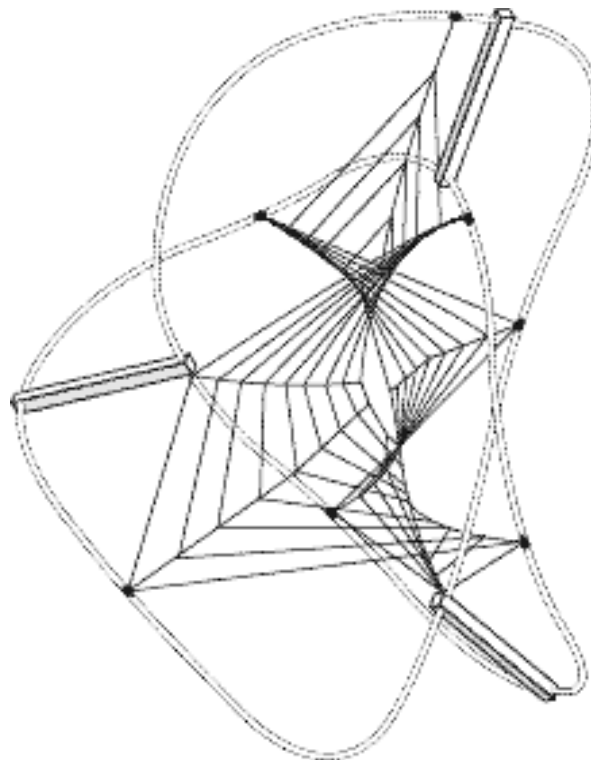


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*Miracles and Alien Abduction*Max Steuer
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Miracles and Alien Abduction

Max Steuer

Abstract: It is argued that the same method is used by the Catholic Church to decide that a miracle has occurred as is used by UFO networks to decide that an alien has come to the Earth. This method is described and is called the *residual method*. Five criticisms of the method are advanced in arguing that the residual method is flawed. It is suggested that better methods of investigation are available. Some ethical consequences of adopting a flawed method are briefly discussed.

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Miracles and Alien Abduction¹

Catholic Opinion on Aliens

In a recent issue of *The Times*, it is reported that, "...a Vatican theologian close to the Pope...", Father Corrado Balducci of the Congregation for the Evangelisation of Peoples, maintains that the discovery of extra-terrestrial creatures, superior to human beings, would not pose a problem for, or in any way invalidate, the teachings of Christianity.² A spokesman for the Catholic Media Office in London is quoted in the article in *The Times* as being broadly in agreement with Father Balducci. "The fundamental creation message relates to humans here on earth. If aliens were shown to exist, this would not cast doubt on the veracity of the Gospel."³ While broadly in agreement with Father Balducci on this point, the spokesman for the Catholic Media Office is quoted as indicating some uncertainty for Church policy in the event of aliens being shown to exist. "...we would have to ask whether the Christian atonement was applicable to them."⁴

Father Balducci is not reported as having a view on the issue of atonement, but he is reported as having no doubts about the existence of aliens. This is in some contrast with the Catholic Media spokesman who appears to be uncertain as to whether aliens exist. Father Balducci is quoted as saying, "It is reasonable to believe and affirm that extra-terrestrials exist. Their existence can no longer be denied, for there is too much evidence for the existence of extra-terrestrials and flying saucers."⁵ Not everyone who claims to be a priest, or indeed is a priest, can speak for the Catholic Church with authority. However, not only is Father Balducci "close to the Pope", he is what is known as a "priest of honour", and has been so listed in the Vatican Directory since 1964. He is currently a member of the papal household.⁶ As such his views may be taken seriously, and not dismissed as the opinions of a crank.

A good deal has been written about the amazingly widespread acceptance on the part of educated people of such things as astrology, psychokinesis, and the like. Far from a scientific approach becoming more and more common, the appetite for the supernatural shows no sign of weakening. Nicholas

¹ I am indebted to Helena Cronin, Charles Goodhart, Carl Hoefer, Nicholas Humphrey and John Worrall for comments on an earlier draft of this article.

² Gledhill, Ruth, "Vatican man puts faith in ET and his friends", *The Times*, No. 66,293, Saturday, 29 August 1998, p. 1.

³ *Ibid.*, p.1. The existence of aliens might not contradict the teachings of the Gospel, but withholding information on the existence of intelligent life elsewhere in the universe would appear to be an important omission. However, it could be argued that God's message was transmitted through human intermediaries and only the bare essentials were made known to them.

⁴ *Ibid.*, p.1.

⁵ *Ibid.*, p.1.

⁶ *Ibid.*, p.1.

Humphrey and others offer psychological explanations for the popularity of unscientific beliefs.⁷ The need for such explanation comes from the position that such beliefs can be shown to be false. Why do people persist in holding to false beliefs? I agree with Professor Humphrey that we need a psychological explanation. However, my purpose in this paper is purely methodological. I will show that the method the Catholic Church uses to verify miracles is the same method that UFO networks use to verify alien encounters.⁸ I call this the *residual* method. This method of argument is used to provide evidence in favour of many things which either contradict or cannot be supported by conventional scientific investigation. This is not a coincidence. A flawed method of verification is likely to prove a handy device for giving apparent plausibility to a variety of false propositions. However, in this discussion I will concentrate solely on the coming together of belief in aliens⁹ and Catholic doctrine as prompted by Father Balducci, and will take the former belief and belief in miracles as case studies. I will use these examples to illustrate the weakness of the residual method.

Who Takes Aliens Seriously?

The Father Balducci is not alone in believing various stories of aliens being present in the atmosphere of this planet and having landed here. It is reported that former President Jimmy Carter has no doubt in his mind about UFO's, and claims to have had first hand experience.¹⁰ Surveys regularly report that over half of Americans believe that aliens have visited the Earth. The psychologist Carl Jung took a great interest in the subject. This interest was only partly a mythic and psychological one. He also felt that there might be a real phenomenon to be uncovered. Jung subscribed to the position which has since been popularised in the television series *The X Files*, that the government authorities are suppressing and holding back information. "What astonishes me most of all is that the American Air Force, despite all the information it must possess, and despite its alleged fear of creating a panic similar to the one which broke out in New Jersey on the occasion of Welles's radio play, is systematically working toward that very thing by refusing to release an authentic and reliable account of the facts."¹¹ Jung's knowledge of the popular literature of UFO's was extensive. A good example is provided by the footnote to this quotation. It reads, "The report by Major Donald E. Keyhoe concerning his struggle with the Pentagon for recognition of the interplanetary origin of the Ufo's was published in 1953 under the title *Flying Saucers from Outer Space*."¹²

⁷ Humphrey, Nicholas, *Leaps of Faith*, Chatto & Windus, 1995.

⁸ The fact that the same method is used may have something to do with Father Balducci's belief in miracles, which I assume, and his belief in aliens, which he asserts.

⁹ I think the balance of scientific theory points strongly to the existence of civilisations elsewhere in the universe and equally strongly to these civilisations not sending emissaries to this planet.

¹⁰ Buttlar, Johannes von, *The UFO Phenomenon*, translated by Nicholas Fry, W.H. Allen, 1980, pp. 188-189. Originally published by C. Bertelsmann Verlag, 1978.

¹¹ Jung, C.G., *Flying Saucers*, translated by R.F.C. Hull, from the Collected Works of C.G. Jung, Volumes 10 and 18, Bollingen Series XX, Princeton university Press, 1978, para. 1434, p. 132.

¹² *Ibid.*, p. 132.

I believe it is fair to say, reading everything Jung wrote on the subject, that his position was that it was very likely that there was something to the UFO phenomena in addition to purely psychological and subjective experiences of individuals. Whether the many reports from individuals which were not subjective, were ultimately caused by visits to Earth from aliens, or were due to some other cause, was an open matter for Jung. In his words, "My special preoccupation precludes neither the physical reality of the Ufo's nor their extraterrestrial origin, nor the purposefulness of their behaviour, etc. But I do not possess sufficient evidence which would enable me to draw definite conclusions."¹³ The 'special preoccupation' Jung refers to is the presence of mythic elements in many UFO reports, and the long history of people turning to the sky in search of enlightenment. It is possible that his statements to Major Keyhoe implying that UFO's have an objective reality were motivated mainly by politeness. However, as they are repeated many times in other contexts, I am inclined to take them at face value.

The House of Lords held a long and interesting debate on UFO's. As part of this debate Lord Clancarty (Brinsley le Poer Trench) made his maiden speech. "Before speaking about the need for an intra-government study of UFO's, which is the basis of my motion being debated today, I think it advisable to give your Lordships some background to this fascinating subject of UFO's. I shall briefly cover a little history, the classes of witnesses, the characteristics of UFO's and some important sightings, and then I shall deal with the vital subject of the attitude of governments to these important phenomena."¹⁴ There is little doubt in Lord Clancarty's mind that aliens have come to the Earth. He is not alone in the House of Lords in holding this view. Following his speech, Lord Kimberley spoke. While the next quotation is a little hard to understand, it does show his commitment. His speech as a whole definitely places him as a believer. "But in spite of the sceptics, such as the noble Lord, Lord Wigg, the other day in a newspaper, and Sir Bernard Lovell from Jodrell Bank, who says that UFO's do not exist, we must agree that they do, because otherwise there would be no unidentified flying objects."¹⁵ Many contributors to the debate were "sceptics". Some were not. Lord Kimberley's statement does illustrate a common ambiguity in discussion in this area. One meaning of the phrase, "UFO's exist", is that aliens have come to this planet. Another meaning is that objects have been seen in the sky and no one knows what they are. It is clear from the context that Father Balducci intends the former meaning, and that is the one I am using.

A recent handy reference to the literature of alien visitors is *The Uninvited*, by Nick Pope.¹⁶ This book carries the misleading sub-title, "An Expose of the Alien Abduction Phenomenon" and identifies the author as "The Government UFO Expert". Far from being an expose, Pope finds most of the reports of abduction to be valid in the sense of not being only in the minds of the

¹³ Letter to Major Keyhoe, 16 August 1958. *Ibid.*, pp. 137 138.

¹⁴ Hansard records the debate. Another convenient source is, *The House of Lords UFO Debate*, by Lord Chancarty, Open Head Press Pentacle Books, 1979. The quotation is from page 11.

¹⁵ *Ibid.*, p. 28.

¹⁶ Pope, Nick, *The Uninvited: an Expose of the Alien Abduction Phenomenon*, Pocket Books, 1997.

abductees. Like Jung, Pope stays resolutely on the fence as to what this non-subjective element might be. The book begins by asserting that, "Nick Pope works for the Ministry of Defence and for much of the early 90's he was responsible for carrying out official research and investigation into the UFO phenomenon."¹⁷ He claims to have started out believing that abductions were undertaken by aliens in order to obtain genetic material. Now he feels there is something real behind the reports, but does not know what it is. "Although I believe the evidence for the physical reality of abductions is so conclusive as to be virtually undeniable, I am the first to admit that my suggestion that the phenomenon is part of a campaign to civilise us as a species is only one more theory to join the ranks of competing ideas."¹⁸ Pope keeps an open mind both as to the motives of aliens, if they have indeed come here, and with regards other theories such as they are visits from the past, or from an alternative universe.

A most interesting case is that of Dr. John E. Mack, Professor of Psychiatry at the Harvard Medical School. Dr. Mack published a book called *Abduction: Human Encounters with Aliens*¹⁹ in which he discussed his medical treatment of people reporting alien abduction. He found no sign of mental disorder in these people, and concluded that the reports were accurate and should be taken at face value. What his patients believed had happened had in fact happened. According to Dr. Mack, aliens have come to the Earth, and have abducted people. Apart from selling quite a number of books, Dr. Mack had considerable success on television chat shows where his views attracted a lot of attention. Included in this response was attention from the Harvard Medical Board. A formal enquiry headed by Dr. Arnold Relman alleged that Dr. Mack's book and his activities had brought Harvard into disrepute. This charge was not upheld. The Board concluded that Dr. Mack had the right to investigate any matter he chose, that they could not pass judgement on the validity of his findings, and that they were critical of his methodology. After lengthy investigation, the report of the Board was duly forwarded to Dr. Daniel Tosteson, Dean of the Harvard Medical School. Dean Tosteson censured Dr. Mack, but stood up to the considerable pressure to remove Dr. Mack from Harvard University and allowed him to remain in his post.²⁰

Turning from aliens to miracles, there is no need to establish widespread acceptance. A belief in miracles is part of the doctrine of the Catholic Church. In order for someone to be declared to be a saint it is necessary to establish that they were involved in a miracle. This is often a miracle which can be attributed to the saint after his or her death.²¹ The only exception is sainthood through being a martyr. Places of pilgrimage, such as Lourdes and Fatima,

¹⁷ *Ibid.*, un-numbered first page.

¹⁸ *Ibid.*, p. 277.

¹⁹ Mack, John E., *Abduction: Human Encounters with Aliens*, Simon & Schuster, 1994.

²⁰ Pope, *Op.Cit.*, pp. 130 – 133.

²¹ For a brief history of the practice of the Catholic Church with regards canonisation see Delooz, Pierre, "Pour une etude sociologique de la saintete canonisee dans l'Eglise catholique", *Archives de Sociologie des Religions*, vol. 13, 1962, pp. 17 - 43. Re-printed in *Saints and Their Cults*, chapter 6, edited by Stephen Wilson, Cambridge, 1983. I am indebted to Martin Bauer for drawing this article to my attention.

are authenticated through a process of determining that they were the site of a miracle. Some other religions also have a role for miracles. The Catholic concern alone means that millions have a commitment to the concept.²²

The Common Method for Finding Aliens and Miracles: Step One — The List of Possible Cases

The residual method for finding valid cases of miracles and valid cases of visits to this planet from alien civilisations begins with lists of reports of potential confirming examples. I will describe the procedure with respect to aliens first. A number of investigators collect reports both of UFO's seen in the sky and of more direct contact with aliens. These reports consist mainly of visual sightings, alleged images on still and moving film, images captured on video and on radar screens, along with elaborate stories of meetings and abductions into space-ships. Reports of these events are often collected from newspapers and are also drawn to the attention of collectors by word of mouth. There are formal and informal networks of mainly private groups of enthusiasts who collect and investigate reports. Typical bodies of the non-governmental kind are *The British UFO Research Association* and the *Center for UFO Studies* in the United States.²³ In addition to these private networks, collections of reports have been undertaken by government agencies. In 1967 the University of Colorado, under the direction of the well-known physicist Dr. Edward Condon, investigated UFO's in response to a request from the American Air Force.²⁴ The American Air Force carried out its own investigation under the name Project Bluebook. 13,000 reports were collected.²⁵ Whether governmental or done by private bodies, lists of reports are compiled and sometimes further developed by interviewing the person or persons making the reports. For the more promising cases there can be visits to the place where a sighting or more direct contact was reported to have taken place, along with elaborate interviewing of people making reports. Psychiatrists can be brought in and often people are questioned using lie detectors and under hypnosis.²⁶

The process of compiling lists of potential miracles is somewhat different. In the past miracles were of a variety of kinds. We are familiar with examples from the Bible. But in modern times reports of miracles have tended to be either of a medical kind, or to take the form of an appearance in some way or another of Jesus Christ or the Virgin Mary. Sometimes a single person

²²There is a useful discussion of miracles in Delooz, *Ibid.*, pp. 206 - 212, Wilson edition.

²³ Two such organisations in the United Kingdom and six in the United States are listed by Pope. *Ibid.*, pp. 290 – 291.

²⁴ The report, *Scientific Study of Unidentified Flying Objects*, was published in 1968 and was totally sceptical about alien visits. See Nick Pope, *Open Skies, Closed Minds*, Simon & Schuster, 1996, p. 169.

²⁵ See *OFO's, A Scientific Debate*, edited by Sagan, Carl and Page, Thornton, Norton, 1972, p. 4 and *passim*.

²⁶ A classic discussion of this process of amassing reports can be found in Hyneck, J. Allen, *The UFO Experience: A Scientific Enquiry*, Henry Regnery, 1972.

reports that they have seen one of these figures. More commonly several people see a manifestation at the same time. There are cases where a spontaneous crowd reaction has occurred when a holy figure is alleged to appear or to give some indication of being present. When one or a few people believe they have seen Jesus or Mary, almost always they report this to their priest in the first instance. This priest is likely to engage in counseling and will usually have some knowledge of the person or persons making the report. If the priest is persuaded that this may be a case of a genuine miracle, the correct procedure is for the priest to forward the report to the local Bishop. In the case of crowd reactions to a possible holy visitation, the priest in whose area this occurs is under some obligation to inform his Bishop.

When a Bishop receives a report of a possible miracle he has the option of bringing the report to a Bishops' Conference. The decision whether or not to do this is his, and is taken in the light of the likelihood that the Conference will respond favourably. Even if the Bishop feels that the Conference might not be convinced, he still might go ahead because he himself is persuaded. A Bishop's Conference is a periodic gathering of Bishops from one country and these are organised on the basis of geographic regions. If the investigation of the miracle is to be taken to the next stage, the Bishops' Conference must agree to inform their relevant Papal Envoy in the Vatican and pass on the report to him.²⁷ The Papal Envoy then takes the report of the possible miracle to the Vatican Congregation for Divine Worship.²⁸ In this way the Catholic Church constructs lists of possible miracles. Papal Envoys from around the world present their lists of possible miracles to the Congregation. The Vatican, acting through the Congregation, has a monopoly on this activity. In the past more informal networks compiled lists of miracles. Today there are no informal networks compiling lists of potential miracles. In the case of medical miracles, the process is the same, except that a doctor, rather than the person who appears to have benefited from a miracle, may contact the priest.

The important first step for the residual method is to generate a list of possible confirming cases. I have noted that there is a difference between the compiling of UFO and alien encounter reports and the compiling of reports of possible miracles. The Catholic Church, through the office of the Vatican Congregation for Divine Worship, is the only locus of authority for compiling lists of miracles. In the case of reports about aliens, in principle anyone can make up a list. In practice a few military bodies are known to make lists and a few others are reputed to have done so. For the most part the UFO lists are the work of self-appointed UFO and alien abduction report collecting groups. The important point is that this difference between a single, official, designated collector of reports and a group of informal collectors has no bearing on my criticism of the residual method. All that matters to the first step is that lists are generated. Who makes up the lists, and whether there is

²⁷ I am indebted to the Catholic Media Office in London for providing this information over the telephone on 20 January 1999.

²⁸ This information was provided by the Vatican Information Office by telephone on 21 January 1999, and this help is gratefully acknowledged.

one or there are many lists, is of no importance. The method is flawed whether lists are compiled by a single authority or by a variety of list makers.

Step Two — Eliminating From Lists Cases Which Have a ‘Natural’ Explanation

We start with a collection of reports which in the view of someone, or some group of people, provide *prima facie* evidence that a miracle, or an alien visit or encounter has occurred. Both types of reports are collected by groups who are believers in the phenomena in general and are searching for confirming evidence. This in itself is not as uncommon in normal science, nor as pernicious, nor as unscientific as is sometimes maintained. Serious research is frequently undertaken by researchers who, on the basis of current knowledge, are entitled to little more than a hunch that their view is correct, but in fact believe passionately that they are right and are searching for confirming evidence. Small particle physicists who believe that a certain particle exists go on to conduct complex and expensive experiments in an effort to find it. Sometimes they are successful. Cosmologists who believed in the Big Bang searched for evidence that galaxies were moving away from each other and for background radiation and found both. Experimentalists searched for confirmation of relativity theory and initially were satisfied with fairly weak confirming evidence. Because of the behaviour of some planets, scientists believed that another planet, which was later called Pluto, existed. They searched for it and found it. Geneticists believed that cloning was possible and eventually achieved it. There is nothing wrong at certain stages in the scientific process in searching for confirming evidence. The Vatican lists and the UFO lists could be regarded in a similar light, though this ignores very important differences which we will come to later.²⁹

Even those who make up the miracle list and UFO lists believe that some reports on the lists may be invalid. The next stage in the residual method is to eliminate those reports on the lists which have natural explanations. A genuine miracle is a supernatural event brought about by God. While God may be responsible for the whole of the natural world in some initiating and broad sense, a miracle is an event which cannot occur in the normal course of events when the laws of nature are operative. When God chooses to intervene, he makes a temporary suspension of the laws of nature. This intervention has the purpose of demonstrating the existence, power and will of God and is an observable act. For example, it would in principle be possible for God to choose the winner of the Lottery by making small unobservable changes in the positions of the balls. Doctrine rules out this kind of miracle on the grounds that it does not fulfil the public purpose of miracles.³⁰ What is

²⁹ There is a world of difference between a general view which depends on the existence of some phenomena and a well specified theory which implies the existence of certain phenomena. This difference will be discussed later.

³⁰ If it turned out that only virtuous Catholics won the Lottery, that might over time be observable and qualify as a miracle. But this does not fit the pattern. Miracles old and new all are held to occur at particular times and places and have a once-and-for-all quality.

natural is not a miracle, however strange, unlikely or beneficial it may be. A miracle is a supernatural event.

When it comes to aliens, there is a split between advocates who hold that these visitors from outer space are perfectly natural in the sense of being part of and conforming to the laws of the universe, and those who hold that aliens are in principle not amenable to the laws of science. This latter camp holds that they are unlikely to be observed and cannot be understood by normal scientific methods. The former group, while holding that aliens are natural phenomena, believes that the scientific community on the whole ignores aliens and refuses to consider the evidence objectively.³¹ They hazard a number of explanations for this. Among them are fear of damaging their professional status, a closed mind set, and finding the phenomenon too frightening personally, or too potentially frightening for the public. For this former group, finding a natural explanation means finding any explanation consistent with science and common sense which does not involve a visit to the Earth from aliens. While holding that aliens are 'natural', the methods aliens use for getting around and communicating, for example, are likely to be beyond our understanding at the present time.³² For this latter camp, any natural explanation is an alternative to the non-natural nature of aliens.

We now come to the crucial part of the residual method. The investigators who are appointed by the Church, or government, or the UFO networks, or more likely self-appointed when it comes to aliens, take the lists of reports and then endeavour to find explanations of the reports which could be termed naturalistic explanations, not involving intervention by God or the arrival on Earth of aliens. Again, my criticism of the residual method has nothing to do with who are the investigators of reports and how they are appointed. The criticism holds for any investigators. Looking at these naturalistic explanations which remove potential candidates from the lists we see that they tend to be of two kinds. One type of explanation suggests that the person or persons making the report is not to be trusted. This may be because there is reason to believe they are perpetrating a hoax in the hope of commercial gain, notoriety, or some other personal gain. Alternatively they may be unreliable reporters because they are permanently suffering from a mental condition or disturbed by severe emotional distress, influenced by drink or drugs, or simply highly suggestible. In some cases the person may be judged to be reliable in general, but is deemed to have been temporarily unreliable at the time of the event that led to the report due to one or more of the reasons mentioned.

The second type of natural explanation requires that a reliable witness has made a mistake. They thought they saw something, but in fact they saw something else, or maybe nothing at all. Any owner of a much loved cat that has died may experience what seems to be a fleeting glimpse of the animal. There are all sorts of reasons why people can misinterpret what they see and experience. The United States Navy had the rather bizarre idea that hot-air

³¹ See Pope (1996) *Op.Cit.* and Sagan and Page *Op.Cit.*

³² It is often held that aliens, while natural and not magical, communicate through their brand of ESP.

balloons might have military value and tested them at night. Many UFO reports stem from the area where this took place.³³ Statues can appear to weep because paint is running, moisture has collected, and so on. Of course it may be difficult to establish that these understandable mistakes have occurred. For most investigators it is sufficient to show that there is some room to think they might be the explanation. Many medical cases where people have regained sight, the use of a limb, or some life threatening disease has disappeared can possibly be explained by misdiagnosis or a very unusual, but natural turn of events. The people making the reports may be reliable in general and quite convinced that what they report cannot have a natural explanation, and still they may be mistaken. Again, investigators usually feel that they do not have to establish that the mistake took place. If it might have taken place, that is sufficient.

Clearly investigators can make type one or type two errors. They can reject a report that was in fact of a genuine miracle or alien arrival, and they can accept a report where some natural explanation is in fact the correct explanation. For a number of reasons investigators tend to worry only about type two errors. The goal is not to make the largest number of correct decisions. The goal is to avoid type two errors. There are two reasons for this. The most important one is that a single valid miracle is sufficient to establish the existence of God, and a single valid case of an alien visit to Earth establishes the truth of the proposition that we have been visited. There is also the feeling that the greatest threat to the authority of investigators comes from an outside sceptic showing that an accepted case was in fact invalid. Allowing the possibility that a rejected case will be found to be a genuine miracle or a true alien encounter does not trouble investigators. For one thing, such an occurrence would demonstrate the care and excessive rigour of the investigators, which is both a pardonable sin and would provide most welcome support for the believers in miracles and in alien visitors to Earth.

The method for investigating miracles adopted by the Catholic Church and by UFO enthusiasts is to collect *prima facie* reports and bring argument and evidence to bear to suggest, not to firmly establish, that the reports may not be valid. This involves coming up with a plausible naturalistic explanation. Having gone through this process, the investigators are left with a residue of cases that cannot be explained away. The investigators have been unsuccessful in finding even a possible natural explanation. Now we must ask, what should be the status of the residual of unexplained cases when we apply sound methodological principles? We will find that users of the residual method typically fail to take account of the weaknesses of this method.

Does the Residual Prove Anything?

³³ In November of 1983 I flew a hot-air balloon across France at night with Julian Nott. There were three reports of UFO's along our track in the French press the next day.

There are five reasons why we cannot deduce from the existence of a residual of unexplained cases that aliens have visited the Earth or that a miracle has occurred: (1) some mistakes will add to the residual; (2) uncertainty will add to the residual; (3) we do not know all the natural explanations; (4) the theory of what is a miracle or an alien is weak; (5) the correct default position when something has not been explained is 'don't know'. We can examine each of these arguments in turn. It will emerge that they operate on different levels of generality, but I believe they are distinct and relevant.

Project Bluebook alone listed 13,000 reports about possible aliens. That was in the 1950's. At the time it was far from complete. Since then many tens of thousands of reports have come onto the lists of investigators. We have no figures on the number of miracles reported to priests and on the proportion of these that make it all the way through to the Congregation for Divine Worship at the Vatican. Judging from the thousands of visitors to Lourdes, and the large number who claim to have benefited, one can only surmise that there must be many thousands of reported miracles.³⁴ We must allow that in attempting to find natural explanations mistakes are made. It could be that a mistake results in a case leaving the list and not going into the residual when it should be there. Investigators may believe that an optic nerve damaged by glaucoma can occasionally repair itself, when medical science can show that this is not possible without a miracle. Other errors may place a case in the residual when a naturalistic explanation has been overlooked. As errors are inevitable in observational science, methods are employed for dealing with them.³⁵ The residual method does not do this. Errors where a natural explanation has been overlooked become confirming cases. Of course this is not a valid inference.

Uncertainty is a closely related problem for the residual method. Mistakes are always possible. If we want to be certain about things and restrict our attention to matters where we can be certain, we will have a very limited range of activity. Sometimes even mathematical proofs are found to be in error. The size and composition of the residual will depend on how the investigators choose to deal with uncertainty. If they insist that we must be certain that there is no natural explanation, there will be no residual. We are dealing with plausibility and reasonable doubt. The investigator has to decide that within sensible limits no natural explanation seems possible. She is not certain, but takes the evidence to be convincing. But being quite sure that a case is not natural does not imply that it is alien or supernatural. It is

³⁴Some indirect evidence of the scale of reports can be gathered from the number of saints. While every saint has at least one miracle, many miracles are not associated with saints. Delooz, *Op.Cit.*, pp. 189 - 192, criticises P.A. Sorokin, *Altruistic Love*, Boston, 1950, for asserting a laughably small number of saints at 3,069 in 1950. Delooz refers to the Benedictines of Paris as recording over 500 saints in one month.

³⁵This point is made by James Randi in his book *Flim-Flam: Psychics, ESP, Unicorns and other Delusions*, Prometheus Books, 1982. Chapter 4 contains a lively criticism of the gullibility of the UFO fraternity, pp. 70 - 92, including passing mention of the residual method. I am indebted to John Worrall for drawing this reference to my attention.

consistent to hold that the evidence cannot support confidence in any particular natural explanation, or in any particular non-natural explanation.

The third problem with the residual method, again closely related to errors and uncertainty, is the formal problem of not having a complete list of natural explanations.³⁶ In order to classify a case as natural, any naturalistic explanation will do. If we had a complete list of all the natural explanations, and we could set aside uncertainty and errors, then we could generate a residual which was either empty, or contained examples of aliens or the supernatural. We all know that we do not have any such list. But having one is a logical requirement for the residual method.

My fourth objection to the residual method is complex and will be taken up more fully in the next section. However, the point can be stated briefly here. When scientists search for confirming examples, as is discussed above, they are looking for confirmation of a theory, or set of theories.³⁷ The Vatican Congregation and the UFO networks are looking for existence. They assert that miracles exist, or aliens exist on Earth. There is virtually no theory here. As was raised on a recent Channel Four programme about aliens, what is an alien? What do they look like? Are they visible to human or other Earthly eyes or instruments? A prophesy is not the same thing as a forecast. I may stand up in the street and say, "The Dow Jones will hit 10,000 next month". I might even be right, but it is not a prediction of a theory. A claim of existence is like a prophesy. It suffers from being unconnected to other ideas.

Finally we come to the question of what can we validly say when we lack a natural explanation? The answer is painfully simple, just that. If all objects were either **A** or **B**, and I knew that this object was not **A**, I would know that it was **B**. However, if I do not know what this object is, I cannot decide that it is **A** or **B**. Nothing follows from not knowing. When an investigator examines a list of contenders and finds that she cannot classify an item as having any particular natural explanation, the inability to classify does not mean that the classification 'miracle' does apply. Living with not knowing the explanation is a common necessity. In the case of the courts we adopt the default position of 'not guilty'. If we cannot classify the accused as 'guilty', we must adopt the classification 'not guilty'. This is not because we know the person is innocent. But in science we are searching for the truth and much of the time we are mystified. Unlike the courts, we do not have to pass judgement. The default position while we are mystified is 'do not know'. The residual method works by adopting a default position of 'do know'. Unless the explanation can be shown to be **A** it must be **B**. But a more reasonable methodology is that reports on the list are either **A** or **not A**. **Not A** means that and only that. We have good reason to think that the applicable explanation is not any of these natural explanations and we do not know what the explanation is. Where does that leave us? Answer: we do not know the explanation. A default

³⁶ I am indebted to George Gaskell for emphasising this important point.

³⁷ Of course, at another stage of the scientific process there will be a search for evidence which contradicts some other prediction of the theory.

position of 'this is a case of an alien visit' has replaced the valid default of 'do not know'. This is the fundamental fault with the residual method.

Is There a Better Method for Finding Genuine Aliens and Genuine Miracles?

There is no procedure that we can follow that will guarantee an improved understanding of events around us as its outcome. "...all methods of finding out about the world have flaws — ineliminable flaws."³⁸ There is no escaping the fact that success in science depends in part on the exercise of good judgement. We often hear the phrase, *keeping an open mind*. It can mean two very different things. One interpretation is a willingness to take on board new ideas, or at least a willingness to seriously consider them. Another interpretation is to regard all opinions as equally likely to be correct. My world view consists of a host of interconnected impressions and expectations which lead me to believe that God does not exist and that aliens do exist but that they have not come here. For the person with the opposite world view, the residual method lends support. How much support is reasonable to infer depends on the force of the arguments listed above.

We can draw a distinction between what a person in fact believes at a point in time, and what a neutral investigator would regard as more likely to be the case. The default position of "do not know" defines the neutral investigator. For the true believer everything seems to provide confirming evidence. The residual method is particularly suited to this because of the prior beliefs of the believer, and because the method does not call for any connection between ideas and other evidence.

Having conceded the importance of prior belief and the importance of good judgement in science, I argue that the method employed by the Church and by UFO enthusiasts is the same method and it certainly has flaws. This might be agreed, yet the claim could be advanced that this is the only method we have for investigating miracles and aliens. That assertion would be wrong. There certainly are other and better methods. I do not intend to develop the argument in any detail, but just to suggest that it exists. My contention is that rather than employ the residual method, the investigation should be theory driven rather than be an exercise in existence. In the Popperian tradition, with the fundamental asymmetry of being able to refute but not to confirm, the statement alien abductions exist cannot be refuted. At best we can say that we have not found one yet. This means that the statement is unscientific, not that it is wrong. However, I find this a rather trivial point. By simply reversing the proposition we can make it refutable and so make it scientific. The proposition, there are no miracles, is in principle refutable. The classic Popperian scientific assertion, 'All swans are white' has many of the problems with this asymmetry built-in. It offers very little in the way of an explanation of anything, including white swans, because it is a stand-alone assertion. Of

³⁸Carl Hoefer, writing in an e-mail to me. I am indebted to Carl for forcing me to attempt think about the role of priors in evaluating methods.

course, this criticism of stand-alone propositions is the essential contribution of Imre Lakatos to the study of science. He argued, rightly in my view, that scientific theory consists of bodies of connected statements and that reasoning about science through the example 'All swans are white' could be misleading.

Statements that something exists, be it a miracle or an alien, may follow from a theory, but in the present context these assertions have almost no theoretical antecedents. I agree that "All swans are white" is much the same and that Lakatos was helpful in emphasising the complexity and connectedness of theory. I do not agree with the way Lakatos describes the connections between scientific statements. In essence he classifies them as central or less central. The language of the 'core', the 'protective belt', and so on, is at bottom a movement from the centre to the periphery. The relations between the parts which make up the structure of scientific reasoning have many more dimensions than is involved in a central/less central continuum. To characterise the relations between the parts in this way ignores the important relations between parts of theories. Some parts are held with confidence, others less so. Some are more consistent with the rest of the theory, and others less so. Some are related in a kind of logical entailment and others are more suggestive. Some have implications across a wide range, and other are more restricted. Some parts of theories are hierarchically prior to other parts. We need a particular assumption in order to meaningfully use another assumption, but not the other way around. Even with just these five ways parts of theories can relate to each other, and there are many others, there are a huge number of ways that the elements making up a body of theory can be, and if fact in science are, organised together. It is the connectedness of theoretical propositions which generates the richness of possible relevant observations.

The residual method addresses existence as a stand-alone question. All swans are white. Aliens exist on earth. God works miracles. A theory of the colour of swans, or of origins of creatures, or of suspending the laws of nature, will have many implications and suggest many observations that we might make. My basic task is to show that the residual method is extremely restricted. It could still be defended by arguing that we have no other choice. The purpose of this section is only to say that we do have another choice. To spell it out in full is to offer a theory of science — a bit beyond my scope at the moment.

My point with regards miracles and aliens is that a theory based investigation is superior to the residual method. The application of this idea is fundamentally different in the case of miracles compared to aliens. The concept of miracles involves a suspension of the normal operation of causal relations. Miracles are just one indication of the existence of God and a supernatural element in the universe. It could well be that the Catholic religion might at some point choose to abandon the notion of miracles and still retain much of the religion. This option is not open to the UFO networks. If aliens have not come here, the enthusiasts have nothing. On the other hand, intelligent life in the universe is entirely consistent with scientific knowledge

and does not involve a mystical or supernatural element. Isaac Asimov estimated that roughly 530,000 such civilisations exist at any point in time.³⁹ However, on current understanding they are all too far away to make a visit to us, and maybe too far away to even make their presence known to us.⁴⁰ The research programme here could concentrate on new estimates of the distances and means of travel and communication, rather than relying on the dregs after draining the cup of reports.

Ethics and the Residual Method

I would like to conclude with a brief discussion of some ethical considerations that relate to employing a dubious method of investigation. Propagating false ideas can be harmful, but if the miracle and alien investigators believe their findings, they are subjectively innocent even if they do harm to others when they encourage others to embrace their beliefs. It can be useful to consider a specific example of alien belief encouragement. For those unfamiliar with this murky area it is relevant to note that alleged sightings of aliens and abductions by them tend to be highly private experiences. Unlike the Spielberg film *Close Encounters of the Third Kind*, where alien space-ships visited a giant stadium full of people, far more typical is a lonely encounter. Usually a very small number of people are involved, and very often they are related. A generic tale is that of a farmer's wife living on a farm in a remote and rugged part of America who got up one morning to milk the cows while her husband slept. On the way to the barn, her attention was drawn to a shaft of green light coming out of the overcast sky. It soon emerged that the source of the green light was a silvery, saucer-shaped, ship which descended slowly and silently out of the clouds. It came to rest a few feet above the ground, and put down a ladder. The ship was perhaps thirty yards away from the amazed woman who could see it clearly. Shortly after the ladder came down, three small, human-like, naked and hairless creatures came down the ladder. They did not appear to be rushed or have any particular purpose in mind. They seemed to be to having a look around. Three or four minutes passed, and the three creatures climbed back up the ladder, and entered the ship. In a few moments the ship rose up and disappeared up into the clouds. What is remarkable to me is that after observing this strange event, the wife reports

³⁹ Asimov, Isaac, *Extraterrestrial Civilizations*, Robson Books Ltd, 1980. The key points of the estimating method are rather conservative. Asimov assumes that the only road to life capable of civilisation is essentially that taken by life on Earth. It is also assumed that conditions very close to those on Earth would have to prevail on any planet supporting such life. These conditions would have to continue in a pretty stable fashion for very long periods. He also assumes that eventually civilisations die out. How frequently life supporting planets occur in the universe is estimated by extrapolating from what could be observed from the earth thirty years ago. It would be interesting to see how better observations since that time would effect the estimate. Just over half a million civilisations in existence at any point in time might seem like a lot, but given the size of the universe, most galaxies would not have one. The chances of finding even one through a systematic search lasting many millions of years are very close to zero.

⁴⁰ I support the unPopperian position that the method Asimov employs to answer the question, is there intelligent life out there, is scientific even though the assertion that there is may be in principle irrefutable.

that she went on to milk the cows as if nothing had happened. Then she went back to the house. When her husband woke up, she told him what she had seen before doing the milking.

We know nothing about the nature of this marital relationship from what has been written about the case. One can imagine some hesitation on the part of the wife in revealing the incident to her husband. He might think she was mad, or just making it up, perhaps to get out of early morning milking in the future. But she told him what she saw, suggesting at least some trust and probably a strong need to share her experience. The husband is now in something of a dilemma. Such an incident could even lead ultimately to an end to the marriage. Does he believe her, or does he tell her to forget about it, or does he seriously question either her sanity or her truthfulness? In the present case he at least appeared to believe her, and suggested they report the matter to the police. Going public with the story is, in a way, a proof of his faith in her. The police said it was no concern of theirs, and referred the couple to the local UFO network who investigated the story. The woman appeared sane and reliable to them. She was not a worldly person, and like her husband, she had no particular interest in or knowledge of UFOs. Inspection of the ground where the aliens were allegedly seen to walk showed that it was frozen and was too hard to allow footprints. The clinching parts of the argument was that no known ship can hover silently, and that these creatures looked too unlike humans. Having found no other explanation for the report other than a visit from aliens, it was confirmed as such and entered into the published reports.⁴¹

Perhaps the couple was a little isolated and unsure in their dealings with the wider world. Telling this story took courage and ran the serious risk of ridicule. But it was the path of least resistance. Keeping it to themselves would put a tremendous strain on the marriage. There would always be the danger that at some point the husband could turn on his wife and say she was unbalanced. Can the outside world adjudicate in this stressful situation? The police ducked the issue, but the 'authorities', the UFO enthusiasts, were more than prepared to provide a judgement even though they knew no more about it than anyone else. They told the couple that what they saw is what happened, and that was all there was to it. This was obviously a great relief to the couple. I maintain that this is a typical structure which occurs over and over in UFO and encounter reports. I would add that almost always the person, or people involved in the encounter experiences a profound sense of insight and significance.

Understanding something difficult after a struggle, or better still creating something important after a struggle, can also induce special feelings of insight and significance. But these feelings can as well come about in dreams, from hallucinogenic drugs, and from intense physical effort and privation. The feeling is there, so-to-speak, ready to be triggered by a variety

⁴¹ I have been unable to trace the source of this strangely moving tale of what Professor Hynek, the acknowledged senior figure of the UFO world, calls an encounter of the third kind. I read it some time ago, and cannot recall where. I would be grateful to receive the reference.

of stimuli. It is often this feeling which makes it difficult for people to accept that what has happened might be something as simple as a dream. In a more caring society these encounters might be read as distress signals and help could be brought to bear. The UFO answer is a cheap fix. We might ask about the morality of it on the assumption that it is the only one available.

Telling the truth is not an absolute moral requirement. We would all gladly tell a small lie to prevent immense suffering. The trouble with this kind of moral reasoning is that it is bounded and certain. Under those terms, with no other consequences, the answer is obviously tell the lie. But can we be sure that saving the couple from this crisis is ultimately beneficial? Certainly not. Maybe a fundamental change in the marriage, including ending it, is a better outcome. Perhaps lowering the initial cost of bizarre experiences encourages them to happen, with increasingly costly consequences. There is also plenty of evidence that encounter myths are becoming more widely known and more uniform. When the book *Communion: A True Story* was published it had a striking cover showing a head with a slit mouth, almost no nose, and very large, almond shaped hypnotic eyes.⁴² This image began to be seen by more and more people reporting alien encounters. When asked to draw a picture of the alien they saw, most people reproduced the cover of *Communion: A True Story*. Telling one person that they have had a genuine encounter may cause others to have a distressing encounter. Of course we must recognise that the members of the UFO clubs are the greatest victims, who subjectively are usually unaware of the harm they do to others. It may be that no amount of rational argument will discourage UFO networks. But maybe agreeing on the weakness of the residual method will have an effect.

The case of miracles has a rather interesting and different moral dimension. Insisting on a miracle for sainthood implies that humans, however wise, may be unable to detect great virtue. God must intervene in order for us to avoid the mistake of declaring someone to be a saint when in fact they do not quite measure up. But who decides whether in fact God has intervened or not? Mere mortals decide this. So why not let them decide the original case for outstanding virtue on its merits? There is an answer. It could be maintained that it is easier to detect miracles than to detect virtue. Alternatively, one might be talking about miracles as a kind of code for discussing virtue. It has been suggested that very sophisticated but devout Catholics, like T.S. Elliot, need not believe in miracles. The Church operates on many levels. Dull minds need miracles, so the argument goes, and they shall be provided.⁴³ If that is the thinking on the part of senior figures in the Church, it is of questionable morality. A lie to prevent suffering is one thing. Telling people whatever is necessary to persuade them is something else. Most religions have abandoned torture as a means of persuasion. Perhaps the time is near

⁴² Striber, Whitley, *Communion: A True Story*, William Morrow & Co., 1987.

⁴³ The taste for magic is indicated by the following little piece in *The Times*. “**Jerusalem:** Israel's National Parks Authority said that it had authorised a private contractor to build a submerged bridge into the Sea of Galilee that would allow tourists to simulate Jesus's miraculous walk on water. It would not have rails in order to enhance the “walking-on-water” effect and lifeguards and boats would be in attendance in case a walker slips off.”

for giving up alleged supernatural events as means of persuasion whose existence is based on a flawed methodology.