



## 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.

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

Untitled - The Labour of Watching, 2015 OSLO 10, Basel, Switzerland

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.





## II. Machine Transfer: JG Ballard and the Role of Technology as a Vector of Desire

For the first time, a benevolent psychopathology beckons towards us. For example, the car crash is a fertilising rather than a destructive event – a liberation of sexual energy that mediates the sexuality of those who have died with an intensity impossible in any other form. To fully understand that, and to live that... that is my project.

-spoken by the character Vaughan in the film, Crash! (1996).

The key image of the 20th century is the man in the motor car. It sums up everything: the elements of speed, drama, aggression, the junction of advertising and consumer goods for the technological landscape. The sense of violence and desire, power and energy; the shared experience of moving together through an elaborately signalled landscape.

-JG Ballard, from a BBC 4 short film informed by Atrocity Exhibition (1970).

In David Cronenberg's film, Crash!, the automobile accident is envisioned by Vaughan as a technologically advanced recapitulation of the murder of Uranus from Greek mythology. The violent disarticulations of the car crash produce all new possibilities of cybernetic erotics as they scatter vital human and technological material over a given site. For Vaughan, it seems that a new sexuality is birthed in the process of technological production; beneath the blueprints lie deeper and murkier imperatives of desire that are no less a part of the realised commercial object as the chrome plating, the bucket seats, the gear shift or the instrument panel. The quotation from Ballard above makes this connection more explicit, suggesting that the motor car is not merely the end point in inevitable process of invention set into motion by the first homo habilis; the motor car is an expression of a gendered consciousness, suffused by the values and expectations of an aggressive (in multiple senses) male identity. That the motor car may be interpreted as an extension of the male sexual imaginary is, by now, such a widely expressed sentiment as to be essentially a commonplace, the kind of truism that barely sustains meaningful scrutiny. However, in Ballard's conception of the motor car, there is a sense of looking forward to the kind of transanthropic sexual imaginary that has become familiar in the writings of Katherine Hayles and Donna Haraway.

Vaughan himself seems to sense this connection, speaking of the ways in which the human body is 'reshaped' by modern technology. Jim Ballard, the narrator of *Crash!* is also fascinated as much by the conjunction of the human body and the motor car as either in isolation:

I looked down at her strong back, at the junction between the contours of her shoulders remarked by the straps of her brassiere and the elaborately decorated instrument panel of this American car, between her thick buttock in my left handed the pastel-shaded binnacles of the clock and speedometer (Ballard 1973).

Ballard the narrator, like Ballard the writer, is as aware and luridly fascinated by the thanatic as well as the erotic possibilities this conjunction of flesh and technology provides:

Trying to exhaust himself, Vaughan devised a terrifying almanac of imaginary automobile disasters and insane wounds—the lungs of elderly men punctured by door handles, the chests of young women impaled by steering columns, the cheeks of handsome youths pierced by the chromium latches of quarter-lights (Ballard 1973).





Cronenberg, David. (1996). Crash!



Bodies are literally reshaped both conceptually and physically, both temporarily and permanently, by integration with the technological vector. The question becomes how the mind, in addition to the body, is reshaped. For example, it may be Vaughan's deranged thinking that produces this litany, but Ballard the narrator remembers it in detail, and, of course, Ballard the writer conceived both of their minds in his own. Vaughan is, thus, a kind of Athena of techno-perversion sprung from a poorly lit winding road in Ballard's imagination. The motor car, and other technologies, thus, may simultaneously reshape the mind and manifest eternal, perhaps ineradicable, features of it.

Crash! brings its reader face to face with the hidden, or perhaps deliberately obscured, features of the dynamic between mind and machine. The motor car exists as a kind of shadow version of the kinds of narratives of trans/post-human cybernetic liberation that are explored and developed in Haraway's writing, and this discourse is important to address because it highlights how much of the process of human interaction with technology and creation is kept out of sight either deliberately or merely as a function of the differential placement of attention.

Untitled - The Labour of Watching, 2015 OSLO 10, Basel, Switzerland

## 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 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 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 semialeatory 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







Untitled - The Labour of Watching, 2015 OSLO 10, Basel, Switzerland

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.

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.

## References

Ballard, JG. (1973). Crash!.

Baudrillard, Jean. (1981) Simulation and Simulacra.

Cokeliss, Harley. (1970). Crash: Two Films Informed by JG Ballard's Atrocity Exhibition.

Cronenberg, David. (1996). Crash! (film).

Brentano, Franz. (1874). Psychology from an Empirical Standpoint.

Haraway, Donna. (1995). The Cyborg Handbook.

Husserl, Edmund. (1913). Ideas: General Introduction to Pure Phenomenology.

Marr, David. (1980). "Theory of Edge Detection."

Marr, David, Poggio, Tomaso. (1976) "From Understanding Computation to Understanding Neural Circuitry."





Exhibition *The Labour of Watching – Crash!*OSLO 10, Basel, Switzerland
2.10.15 - 15.11.15
organised by Agatha Valkyrie Ice (Dorota Gawęda, Egle Kulbokaite)

