

AN INVESTIGATION INTO THE PERCEPTIONS OF POLICE CONTROL ROOM STAFF OF THE INFLUENCE OF THE FULL MOON

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Experiments are fundamental to biology, psychology, and indeed, to all areas of science. It is through experiments that observation and anecdote become substantiated as real events or refuted as mistakes and anomalies. It is through experiments that general statements about events, the relationships between those events and the causes that underlie them are tested (Open University, 2004: 1).

Objectives

There have been many statistically based studies into the effects of the full moon on human behaviour. A simple Google search under "lunacy full moon" will provide 19,400 sites to view on this subject alone. These links concern everything from general medical practice consultation rates to suicides and injuries, menstrual cycles and violent crime. For as many studies as claim to prove that the full moon does influence behaviour, there are many more that apparently disprove any effect whatsoever (Chapman and Morrell, 2000; Bhattacharjee, Bradley, Smith and Wilson, 2000).

The purpose of this study is to look at the perceptions that police staff have of the influence of the full moon upon the work that they do. This will be a qualitative investigation into the underlying belief that the full moon does have an effect on human behaviour. Police staff working in the control room answer 999 (emergency) calls from the public and manage the response to incidents by police officers via the radio and telephone. This can be a stressful environment to work in with extremely quiet periods and extremely exciting ones. There is a need for immediate decisions and quick reactions to incidents as they develop.

The objectives:

1. To ascertain how widespread the perception is, among police staff working in one regional control room, that the full moon affects call rates and the behaviour of the public.
2. To find out, if this perception is held by staff, why this perception is held.
3. To find out what staff think happens at full moon in order for the phenomenon to occur or be relevant to their work.
4. To place the full moon phenomenon into a contemporary context.

Two methods have been used to explore the perceptions of control room staff. The first was the use of a questionnaire in order to find out if such a perception was held. The questionnaire contained a mixture of quantitative and qualitative questions in order to give participants chance to expand or explain their answers if they so chose. The second method was a series of interviews with volunteers to investigate further their ideas and perceptions of the full moon. The sample (5 interviewees, 24 completed questionnaires) is small and as such cannot be seen to be fully

representative of police staff views. It is, therefore, not possible to draw any hard conclusions about the concept of full moon influences. This is only a "snap-shot" of views.

Appendix A contains a copy of the questions asked in a questionnaire circulated to staff in the police control room together with the results.

Appendix B contains a list of the questions used in the semi-structured interviews of five volunteers.

Appendix C contains biographical details of those interviewed, to give a cultural context to the research and the transcripts of the interviews.

Appendix D contains some statistics for the number of 999 calls made and of incidents created each day.

NB: Only Appendix D is included in the current document.

I am a full-time active member of a control room team; my own views and perceptions are inescapable within the context of this paper.

Introduction

This investigation stems from my personal experiences working within the Police control room in Milton Keynes. We have our own culture within this working environment and consequently a set of values and meanings that are specific to it. One aspect of this culture is the perception that the full moon has an effect upon human behaviour. When the workload increases or unusual incidents arise colleagues turn to each other and ask, "Is it full moon or something?" This investigation seeks to look at why that question should arise at all. What is it about the culture that allows the question? Why should people working in a high-tech environment that magnifies the "reality" of human activity, choose to associate that activity with the presence of a satellite in the sky? When looking for evidence for our perceptions it became clear that the scientific and statistical evidence did not support our experiences. This qualitative study seeks to place our experiences into a context and show that the scientific method and statistical analysis may not be appropriate as a measure of these experiences.

All scientific knowledge is grounded in the lifeworld, common sense, and everyday life. Although the elaboration of scientific knowledge as a paramount reality requires the institutionalisation of uncommon sense in scientific communities, these same communities must return continually to their point of origin. But as hermeneutic theorists such as Gadamer (1975) have stressed, our interpretive skills are grounded in, and only become possible through, our experiences and prejudices; denying or suppressing them can only distort the communication process and our ability to interpret others (Morrow and Brown 1994: 237-238).

Although many statistical studies have been carried out to measure the effect of the phases of the moon upon behaviour, from plants, animals and weather through to human beings, little has been done to look at our perceptions of the influence of the moon. "Lunar Cycles and Violent Behaviour" is a study to be found on the Blackwell-synergy.com website (Owen, Tarrantello, Jones and Tennant 1998: 496-499) and concludes, "Future research could profitably examine the implications of a belief in the lunar effect among health workers in the face of evidence that no relationship exists between violence, aggression and the lunar cycle". A study conducted in Australia by the Department of Public Health and Community Medicine, University of Sydney, in 2000 began its introduction by citing a preconception for its motivation.

After publicity about the paper (by SC) on a randomised controlled trial to reduce dog bites, we were contacted by a farmer who asked: "Have you university types ever looked at whether dog bites happen more around the full moon? It's a well known fact that they do." Farmers are often storehouses of folkloric knowledge said to be derived from a rich tradition of empirical observation of, for example, sky colour and the weather ("red sky at night, shepherd's delight; red sky in the morning, shepherd's warning") or avoiding the wrath of bulls ("red rag to a bull") - so we leashed our scepticism and investigated (Chapman and Morrell, BMJ 2000 December 23; 321 (7276): 1561-1563).

The conclusion of the research was that dog bites were no more frequent during the period of the full moon than at any other part of the cycle of the moon (BMJ 2000 December 23; 321 (7276): 1561-1563). Perhaps the question should be, "Why does the farmer think they would be?" Despite the numerous studies available on Internet sites and various scientific and medical publications claiming to disprove any connection with the full moon and lunatic behaviour, the idea persists.

As I have said, working in the Thames Valley Police Control Room in Milton Keynes, it is my perception that, when times become unusually busy, or when a particularly unusual incident is reported, the question is often asked, "Is it full moon or something?" I have worked in the control room for two and a half years and have some four years experience as an operational police officer in a large city, and as long as I can remember, the link with the full moon and busy periods has always existed. The question is, why? Why do a group of people believe that the phases of the moon have an influence upon their workload? The quantitative studies are available to disprove the perception (Chapman and Morrell, 2000), and yet when asked about the statistics and the scientific conclusions, my colleagues admitted they had neither thought about science as a measure of the effect or what the true reasons for their belief in the effect might be. In fact for some, it was just something to say!

No I mean, as I said before, I just use it as phraseology, if it is really busy, I will tend to say, oh, there must be a full moon...I mean we all know it's just a bit of banter in here and I think we just use it as a bit of a general escape really (Participant 4 (P4) C27).

To declare my own stance, as the researcher in the current investigation: it began as belief in the *effect* of the full moon upon behaviour in many kinds of life forms.

Experience as a police officer and working in the control room confirmed in my own mind that the full moon does have an influence upon the work we do from the perspective of things being busier than usual and the kind of incidents that we deal with becoming more bizarre and less easily resolved. This is of course, from the scientist's point of view, "derived from a rich tradition of empirical observation" as cited above and is no doubt of little or no value in scientific discourse as it is purely anecdotal. Whether the effect of the full moon is truly that of the moon upon behaviour, or whether the effect is the fact that we *believe* the full moon influences behaviour, the point is that *the belief itself has an effect* which is demonstrated in the perceptions of the control room staff.

In the course of this study it has been impossible to remove the researcher from the account of the results. In fact it would be safe to say that the act of this study had an unavoidable influence upon those being studied.

Reflexivity is a metaphor from grammar indicating a relationship of identity between subject and object, thus meaning the inclusion of the actor (scholar, author, observer) in the account of the act and/or its outcomes. In this sense reflexivity shows that all knowledge is "subjective." (Hufford in *Western Folklore* 54 January, 1995: 57-76 p57).

Rupert Sheldrake points out that "The illusion of objectivity is most powerful when its victims believe themselves to be free of it" (Sheldrake 2002: 169). There is no pretence as to objectivity in this study. Seidman highlights the interviewer's part in the process:

The fact is that the interviewers are a part of the interviewing picture. They ask questions, respond to the participant and at times, even share their own experiences. Moreover, interviewers work with the material, select from it, interpret, describe, and analyse it...Only by recognising that interaction and affirming its possibilities can interviewers use their skills to minimise the distortion that can occur because of their role in the interview (Seidman 1998: 16).

Sheldrake points out that this selection of material and the following interpretation of results is not just a judgement call by the qualitative researchers. It is a reality of the quantitative method also. Sheldrake relates the story of the rivalry between Ehrenfeld and Millikan in their research into the electron. A dispute arose between the two men over the existence of sub electrons.

A historian of science has recently examined Millikan's laboratory notebooks, which reveal a very different picture. The raw data

were individually annotated with comments such as 'very low, something wrong' and 'beauty, publish this.' The 58 observations published in his article were selected from 140 (Sheldrake 2002: 170).

Sheldrake's point is that even using the apparently objective statistical method, interpretation and selection of results is a human action. Millikan selected his 58 results from the 140 available to him in order to give the best evidence for his theory. He won the Nobel Prize (Sheldrake 2002: 170).

Seidman also discusses the issue of the selection process, with regard to interviews.

Experimental studies use random samples to ensure generalisation. Randomness is a statistical concept that depends on a very large number of participants...interview participants must consent to be interviewed, so there is always an element of self-selection in an interview study. Self-selection and randomness are not compatible (Seidman 1998: 44).

My participants have been drawn from the people with whom I work. I chose participants with different service periods in the control room ranging from two and a half years to fourteen years. They represent the ages of those working in the control room, as this is a more mature working environment requiring life experience in order to qualify for the job. They are people who work on the same shift as the researcher and were therefore available for interview. Interviews were carried out at work in a quiet office and some were carried out at the participant's home.

Purpose and Meaning

The purpose of this study is to try to understand the experiences of staff working in the control room.

Because hypotheses are not being tested, the issue is not whether the researcher can generalise the finding of an interview study to a broader population. Instead the researcher's task is to present the experience of the people he or she interviews...so that those who read the study can connect to that experience, learn how it is constituted and deepen their understanding of the issues it reflects. Because the basic assumptions underlying an interview study are different from those of an experimental study, selecting participants is approached differently (Seidman 1998: 36).

A recent article on the Channel 4 science website asked the same rationally driven question about why the idea persists regarding the full moon and altered behaviour. If all the statistics say there is no correlation between the phases of the moon and heightened incidents of madness then why does the belief that it does so still persist among those

working with extremes of human experiences like the police and those in the health service. This article went on to suggest the self-fulfilling prophecy theory, that workers expect it and therefore perceive it to be so (Anon, www.channel4.com, 21/04/2004). In short they are kidding themselves. This is neither helpful nor respectful of people's experiences. The fact still remains that there is such a perception and it is grounded in experience.

The idea that the phases of the moon can have an effect on human behaviour is one that has a social impact within the context of the control room. People are conscious and can make choices. They give meaning to things that occur, particularly in a social context, and look for some sort of consensus (McNeill, 1992: 119). It involves values, interaction, feelings and interpretation of what happened. This is quite different from that of natural phenomena, as dealt with by science. For example, the moon affects the tides. The water levels rise and fall according to the position of the moon in relation to the earth. It just happens, like the weather and the seasons. It is a natural phenomenon and science can predict the tides; this is the positivist approach (McNeill, 1992: 116). Positivism is the premise that the natural world exists independently of everything else, working to a set of rules or laws that can be discovered by empiricism and objectivity and that can be applied *ad infinitum*. There is no attempt to give meaning to the phenomena of the tides because it is governed by cold hard scientifically observed fact and has been explained in the same way through history.

The social sciences applied the positivist approach in its methods in order to maintain its position as a "proper science". In the middle of the twentieth century Max Weber began to look at why things might influence people's thinking (McNeill, 1995: 119). Whilst studying the roots of capitalism in Europe, Weber wanted to know why capitalism had not occurred in other societies. His explanation went beyond economics and found the driving force in Protestantism, in particular Calvinism. Calvinist doctrine stated that everyone was predestined to go to heaven or hell. The Calvinists then demonstrated their destiny by being successful, and reinvesting their wealth in business. Weber showed that the Calvinist money ethic coincided with the phenomenon of capitalism and may have been a factor in the economic success of Europe (McNeill 1995: 60). This is a simplistic outline of a complicated economic phenomenon but serves to illustrate that belief influences action. The Calvinists believed that they could demonstrate their election to heaven, a religious belief, through their economic success, thus motivating them to create the phenomenon of capitalism, measurable numerically. Their social values influenced their economic ones (McNeill, 1995: 61). Economics could not be boiled down to commodities and numbers but relied upon human motivation. For the Calvinists, wealth meant salvation. It had a transcendent meaning which could not be quantified or defined through conventional economic analysis. Weber was able to explain capitalism through understanding the situation from the point of view of the Calvinists. This paper attempts, in somewhat similar vein, to delineate the influence of belief upon experience and action in the world. In order to understand why police staff believe that the full moon has an influence upon the work that they

do, it is necessary to understand the situation from their point of view and to try to interpret it.

This interpretive method gave rise to phenomenological sociology (McNeill, 1995:120). Edmund Husserl (1859-1938) developed phenomenology, and Alfred Schutz (1899-1959) applied the philosophy to sociology. The basic idea is that, through social interaction, we create a social reality. It is constructed in some way through our experiences, interpretation and consequent interaction with others (McNeill, 1995: 120). As a result it appears independent of us and also appears to influence our behaviour. The work of Berger and Luckmann defined this approach in their work "Social Construction of Reality" in 1967 (McNeill, 1995:120). This method outlines the importance of having people describe their experiences as this leads to the "construction of shared meanings and interpretations" (McNeill, 1995: 121). In short, the police control room culture that persists in the belief that the full moon has an influence upon the workload is not "out there", but it has a social context and meaning for those working within that culture. It explains things and gives reasons for certain perceived happenings. It has value for those within that culture.

What makes a social event social is that all those involved give it the same meaning. They all interpret what is happening in broadly the same way (McNeill, 1995:119).

Historical Context

It is useful to take into consideration some of the historical context of the police service in relation to the full moon as governed by legislation. In 1842 the Lunacy Act was passed.

England's Lunacy Act 1842 gave allowances for uncharacteristic crimes committed during the full and new moon. The law distinguished between the chronically insane and the Lunatic. It was argued that the Lunatic became deranged at these times because of the moon's power and thus could not be held accountable for his or her actions (<http://exn.ca/Apollo/moon/allure.cfm>).

The popular understanding of this legislation, although unknown to my colleagues in the control room, may well be responsible for the cultural perception that the full moon has an influence upon human behaviour and may have been handed down through the continuing police culture. Once the understanding that the full moon influenced behaviour became recognised in law it would have been difficult to erase this understanding, being passed from experienced officers to new officers over time. For example, there are police officers who still quote the Larceny Act (1916) even though it was replaced by the Theft act in 1968. The point is that once an understanding is entrenched in a culture it is never fully forgotten but may be adapted or modified. This may help to explain the perception that the full moon has influence upon human behaviour for those working in the police service now, but further research would be needed into the origins of the act itself to determine why it was deemed necessary to pass

legislation in the first place (which is beyond the scope of this investigation).

The Research

A survey was circulated among staff consisting of 28 basic questions about the full moon, (Appendix A). Out of the 40 that were handed out 24 were returned. The survey asked questions that could be interpreted using the quantitative method (yes/no/don't know) but used open questions for participants to expand or explain their ideas or beliefs. The reason for this initial survey was to ascertain to what extent, if at all, the perception existed in the control room that the full moon influenced the work that was being done.

95% of those asked said they were aware of the idea that the phases of the moon can affect human behaviour. 70% said that they thought that the full moon affected human behaviour. 58% said that they thought that the full moon affected the numbers of calls coming in on the 999 system with an equal number undecided and disbelieving. 50% said that they thought that night shifts were busier during the full moon with 29% undecided. 54% had previously asked a colleague if it was full moon; 46% had not. 92% were unaware of any scientific studies, but 62% believed that science could provide answers for the phenomenon. 21% said that science could not provide answers.

This quick basic quantitative survey shows that there is a perception within the control room that the full moon does have some sort of influence upon the work that is done there. It is important to note that this is a survey of two shift groups out of four that man the room twenty four hours a day and cannot be seen as truly representative. Time was a constraint at this point in the research with the basic orientation of the following research being based on a "snap-shot" of opinions. A more thorough coverage could have been obtained with more time and co-operation and could have included other control rooms where the culture may well vary. This may have shown that the perception did not exist, but using this method the quantitative indication was that the perception did exist within the Milton Keynes control room.

The Interviews

As suggested by Seidman (1998:8), my colleagues have been given the title of Participants together with a number to differentiate them, e.g., P1. This is in respect of their voluntary status and the fact that without their participation this research would have been a great deal more difficult, if not impossible.

Five of my colleagues were interviewed about their perceptions of the influence of the full moon upon the work that is done in the control room. The interviews were recorded on mini-disk format (data source A) and later transcribed (data source B). Issues raised are referenced as C numbers, for example C4. Three participants were women and two were

men. This represents a small proportion of those working in the room, as there can be up to twenty-eight people working in the room at any one time. These include police officers, and one of those interviewed is a police officer. The three to two ratio of women to men reflects the predominance of women who work in the room. Again this study cannot claim to be accurately representative of control room staff, it is only a small sample and would benefit from more interviews of staff and also of staff working in other divisional areas as their culture may vary from that of Milton Keynes. All the participants know each other and have worked on the same team for at least two and a half years. This means that the views expressed by the participants could be representative of one group or shift of workers and not of the entire workforce, although shift members do work with other shifts and travel to other control rooms regularly as part of their daily duties. Shift culture does not exist in isolation.

Questions were asked in a semi-structured way and the headings represent the basis of the question asked.

When we are working in the control room I frequently hear the comment, "Is it full moon tonight?" Have you heard that said?

When I asked this question all five participants said that they had heard this said, and two admitted straight away that they had said it themselves. When asked if any of them could identify the circumstances when this question arises four of the five qualified it by saying that things would be busy in the control room.

The amount of people ringing in and the amount of stuff to deal with, it just seems to get tense and a lot more busier.
Yeah, the phones are ringing more, there's even more radio traffic because the police officers are dealing with more, or seem to be more busier, out on the streets. Especially if there's a fight or whatever, it just seems from memory it seems, just busier (P2 C6/7).

Participant 3 perceived that when these busy times occurred it seemed that it was a full moon night but admitted that this was not always the case. The perception was clearly that the busy times in the control room are often associated with the possibility of a full moon (P3 C5). Participant 3 also clarified that although the perception was there in the culture of the control room it might not be the 'truth'. When diaries were checked very often the perception was not supported. Incidentally, none of those involved in the interviews had any perception that the new moon may have any influence upon behaviour.

Three participants explained that the 'trigger' for associating the full moon with what was happening in the control room was the *nature* of the calls coming in on the 999 system. This is quite different from the perception that is held by many who have studied the effects of the full moon by way of quantitative methods. Later, when asked about statistics for analysing the full moon effect, participants were un-surprised that no consistent correlation could be found. For them it was clearly the quality

of the incidents coming in. For example Participant 2 relates that she noticed that local people who were known to police for mental health issues and who normally telephoned once or twice a week with incredible stories and requests would suddenly begin calling on an evening and may call repeatedly for hours on end (P2 C18). Participant 4 had the perception that ordinary people would also call with ridiculous requests which serves to underline the notion that the full moon can affect us all, not just those that may already be susceptible.

You just associate the full moon and it all goes pear-shaped. Really it's just got really really busy, or on the other side of it, whether I'm on the 9s it's, some of the calls we get coming in, instead of being a genuine call, someone in distress and needs our help, you get people saying stupid questions, saying like, you know, I'm locked out of the house or you know, can I get a taxi driver? And it's consistent, persistent and you think, argh! Is it full moon? (P4 C1/2).

Participant 1 talked about the effect upon people in a similar way, perceiving that it was certain types that responded to the full moon.

I don't think that it affects most human beings; I think it affects human beings who have some sort of other thing going on. Some sort of mental problem going on but it's exacerbated by the full moon. But I think that the majority of people, it might have an affect on them but it's not noticeable (P1 C17).

Participant 1 reinforced the perception that the nature of these calls was the 'trigger' for considering the full moon effect. It is clear that she has not gone to work with the preconceived idea that it was a full moon night and so expecting it to be busy or unusual, but clearly the developments at work have prompted her to ask the question and check the facts. This does not support the idea of a self-fulfilling prophecy as suggested by the Channel 4 website article. This is her reality.

You always get the lunatics phoning up but they phone up in bigger numbers. On a full moon I have noticed. And I've not noticed it's full moon until the calls have started coming in and then I will look in my diary and lo and behold it's full moon!

It's not the volume of calls; it's the type of calls that's coming in. A lot of paranoia type calls, there's somebody chasing me, there's somebody in my house, the curtains are talking to me (P1 C6/7).

Note the emphasis on the fact that she does not believe that it is the number of calls that indicates the full moon but the types of calls.

There seems to be a consensus then that the events within the control room trigger an awareness of a change in the way things are happening. All participants stated that they notice that the room becomes busier, either due to the telephones or radio traffic or due to the changing nature of the 999 calls that are being taken. Participant 4 associated this busy period with a degree of struggle in that resources may become stretched

or incidents difficult to deal with (P4 C1). The reality of the full moon effect for those working in the control room would be some sort of deviation from the norm. Further interviews would serve to determine what that norm might be in order to give a better perspective for the trigger. My own opinion is that this sudden trigger is marked by an increased workload. The stress levels in the room rise and the noise increases. The number of expletives and exclamations used becomes noticeably higher and emotions and value judgements are to the fore.

Participant 4 did not know why the moon should affect the type of calls or the type of caller using the 999 system. When asked if he knew why the moon should cause this he said he had never thought about it (P4 C10).

There is a close association with asylums and the full moon. Both Participants 1 and 5 talked about the urban myths of patients in these institutions demonstrating greater erratic and insane behaviour at the times of the full moon. Participant 5 stated that her own understanding of the full moon and lunatic behaviour was grounded in this premise (P5 C15).

Participant 3 also related the phenomenon to mental health issues but also with public order and domestic violence. He qualified this by saying that he believed that there were more of these sorts of incidents to deal with over the full moon period but did not know for certain if this was statistically correct (P3 C8).

Participant 1 qualified her understanding of the influence of the full moon when asked how she would determine its effect empirically.

I think I would set up base camp in an asylum. I know we haven't got any asylums any more, but that would be ideal if you could get a collection of people who have some sort of mental health problem, that's where you are going to get all your results (P1 C25).

The overall perception of the participants is that when the calls start coming in, and they are of a certain nature, then it is probably the influence of the full moon. This is distinct from other days when lunatic behaviour can be explained by Saturday night, payday, sunny weather or large socially significant events like football matches. These other 'effects' were discussed but were deemed to be separate from the full moon effect unless they happened to coincide.

Have you ever discussed this with members of other agencies?

Participants were asked if they had ever discussed the matter with members of other emergency services. The general consensus was that their main interaction with other agencies related to the fire and ambulance services, mainly the ambulance service.

For Participant 4 the interaction with the ambulance service with regard to the influence of the full moon was more of a way of conversation or light heartedness. However he did state that the reactions he received from

these other agencies was always positive and reinforced his own belief that the full moon was having an affect on events unfolding (P4 C31/32). Participant 5 confirmed this positive reaction and went on to suggest that it was part of the emergency services culture though she had no idea where it may have originated (P5 C27). Participant 3, as a police officer, had similar recollections of other agencies confirming his perceptions of the full moon effect.

When I've been, then times when I've been out, to a job and the ambulance, quite a lot of jobs that police officers go to the ambulance is, has turned up to as well, you get to know them quite well, and I can remember at least two incidents where we have discussed it that, you know, it's a full moon tonight and this is the third nut case that we have had to deal with, erm, and you assume, we don't assume, but we assume that there may be a connection (P3 C13).

The consensus here is that other emergency services experience the same perception of a full moon effect, and that members of these other agencies are just as happy to discuss these events with each other. This may indicate an acceptance of the full moon effect as a normality, or reality.

Where do you think the idea comes from?

Trying to understand why staff had the perception that the full moon was connected to extremes of behaviour related to mental health issues proved difficult. All participants were asked where they thought the idea originated. There was a consensus of werewolf and wolf imagery between four out of the five interviewed.

...wolves were kind of more synonymous with the full moon. And witches and stuff like that, flying across the moon, you know. Folklore, fairytales which obviously I read as I was growing up (P2 C27/28).

It's probably, it stems from werewolves (spooky voice). Vampires, and all the horror stories... (P5 C39).

...maybe developed, evolved on, things like witches at Halloween, thing like that, see the full moon, all this kind of stuff. But that would be my only guess. I would have absolutely no idea (P4 C23).

Werewolf films.

Yeah, but it's when you get older you find out that the legend was actually based in medical fact. Initially it's legend, yes. And then you find out yes, there is such a condition (P1 C38/39).

I think that it comes from animals, wolves and dogs will bark at the moon...and there's lots of mythology and folk culture that runs around the full moon. The full moon as a, you know, when you go back to ancient Greece has had an affect on religion so it's, the

moon, is a very powerful icon as far as people are concerned (P3 C6).

The responses to the question yielded iconographic perceptions: the full moon being associated with the unknown, animal instincts, and a removal of rationality, and the powerful imagery of the full moon itself. Lieber explores the possible origin of the association of the full moon with the werewolf legend from the anthropological standpoint (Lieber, 1978: 8-11). He posits that the origin may lie in the change from vegetarian diet to meat eating during the glacial period. This may have been associated with a kind of "descent" into killing to survive. "It was in the company of the wolf, both competitive and co-operative (that is with dogs), that man fell from grace. This epic moment is ingrained in human memory" (Lieber, 1978: 9). By emulating the wolf in his hunting methods mankind began a mutual relationship with the wolf that culminated in the domesticated dog. Keith Thomas explores the importance of the moon in relation to astrological almanacs (Thomas, 1991: 351-352), which were used to make predictions and to choose fortuitous days for certain activities. He explains the correlation with medieval medicine that related the moon to mental illness through the influence of the humours and an excess of moisture in the brain that was subject to the moon's influence like the tides. Someone suffering from an excess of moisture on the brain could demonstrate classic 'lunatic' behaviour. This had another impact on the work of the police discussed, within its historical context, earlier in this paper. These almanacs were also used by rural dwellers to determine weather conditions and beneficial times for planting. Many of these beliefs are still held by gardeners today. Further study would be necessary to understand why this association continues and why it is relevant in the culture of the control room. My personal opinion is that it may be grounded in the fact that we deal with extremes of situations and lunatic behaviour is an extreme. The control room is an isolated room in the police station where we have "ears" but no "eyes". We live in a microcosm of weird and wonderful human activity where everything is magnified. No one rings us to say that they have had a nice day! The night shift is peculiar in that most of the world sleeps, but this is the time when staff have the opportunity to interact with each other and police officers. Comments and stories are passed between us. It is a time of relative silence and darkness that we sit through waiting for something to happen. This culture of storytelling may be a cradle for the perpetuation of full moon experiences.

What do you think about science studying the influence of the full moon?

The issue of scientific study into the phenomenon of the full moon and its influence upon behaviour and other matters was discussed, and the reactions were varied, but the over-riding indication is that, although the participants used the full moon as an explanation for certain situations, none of them had investigated the scientific view of the phenomenon. None of them were aware of any scientific studies into the influence of the full moon.

The interview introduced the idea that statistical evidence has been used by scientific studies to support various claims as to the influence or lack thereof of the full moon. The participants were asked how they would greet a study that used statistics to refute their experiences of the influence of the full moon within their working environment. There was a general mistrust of the use of statistics. For Participant 5 the statistics would serve as a guide, but her own perception of the full moon effect was that it was more of an intuitional matter. She went on to say that the statistics would not change her perception or change her interest in the subject. She would be interested in seeing the statistics, but that was all (P5 C25/26). This clearly indicates that the statistics are of secondary value to her in explaining her reality. The meaning is in the experience not the statistical evidence

Participant 1 was clear about statistics. Her experience is based on first hand knowledge of using statistics to apply for budgets within a council bureaucracy.

There are lies, damn lies and statistics aren't there?
Oh statistics can be used to say anything. You can get statistics to say absolutely anything you like ... So no I wouldn't believe them if they said there was no correlation, because I think there is (P1 C27/28).

For Participant 1 the statistics have no value, no meaning.

Participant 3 was also mistrustful of statistics and declared that he would probably study them carefully. Participant 3 was clear that he liked hard evidence, but if the statistics proved that the moon had no affect upon human behaviour it would not matter to him one way or the other (P3 C11).

I think it's down to people's interpretation, 'cause you can change statistics to work one-way or another (P2 C39).

Participant 2 is clear that statistics are interpreted. Interpretation is driven by a person's own agenda or subjectivity.

Participant 4 was the most sympathetic towards the use of statistics to measure the full moon effect. His argument was that we need to measure things somehow and numbers were the best way. His own lack of expertise in statistical analysis was his reason for accepting such statistical studies as 'true', but he qualified this by saying that, even if the full moon effect was proved to be null and void, he would continue to use the phraseology in the control room (P4 C16/17/18). This indicates that, for him, the association and vocalisation of the full moon and its effect upon behaviour could indeed be culturally driven, rather than specifically experientially confirmed.

There is a consensus here too. Although the participants were generally willing to accept that statistics can be useful, they felt that the statistics

would not change their perceptions or their own behaviour within the culture of the control room.

I have found the voices of my colleagues to be informative in surprising ways. When Participant 1 was asked if she needed to know whether her perceptions about the influence of the full moon were right or wrong Participant 1 stated,

No I don't think it would be useful to have it proved or disproved. As far as I'm concerned it has an effect, and somebody saying "yeah you're right" doesn't make any difference to me...Nobody's ever proved to me that the sun exists, but I know it's there, I've never seen it in writing, I've never seen it proved (P1 C42).

Participant 2 echoed this.

I would probably say, no I believe, I would stand up for it. Kind of say, yeah, I believe, you know, it would, is true, 'cause I experienced it or to my knowledge I experience it, or my, I perceive it as like that (P2 C37).

Participant 3 looks to the statistical evidence as a tool to back up the perception that full moon nights are busier and therefore needs better resourcing in order to tackle potentially increasing workloads.

The thing is we don't do anything about it. We don't have more control room operators or more police officers on at periods of the full moon. Now if we proved there was a connection, and that there were 15% more calls of a certain nature during certain times of the month, then we need to start looking at whether we need to resource those (P3 C17).

The outcome of these replies shows different agendas. Participant 1 is clearly convinced by her own experiences. This is her reality, and the scientific evidence offered in the form of statistics is of no value for her, echoed in the views of Participant 2.

Statistics

The main findings of the qualitative interviews has been that control room staff have a perception that the full moon has an effect upon human behaviour. This effect is shown in the *nature* of the calls received on the 999 telephone system, and staff have stated that their experience of these calls is what confirms their belief in the influence of the full moon. This is not a quantitative study, but it is useful to look at some of the numbers provided for calls received in order to give some context for the qualitative argument.

It is important to outline how the police service deals with calls. There are two types of telephone access to police. The first is the emergency number 999. This routes the call via the operator who determines the service required and then connects to the relevant emergency control room. This is for life and death situations only although it is constantly

abused by people who are ignorant of its correct designation or people with mobile phones who have 'no credit' (999 calls are free). This can therefore be questioned as an accurate measure of call frequencies in relation to emergencies as these calls are not always appropriate.

The second telephone access is via the local police number and is for all matters that do not require immediate police response. Sometimes callers with genuine emergencies will call this number, which once again casts doubt upon the accuracy of call figures. The statistics provided by Thames Valley Police are for the emergency 999 system only and do not show the *total* number of calls made to the police over a period of the full moon. Therefore this study cannot make any conclusive statements as to whether the number of calls drastically increases over the full moon period, and it is questionable that this is even useful.

The number of calls made to the police on the 999 system does not accurately reflect the number of incidents that are logged on the Command and Control computer system. These 'jobs' are sent to the radio operators who will then assign or 'despatch' an officer to deal with the incident. Not all calls to the police are dealt with by creating an incident, and sometimes numerous calls will result in one incident or none at all. Although 999 calls are made to the police, not all of them are logged and passed to the radio operator to send police officers. The call taker has the Law and Force Standard Operating Procedures to determine whether or not the circumstances warrant police attendance. This means that the call levels do not reflect the workload at operational level. It is possible to have a major incident running as a result of one call, while 22 calls may be made to report one traffic accident that does not need police attendance at all. For this reason it is better to compare 999 figures as they *usually* result in an incident being created and therefore being accountable, however, this is not ideal. When an incident is created it is given a Unique Reference Number or URN. This number starts at 1 every midnight and is identified as unique by the date that the job was created, i.e., URN 156 12/03/04. As a result, the number of 999 calls made appear to be significantly lower than the number of jobs created in a twenty-four hour period. For example, Tuesday 6th March, 813 calls were received on the 999 system, but 1647 URN were created. This is where statistical problems begin. What exactly are we choosing to look at? Suggesting that the full moon effect can be 'measured' by call frequencies is a highly complex and interpretive method of measuring something that may or may not be evaluated in this way. It may be better to look at the opening classifications of incidents or the closing classifications as an indicator of a full moon influence. A classification of CRIME/MURDER or PERSONAL/MENTAL may be a more accurate indicator of the full moon effect as these classifications relate to behaviour.

Behaviour is described in qualitative terms like 'good', 'bad', 'kind', 'cruel', 'erratic', or 'mad'. For example, in law, the drunkenness of person can be assessed by a doctor or by a police officer. Assessment is made thus, "His eyes were glazed (the quality of his eyes), his speech was slurred (the quality of his speech) and his breath smelled of alcohol (a sense perception)". To try to determine if there is more 'mad' behaviour at a

certain time is fine but what do we mean by 'mad'? It is a long and drawn out procedure to commit someone to a mental health institution on the grounds that they are "mad". A series of specific criteria must be met. Judgements are made by doctors, psychiatrists, and social workers, from their experience. Why then would we attempt to measure a qualitatively assessed condition, as perceived in a specific cultural environment, with a quantitative method? A quantitative 'objective' approach does not define this. It must use subjective terms in order to do so. It is limited. Participants in this study have stated that for them it is not the *quantity* of calls that indicate full moon influence. For them it is the *quality*, content, nature or type of call that is received.

Conclusion

The main objectives of this study were:

1. To ascertain how widespread the perception is among police staff working in one regional control room, that the full moon affects call rates and behaviour of the public.
2. To find out, if this perception is held by staff, why it is held.
3. To find out what staff think happens at full moon in order for the phenomenon to occur or be relevant in their work.
4. To place the phenomenon into a contemporary context.

The survey used at the beginning of this research clearly indicated that some staff believed that the full moon had an influence upon the work that they do.

The qualitative data has been used to find out why staff hold this belief and what they think actually happens when the full moon is visible.

The belief in the influence of the full moon exists in the control room because participants have said that their own experience tells them that there is a correlation between the full moon and public behaviour as exhibited through the *types* of 999 calls received. This is in contrast to the statistical analysis that looks at the *numbers* of calls made to various call centres, and the *numbers* of injuries, visits to doctors and hospitals, dog bites and so on (Chapman and Morrell, 2000).

Appendix D shows a **small** number of statistics for the numbers of calls made to the control room on the 999 system at the time of the full moon. It is noticeable that the numbers of 999 calls do increase but this may not be statistically significant if taken over a longer period of time. What is important within the scope of this study is that the numbers of jobs created on the Command and Control computer system do increase. This can be used to support the idea that it is the *type* of incident that is significant, rather than the *numbers* of calls received, but it is important to bear in mind the limited scope of this study, so no hard conclusions should be drawn from this.

It is the belief in the influence of the full moon that assists staff to make sense of what is going on when things become busy or incidents become strange. It could be viewed as a coping strategy.

Where do you think that it came from, (belief in full moon influence), where do you think it is rooted?

From the people that work there! (Laughing). It can only be can't it? It can only be from us who work there. It's a reason for being busy. It's always nice to have a reason (P5 C31).

Yeah, you've got to blame it on something, so why not blame it on the full moon? (P5 C32).

It is also a shared experience as shown through the interviews, and, because of this, it has meaning (McNeill 1995:119). It must be remembered that this study is a small one and, therefore, cannot be deemed fully representative of views of staff working in the control room at Milton Keynes. However it is clear that some staff do believe that the full moon has an influence on the work that they do, and this cannot be ignored.

Belief in the influence of the full moon could be seen as a way of relinquishing responsibility for social events and the behaviour of others in that the moon continues its endless phases of waxing and waning, and there is nothing that we can do about it (the natural phenomenon), or the resulting lunatic behaviour demonstrated by some people at periods of the full moon (arguably also a natural phenomenon like turtles hatching or the tides).

The control room is an environment that deals with the harsh realities of life, magnified and intensified, and some staff develop a cynical streak based on experience and value judgements. Why do people working in an environment that deals with such magnified and concentrated aspects of human behaviour associate parts of that reality with the influence of a satellite rooted in folklore and symbolised by a specific image? They associate the phenomena of crazy night shifts with the full moon because their experiences confirm it for them. Participants 1, 2, 3 and 5 clearly stated as much. Certainly the scientists and debunkers may well be surprised by the results, as this continued belief in the influence of the full moon persists in the face of their overwhelming statistical evidence that it has no influence, and in the very environment where one would expect people to be realists, rationally motivated, and requiring *evidence* to support their own efforts in fighting crime and disorder as part of their profession.

This study has provided a glimpse into the perceptions of some staff working in the Milton Keynes control room but only provides limited views and perceptions. It is difficult interviewing people from within the culture (the insider view), because assumptions are made about the context of questions asked and the understanding of answers given (Seidman 1998:36). This does not always lead to clarification of answers or further investigation of perceptions and understandings. This may well be the

case in this study, but it is hard to ask the 'right' questions in one interview. Further interviews would be valid in order to investigate issues like the Lunacy Act and its legacy, or to look at the perception as a coping strategy in order to give it some contemporary context.

I also perceived levels of tension at three of the interviews conducted, as though the participants felt that they were being tested. This was particularly evident when asked if they knew where the idea of the influence of the full moon originated (as they did not seem to know). Further interviews would serve to put participants more at ease with the process and perhaps better inclined to search more deeply for answers. Furthermore, this kind of research is time consuming and requires attention to detail in understanding fully what people are saying, and what they want to say. What is hidden in what people say is just as valid, and this is where further interviews benefit the method. What has been said cannot be clarified if one interview is the format. Several issues arose that I would have liked to investigate further (mentioned above), and, as previously stated, my own influence upon the interviews cannot be ignored (Seidman 1998: 16).

This has been a short investigation into the "truth" of a culture. The previous scientific and statistical investigations have mainly indicated that this "truth", a belief that the full moon influences behaviour, is not valid (Chapman and Morrell, 2000; Owen, Tarrantello, Jones and Tennant 1998). The methods used have been quantitative, positivist and ostensibly objective in their evaluations. But it has been suggested that these qualities of the methods used to evaluate the correlation of the full moon with affects on human behaviour are themselves prone to subjectivity, in selection and interpretation of results (Sheldrake, 2002: 165). Statistical analysis of a belief cannot show the value or meaning of the belief, and it is arguable that the value and meaning of a belief is what keeps it alive in a culture, not the statistical analysis, or the scientific 'truth' of the matter. If this were the case then Santa Claus would cease to exist, (perhaps he has for some already), and the period of the full moon would have no value or meaning for police staff in the work that they do. It seems to me that a passage written by Patrick Curry, in which he criticises the approach taken by some of astrology's foremost critics, both elucidates, and is exemplified by, the findings (tentative though they are) of the current paper.

Once again we find the same naïve realism, not only as if 'truth' was entirely straightforward and unproblematic, but as if science, a thoroughly human practice and tradition – or objectivity, a human attitude and ideal – or truth, a human judgement – were possible without subjectivity (commitments, views, assumptions and values, not to mention ideas). And note the assumption underpinning their whole approach: that of radical distinction between 'objective' and 'subjective'. There are good reasons to doubt that such a crude divide, while analytically possible, is either defensible or useful as a way to understand *any* human activity (Willis and Curry, 2004: 99).

(NB: Appendices A-C are deliberately not included in the current document.)

APPENDIX D

MEAN AVERAGE CALL FIGURES

Call figures for January and February 2004 were used to give a basic and restricted indication of whether calls to the 999 system increased over the period of the three days of the full moon.

WEDNESDAYS: MEAN AVERAGE CALL TOTALS	747
FULL MOON CALL TOTAL FOR JANUARY	650

FRIDAYS: MEAN AVERAGE CALL TOTALS	784
FULL MOON CALL TOTAL FOR FEBRUARY	747

SATURDAYS: MEAN AVERAGE CALL TOTALS	877
FULL MOON CALL TOTAL FOR MARCH	983

**Numbers of incidents created for randomly selected days
0000hrs to 2359hrs.**

January 2004	Mean average from these URNs 1939
Thursday 8 th	1856
Saturday 17 th	1913
Wednesday 21 st	1736
Monday 26 th	1752
Thursday 29 th	2131
Saturday 31 st	2527 severe weather conditions
Wednesday 7th	1663 full moon
February 2004	Mean average from these URNs 1934
Thursday 5 th	1917
Wednesday 11 th	1873
Friday 20 th	1921
Saturday 28 th	1870
Friday 6th	2090 full moon
March 2004	Mean average from these URNs 2013
Monday 1 st	1702
Tuesday 16 th	2010
Saturday 20 th	2430 New moon & severe weather conditions
Sunday 21 st	1878
Saturday 6th	2049 full moon
April 2004	Mean average from these URNs 1962
Friday 2 nd	2235
Sunday 11 th	1707
Wednesday 14 th	1943
Sunday 25 th	1883
Monday 5th	2046 full moon

Remember: These are merely a small number of randomly selected days from each month and as such these mean averages are not conclusive. They are presented for interest. To be statistically relevant more data needs to be included.

Total of 999 calls and number of incidents created by Thames Valley Police on the three days of the full moon.

January 2004

Tuesday 6th

813 calls Incidents created 1647

Wednesday 7th: Day of full moon 1539hrs

650 calls Incidents created 1663

Thursday 8th

784 calls Incidents created 1856

February 2004

Thursday 5th

685 calls Incidents created 1917

Friday 6th: Day of the full moon 0846hrs

747 calls Incidents created 2090

Saturday 7th

621 calls Incidents created 1915

March 2004

Friday 5th

917 calls Incidents created 1917

Saturday 6th: Day of the full moon 2313hrs

983 calls Incidents created 2049

Sunday 7th

875 calls Incidents created 1640

April 2004*

Sunday 4th

Incidents created 1809

Monday 5th: Day of the full moon 1103hrs

Incidents created 2046

Tuesday 6th

Incidents created 1946

*Call totals for April 2004 NOT available at time of original submission.

TOTAL CALLS FOR THREE DAYS OF FULL MOON JANUARY 2004

Tuesday 6th

Time	
0000	41
0100	43
0200	19
0300	17
0400	10
0500	7
0600	5
0700	18
0800	16
0900	30
1000	34
1100	18
1200	37
1300	20
1400	32
1500	44
1600	67
1700	70
1800	70
1900	56
2000	51
2100	51
2200	32
2300	25
Total	813

Wednesday 7th Full Moon at 1539hrs

Time

0000	21
0100	17
0200	9
0300	11
0400	4
0500	7
0600	7
0700	10
0800	17
0900	30
1000	11
1100	22
1200	23
1300	27
1400	26
1500	34
1600	45
1700	54
1800	50
1900	59
2000	60
2100	39
2200	32
2300	35
Total	650

Thursday 8th

Time

0000	22
0100	20
0200	14
0300	5
0400	10
0500	8
0600	11
0700	36
0800	52
0900	44
1000	34
1100	47
1200	28
1300	25
1400	33
1500	57
1600	42
1700	44
1800	57
1900	46
2000	40
2100	41
2200	45
2300	28
Total	784

TOTAL CALLS FOR THREE DAYS OF FULL MOON FEBRUARY 2004

Thursday 5th

Time	
0000	25
0100	9
0200	18
0300	8
0400	8
0500	6
0600	10
0700	19
0800	28
0900	23
1000	1
1100	26
1200	30
1300	31
1400	40
1500	42
1600	46
1700	52
1800	45
1900	43
2000	45
2100	41
2200	38
2300	36
Total	685

Friday 6th Full Moon at 0846hrs

Time	
0000	26
0100	25
0200	21
0300	15
0400	13
0500	10
0600	7
0700	24
0800	21
0900	22
1000	25
1100	38
1200	23
1300	28
1400	29
1500	41
1600	34
1700	45
1800	53
1900	56
2000	49
2100	55
2200	38
2300	49
Total	747

Saturday 7th**Time**

0000	39
0100	28
0200	26
0300	12
0400	16
0500	6
0600	4
0700	13
0800	18
0900	17
1000	24
1100	26
1200	27
1300	29
1400	34
1500	29
1600	33
1700	40
1800	36
1900	30
2000	36
2100	28
2200	33
2300	37
Total	621

TOTAL CALLS FOR THREE DAYS OF FULL MOON MARCH 2004

Friday 5th

Time	
0000	24
0100	27
0200	27
0300	11
0400	13
0500	11
0600	10
0700	32
0800	23
0900	29
1000	21
1100	23
1200	31
1300	31
1400	39
1500	77
1600	55
1700	52
1800	64
1900	65
2000	77
2100	59
2200	59
2300	57
Total	917

Saturday 6th Full Moon at 2313hrs

Time

0000	49
0100	35
0200	42
0300	41
0400	14
0500	11
0600	17
0700	13
0800	16
0900	18
1000	32
1100	34
1200	43
1300	46
1400	49
1500	55
1600	49
1700	62
1800	52
1900	59
2000	64
2100	73
2200	46
2300	63
Total	983

Sunday 7th

Time

0000	43
0100	48
0200	51
0300	19
0400	22
0500	12
0600	10
0700	7
0800	22
0900	19
1000	28
1100	31
1200	38
1300	40
1400	43
1500	40
1600	55
1700	56
1800	46
1900	46
2000	65
2100	50
2200	45
2300	39
Total	835

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