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## **ABSTRACT**

The remains of Modernism are a predilection for linear thinking and an emphasis on 'evidence' while art and aesthetics are relegated to unessential but nice add-ons to life.

What creates a feeling of uncertainty, that 'something is not quite right'? I suggest, whether in art or fire fighting, it is the violation of expectancy stirred by a contravening of what was to be likely in the normal progression of events.

Against the backdrop of the visual and the artistic, the 'image' firefighters work with, work on, mould and shape consists not only of the fire itself, but of the situation as a whole, incorporating risk, danger, sparse pieces of conflicting information and the pressure to act rapidly. Explorations through the multidimensional layers of spatial awareness, pattern recognition and the reading of differences reveals parallels between art and fire fighting with which I challenge the prevailing attitude that somatic and aesthetic forms of awareness are unsophisticated and inferior sources of knowledge. I do this through the development of Multimodal Decision Making, a holistic approach to recognising the importance of artistic perception in decision making when contradictory and incomplete information has to be processed quickly.

There is an exceptionally strong impulse within us to sort, delineate and categorise. I have resisted this impulse in an attempt to mirror the multimodal theory I am developing. I will present one fireground incident through the analysis of the image created by the incident commander as he related the event to me, demonstrating multimodal decision making *and* a multimodal approach to analysis.

**Key words:** decision making, aesthetic, somatic, fire, visual culture

**Note:** The subjects of this investigation were Inspectors from a fire brigade. Inspector is a rank title; when in charge of an incident they assume the role of incident commander. Similarly, a Station Officer is a rank title and a Station Officer may assume the role of incident commander.

## **THE CREATION OF UNCERTAINTY**

The demand for a decision frequently happens through the creation of uncertainty. An emergency situation projects emotional force and a certain abstraction of reality. This kind of uncertainty demands a response.

When firefighters look at a fire there are similar processes in the apprehension and processing of somatic signals as a person looking at an artwork. It takes energy to read the intensity of the heat, recognise the smell of various burning substances, look for points of entry and visually measure various relationships such as depth of field, height and the make-up of construction materials. In the artistic realm this is called aesthetic response and it is recognised that responding to art works involves a somatic and aesthetic response involving every part of the human being (Eisner, 2002). In the fire fighting realm it is called situational awareness. Situational awareness is used by emergency services to refer to the degree of accuracy by which a person's perception of the current environment actually mirrors reality (Klein, 1998, p. 90). Perhaps you can see, even in this small snippet of definition, the tendrils of a scientific approach? Extrapolating out from art and aesthetics, fire fighting and situational awareness, with what words can I describe data analysis in the research process?

That something is perceived as not quite right sometimes places emergency personnel in a position of having to distinguish between what is read at face value and what is intuitively understood to be happening; or conversely, reading the indications that may have been passed over by the less experienced.

There will always be variable interpretations of an image and a transmutation of meanings through different times and spaces. For example an Indonesian villager and a foreign aid worker will view the scene of devastation after the Indian Ocean tsunami from completely different cultural, economic, social and political perspectives. Whatever the place or time, the uncertainty of our response is an indication of our connection with the image. This point of connection is initially individual, but it is also collective, as we engage in a process of looking for indications and reminders in order to understand, with

eyes coloured by our emotional as well as collective experience. When we address images there is “a continuous adjustment as we scan them for suggestions on how to proceed and for confirmation or disconfirmation of our response” (Podro, 1998, p. 136).

In “scanning for suggestions” in order to clarify our uncertainty, part of what we are doing is absorbing the emotional force of the image, whether it be from an aerial perspective of the devastation or a close-up image of an orphan in the aftermath. All images have an emotional force expressed through shape and colour. All have a certain abstraction of reality. All possess a degree of uncertainty and the ensuing demand for response, and response means making decisions. This is the dilemma I address: logical, rational decisions are usually considered objective, while empathetic and intuitive decisions are frequently understood as subjective and consequently untrustworthy, as they are usually unverifiable and perceived to be based on something other than ‘fact’. This applies to me as a researcher as much as to my participants – fire brigade officers at the rank of Inspector.

## **COLOURING IN THE BACKGROUND**

In 2003 I taught a couple of decision making subjects for a large Australian fire fighting organisation, associated with the University of Western Sydney. It was the first run of a new course, and once decision making was decided as a focus I began a reading frenzy, scanning and sorting through everything I could pull off the net, find in a book and locate in a journal. I swung off the beaten track to follow a lead and was taken captive by Gary Klein (1998) and Rhona Flin (1996) as they described an exciting new paradigm in decision research called Naturalistic Decision Making. Here decision researchers left their controlled laboratory conditions and entered into the messy, complex and ‘natural’ environments of incident commanders: firegrounds, airplane cockpits and hospital emergency wards to name a few.

Then I had the enjoyment of presenting the material to the class of seventeen budding fire brigade Inspectors – all men at the peak of their career. They eagerly embraced the idea, ran with it and constructed various assignments

around it. We learned together – I had the theory, they had the practice. It was an exciting time that none of us have forgotten. At the end of the course I was reluctant to give up these newly formed friendships and as I was considering a project for post graduate study, thought of asking them to be participants. Why not? They knew me, they understood Naturalistic Decision theory and they were heading back into the ‘real’ world of fire fighting. As a consequence, twelve Inspectors elected to participate in the research.

I wanted to build on Naturalistic Decision Making with a study on the contribution and importance of somatic and aesthetic awareness in the decision making process, building a complex, multifaceted and holistic depiction. As it turned out the firm situation of Naturalistic Decision Making within the scientific paradigm was counterproductive to exploring somatic and aesthetic awareness. I found the aesthetic and artistic domain more hospitable, especially when it came to developing a multimodal perspective and incorporating non verbal data.

I considered Inspectors ideal participants for this research as they typically have seventeen to twenty years of fire fighting experience. The Inspectors were provided with drawing materials and given the option of visually representing the incidents they were describing.

A broader question enveloping the research is the role of somatic and aesthetic awareness in contemporary Western society in resolving its problems. Scaled right down to a microcosm, I aim to remain alert to my own somatic and aesthetic awareness as a researcher, using a multimodal approach in my own research process.

There is a strong impulse left over by Modernism; the impulse to study artistic expression through establishing types, looking for precepts and repeating patterns, measuring effects. A multimodal approach deeply embraces the somatic and aesthetic experience in a holistic way, much like a three dimensional laser show requires more than one dimension for the full visual effect. It is an integrated approach in which individual points that are highlighted are deemed distorted and meaningless on their own. Adopting this approach also means that I did not make categories through assembling

codes across incidents. This would have been counterproductive as I wanted to retain the integrity of each incident as a whole, examine it as an integrated structure which would lose some of its essence if broken apart into segments for coding.

## **ABSORBING EMOTIONAL FORCE**

The traditional approach to qualitative research usually involves some form of interview. The interview process is not a simple case of collecting information or sets of factual data. It relies on interpretation and judgment and mirrors the artistic process in that it may be 'emotional, unpredictable and ambiguous' (Boughton, Eisner, & Ligtvoet, 1996, p. 1).

I experienced how my embodied responses could alter the course of interviews with some of the Inspectors. This is an extract from my research journal:

Personally, I find it incredible that someone voluntarily climbs down through pieces of machinery under a recently burning oil refinery into tunnels below the earth to locate the seats of fire. I could not contain my horror at this point in the interview and enquired about his wife – what would she think? I could have kicked myself because at this point the participant always looks at me and says point blank and seemingly emotionless “It’s my job; I’m trained for this sort of thing; I know how to calculate the risks.” Slipping between a professional attitude and the confidential tones of friendship is almost an art form for firefighters, I discovered. The tension between the professional demeanor and the candid expose of what it is *really* like are guises they can slip on and off, in and out of, quickly and smoothly with fair ease, often subconsciously. At a later point in this particular interview the Inspector opened the door for me to re enter the trusted-friend domain and actually shed a few embarrassed tears as he recalled a life threatening incident that completely changed his perspective on life. This time I sat silent, fighting the impulse to interfere again with my own feelings. In retrospect, this was a poor choice.

I share this incident as an illustration of my own increasing awareness of the fine line I was negotiating as an interviewer, a friend and a researcher. My interviews felt more like conversations and my sensitivities leant towards the

participant rather than the data I was collecting. The Inspectors were fully aware of my research, although most expressed some kind of curiosity as to its value and just exactly what was I going to do – turn them into artists?

## **TRANSMUTATION OF MEANINGS**

Keeping a checklist of where I am up to – or not up to as the case may be – in my daily activities is helpful in utilizing the predictable chronological passage of time through a day. In my data analysis, I wanted to be multimodal, to escape the list, the sequential ordering, the search and matching for codes across incidents. I wanted a multidimensional view of the incident itself, by itself, because I aimed to preserve the connecting arteries that I supposed linked and supplied and refreshed the multimodal activity taking place both within the incident commander, the incident itself and within me.

Thus I cannot provide you a take-home list of what to look for when seeking the somatic and aesthetic awareness in your data. To say it again - I did not have precise criteria that I brought with me to the analysis of the data. It is at this point that my research and I are most vulnerable. Hold your fire and take another step with me, this time not onto a linear plane, but into the multidimensional world of multimodality.

What I did bring to my data was concepts; loose, linked and amorphous. The product of my hunches, convictions, prejudices and predictions; the sum total of my experience in this life as an artist, a researcher and a woman; in short, my own and therefore unique, visual culture – the ether within which I live and move and have my being, the inside and the outside of me.

I used my own judgment to offer explanations. Eisner says “If researchers have no consciousness of what is significant in a setting, it is unlikely that anything subsequent will occur that is of interest” (Eisner, 1998, p. 230). As I had no idea what I would find in the data I had to let it speak to me. My role was to recognise what was important and be able to justify why:

This way of treating information resembles the work of a critic who cannot know in advance which particular qualities a specific work of art or literature, or music, or dance might display, yet is responsible for recognizing what is

important in the work and justifying his or her judgments if asked (Eisner & Powell, 2002, p. 136).

According to Richardson (2005, p. 963) the linear plane provided by traditional triangulation is not sufficient for a multidimensional viewpoint ; the three dimensional metaphor of a crystal with its many faces and facets reflecting and refracting the image captures the 'multidimensionalities and angles of approach' and therefore removes the traditional idea of a 'fixed point' or 'object' to be validated. The crystal metaphor aptly encapsulates Multimodal Decision Making in that the decision is the result of the knowing; the knowing is the sense of 'not quite right', the coming together of all the disparate bits of information, constantly changing in the time pressured pace of the incident ground.

## **DEPICTION AND DISTORTION IN THE DOUBLE MURDER**

I have resisted the impulse to sort and categorise my data in an attempt to mirror the multimodal theory I am developing. Here I draw connections between multimodality in decision making on the fireground, in art practice and in research investigations.

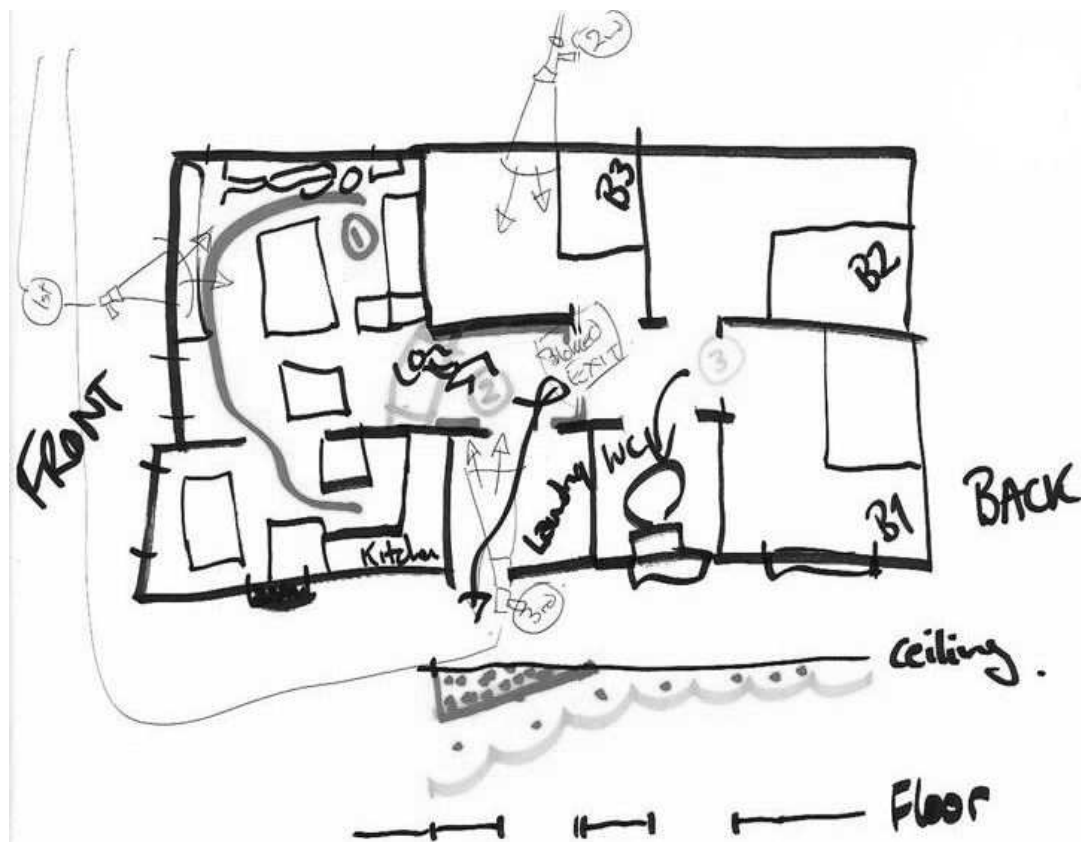
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### **The Double Murder**

In the Double Murder a relieving country Inspector attends a house fire in which one male victim has been located and one female child is still considered missing. A five year old boy has escaped through the toilet window. The fire is out by the time he arrives, it is midnight, and the Inspector surveys the burnt male body sticking out of the rubble in the lounge room, behind a sofa and under a window. Intuitively he knows 'something is not quite right', decides not to damage the scene any further and calls off all activity until sun-up, by which time the Fire Investigation team will have arrived.

It turned out to be murder, the dead man had been beaten, shot and the house set alight by accelerant in two places.

Reading through newspaper reports I learned that the girl was four years old, and the five year old boy suffered burns to 30% of his body, mainly his face. One man was taken into custody for further questioning; he was found at the scene.



*Figure 1:* Drawing of the double murder with a visual explanation at the bottom showing build up of particles at ceiling height prior to flashover. Flashover occurs when a high enough temperature is reached for the self-combustion of gases and materials in a room.

The Inspector has distinguished between the three occupants of the house through the use of colour and numbers. One body, the man behind the sofa, is lying under a window he could easily have smashed in an effort to escape the fire. His hands are limp by his side. People burned to death have their arms up in a boxing position, called the pugilist pose.

The little girl is drawn in the hallway and we are left with the impression that she is on top of the door rather than underneath it. The little boy has a line of escape following him through the toilet window,

The two end points of the pink line indicate the places where accelerant was poured. The Inspector, surveying the scene at midnight, recognises the seats of the hottest part of the fire are not where he would have expected if the cause of the blaze was a run of the mill house fire, for instance triggered by an electrical fault.

### **SCANNING FOR SUGGESTIONS**

The Inspector describes how in their panic each emergency service agency reworked the scene in a desperate effort to locate the girl. Despite their good intentions they were effectively destroying the crime scene, though none of them realised it was a crime scene as they had not read the signs as the Inspector did a little later, at midnight:

But I guess it's like one of those things where they think someone's in a cupboard - you go to the fridge and you keep opening the fridge and you close it and you open it and you close it and you open it, magically hoping they will re-appear, rather than pull back and go wait. Because they turned over every bed, they opened every cupboard, they emptied every single draw of every article of clothing, thinking that the kid might be hiding in there. When where she was, was under a pile of rubble and they had literally been walking over the top of her.

... So that's where we need the SO's (*Station Officers*) to, the officers to, to contain their level of arousal, step back and, and really be more systematic about it. Just taking a stand back sort of stance with it, sorry, stand back posture, capture and taking it all in. (Inspector at Double Murder)

That something is perceived as 'not quite right' sometimes places emergency personnel in a position of having to distinguish between what is read at face value and what is intuitively understood to be happening. Or, conversely, reading the indications that may have been passed over by the less

experienced. The Inspector reveals his experience in commanding complex incidents by his ability to stand back and survey the scene to get the whole picture. The positioning of the researcher, the artist and the firefighter to their work at hand is important in the formulation of decisions determining the overall direction of the piece.

In this incident the Inspector talks about controlling his 'level of arousal' in order to stand back and make steady mediated decisions not based on panicked reactions to the horrifying burnt wreckage of lives before him. Often this kind of stance is interpreted as emotional neutrality. I suggest it indicates multidimensional ways of knowing, that emotion is central to understanding, and that knowing takes a variety of forms, exhibited in this case by the decision to hold off all activity till daylight.

The fresh vitality of an expert hand leaves a painting dripping with suggestion and nuance that must be read; some action is required or demanded on the part of the viewer. In artistic terms, interest may be measured by how long an image holds your attention. If you can look in a few seconds and 'get the picture' well - it's often not an interesting piece. It has to keep your attention for more than a moment, it has to get you thinking or feeling. One way to dissuade interest is to overwork something to such an extent that the life is rubbed out of it. The contrast has been swallowed up. An overworked scene is dull, lifeless and boring, and even the most inexperienced viewer can pick this to some degree.

An innocent life is lost as the result of her father's underworld dealings and people with murderous intent. A suspect is apprehended at the scene. There is a sense in which the enormity of the emotion – the emotion of the firefighters searching for the girl – takes first place above everything else – above 'good firefightership', above 'proper incident command and search and rescue, above 'crime scene preservation'. There is a sense in which this unbridled passion to rescue a young innocent life overworks and blurs the scene; overworking in the artistic sense is read as a sign of professional immaturity, called 'potential' and enacted as emotional activity and energy.

The visual organisation of the artwork is the smoldering, blackened, twisted burnt out house, roof collapsed everywhere except above the kitchen, smoke staining and charring, the heat of embers. This is a familiar scene to the firefighters, albeit not on this magnitude on a regular basis. What made the difference? The emotions invoked by a young life at stake.

This is a scene of desperation as the firefighters look repeatedly for the girl in places they have already been numerous times before. They overwork and overwork the scene, but the life is gone. They are not going to find it.

These emotion-driven actions essentially pollute and further destroy the scene. They foul and dim the signs, the original pointers to what has happened. In the words of the Inspector:

Forensic investigators hate this, but if you imagine CSI (*crime scene investigation*) the show where they do all the bullet patterns and they stick little red-like straws in the bullet holes and the straw points back to where the gunman fired the gun. In my own mind I'm constructing all these little pointers to say the fire, you can see, you can tell where the fire came from. So where it came from you just back sequence. So you go well, this is where it came from, where did it come from before that point? Where did it come from before that point? And you try to plot backwards from the outside pointing back in to where the seat was, so there's all these little red straws, if you like, telling me to look here, look there, go back, look for other indicators. (Inspector at Double Murder)

The aesthetic signal of this scene is the unseen – the girl. The thought of her death through smoke inhalation or burning and the instinctual search and rescue for survivors are powerful passions pushing these firefighters beyond their usual standard procedures.

According to the Inspector another approach was possible:

Now, probably it would have been more appropriate to implement ICS (*incident command system*) initially, have a room searched in a rapid manner, in a primary manner, have it thoroughly searched, and then close it off and go “nah, they’re not in that room” and then working

back from the least damaged to the most damaged, realising if it was done more systematically, it would have been realised that she was probably buried under the rubble, and if she was buried under the rubble, she was dead. So, the debris could have been searched with bars to poke, because a body will, will push back. A lounge will push back, but a body will push back also. (Inspector at Double Murder)

The Station Officer attending this fire had 28 years of experience and had never seen a dead body as a result of a fire. It is likely that he would not have known that a burnt body is spongy and pushes back like a lounge.

They found the male early on in the fire fighting, they found him early on because his head was sticking out of the debris, charred as it was and unrecognizable, you could tell it was a human, human head.

The image of a dead body is disturbing. In Australia television stations are obliged to give warnings concerning disturbing images. A burnt body is also distorted. Disturbing and distorted. The deformed, twisted body, the textual surface of burned, unrecognisable faces, the distortion of heat...or gunshot?

What the body does is it takes on what they call a pugilist pose, all the tendons pull up and the arms come up in front as if you're a boxer. And his arms were laid down by his side. And I said to the cop "Ah, Mick, he is not right, he is not right, there's something not right!" and Mick's gone "His arms, the arms thing?" and I've said "Yeah, there's no pugilist pose, there's no pugilist pose. This looks really, really suspicious", and this was at midnight.

Distortion generates emotion because our feelings are quickly aroused by any departure from the normal, especially in the case of the human body (Feldman, 1992, p. 175). If we are honest in describing the research process, any form of reporting, including scientific reporting, has a special emphasis (Eisner, 1981, p. 8). Distortion may be the result of adding in just as much as from leaving things out. While I was thinking about distortion Munch's painting of 'The Scream' scudded to the forefront of my mind.



Figure 2: *The scream* painted by Edward Munch

(<http://i.cnn.net/cnn/2003/TECH/space/12/10/scream.munch.reut/storyv.munch.sky.jpg> viewed October 2006).

After a little investigation I found that Munch wrote down his motivation for this painting. “One evening”, wrote Munch, “I was walking along a path, the city on one side, the fjord below. I felt tired and ill... The sun was setting and the clouds turning blood-red. I sensed a scream passing through Nature; it seemed to me that I heard the scream. I painted this picture, painted the clouds as actual blood. The colour shrieked” (Munch, 1893). It may be worth noting that in the year Munch painted *The Scream* he began a futile love affair which ended in a nervous breakdown.

There is something deathly about the person screaming, and the repeating of the sky patterns intensify the dramatic effect of ‘it’s all too much’, the pain, the suffering is like a dull ache pulsating repeatedly, not going away, to the point that the person is covering their ears in an attempt to block it all out. Feldman (1992, p. 176) says “Through one painting we encounter all the anguish of existence”.

Through the Double Murder “we encounter all the anguish of existence”. The treachery of murder and the loss of innocent life. The overwhelming emotion, almost a Munch scream, first by the little girl, and then by the firefighters in their desperate and repeated effort. In the words of the Inspector:

So the girl opens the door and becomes immediately engulfed in fire,  
in that when she went down, her hand was closed as if she had been

grabbing a handle. It was when we excavated the debris, her hand was in the immediate vicinity of the remnants of the door handle; she had her other hand up over her face, palm outwards as if she'd been protecting herself. The bottom rung of the door was underneath her, the top rung of the door was on top of her. So it was as if she opened the door, the flame engulfed her and she fell forward into the door, as it was combusted by the fire. (Inspector at Double Murder)

Throughout the interview the Inspector reconstructs the entire scene – this is one ghastly image of it. He reads the signs, the hand clasping for the door, the palm outward, this was an active person caught by the heat and smoke, evocative of the scream Munch heard and then painted.

## **RESPONSIBLE FOR RECOGNISING**

A linear approach based on a systematic analysis headed by sections such as line, shape colour, perspective, form, light and so on would reflect a linear progression of data analysis and defeat the purpose of my thesis, that the apprehension of each incident must be holistic. The impulse within us to categorise, sort and delineate, is exceptionally strong, but it really is only a recent and Modernistic way of understanding an image. Through the infiltration of the scientific understanding we have been programmed to think perception is all about distinguishing these elements

The condition of uncertainty in the changeable and erratic landscape of an emergency calls for a process of continuous adjustment and reappraisal. Choices between one course of action and another must be made quickly. Despite its lack of visibility and explanation there is an art to decision making in dynamic high pressured situations. Scientific language does not easily capture this dimension and science alone will not solve all the problems of decision making in time pressure situations. The focus of Multimodal Decision Making is not primarily an objective representation of the 'truth', but rather the unpredictable, uncertain conditions which incident commanders must address.

From the niggling feeling that 'something is not quite right' to the violation of expectancy, uncertainty demands a response, usually falling within the shape

of a decision. Experienced practitioners are multimodal in their perception of the situation and Multimodal Decision Making provides a holistic approach to understanding decision making in time pressured, uncertain conditions.

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