientific revolution of the seventeenth century hardly any other field of human activity worked more extensively with spatial relationships than architecture. It is therefore (indeed) from the field of architectural history that one can make a wide-reaching claim that could substantially undermine the assumption about the rational structure of the world we live in. If pre-Enlightenment architects and architectural theorists did not conceive of spatial relationships as quantifiable, then (insofar as the reality of an era is constituted by the beliefs of that era)<sup>75</sup> it will follow that spatial relationships in the pre-Enlightenment era were not quantifiable. It then follows that the rational structure of the world as we know it today is merely a construct of the times we live in.

Saying that spatial relationships were not conceived of as quantifiable before the seventeenth-century scientific revolution means saying that they were not understood as being geometrically or arithmetically comparable. This is obviously a major claim. It is important to be careful about terminology in these matters. Pérez-Gómez operates with three terms—homogeneity, isometry and homology—that he does not define. While these terms have their meanings in contemporary mathematics and physics, he does not seem to rely on those meanings. His statements are thus often best understood on the basis of the arguments he makes with them. At the same time, the term ‘homogenous’ has had a long history in art- and architectural history ever since the 1920s. Erwin Panofsky adopted it from Ernst Cassirer in order to claim that it was the new understanding of space as homogenous that enabled the discovery of perspective in the early Renaissance.<sup>76</sup> According to Panofsky, before the early Renaissance people could not conceive of space as homogenous. The claim is inaccurate and partly based on the misunderstandings of Aristotle and Euclid, but it did exercise a huge influence

<sup>73</sup> Hans Sedlmayr, ‘Kunstgeschichte als Stilgeschichte. Die Quintessenz der Lehren Riegls’, according to Hans Sedlmayr, *Kunst und Wahrheit. Zur Theorie und Methode der Kunstgeschichte*, Mittenwald: Mäander, 1978, 32-56, 46-47.

<sup>74</sup> Norman Bryson: *Vision and painting. The logic of the gaze*, London: Macmillan 1985, 13.

<sup>75</sup> The postmodernist-constructionist principle that reality is constructed by the beliefs dominant in a cultural context remains unproved—as mentioned, it is an assumption.

<sup>76</sup> Erwin Panofsky, ‘Die Perspektive als “symbolische Form”’ in Erwin Panofsky, *Deutschsprachige Aufsätze*, vol. 2, Berlin, Akademie Verlag 1998, 664-757.

through the twentieth century.<sup>77</sup> (In an earlier book, *Architectural representation and the perspectival hinge*, that Pérez-Gómez wrote together with Louise Pelletier, the authors extensively relied on Panofsky's claim.<sup>78</sup>) 'Homogeneity' in the form Panofsky adopted it from Cassirer had two important components.<sup>79</sup> First, all elements of space, points and sets of points, are to be understood as mere designations of positions relative to each other; it is assumed that they do not possess any other content. Second, the postulate of homogeneity says that from every point it must be possible to draw identical figures. It is easy to see that if homogeneity thus understood had indeed been inconceivable to pre-Renaissance people, they could not have discovered the geometrical construction of perspective. However, one should note that the wider implications of this claim are quite radical. It is really the second component ('the postulate') that matters for Panofsky's argument about perspective. (If points in space merely had different significance in addition to their mutual geometrical position, while their geometrical relationships remained unaffected by their significance, then this would not affect the geometry of vision nor prevented earlier discovery of perspective.) The postulate says that it should be possible to draw the same geometrical figure from every point—for instance, starting from a point A one draws the rectangle ABCD and then from B on the rectangle one can draw the same rectangle BACD. If this were not the case—if the homogeneity postulate did not apply—it would not be possible to draw the line AB starting from A and then the same line from B.<sup>80</sup> The claim that before the Renaissance nobody figured out that one can draw a line from its one end to another and then from that other end to the first one—that architects, for instance, did not know that when they measure a wall, the result is the same regardless of the end of the wall from which one starts measuring—is certainly implausible in the extreme. The homogeneity of spatial relationships between points—in accordance with the 'postulate'—must have been therefore understood from the earliest days of human civilisation. Also, one must not get bogged down in the assumption that homogeneity requires the existence of homogeneous *space*. One may deny the existence of space as an immaterial medium in which bodies are located—this was the case with Aristotle—but nevertheless admit the postulate of homogeneity, by assuming that points and dimensions between them belong to physical bodies, including air.<sup>81</sup>

<sup>77</sup> For Euclid, see C. D. Brownson, 'Euclid's *Optics* and its compatibility with linear perspective', *Archive for history of exact sciences*, 26, 1982, 165-193. For Aristotle, see Branko Mitrović, 'Leon Battista Alberti and the homogeneity of space', *Journal of the society of architectural historians*, 63, 2004, 424-439.

<sup>78</sup> See my analysis in Mitrović, 'Leon Battista Alberti and the homogeneity of space'.

<sup>79</sup> Panofsky, 'Die Perspektive' 667-668. For Cassirer's influence on Panofsky see Michael Ann Holly, *Panofsky and the Foundations of Art History*, Ithaca: Cornell University Press, 1984, 114-157.

<sup>80</sup> One may imagine that the thickness of ABCD is 0 (i.e. AD=BC=0) in which case the rectangle will be identical with a simple line. Alternatively, one may just take that line is a figure.

<sup>81</sup> See Mitrović, 'Leon Battista Alberti and the homogeneity of space'.

In other words, relationships between objects can be quantifiable even for a thinker who does not discuss (or postulate) space as a medium in which objects are located. Our modern way of talking about 'Euclidean space' was largely formed after mathematicians developed geometrical systems that differed from the one developed by Euclid. But it would be anachronistic to expect from an ancient Greek mathematician such as Euclid to differentiate between Euclidean and non-Euclidean spaces. Euclid's *Elements* are a book about geometry – and its axioms define the necessary relationships between points, lines and surfaces that exist in what we call Euclidean space.<sup>82</sup> We use this latter term today in order to differentiate it from other, non-Euclidean spaces that mathematicians have also described in the meantime. This is an important point to make. Consider the following statements by Pérez-Gómez:

... a geometrical discipline such as Euclid's does not identify 'Euclidean space' as a realm where humans dwell; ancient thinkers never believed that humans actually existed in Euclidean space.<sup>83</sup>

...[in antiquity] it was not possible to simply assume that it [Euclidean space] existed as physical space.<sup>84</sup>

Positing the invariable in the universe of perception corresponded to ancient astronomical thinking. It was in the supralunar sphere that the absolute truths of Euclidean geometry were to be found.<sup>85</sup>

As mentioned, it is not controversial that ancient thinkers did not talk about 'Euclidean space' because the mathematical alternative, non-Euclidean spaces, was unknown. But Pérez-Gómez's thesis is much stronger: that they did not conceive of spatial relationships in the environment in which humans live the way they are defined by Euclidean geometry. (This claim is crucial for his further claim that they did not assume the quantifiability of spatial relationships.) Rather, according to Pérez-Gómez, it was only starting from the scientific revolution of the seventeenth century that the assumption about the geometrical nature of the lived space became credible. Before the era of Galileo Galilei and Descartes, it was assumed, he claims, that Euclidean geometry defined spatial relationships only in the supralunar regions:

Geometric (Euclidean) space, having been previously [before Galileo] understood as the realization of supralunary contemplation and therefore considered a mental reality, became universalized and was assumed to be

<sup>82</sup> Euclid, *Elements*. See the parallel Greek-English version, English translation by Richard Fitzpatrick, which can be downloaded as a PDF file at <http://farside.ph.utexas.edu/Books/Euclid/Elements.pdf>. (Accessed 13 October 2018.)

<sup>83</sup> Pérez-Gómez, *Attunement*, 38.

<sup>84</sup> Pérez-Gómez, *Attunement*, 112.

<sup>85</sup> Pérez-Gómez, 'Introduction', 9.

present also in places of our sublunary worldly existence, lending its mathematical explanatory structure to all aspects of physical experience.<sup>86</sup>

However, consider the implications of this claim. If it were true, then before the seventeenth century people would not have realised the applicability of the simplest Euclidean postulates and theorems in the environments in which they lived. For instance, it is one of Euclid's postulates that it is possible to draw a line through any two points and if Pérez-Gómez is right, people would not have realised before the seventeenth century that it is possible to do this in the case of points on the things that surrounded them. Similarly, people would not have known that the sum of angles of any triangle they encounter in their 'sublunary' world equals the sum of two right angles. They would not have known or believed that through a given point outside a straight wall it is possible to build only one wall parallel with the given straight wall. Tasks that rely on the application of geometry in the physical world, such as the construction of sun-dials, would have been impossible—while we know that ancient Greeks and Romans were able to make sun-dials. Even more radically, since we have seen that, in line with postmodernist constructionism, Pérez-Gómez assumes that the beliefs of an era construct its reality, this was indeed how the 'sublunary' world operated in those days: people really lived in an environment in which simple facts of Euclidean geometry did not apply. We are thus expected to believe that this was indeed the case and that, for instance, medieval master-builders who built Gothic cathedrals did not know that it is possible to draw a line between any two points, and that they operated in a world in which this was not true. Even more remarkably, since Gothic cathedrals were built in an era when (according to Pérez-Gómez) it was not believed that in the material world it is possible to draw a line through any two given points, and since this belief constructed the reality in which these cathedrals were built, then it should be still possible to find, on Gothic cathedrals, pairs of points through which it is impossible to draw a single line. This is simply not true.

Consider what this means in the case of architectural drawings. Vitruvius' terms *ichnographia* and *orthographia*, says Pérez-Gómez, 'would eventually be translated as plan and elevation, but do not involve the systematic correspondence of descriptive geometry'.<sup>87</sup> However, the way Vitruvius describes them, his *ichnographia* and *orthographia* are plan and elevation and any systematic correspondence between the geometrical properties of a building described in plan and those described in elevation that descriptive geometry might be able to stipulate must be first available in plan and elevation. Otherwise they would not be plan and elevation. Even before the discovery of descriptive geometry architects knew that a building cannot have different lengths in plan and elevation, or have three columns in its plan and four in the elevation.<sup>88</sup> The introduction of descriptive geometry into

<sup>86</sup> Pérez-Gómez, *Attunement*, 57.

<sup>87</sup> Pérez-Gómez, 'The historical context', 217.

<sup>88</sup> Vitruvius says that *ichnographia* is the use of compass and rule 'e qua capiuntur formarum in solis arearum descriptiones' ('from which we obtain the descriptions of the ground area'), while *orthographia* is 'erecta frontis imago modiceque picta rationibus operis futuri figura'

architectural practice simply could not have introduced new or previously unknown geometrical relationships ('systematic correspondence') between plans and elevations; it merely provided new, more efficient ways to establish and communicate about these relationships.

The discussion of architectural representation techniques is further marred by a series of false claims that all relate to the project of showing that before the seventeenth-century scientific revolution the quantification of spatial relationships in human, lived, environments was inconceivable. For instance:

Renaissance architects therefore never conceived of lived spatiality as a geometric entity. The perceptually exciting depth of the painting or the stage, never subjected to just one viewing point, was incomplete without the *storia*, the eloquent poetic narrative of which Alberti speaks in *Della Pittura*.<sup>89</sup>

This is simply not true. Alberti in *De pictura* explains how to achieve depth in a painting purely geometrically.<sup>90</sup> Additionally, insofar as depth can be perceived, it had to be geometrically definable according to Alberti; since, in the *Elementa picturae* he insisted that everything that can be seen can be geometrically defined.<sup>91</sup> Similarly, it is not true that

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('an upright picture of the front and the figure of the future work orderly depicted in proportion'). (Marcus Vitruvius Pollio, *De architectura*, according to Marcus Vitruvius Pollio, *On architecture*, Cambridge Mass.: Harvard University Press (Loeb), 1983 (a parallel Latin-English edition), 1.2.2. Translations by Branko Mitrović.) In Vitruvius' terminology, it was impossible in Roman times, the way it is impossible today, that a building could have a different length or a different position of columns according to the description of the building's area on the ground and according to its 'upright picture of the of the front'. The use of descriptive geometry may have made it easier to prevent such discrepancies, but could not have changed the way plan and elevation relate to each other.

<sup>89</sup> Pérez-Gómez, 'Chora', 62.

<sup>90</sup> See sections 1.19 and 1.20 of Leon Battista Alberti, *De pictura*, according to Leon Battista Alberti, *Das Standbild, Die Malerei, Grundlagen der Malerei*, Darmstadt: Wissenschaftliche Buchgesellschaft, 2000 (a parallel Latin-German edition), 194-315. Alberti there describes the construction of perspective purely geometrically and *historia* is mentioned at the beginning of the account merely in order to say that the rectangle from which he starts the geometrical construction is like a window in which the 'history' is contained (1.19).

<sup>91</sup> The aim of *Elementa picturae*, he says, is 'ut nihil in rerum natura sit, quod ipsum oculis possit perspicui, quin id hinc instructum perfacile possit lineis perfinire atque exprimere'. Leon Battista Alberti, *Elementa picturae*, E, according to Leon Battista Alberti, *Das Standbild, Die Malerei, Grundlagen der Malerei*, 336-355. ('...so that there will be nothing in the natural world that the eyes can see that a person instructed in these things cannot readily define and illustrate with lines.' Translation by Kim Williams and Richard Schofield in Leon Battista Alberti, *The mathematical works of Leon Battista Alberti*, Basel: Birkhäuser, 2010, 141-152, 147, note 26.)

Only in the second half of the sixteenth century did there arise a desire to reconcile the monocular constructions of *perspectiva artificialis* with the natural vision of man.<sup>92</sup>

Early in the fifteenth century Alberti precisely derived the geometrical construction of perspective on the basis of the geometry of light rays, with the human eye as one of the points through which they pass.<sup>93</sup> Finally, it is not true that

The hypothesis of a vanishing point at infinity was both unnecessary for the construction of perspective, and ultimately inconceivable as the reality of perception in everyday life. Alberti's central point (*punto centrico*) of the perspective construction, for example, is often wrongly associated with such a 'vanishing' point. In fact the point of convergence in the *costruzione* [sic] *legitima* is determined and fixed by the point of sight as a 'counter-eye' on the 'window' or, in contemporary terms, the central point on the picture plane.<sup>94</sup>

Alberti in fact says that lines directed to the central point go 'paene usque ad infinita distantia' — 'to an almost infinite distance'.<sup>95</sup> (Clearly, he did not talk about actual infinity, because he conceived of the world as finite.) (One may wonder how Pérez-Gómez's omissions could have been made. The last section cited above is accompanied by the note 'Leon Battista Alberti, *Della Pictura* (Florence 1435)', without any attempt to state the section in the book that would justify the claim — which suggests that he never bothered to check.)

Following Descartes, the introduction of geometrical coordinates, analytic and descriptive geometry, according to Pérez-Gómez, resulted in the misconception that human lives and architectural works are in a rational, geometrical medium. From the late eighteenth century, he says

The space of the city began to be perceived in analogy to the geometric emptiness that could be inferred from a set of Cartesian coordinates: the space of modern planning.<sup>96</sup>

Here too, one is puzzled by the suggestion that the builders of Renaissance cities such as Sabbioneta or Palmanova did not conceive the relationships between the spatial parts of the cities they designed as geometrically definable. The introduction of 'Cartesian coordinates' may have resulted in a more efficient way to process information about geometrical relationships, but it could not have introduced new ones. He insists that it was a 'delusion' that

<sup>92</sup> Pérez-Gómez, 'Chora', 60.

<sup>93</sup> See the discussion of the pyramid of vision in Alberti, *De pictura*, 1.6, 1.7.

<sup>94</sup> Pérez-Gómez, 'Historical context', 214.

<sup>95</sup> Alberti, *De pictura*, 1.19. (The translation of the phrase by Cecil Grayson, in Leon Battista Alberti, *On Painting*, London: Penguin, 1972, 54.) The perception of depth is thus results from the geometry of vision.

<sup>96</sup> Pérez-Gómez, *Attunement*, 13.

the Cartesian spaces in which the design was conceived (the three planes of the newly invented 'descriptive geometry') were homologous with the spatialities in which our lives are take place...<sup>97</sup>

and similarly, he says that 'our still-common delusion' is

that the Cartesian spaces on which the design takes place—the three planes of the newly invented (ca 1790s) 'descriptive geometries'—are homologous with the lived spaces of man.<sup>98</sup>

Contemporary architects still generally assume that the sites they build upon have few, if any, truly intrinsic qualities, beyond those that can be described 'objectively' through physical geography, morphology, ... This is founded on the belief that the external world is *essentially* an isotropic geometric space, a three-dimensional matrix as first conceived by Descartes.<sup>99</sup>

However, no architect could ever build a house with spatial properties that contradict the norms of Euclidean geometry. This would have to be a house in which there are pairs of points that cannot be connected with a straight line, or square windows whose sum of angles is more or less than four right angles. The use of the word 'homologous' in the paragraph cited borders on obfuscation because Pérez-Gómez never bothers to define it. But if the claim is meant to be that in everyday life there could exist shapes whose actual spatial properties contradict their spatial properties as projected on the three planes of descriptive geometry, then this simply cannot happen. The shapes of things in the world we live in are defined by geometry; we have to use geometry when we want to define the shapes of things that we make and the world has been that way since the time began.

## Conclusion and consequences

Finally, it is important to ask about the possible aims and the wider implications of the perspective on history that Pérez-Gómez promotes. In the case of Norberg-Schulz, his emphasis on the spirit of the place comes close to the glorification of *Bodenständigkeit*, and possible associations with right-wing politics are never too far in the background. Pérez-Gómez provides no ground for such suspicions—some people may classify him as a conservative or a postmodernist thinker; he clearly believes that eras and cultures to which individuals belong determine their worldview and even their physical reality, but he is certainly not promoting ethnic or national determinism. Nevertheless, some other well-known political implications of post-modernist constructionism remain. If the physical reality is merely constructed by the beliefs that people share, then it is legitimate for modern

<sup>97</sup> Pérez-Gómez, 'Architecture as a performing art', 91.

<sup>98</sup> Pérez-Gómez, *Attunement*, 100.

<sup>99</sup> Pérez-Gómez, *Attunement*, 107.

armies to use depleted uranium in ammunition in the areas where the local population does not know about radiation: locals in such areas live in a different reality and radiation cannot affect their health. Similarly, it is legitimate for colonial powers to deprive the population of their colonies of human rights insofar as this population has been unaffected by the Enlightenment, since the idea of human rights is merely one of its products.

Indeed, for Pérez-Gómez the influence of the idea of human rights figures prominently among the results of what he suggests is the nefarious and unfortunate influence of the Enlightenment. He states that as a result of 'the epistemological and political revolutions of late-eighteenth-century',

[t]he individual came to be understood as the unquestionable, autonomous origin of consciousness, endowed with inherent rights and freedoms, to the detriment of the understanding of the primacy of the social body.<sup>100</sup>

Similarly,

The preponderance of geometric space of place could only occur during the nineteenth century, due mainly to the final crystalization of Cartesian dualism into a divided reality: on the one had the 'subject' as a citizen, passive observer, and *flâneur*, with innate political rights, and on the other hand a material and objectively measurable external reality, assumed to be totally disconnected from the subject to the extent of becoming inanimate 'natural resources'.<sup>101</sup>

Human rights as proclaimed by the French Revolution are

rights of a new, truly autonomous subject, modeled on Descartes's dualistic premises, endowed with almost absolute free will and who must be totally responsible for his or her actions. Despite the undeniable benefits of the new dispensation for most human beings, there was also a tremendous cost to our humanity. Such a subject would find it increasingly difficult to participate in rituals, the most important focal actions traditionally framed by architecture, since ritual by definition involves a belief in external agencies having true and effective responsibility for outcomes.<sup>102</sup>

The association of the Enlightenment with the idea of human rights is certainly not novel. However, Cartesian dualism has nothing to do with the divided reality that separates the citizen from the material reality—it pertains to the understanding of the relationship between the human body and the mental processes that are assumed to be immaterial. In any case, ideas do not become influential merely because a philosopher formulates a theory. The idea of human rights could not have

<sup>100</sup> Pérez-Gómez, *Attunement*, 5.

<sup>101</sup> Pérez-Gómez, *Attunement*, 132.

<sup>102</sup> Pérez-Gómez, *Attunement*, 221.

become influential merely as a result of a purely intellectual development and independently of the development of the economic interests that favoured it and the creation of the media that promoted it to the general public. In any case it is utterly unclear how 'the preponderance of geometric space' could have something to do with Cartesian dualism, considering that space has been geometric since the beginning of time.

Pérez-Gómez's criticism of the influence of the idea of human rights overlooks that many people will doubt that there is such a thing as a 'social body' that is something else than individuals and their interactions; in the philosophy of the social sciences and in the philosophy of history there exists an extensive literature about this problem.<sup>103</sup> In any case, even if such social bodies exist, they should not be sustained if they require the unjust oppression of individuals. Through history, narratives about 'the primacy of the social body' have been mostly constructed in order to justify the privileged positions of some individuals over others and it is natural to be suspicious about them. As for the incapacity to participate in rituals, insofar as such participation is motivated by superstitions, it is certainly good that people are less likely to observe them. Pérez-Gómez also suggests that the idea of the human subject responsible for his or her actions has forced governments to introduce laws and rules, control and discipline, as well as legislative and policing institutions that become corrupt.<sup>104</sup> In his view, this results in 'nefarious nihilism'.<sup>105</sup> However, it can be responded that governments introduced laws and rules thousands of years before the Enlightenment, and corruption has been around ever since as well. It is certainly a much worse form of nihilism if one believes that superstitions should be used to motivate people to do good things.

Over decades, Pérez-Gómez's writings have exercised a wide-ranging influence in architectural academia, especially when it comes to architectural pedagogy, the education of doctoral students and even in studio teaching. Normally, history writing of this kind cannot pass (or should not pass) reviewing processes of academic publishers. As for their impact in the discipline of architectural history, one should only imagine the desperation of a doctoral advisor (or the person invited to evaluate a dissertation) who has to explain to a doctoral student that statements he or she relied on in the dissertation are false, although the student can refer to and has cited a book by the MIT Press as the source. At the same time, in general architectural education the impact of phenomenology is best described as catastrophic. Some years ago I was present when students in the first year studio in an architecture school were told by their tutor to go the beach, smell the air and draw the smell. The exercise was supposed to provide the students with some kind of profound insight and teach them about synaesthesia. More likely, it served to assuage the intellectual insecurities of the tutor and make him feel

<sup>103</sup> For a summary of such debates in relation to historiography see Branko Mitrović, 'A Panofskian meditation on free will and the social world: is humanist (art) historiography still credible?', *Journal of Art Historiography* 15, 2016, BM2.

<sup>104</sup> Pérez-Gómez, *Attunement*, 222.

<sup>105</sup> Pérez-Gómez, *Attunement*, 232.

profound—the way this is often the case with those authors who cite fragments from Heidegger that nobody, including themselves, can understand. What the students actually learnt was that if they want to get through architectural education they should suppress their reasoning capacities and critical thinking. They were certainly not expected to exercise intellectual integrity and question the meaningless demand made by their tutor. I confess I am horrified to think what is going to happen when a generation of architects who have been taught to suppress visual concerns and their own reasoning capacities, and who have been selected for their lack of intellectual integrity, starts designing our cities.

**Branko Mitrović** received his doctorates in architecture and philosophy and is currently employed as professor of architectural history and theory at the Norwegian University of Science and Technology. He is the author (or co-author) of seven books and has been the recipient of the *Humboldt Forschungpreis*.

branko.mitrovic@ntnu.no



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