

## I. The Labour of Watching: Reflections on a Computational Model of Vision

The processing of visual data is a layered and multidimensional process. David Marr and Tomaso Poggio proposed understanding vision as a structured process of information management and representation. Marr and Poggio's conception, known as the Tri-Level Hypothesis, posits that the phenomenon known as vision is can be broken into three distinct sub-processes which underlie the apparently effortless reception of the stream of visual data from the environmental surround. These levels include a computational level, on which the visual system is conceptualised as seeking solutions to particular problems endogenous to the material structures of the mind and brain. The next level of the model is a representational level on which the visual system applies particular archetypal structures and algorithmic functions to the data input of the eyes to form a coherent and cognisable structure for the mind. Marr and Poggio's third level is the implementation level, or the physiological level, which considers the nature of the physical structure of the interface system between what might be described as biophysical vision and cognitive vision, i.e., the distinction between the material hardware that makes vision possible and which generates the representational structures of the second level of Marr and Poggio's system, and the nonmaterial structures which emerge from the interaction of these biological structures and cognitive functions (Marr and Poggio, 1976). Marr extends this conception of the procedural nature of vision to formulate a highly evocative model of the manifestation of visual data, one that strongly resonates with the discourses of contemporary visual art criticism and aesthetic theory. Marr's "Stages of Vision" model, in fact, employs the language of visual art directly, speaking of a "primal sketch" existing in the mind which provides a basic template for the interpretation of visual information. The next level is the "2.5-D sketch" in which gradations of shading and texture in a particular visual event are accounted for. Finally, the model culminates int the "3-D model" in which a full three dimensional representation of visual data is produced by the brain (Marr 1980). This model holds true even in the absence of external data, as is evidenced by the phenomenon of "blind sight" or in experimental contexts where tachistoscopic stimulation can produce visual structures in the mind-brain in the absence of "real world" stimuli.

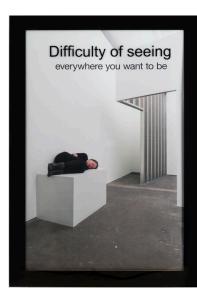
Diffuculty of seeing, 2016 200 x 140 cm, city light rolling advertising display

David Courtnay Marr (1945 – 1980) was a British neuroscientist and psychologist. Marr integrated results from psychology, artificial intelligence, and neurophysiology into new models of visual processing.

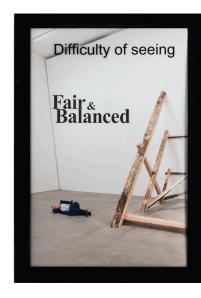
Tomaso Armando Poggio (born 1947), is the Eugene McDermott professor in the Department of Brain and Cognitive Sciences, an investigator at the McGovern Institute for Brain Research, a member of the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) and director of both the Center for Biological and Computational Learning at MIT and the Center for Brains, Minds, and Machines.

Such investigations into the nature of sight evoke the complex dynamics involved in the reception and processing of visual data in social contexts. Beyond the processes that underwrite vision itself, the presentation and understanding of visual information differs dramatically in the light of expectations. The "primal sketch" that creates the schema for the reception of visual information is instantiated differently in accord with the mandates of the axes of cultural priming. The works in this exhibition, for example, build on the visual information presented in the widely available archival video of automobile structural integrity tests. The videos present an endless cascade of ritualised destruction. Vehicles from the golden age of the automobile appear in succession only to be smashed against specialised structures to determine the boundaries of risk and safety that the corporations that produce them are prepared to sustain. The vehicles and the structures into which they are driven play curiously coded roles in this ritual. They are meant to simulate real world scenarios, but the structures are entirely purpose-built, and the types of incidents these test videos record are, at best, rough 3-D sketches of the possible accidents in which the vehicles may be involved. Even in the cases of head-on collisions, the purpose-built structures used in the tests are rarely the structures into which drivers could expect to collide in the quotidian driving experience. The works that derive from these videos are aesthetic objects; they are inscribed with, and informed by, the appurtenances of visual display, and, therefore, exert particular visual pressures on their viewers whose expectations are themselves coded and managed by the presentation of the objects in a gallery environment. An alternative context could be easily posited.

In the eyes of structural engineers, the videos from which the works derive tell an entirely different story. The minds and eyes of these engineers are inscribed with a different primal sketch. The information they seek and receive, is, thus, fundamentally different. Their concerns relate to the integrity of materials and the formal distortion of the objects—as, often, do those of the visual artist—but the implications of this information as it comes into higher relief, in the 2.5-D and 3-D versions of the videos' narratives, for the engineers, reflect differences of competencies, of training, and of visual priority. Materially absent in these videos, but cognitively visible to the engineers, is the entire history of the design and structural engineering of the vehicle. What is crashing before their eyes is not merely a particular configuration of metal, glass and plastic, but equations, blue prints, even primitive computer models. They are simulations that engage but warp Baudrillard's notion of the dynamic of simulation and underlying event: in these cases, the engineers watch as one simulation replaces another, and, in a strange alchemy that moves even beyond Baudrillard's multiple orders of simulatory dialogue, the final simulation becomes, for the engineers and product designers, a primal material fact. The information they ultimately seek is the discrepancy or coherence between the ruin and the model in order to refine simulations to the point where they achieve fidelity with reality. Too great a distance between expectation and outcome engenders anxiety in the same way it engenders exhilaration in a visual art context. To see the same information, then, is to see a multiplicity of narratives and histories, most of which are hidden and inaccessible to those outside of a given frame of reference—a frame that houses millions of distinct primal sketches waiting to be filled in with expectation, hope and dread.



Diffuculty of seeing, 2016 200 x 140 cm, city light rolling advertising display



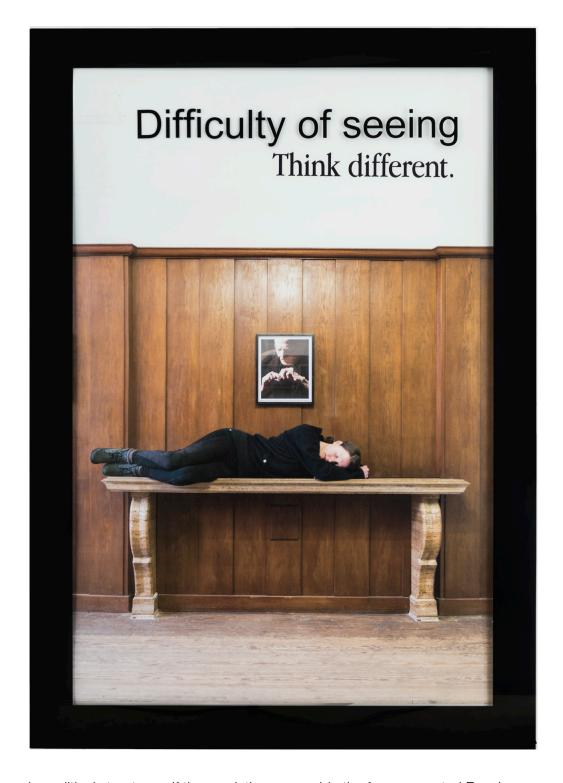
Diffuculty of seeing, 2016 200 x 140 cm, city light rolling advertising display



Seeing, and being seen to see, 2016 200 x 145 cm, city light display, digital print on foil

## II. Who Will Watch the Watchers: The Physical and Economic Imperatives of Viewing Art

If the act of seeing is a process, then the application of sight to the contents of a mise-en-scene is a heavily structurally-determined circumstance. When one considers the way these relations are theorised and applied in the context of the exhibition of visual art, the mise-en-scene begins to resemble a mise-en-abyme. Visual structures are directed by curatorial structures, which are increasingly defined by economic structures which are fundamentally inscribed



Diffuculty of seeing, 2016 200 x 140 cm, city light rolling advertising display

by political structures. If these relations resemble the famous nested Russian doll figurines, the faces and attire of the dolls is increasingly that of an oligarch of graduated bloatedness. The positioning of institutions of visual art incubation and display as a handmaiden of a nation's economic sector is a trend which has quietly cultivated a dynamic of dependency and impotence. Though the offices of culture and tourism in which decisions are made with regard to the accessibility of institutional(ised) art may seem distant from the daily experience of art as felt by the thousands of art "consumers" who attend museums or who, scrolling the images of an institution's website, plan their holidays around trips to museums and galleries, nevertheless, the management of collections,



The Labour of Watching, installation view, leto gallery, Warsaw, 2016

the positioning of furniture in gallery spaces and the training and positioning of museum staff are all part of the protocols visual license such offices determine.

These regimes of aesthetic display place the experience of art firmly in the realm of commercial urban planning. In a sense, museums are temporary cities experiencing a continuous flux of population and expectations are placed not merely on those entering the space in terms of commercial imperatives, but also in terms of the performance of social roles. In Piero Martini's images of the Grand Salon of 1785 and the Royal Academy the performance of viewing is as integral an aspect of the composition and argument structure of the work as the virtuosic meta-commentary the works more overtly display. They are works about seeing and being seen to see. The question such works prompt in an age of infinite reproducibility of images is the following: is there a distinction to be made between seeing and watching, between being a site of aesthetic reception and an active creator of aesthetic meaning and significance in one's own right? The status of the viewer as an embodied subject is central to understanding how a difference would be adjudicated. While the visual exhaustion that may come with the endless scrolling, sharing, or popping up of digital images may represent one form of visual fatigue, the deeply physical process of visiting a museum represents a unique, humanistic point of contact between art works as both cognitive and aesthetic objects and individuals who could be thought of in the same terms.

The viewer in a museum defines herself by a performance of visual consumption: as one passes through an art institution, one defines oneself as the type of person who visits an art institution. Even if one is not the type of person who visits an art institution but is the type of person who is dragged their by their travelling companion, that too is a modality of performance. This performance and the structural relations it entails, both visual and social, are at the heart of the way institutions of cultural management like tourism and heritage offices understand the status of art. In a digital age,



Closure is not desirable, 2016 200 x 145 cm, city light display, digital print on foil

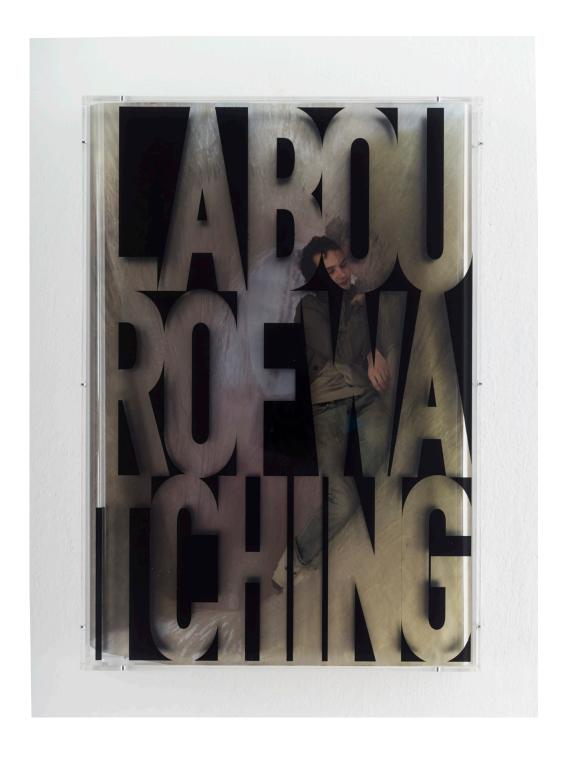
the performance of the visual reception and engagement with art remains the privileged and dominant political understanding of the what it means to "consume" art. Indeed, the exhaustion of the viewer's body may experience in the context of a contemporary Grand Salon like the Tate Modern becomes more comprehensible if such relations are taken into account. The viewer, then bears not only the intellectual, semiotic and cognitive weight of the process of art viewing, but also the economic and cultural weight institutions of official culture choose to shift on these viewers. To see art is to watch the process of aesthetic discourse unfold, but it is also to watch a hyper-visible but unmarked economic process too.



The Labour of Watching, 2016 frontal crash test barierres

## III. Reverse Engineering: Examining the Dynamics of Disclosure and Concealment in Artistic and Commercial Creation

Presentation, however, is as vexed a conception as concealment. The placement of objects within a space defines particular relations that will, of necessity, intervene in the cognitive environment of a viewer. In establishing a presence in the viewer's cognitive geography, the objects assert a kind of agency which bears the traces of the intentionality that arranged them. Such agency is by definition artificial, but the relations it gives rise to are no less real for this fact. As in the world of fiction, non-real structures can give rise to real world consequences and emotions; the unreal present informs the pre-real future. This is a basic point articulated in thinkers including Brentano and Husserl whose writings have helped to delineate the contemporary conception of intentionality: minds can have real relationships with non-real, or perhaps "trans-real" is a better term, objects, structures and concepts. The exhibition is a celebration of this dynamic; indeed, it may even be seen as an appeal to the



The Labour of Watching, 2016 46 x 65 cm, plexiglass, digital print on electrostatic foil

expectations of such immaterial potentialities. Inherent in this notion, however, is an acceptance of the vagaries of individual perception, an understanding that simply because minds experience the same data, their experience of that data will not necessarily be the same or even similar.

The space itself, like the object, is not innocent in the creation of meaning. Locations have identities definable by sonic, visual, geographical or mathematical investigation, and, in so being, they, too, come to provide not merely a physical location for an object, but also a cultural and social location. The process of seeing an object may be understood to be as much about revealing more than simply the physical properties of an object as it is displayed or experienced, but about uncovering the messages the space



Untitled - The Labour of Watching, 2016 frontal crash test barierre

inscribes in the interpretation of the object. To return to the images of the automobiles in the crash test videos, the experience of the engineers in the test rooms was a different experience to that of the viewers seeing the video of the tests as part of public service announcements about driving safety, and different as well from individuals watching the videos now, years after their creation, on internet platforms which entirely recontextualise the experience of seeing an infinity of vehicles concertinaed against barriers, purpose-built walls or other vehicles. The works that compose The Labour of Watching, a series of untitled pieces that occupy an uneasy space between painting, sculpture and installation, have grown out of this visual and cognitive substratum. The works, as exhibited, are not simply the records of specific mechanical or structural deformations; they are also documents containing the observational and intentional relations that underpin these semi-aleatory structures. In being further decontextualsed by their placement in the gallery environment, the works take on an additional level of intentionality: they are not only the creations of minds primed to identify certain external features in a reference chain rooted in the trans-anthropic techno-sexual imaginary, they are also products of labour situated in dialogue with each other and with sentient viewers applying their cognitive faculties and conditioned reference frames to the assessment and classification of the visual data they represent. They are metaphors as well as monoliths, fundamentally anthropogenic from beginning to end, yet no less organic for being so, as they house the physical and intellectual content of a multiplicity of discourses as as fecund as the dispersed agency and energy of the underlying crashes themselves. New meanings are born in these sites of abstracted ruin.



The Labour of Watching, installation view, leto gallery, Warsaw, 2016

Though neither closure nor convergence of understanding may be achievable nor desirable in such a dynamic, the impulse to process and interpret what one sees remains. The nature of visual art presentation, at its most critical and challenging, is that it accepts both aspects of this fundamental dilemma and seeks to proliferate further the possible ways in which an object (whether material or immaterial) can be received and engaged. To attempt to use language to bridge this space is perhaps the most vacuous exercise of all, relying, as it does, on a similarly equivocal system of reference and relation underwritten by a quasi-algorithmic grammatical system that licenses a discrete infinity; nevertheless, the labour of seeing is an undertaking that entails consideration on multiple levels. To reveal the structures that underwrite the visual processing of data opens the field of perceptual and semiological possibility to deeper investigation, and this opening clears the way for the viewer to look more deeply into objects, both on a metaphoric and literal level, to see not only the physical contours of an object, or even the obscured historical and cognitive processes that have given rise to it, but, also, to see one's own architecture of visualisation as it is brought to bear on the work before one's eyes.

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