

Variations as compressions of analytic and synthetic moments in design¹

26

Iris Lycourioti

National Technical University of Athens, Greece

Abstract

The emergence of design intentions and the formulation of a design language are studied based on architecturally aimed variations of Las Meninas. Variations are used to probe into the relationship between individual work and design language so as to understand how architectural invention is possible.

When is something new invented in architecture?

This paper presents the first stages of research on design language and spatial meaning. At the core of this inquiry is a general question: “when is something new invented in architecture?” Even though the question is central to design as a mode of inquiry and understanding, it is rarely raised explicitly, even as the formulation of the design language or idiom of each designer is the underlying aim that intuitively drives much design activity. The suppression of the question is associated with two opposed prevailing views, one which looks at architectural language as a system and a set of rules; and another which looks at architectural language as a dense symbolic form issuing from elusive creative capacities but which can be justified with reference to functional considerations and is not amenable to reflexive reconstruction. The view taken in this paper is that a better understanding of design formulation, including both particular forms and design language, and by extension of the advent of new forms and languages, cannot be approached with the methodological tools of other disciplines.

To look at design as a mode of inquiry, rather than as a means for applying and testing already understood principles, we need to understand how design problems and design intentions are themselves formulated. A key step in this direction is the treatment of design as a medium and domain contingent rather than a medium and domain independent mode of inquiry. Another step is to allow that sometimes design activity can only retrospectively be construed as problem solving (Baxandall, 1985).

Keywords

Design language, design formulation, variations, Las Meninas, Velasquez, Picasso, spatial meaning

lycouriotisarch@tee.gr

26.1

The thesis explored here is that the invention of new forms and the exploration of new design languages requires a systematic study, scrutiny and critical manipulation of existing forms and languages, including those that operate in a stereotypical manner; such approach should be aimed at a reconstruction and recontextualisation of the questions and problems that initially led to these forms and languages by means of an elaboration of new forms and new languages within which new meanings become possible. The study of such processes of recontextualisation can only be fruitful if it is focused upon the dense and decisive moment of emergence of what retrospectively seems conventional and banal. Thus, the design of new forms implies a study and reconstruction of existing forms, not only in the reflexive terms of a retrospective account of “problem solving” but also in terms of a reinvention through design and a re-assimilation in design.

26.2

More precisely inquiry by design must be driven by methodologies which enable a description of the properties of a stereotype, an account of the properties which differentiate its transformations and an account of the manner in which design elements, materials and presuppositions can be changed in such a way as to maintain the relation of reference between the transformed form and the original. The function of the stereotype within the process of design is to enable the designer to communicate with the medium and the domain of design in a structured way and to provide a measure of the transformations made and of their potential to carry meaning and to recontextualise or redefine the questions that were originally addressed by the stereotypes.

These considerations led to an inquiry into variations as a mode of reflexive inquiry into existing forms and languages, and as a process that can lead to open ended innovation. Goodman and Elgin (1988) define variations as new works that share some features with an existing work taken as a theme while differentiating themselves according to other features. The relation between variation and theme is referential and depends upon three conditions. First, the variation must literally exemplify the features it shares with the theme, on condition that these features, which are always subject to selection, are formulated in a new way. Second, the variation must metaphorically or figuratively exemplify the contrasting features. That is, selected characteristics are substituted for and contrasted to others. Third, the variation must refer to the theme through these features. The referential function that links theme to variation is established as the features which are exemplified in the variation are subsequently able to literally or figuratively-metaphorically denote the theme. Denotation runs from label to incidence (from variation to theme) while exemplification runs back from incidence to label (from theme to variation).

Goodman and Elgin deliberately address the question “when is a variation” rather than the question “what is a variation”. They are interested in the conditions that are satisfied when we are able to recognise a work as a variation upon a theme. This overt philosophical shift conceals a less visible one, namely the relative neglect of the question “why a variation”. This paper offers an attempt to deal with this question and to understand the cognitive and aesthetic gains that can be achieved through a process of variations. The paper also deals more explicitly with a second question left somewhat unanswered by Goodman and Elgin: “when cross-modal variations”. The authors recognise their possibility but do not specifically discuss what is involved and what distinguishes them from variations within the same medium.

The subsequent section of the paper are organised as comments upon ten figures that document a series of variations based on Las Meninas and on Picasso’s variations of Las Meninas . The variations are intended to lead to an architectural object: a screen, filter or passage, situated at a strategic outdoor space within the complex of the School of Architecture in Athens; also at the elaboration of a new architectural language. The choice of a painting as a potential program for architectural design is intended as a challenge of the most stereotypical of assumptions, the very idea of program and its conventional typological presuppositions. The emergence of design aims against the background of fields of meaning and understanding becomes itself an object of inquiry. Furthermore, taking a work in another medium as a point of departure leads to a reflexive questioning of the contingency of meaning and design intentions upon the potentialities of different media. By implication the conditions under which meaning is constructed in architecture are more explicitly be explored. A second reason for choosing a painting as a point of departure is the belief that architectural form arises to a great extent through the manipulation of visual data, materials and information and that meaning arises based on the creation of spatial patterns which are at least in part driven towards visual effects. Some readers may also want to refer to the concluding section of the paper, independently of the design argument.

Las Meninas depicts twelve figures occupying four layers of space within the visual field. In the front and to the right we see dwarfs Mari Ba’rbola and Nicolasico Pertusato as well as the seated royal mastiff; at the centre, and on a recessed second plan, princess Infanta Margarita stands between her two maids of honour, Maria Augustina Sarmiento, and Isabel de Velasco. At an intermediate plane and to the left, we see Diego Vela’zquez himself, engaged in the act of painting, and to the right, we see Dona Marcela de Ulloa, a companion of the maids of honor, with her escort. Deeper within the visual field, José Nieto Velázquez is visible through

the door, while the royal couple of Spain, Philip the 4th and Mariana, are reflected in the mirror. Paintings with mythological themes are hung on the walls. There is no painterly evidence of luxurious decoration, or precise evidence about the architectural construction of the space depicted. The treatment of a painting as a potential program for architectural design is mediated by multiple interpretations and studies; some are drawn from the literature of art history and address the manner of painting of Diego Vela'zquez de Silva; some are based on direct observation; others are drawn from the intense discussion of the painting within the broader field of cultural studies and philosophy. The later often hinge on the relationship between the reflections visible in the mirror, near the centre of the painting, and the position occupied by a viewing subject.

26.4



Figure 1: Diego Vela'zquez, Las Meninas 1656

Stated concisely, the main claim advanced in this paper is that through Las Meninas, Vela'zquez has fragmented the viewing point of centralised perspective. He has thereby challenged the second fundamental axiom of classical representation in painting and the main compositional device through which representation is constructed. This is why the work is fundamentally modernist and points to an epistemological shift that occurred in the 17th century. The fragmentation affects the triple identity of the subject, as part of the world, as viewing the world in particular ways, and as able to represent it. Thus, the geometric centre of the painting, the centre of the canvas, does not coincide with the visual centre, the vanishing point; furthermore, neither of these coincides with the centre of the image reflected in the mirror, which, for the purposes of this study, will be treated as the synthetic/conceptual centre of the work. When we look at the painting, however, these three different points, though clearly spaced apart on the same horizontal line, converge to create a sense of generic centrality.

The sense of generic centrality issues from the persistent painterly control over centrifugal elements and asymmetries. Consider, first, perspectival asymmetry: the visible part of the back of the canvas seen in the painting hides the left back corner of the room. The room would otherwise appear quite asymmetric. The visible frame of the canvas replaces the hidden corner and projects a vertical edge nearer the foreground to emphasise the vertical dimension rather than the horizontal, which would otherwise dominate. Consider, second, the emphasis upon the central axis of the painting: It falls between the axis of symmetry of the room, and the vertical axis that runs through the vanishing point. It also runs through the figure of the Infanta, and the axis of rotation of the door in the background. In other words, it engages the

two brightest, but spatially most polarised layers of the painting. Consider, third, the emphasis upon the axis of symmetry of the room, which is offset with respect to the central axis of the painting: It coincides with the central axis of the mirror. It also underscores the symmetrical placement of the two paintings hung on the wall in the background, and of the two figures of Augustina Sarmiento and Infanta Margarita in the foreground, within the upper and lower horizontal zones of the painting respectively. These compositional moves direct the gaze to different areas of the surface of the painting that appear subject to very clearly articulated patterns of centrality. By implication, they engender a tension between centralising moves and the more fundamental decision to fragment the unified single centre of classical representation. The dominant idea that we often find in various interpretations of the work, that the mirror reflects the subject viewing the painting, results precisely from the ruses deployed by Vela'zquez in order to control the gaze. The idea is manifestly erroneous, as shown by Snyder and Cohen (1980); it readily collapses when we realise that the vanishing point is to the right of the mirror, and that consequently the object being reflected must sustain an equal angle of incidence upon the mirror as the angle sustained between the later and the viewing subject. Quite simply, the viewing subject cannot see herself reflected upon a mirror placed off centre with respect to the vanishing point of perspective and on a plane which is vertical to its axis. The non-coincidence between the three points (centre of perspective, centre of canvas and centre of mirror) also marks an early stage in exposing the illusory power of paintings. Disillusion, the awareness of illusion, was to acquire fundamental epistemological significance for Baroque mentality. Vela'zquez challenges the first fundamental axiom of classical representation, namely that a representation is similar to what is being represented.

26.5

Figure 2: Picasso's Variations on Las Meninas (1957)

The questions of how the world is seen and how it is represented are inscribed in the painting as a whole. Here, it is claimed that despite the concerted interpretative efforts the origin of reflection can never be located with certainty. Vela'zquez relegates the question "how I see the world" to the most fetishized object of classical thought, the mirror. The mirror was taken as symbol of the virtual coincidence between the world seen and the world represented, and as evidence that representation can be precise. Here, however, there can be no certainty as to the origin of reflection. On the contrary, the meaning of the work resides in its activating the interaction between hypothesis and deduction within the act of seeing. From this point of view, the work remains deliberately open to interpretations and can be treated as a machine for thinking and continuously displacing meaning.



26.6

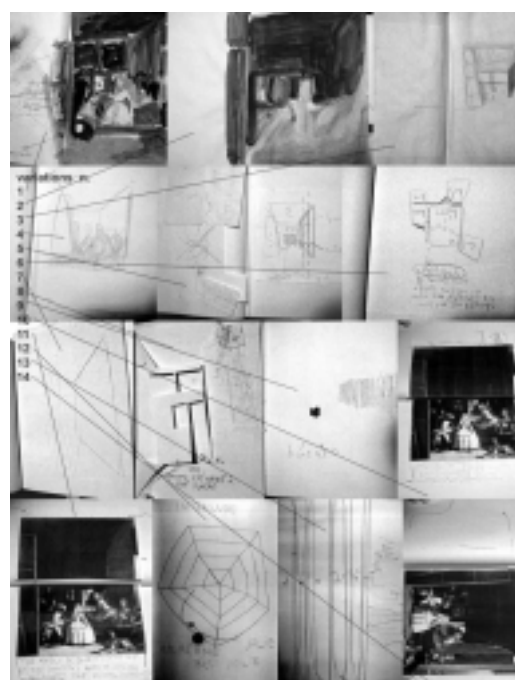
Picasso studied *Las Meninas* fifty years after he painted “*Demoiselles d’Avignon*” (1907), possessing a mature painterly language; the study is documented in 58 paintings which can also be treated as a composite work subject to consistent principles. *Las Meninas* will be referred-to as the theme of the collection, while individual paintings will be considered as variations that may either focus on particular elements of the theme, or reconstruct the scene as a whole. With the exception of the last variation, elements are never drawn out of context: the frame seems to interrupt lines that would otherwise extend beyond the area made visible. The variations can therefore be thought of as close-ups, documents of selective acts of vision scanning the original theme. The series of variations is interrupted three times, with the insertion of paintings that seem to have independent thematic reference. Picasso insisted upon treating the whole series as integral, despite the reservations that stem from the presence of these inserts. For the purposes of this argument, the overall series will be split into four sub-series divided by three interludes.

The painting of the first series (1 - 17) depicts the scene as a whole and functions as a map for situating subsequent close-ups. One variation depicts Maria Augustina (3), and two are further reconstructions of a part (13) or the whole (14) of the scene. All other variations reveal the Infanta as the focus of interest. Variations are practically devoid of colour; indeed we know that Picasso was working off a grayscale copy of the original painting. The first interlude (18-26) is known as *Los Pichones*. We suppose it to consist of views through Picasso’s window. The paintings are studies of colour and composition. Students have observed analogies between the compositional structure of these paintings and the structure of *Las Meninas*. These include: first, the presence of a large surface on the left side of the paintings, which is even split into parts much as the canvas shown in the original theme; second, the presence of pigeons in the foreground, at the lower zone of the painting; third, the situation of an implied vanishing point, along with the opening of the window towards the depth of the visual field. We note that pigeons have been a theme of Picasso’s paintings since his earlier youth. The second series (27-39) starts with the most intense portrait of Infanta, the last in the whole set of variations. The colour schemes developed in the interlude are inscribed in these variations which are otherwise directed towards controlled reconstructions of global aspects of the scene. The last five works re-focus upon the figures either side of the Infanta, at the centre of the original theme. The second interlude (40) shows a pianist, whose figure repeats Picasso’s rendition of *Nicolasico Pertusato* in the first variation of the whole series, and a dog. Interestingly, we can notice two candles reversing the perspective defined by the bases for chandeliers (themselves absent) in the ceiling in the original painting. We also note that musical instruments are recurrent themes for Picasso during the period of synthetic cubism. The third series (41-53) starts with a variation upon the

figure of Nicolasico Pertusato. Picasso's interest shifts to the right side of the painting, moving towards the left. He deals with the dwarfs Nicolasico and Mari Ba'rbola, the dog and the maid of honour Isabel de Velasco. Surfaces are emphasised more than the outlines of shapes, while red is used as a compact background for paintings 46-53 that complete the series. Towards the end of this series we notice that the figure of Isabel de Velasco is formally treated according to Velasquez's naturalistic vocabulary: even the gesture depicted by Velasquez is reproduced in the manner in which the brush and colour are handled. In other words, the series ends with clear signs of renewed attention upon the structure and the painterly manner of the original theme. The third interlude comprises the landscapes (54-56) and a portrait of Jacqueline (57), an extension of a persistent trend whereby portraits of familiar figures are found through the evolution of the work of Picasso. The naturalistic idiom is extended onto the treatment of landscape no longer in terms of structure and frame but rather in terms of gestures dealing with colour and materiality. Two specific thematic and iconographic affinities with the original theme might even be identified. First, in the case of the portrait, the rather uncommon appearance of a painted frame with dated morphological characteristics; this might implicitly refer to the paintings hung on the walls in the original theme, perhaps even to the mirror. The red colour might also refer to the colour that would be associated with the curtains in typical portraits of the gentry. A second affinity resides in the manner in which the female figure looks towards the viewer. This is very similar to the manner in which Velasquez depicts Infanta Margarita, Isabel de Velasco and Mari Ba'rbola. We could advance the hypothesis that Picasso's attention is directed towards the central area of the original theme, perhaps even towards its conceptual centre, that is the mirror. The fourth series comprises the single painting 58, a portrait of Isabel de Velasco, which is extracted out of context. Here, variation bears upon the rendition of gesture, the use of a colour palette and the stylistic manner of Velasquez.

The examination of the set of variations suggests an hypothesis: variations are simultaneously a means for exploring, interpreting, reconstructing and understanding an original theme, and also a means for developing a language within a given medium. Picasso enters the production of variations with an already developed language. In the course of his work he seems to use the interludes in order to test how the modifications or elaborations of the language that issue from the act of producing variations can perhaps be autonomously applied to different themes, perhaps even to themes that were constitutive of the original formation of the language. Thus, the interspacing of main series and interludes alludes to the dialogue between variation and the elaboration of language.

Figure 3: Manipulating visual material. Studies of Las Meninas



Variations, 1 and 2 take as a point of departure the sense that a painterly image presupposes materially present colour, as well as an abstract theory of colour. If we were to isolate even a small section of the surface of the theme, for example the area where the lace on the dress of the Infanta is folded, there is nothing that inherently links the composition of coloured traces to the transparent lace worn by the princess. Such reference is only created within a specific painterly code. The code encompasses a representation convention whereby we can, for example, understand what the diagonal black brush stroke represents in its relation to the horizontal yellow brush stroke, how the two respond to and reconstruct transparency and fold. Variation 1 is a colour-map of the original theme. In variation 2 brush strokes unfold over larger surfaces to reveal generic shapes, such as the illuminated and the shaded regions of the theme. Variation 3 uses tones of the same colour to interpret shapes and spatial relationships in the theme. Variation 4 explores clearly or unclearly delineated shapes: the figures in the foreground and the surrounding cubical volume of the room respectively.

In variation 5, seven quadrilaterals are used to represent the perspective image of the internal sides of the room as orthogonally projected shapes as well as the mirror, the door and the paintings hung on the walls. A broken line represents the figures in the foreground. The opposite page interprets this diagram in plan. The broken line is repeated according to the positions taken by the figures in this hypothetical (un-dimensioned) space. In variation 6 the same plan is used to record the areas that are hidden through 3-d projection, as well as the points from which light penetrates the scene.

The seventh variation attempts a translational shift. a) The trapezium on the right, the visible side of the room, is retained, so that the converging lines may confirm the perspectival construction of the work; however the broken line corresponding to the figures is replaced by vertical axes through their bodies. Thus, figures become lines and space is rendered as a plane, to create an abstracted representation which eschews visual resemblance to the original theme. b) From here on, the elements of meaning of the theme will be treated as fragments. c) Lines drawn with pencil become threads. This is meant to distance the variation from the normal conventions of architectural representation where lines represent edges, while also bringing forth a constructional act: sewing. The same move inscribes the importance attributed to the painterly rendition of materials as part of the illusionistic correspondence between object and representation: renditions of fabric are of paramount importance as demonstrations of virtuosity, while also signalling status. The rendition of materiality becomes a potential object of transformation.

In variation 8, the quadrilaterals drawn in variation 5 are cut off the page of the book, to construct an elementary game-puzzle, which calls us to place the shapes in their appropriate relative positions. This variation separates shapes from their current relational setting. It thus accelerates the potential transformability of the image, while also implying that the future co-ordination of shapes will issue from a compositional act.

Variation 9 follows upon 7. The red clay jug, the bu'caro, that Maria Augustina offers to Infanta Margarita is constructed from sealing wax. The thread lines suggest depth.

Variations 10 and 11 inscribe texts. The aim is to set the image within an emblematic interpretative framework, to have it respond to figures of speech, so that visual information is open to new interpretations. We look back upon Velasquez's image after taking our distance from it.

Variations 12 and 13 bring the paintings hung in the background of the original theme into the translational field. The paintings deal with mythological motifs from Ovid and are copies of works by Rubens. "Athena punishes Arachne" is placed over the mirror, while the "Victory of Apollo over Pan" is placed to the right. Both paintings encapsulate politico-philosophical views regarding the origin and significance of artists and of art. In variation 12, threads are used to create a spider web, also to recreate the convergence of perspective lines. There is an indirect reference to the vanishing point which coincides with the elbow of Nieto Vela'zquez who was head of the tapestry workshops of the queen. In variation 13, threads treated as chords form the word "mousique", thus indirectly referring to Apollo's lyre.

The right hand side of the room is cut in variation 14, to project a perspectival plane into space. This is the starting point of variations-models described in Figure 5.

Statements of two kinds are inscribed. Some statements exemplify properties of the visual material. These function autonomously: they do not denote the original theme but they incorporate and translate it within their own medium. The juxtaposition of two of enunciative systems, linguistic and visual, leads to new potential insights and variations. Other statements work as interpretations of what takes place inside the visual field and of the transformations involved with the production of variations. These discretise and crystallise ideas that arise within the process of visual elaboration, in a manner which is more stable and more permanent than is possible within the visual medium itself. The relationship of these two kinds of textual figures, the exemplificatory and the interpretative, with the visual material is emblematic. It is

analogous to the relationship between *imago-subscriptio-inscriptio* in the emblem as symbolic form. Evoking the emblem is consistent with the manner in which Picasso responds to Velasquez's painting. The series of variations can be treated as a kind of painterly prose with two components: elaborated interpretations through the four series, and patterns of exemplification in the three interludes. In the case of variations operating across symbolic forms, in this case from painting to architecture, there are additional complications. The transition from visual to architectural material is mediated by language. Hence the different manner of constructing the emblems.

The variations shown in Figure 4 will be numbered according to the numbering system used for identifying Picasso's paintings rather than according to the independent numbering system initiated with Figure 3. The starting point is, once again, a mapping of colour (1-30). Variations based on the "pigeon" set lead to a realisation that colour is used to inscribe the time of day and the prevailing patterns of weather: warm colours are used when sunlight is intense, cold colours when the sun disappears. The use of colour inscribes within Picasso's variations the manner in which he understood Velasquez's treatment of natural light. The last few variations (31-33) corresponding to the paintings by Picasso that reconstruct the entire setting of the original theme are almost copies of Picasso's work in terms of the outlines of shapes. The flattening of space and the negation of perspective depth in the work of Picasso is clearly evident. Human figures and space are represented in the same way

26.10



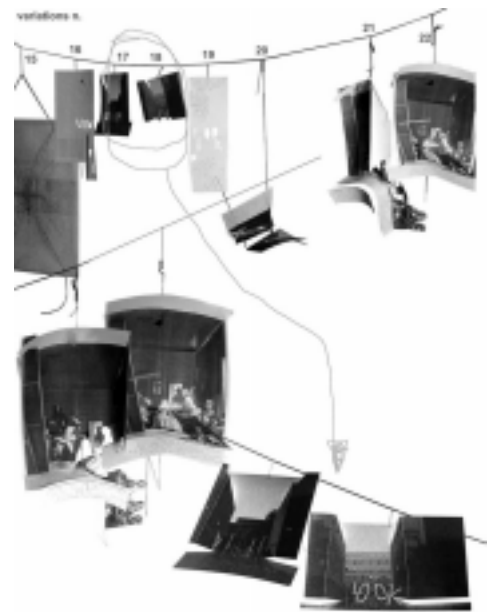
Figure 4: Manipulating visual material. Studies of Picasso's variations

The last three variations (34-36) show an elaboration of the original theme through spatial layers and constructions, so that the overall composition emerges by turning or by overlapping successive pages of the notebook. Action is once again brought to the fore as the instrument of shaping, in a manner analogous to the puzzle-memory game of variation 8 in Figure 3. Colour is, once again abolished and replaced with numeric indices that refer to the codes used in architectural drawings. Threads are evident, as with the first series of variations.

The third set of eight variations, numbered 15-22 by extending the numbering system of Figure 3, works to create a composite whole, the "laundry": the variations are suspended from a string. As with the use of thread and sewing in variation 7, the aim is to situate the variation within the space occupied by the viewer: the variations are to be treated less as 3-D models and more as objects in their own right. The ideas of fabric and clothing are now indirectly suggested by the visual reference to laundry hang to dry.

Variations 16 and 19 are merely the sheets of paper out of which the words “view” and “look” were cut out to be suspended within variations 17 and 18 as recursive realisations of the idea of laundry. Variations 21 and 22 arise from cutting and folding a copy of the theme. The figures and the canvas are cut out and placed on successive layers according to their approximate position in the plan. The string used to hang the variation corresponds to the vertical axis through the centre of the mirror. The ensuing rotation and deformation of the variation relative to the vertical exemplifies the instability involved with identifying the centre of Las Meninas.

Drawing 15 is a site plan of the location for the architectural project that will result from the process of variations of Las Meninas (also see Figure 10). It precedes the variations (July 2001). The site is part of the court of the School of Architecture at the National Technical University of Athens. It is situated between two facing building entrances and along an axis that links the older neo-classical main building to the newer extensions at the back of the complex. In other words, it is a node linking many alternative paths used in the everyday life of the school. The intention is to assimilate and redefine, or re-qualify, the interaction between the site and the paths of movement; to create a filter which reframes perceptions of existing conditions according to its own structure. The association of the site with multiple passages as well as the views available from the site have affinities with Las Meninas including the animation of the gaze towards the central area of the visual field, the perspective foreshortening of space, and the rectilinear grid created on the elevation in the background. The word “viewfinder” on variation 17 suggests the approximate position of the viewing point, while the words “look”, “line”, “laundry”, suspended in 3-D space, suggest the region to be occupied by the project after construction. Variation 20 is based on a



26.11

Figure 5: Reading the Terrain again. Laundry: 3-D variations on Las Meninas

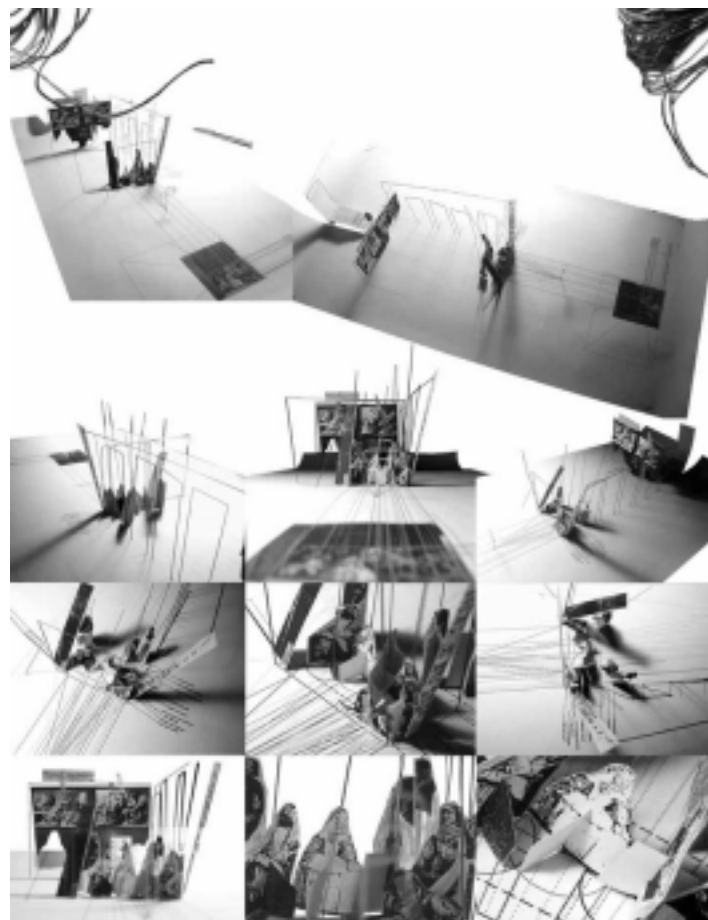


Figure 6: Measures taken. Integration of bodies and space. 3-D reproduction of the painted image

photograph of the passage seen from the inside, thus offering a sense of what would be visible to a subject moving in relation to an element of “the laundry”.

Seen as a whole image, Figure 5 has iconic affinities with *Las Meninas*. Correspondences can be seen between: sketch 15 and the canvas; the sheets of paper from which the cut-outs were produced and the maids of honour; the prompts “look” and “viewfinder” and the Infanta; variation 20 and the dog; finally, the “deformed” variations and the dwarfs. This latent similarity was only retrospectively evident and is noted as an indication that the visual structure of the painting is internalised within design thinking.

26.12

The construction of the model is based on the method used by Philip Steadman (2001) to analyse Vermeer’s paintings. The main difference in this case is that no regular tiling is visible on the floor to assist in determining the position of the viewing point. Snyder and Cohen (1980) note that the viewing point is 12 feet (3.6m) in front of the projection surface. Even though this may be a somewhat arbitrary claim, a 3-D reconstruction of the painting helps us to understand more clearly the manner in which the representation of space contributes to the construction of meaning. The plan is used as a basis for constructing the 3-D model. Each figure is represented by two paper surfaces and held up by a wire that also functions as a handle. The wire handles remind of the threads used in variation 7 and also create the impression of a puppet show. The same impression is conveyed by the wire frames used to denote the lateral walls. The figures also resemble spinning tops, a motif that will be taken up in Figure 9. Threads and fabric are always present. The presence of a copy of the theme-painting within the model, with traces of the projection lines used for the construction, gives the impression of weaving, while the wall in the background is a piece of paper hung on a wire frame, as if a tapestry or a banner. These refer to the presence of similar motifs in the original work, including the paintings “*Minerva punishing Arachne*” and “*Apollo’s Victory over Marsyas*” hung in the back wall.

The model shows that the placement of figures in the room has no logic other than the creation of a painterly image from a given viewing point. The disconnection between the position of the figures in 3-D space and what they do is evident even when we look at the details of gestures. The offering of the bu’caro, for example, appears to function only symbolically since in actual fact the Infanta looks away towards the viewing subject and shows no interest in getting hold of the object being offered. Similarly, Jose Nieto Vela’zquez seems oblivious regarding the extension of his path upstairs, and looks towards the viewing point as if posing for a portrait. A comparison to the paintings by Vermeer analysed by Steadman is revealing at this point. In the works of Vermeer there is an intimate connection between the space

represented and the figures occupying it. In addition, the use of the camera obscura enables a direct correspondence between real and represented space. By contrast, Velasquez seems intent on situating his subjects according to the exigencies of the painted image and regardless of what the realistic occupancy of setting might be. The dense concentration of subjects within a thin region of space is only aimed at enabling them to gaze and to become objects of the gaze. Thus, the painterly control over representation is aimed at the construction of subjects disconnected from the normal patterns of space occupancy.

The contents of a package are used to assemble a model. The plan of represented space is taken as a base. The diameters of the circles represent the orientation of figures and are forcibly marked, as if sections through walls. The trace of a pyramid is placed so as to suggest an optical structure within which wall surfaces are placed along the traces that link the viewing point to the figures. Walls are aligned with the two viewing lines which are tangent to the figures on opposite sides. Furthermore, the lines connecting the viewing point to the base of the figures are marked on the surfaces. Each surface is coloured according to the dominant colour used to represent the figure. The aim is to suggest movements from a point of origin to multiple destinations, according to the contextual aims recorded in Figure 5 and 10. The assembly package is an allusion to the fact that architectural space is materially constructed but only animated by embodied movement.

26.13

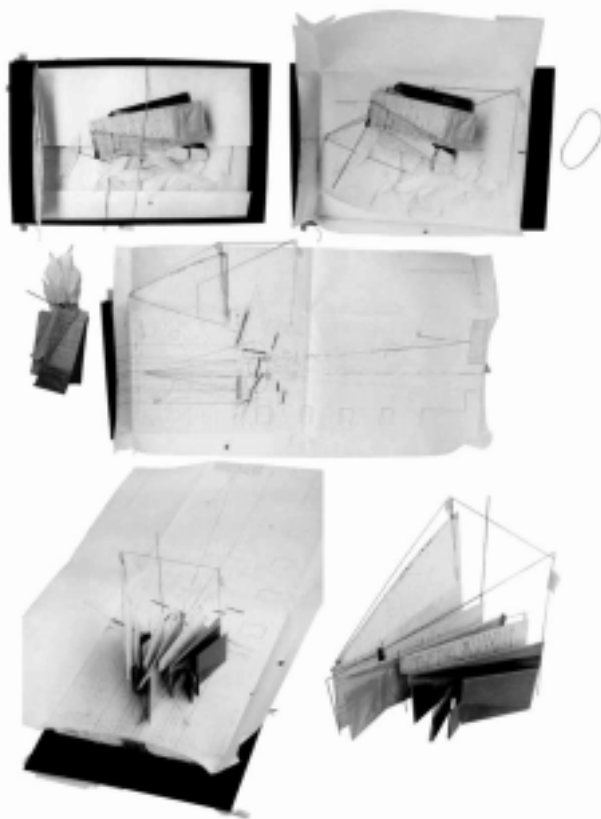


Figure 7: Inscribing movement and passage. Transformations of the visual cone: the place of the viewer

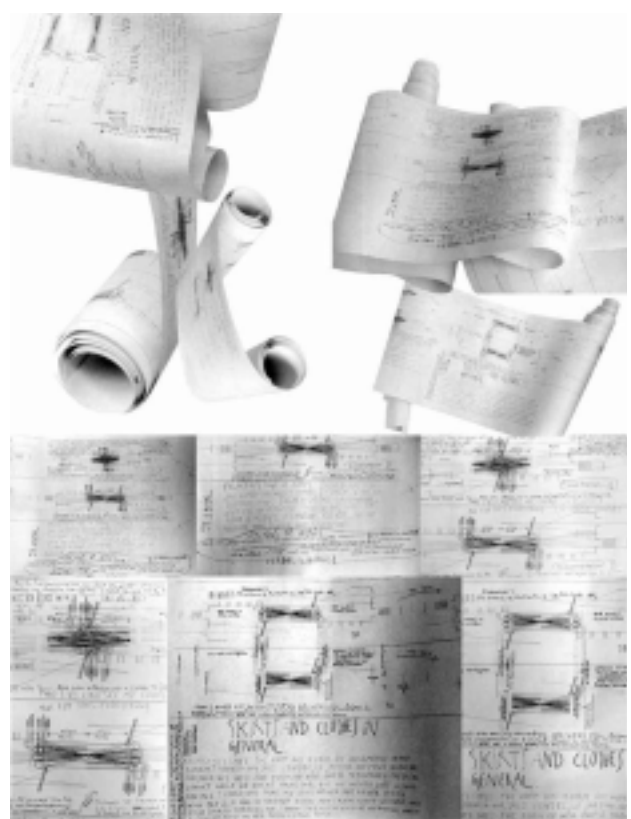


Figure 8: Inscribing movement and passage. Transformations of the visual cone: scroll

As shown in Figures 5 and 10 (sketch of a plan), the project site is intersected by the multiple curved paths. The main axis of movement is pointing North-West. The passage being designed has to respond to the axis, the multiple paths and the multiple destinations.

Seventeen drawings are printed on paper 4.32m long. In order to suggest double orientation, two transformations are applied to the space represented in Las Meninas, both leaving intact the relationship between viewing lines and viewing point. The first transformation is a rotation of 180° around the viewing point, implying that a single subject can look in two directions. The second transformation is a reflection along the projection surface followed by a reflection upon the viewing axis; this implies two viewing subjects that look towards the central region occupied by the outlines of figures. These basic arrangements lead to 15 variations, either by eliminating some lines or by further doubling the area covered in order to accommodate more paths.

Writing has the emblematic functions previously discussed, both interpretative and exemplificatory, but also the more particular function of suggesting and condensing the criteria whereby some of the many possible alternative transformations may be chosen, in part according to functional considerations. Indeed, as used in this study, the idea of variation is not intended to lead to an exhaustive enumeration of possibilities but rather to the precise formulation of design intentionality, the framing of design choice.

Exemplificatory statements can be subtitles, phrases, or indeed dialogues between subjects that are indirectly associated with motifs present in the painting. The dialogues are treated as automated writing. The following are examples of subtitles that correspond to transformations previously discussed: “an eye sees everything”; “Two eyes see me round”. These compress shifting epistemologies of stereoscopic sight and the representation of depth in the 17th century, so that we can associate the former with the circle and the latter with the ellipse.

“Skirts and clothes in general” is an example of an imaginary dialogue: French guy: The room has a form. Do movements have a form? Spanish guy: Pensez, le jardin! On peut danser. French guy: The form of her dress prevented physical contact while we danced. But we never lost visual contact. I could not take my eyes off her. Due to her white wide dress, I had to observe every movement, every gesture and, if she looked towards me, even the room lost its meaning when I concentrated on her pink little nose.

The dialogue occurs between Foucault and Velasquez. The interpretation of Las Meninas adopted here is consistent with Foucault (1966) but rejects his geometrical claims, adopting instead the geometrical argument advanced by Snyder and Cohen (1980). For this reason the French guy speaks English. The Spanish guy speaks French in order to allude to the marriage of Infanta's older sister, Maria Teresa, with Louis XIV, the Sun King; the same allusion is sustained by the references to a dance in a garden and the observation of gestures. The large skirt is an indirect comment on the compression of figures in the foreground. The gaze of the French guy denotes the exchange of gazes staged by Velasquez. "White wide" is a direct reference to the avant-garde "White Wide Space" in Anverse in 1966 and an indirect reference to the incorporation of space, both physical and social, in the production of works of art.

The drawings and the text are placed on a scroll in order to engender the association between reading and physically unrolling a surface. The action refers to the key idea in Baroque art, that is to movement. It also refers to the fact that in the 17th Century, reading often necessitated the physical movement of the body of the reader.

The variation result from a desire to stretch represented space in order to allow passages between the figures depicted. Photocopies become distorted by moving the original at varying speeds relative to the photocopying machine lamp. In the event interesting transformations become apparent, including shape duplications, glowing light substituted for shapes, or even lines. The distorted copies get stitched with red thread. Button holes are formed and buttons are placed so that the edges can be connected to form closed bands that can also be connected into a much larger band. The forms were inspired from the skirts of the young ladies that are similarly buttoned up. The successive moving images remind of primitive cinematic projections. While the shapes created are in principle cylindrical, the material cannot stand upright and the actual forms are as unstable as folds of fabric. The constructions are intended to counter the linear wall elements shown in Figure 7. The alternative is to use less stable shapes that will differentiate themselves according to the movement of viewing subjects.

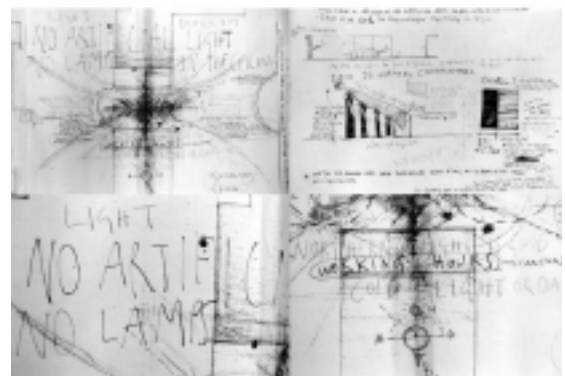
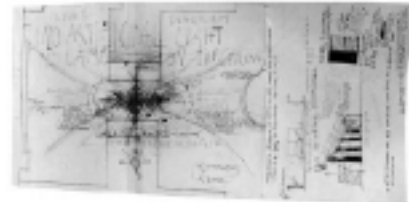
The form shown in the original sketch of the site resembles a fishbone and can be treated as an underlying syntax. Changes in light according to orientation and the time of day are also recorded. The building on the south side of the site casts a strong shadow. In Las Meninas there is only natural light which penetrates across the room from the side widows and also through the back door. It is reflected upon the figures and brightly coloured surfaces that occupy the central region. In the

Figure 9: Inscribing movement and orbits. Variations on stretching Las Meninas



26.16

Figure 10: Inscribing light and material; fishbone variations



fishbone sketches, shaded and illuminated areas are delineated while at the same time exploring the possible channelling of light into the shades: the vertical elements defining the passage can potentially be reflector arrays that could create rivers of light across distance while also directing it or diffusing it over selected areas. The images that correspond to the idea are drawn from the laced collars of the gentry of the time, and from concave and convex mirrors. Thus, ideas and materials retrieved from the painting are used not only symbolically but also literally. More precisely, the functions of materials that are specific and instrumental within painterly space are projected onto architectural space and assimilate its qualities and structure. Materials will assume shapes consistent with the functional criteria that dictate their selection, much as the pigment assumes symbolic functions at the interface between abstract theories of colour and the embodied gestures, or brush strokes, of a painter.

Why do variations usually come in sets?

The question of why variations come in sets points to the more interesting question about what variations achieve from a cognitive point of view. The answer is implicit in the claim advanced earlier, that the function of Picasso's interlude is to test the effects of the study of Velasquez's painterly idiom upon his own painterly language by provisionally withdrawing the over thematic references. The theoretical issue of general significance raised by the production of variations is, therefore, as follows: how does the inflection of a language as a response to external references, affect the internal structure of the language, as it has evolved through past acts of formulation? The fact that Picasso undertook the variations at a late stage also suggests that their relevance is not limited to the formative stages of a language. Rather, they point towards a deep and complex entailment between work and language that defines design. Language can not be studied apart from the works in which it is realised, not least because it is not only the means but also the result of the activity that produces the works. The principles of language can only be retrieved through their repeated instantiation in works.

26.17

After each interlude a new element is introduced in the subsequent series of thematic variations: colour and the repeated reconstruction of the scene as a whole are taken up after the pigeons interlude, *Nicolasico* appears after the piano interlude, Velasquez's naturalistic brush stroke appears after the paintings of landscape and the portrait of Jacqueline. It is as if the Interludes lead to a better or renewed understanding of Velasquez's idiom that must be registered in the next set of variations. Or, Picasso can better understand Velasquez's language precisely in proportion to being able to better understand his own. The associations explored in the interludes allow Picasso to clarify the constitution of a complex painterly structure, the relevance and manner of naturalistic expression within its frame of reference, the symbolic functions of colour. Essentially Picasso asks how his own work can respond to problems originally formulated by Velasquez.

The function of variations as symbolic form resides in the interplay and compression of analytical acts of understanding (the selection of relevant features and the concomitant attribution of significance) and synthetic acts of imagining (the construction of the differentiating features of the new work), in such a way as to enable a reflective formulation of an emergent design language against the background of a reflexive understanding of a pre-existing design language. Thus variations work in two interlacing ways: they document an analysis of the theme by exemplifying its defining features; they also exemplify the questions and the intentions that underlie the theme, and in this manner they set the stage for dealing with these questions and intentions by constructing new fields of meaning. In doing so,

variations afford us insights into the process of fundamental formulation, that is formulation that bears on language as well as the individual work, which are otherwise more difficult to pinpoint with accuracy. Hence the experimental value of the ongoing exercises reported in this paper, within the context of a broader inquiry into the construction of meaning in architecture.

Notes

¹ This paper is based on doctoral studies undertaken at the National Technical University of Athens and advised by John Peponis. Ken Knoespel of the Georgia Institute of Technology, and Aarati Kanekar of the University of Cincinnati, have offered critical comments on the progress of this work. The author also wishes to thank David Alpher who provided her with recordings of his work *Las Meninas Variations* (1985), composed as a response to a request by Goodman and Elgin. His generosity was a crucial encouragement at a stage when variations across media were first being explored.

References

- Baxandall, M., 1985, *Patterns of Intention, On the Historical Explanation of Pictures*, New Haven, Yale University Press
- Foucault, M., 1966, *Les Mots et les Choses*, Paris, Gallimard
- Galassi, S. G., 1996, *Picasso's variations on the Masters*, New York, Harry N. Abrams
- Goodman, N., 1976, *Languages of Art, An Approach to a Theory of Symbols*, Indianapolis, Hackett Publishing Company
- Goodman, N., Elgin C. Z., 1988, *Reconceptions in Philosophy and Other Arts and Sciences*, London, Routledge
- Lopez-Rey, J., 1999, *Vela'zquez, Catalogue Raisonne'*, Cologne, Taschen
- Snyder J. and Cohen T., 1980, "Reflexions on Las Meninas: Paradox Lost", *Critical Inquiry*, Volume 7, No 2, 1980, Chicago, Chicago University Press, pp. 429-447
- Steadman, P., 2001, *Vermeer's Camera, Uncovering the Truth Behind the Masterpieces*, Oxford, Oxford University Press
- Warncke, C. P., 1995, *Pablo Picasso 1881-1973*, Volume I-II, Cologne, Taschen