

## Unprovable ideas in the production of reliable knowledge – a case study<sup>1</sup>.

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How are we to make sense of radical innovation, and how do changes in one area of thought and research affect other areas? A major area of innovation in the twentieth century (continuing to the present) is that of technological change; it may be the principal social fact of our time. I wish to present a case study drawn from the mid-twentieth century. It works from the angle of the role played by hypotheses that are subsequently discarded in the production of technical achievements, in a phrase, looking at the place of the unproved ideas in the production of reliable knowledge. My thesis is this: if there had not been flying saucers, there would not have been manned space flight. Or, to quote the French philosopher of science Georges Canguilhem, ‘if you try to write a history of the truth exclusively, you will end up writing an imaginary history’ (2011).

I am going to give a brief history of the idea of ‘life beyond this planet’, speak of the emergence of the idea of flying saucers and their subsequent history, and then state what I believe to be the conclusions that might be drawn from this account.

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If there has always been interest in a possible ‘plurality of worlds’, the idea of ‘life elsewhere’ took on a different form due to the extraordinary technological innovations associated with the Second World War. These innovations included the development of rocket flight, harnessing sound and light waves of different amplitudes for communication and detection, and the creation of Information Technology, which together – with a range of other materials and techniques – made the exploration of space a practical possibility for the first time.

While the new possibilities were explored *speculatively* in the science fiction milieu, the *practical* development of ideas of life elsewhere fell to the United States Air Force in the context of the end of the Second War and the emergence of the Cold War. The form in

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<sup>1</sup> This paper incorporates material from ‘A recent history of the idea of ‘life beyond this planet’’, given at Princeton CTI, 15.3.17.

which life elsewhere was conceived was the product of an organization based on advanced technology crossed with a situation of a high state of threat to home security. You cannot separate out ideas concerning the contemporary forms of life from beyond this planet from the constellation of military, technological and industrial interests, driven by science and funded by the tax base, and so of concern to both politicians and the press. The primary work was done, and the forms given shape and substance, in this constellation and primarily by a unit in Air Force Intelligence.

This work was not undertaken intentionally: there was no programme to design and launch flying saucers. They emerged instead in an apparatus of reports, memos and investigations, which led to organizational changes and the attribution of budgets, and to the assembling of records and the development of equipment to record and measure the phenomena, and then resulted in a series of conflicts in interpretation, hypotheses put forward, policy decisions and reversals of decisions, conflicts between factions, the inflection of certain careers, the destruction of documents, and a series of attempts to shape accounts of past history and to redirect public opinion, if necessary by deception and propaganda.

If you wanted evidence for 'flying saucers' or 'disks' – which is the form life from elsewhere took on in the late forties and early fifties – you should look less to the always-ambiguous material of reports of sightings and more to this remarkable series of organizational effects, leading to disturbances of a local but sometimes quite acute kind, which are well-evidenced and available in the now fairly open archives of the organizations in question (see Swords & Powell 2012 for the most recent summary). In sum, if we look for evidence not in objects and isolated acts but in networks and events, there is a good deal to be considered.

Probably the best way to understand flying saucers is as a scientific hypothesis which was tested in various ways but ultimately discarded as lacking convincing supporting evidence. As such, it has had a varied subsequent history, not least in lending itself as a component to further investigations, when elements are borrowed by other hypotheses to be tested in their turn.

While early Air Force interest was triggered by visual sightings, reported for the most part by pilots, the issue was given definitive form by the deployment of a home radar system across the United States around 1950. This was an enormous technical operation, involving

the development and rolling out both of radar systems and of communications networks throughout the home territory to defend against a potential Soviet nuclear attack which, as a side-product, appeared to produce objective evidence of what came to be known as 'Unidentified Flying Objects' (UFOs). The Air Force applied standard Intelligence procedures to these UFOs as a small-scale operation within the department which had the business of tracking and investigating the properties of enemy aircraft.

Hence the range of practices already listed, from memos to major rows, which gave form and substance to the mysterious objects being sought; though no saucer was ever grounded or captured, nor any individual machine identified, nor even clearly photographed, the existence of these objects can be traced through their effects in a whole range of human activities both regular and anomalous, involving not only the military and security organizations, but also the press, politicians up to the Presidential level, and many members of the public.

My point here is a simple one: if you go back to the early period – 1947 to 1953 – and look at the documents, flying saucers or UFOs are a product of the constellation of various military, industrial, technological and scientific interests of the time, and life elsewhere takes this form and no other because of its site of production. Life elsewhere could have had other forms, but (by and large) it did not. Above all, these forms are not some kind of myth invented in the margins of society which sensible and responsible people must shake off; they are indeed the expression of a contentious but orthodox hypothesis – termed the 'Interplanetary hypothesis' at the time – that these machines come from other planets, other planetary civilizations, and are intelligently guided.

Let me offer two clarifications before moving on. First, the form of the emergence of the interplanetary hypothesis can be traced through the documents. Once the sighting of what came to be known as Unidentified Flying Objects became accepted as a problem to be resolved, a sequence of questions followed. Initially, is this a secret weapon being developed by another branch of the Armed Forces about which we have not been informed? Once that had been denied, a second question followed: is it a Russian weapon we don't know about being tested? But no reason could be given for testing new weapons over American territory. So, the third question followed, is it 'interplanetary'? A standard set of Intelligence techniques worked out in the Second World War were set to work and

applied to the problem thus identified, and men transferred from working on the Russian Mig 15 fighter, newly-introduced in Korea. (There are interesting questions about why engineers are not fazed by a priori impossibilities in the way that scientists are).

Second, a crucial question, which I can do no more now than point to, is where did the 'interplanetary hypothesis' come from? Why was such a possibility conceivable at all? In other words, why do we project ideas of intelligent life onto and into space, and imagine life forms which show a reciprocal interest in human civilization? The brief answer is that the hypothesis comes from Theosophy, a late nineteenth century movement concerned to give a narrative shape to the extraordinary advances by the physical sciences and evolutionary biology in the period, whose cosmology was disseminated through pulp science fiction in the first part of the twentieth century. The history of the interplanetary hypothesis can be traced and its moment of glory in security circles, which I have sketched, recorded. There is however a second part to this story.

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The hypothesis was not supported, though the history of its suppression is a delicate tale, but by the time it was discarded – it took the Air Force until 1968 to close its investigative department – it had taken on a life of its own. To sketch this subsequent life in brief, the specific form of life elsewhere, which had been forged in this post-War Security crucible by engineers in Air Force uniforms, went in two directions from the late 1950s, towards alien abductions, on the one hand, and the development of NASA, on the other.

The first direction was that of alien abductions. Notions of machines from elsewhere, registered by our technology, retreated into the background, and instead a new series of techniques were engaged with, consisting in therapy, hypnosis and recovered memories. The site of production moved from a series of state concerns with Security and military technology to the far more domestic sphere of the family, psychology and counselling. And the focus shifted from questions of objective evidence – radar traces, photographs, recovered machines – to personal experience of such matters as lost time and telepathically-received messages shaping the individual's life-course, as well as of medical investigations, often with a reproductive focus.

Despite this considerable shift in focus, there was also a whole range of features in common between the earlier flying saucer sightings and the later memories of abductions, notably, the relationship of witnesses to experts, and what may be described as the 'thinness' of the objects or the experience being described. Likewise, the interest of the events lay elsewhere in both instances, in the contested explanations, the business of establishing the credibility of the witnesses (or destroying their character), and questions of the appropriate techniques to be employed and their interpretation. Just as with reports of UFOs, the best evidence in the case of abductions is to be found in the 'unseemly effects' experienced by the social body, found in the anomalous behaviour of both organizations and individuals that bear witness to turbulence in relationships.

The striking feature of abductions, apart from the prominence of therapeutic, medical and genetic motifs, is how close the figure of life elsewhere has come: it enters your home and your bedroom, paralyzes and abducts you to a nearby location for tests, entering not only your body but also your mind, by telepathy, and then puts in place certain mental barriers so that you cannot remember the events. These ideas have been developed over time into notions of repeated interventions – of the extraction of gametes, of surrogate pregnancies, of alien breeding programmes and therefore of cross-breeds and changelings – extended in some cases over the generations.

As you might expect, these ideas and experiences share a good deal both with contemporary television testimony and with forms of family court investigations into abuse, with the focus on producing reliable witnesses who can speak in a representative fashion for an exceptional human condition: that (in this case) of encountering life from elsewhere (cf. Dean 1998).

They also share several themes, in terms both of similarities and inversions, with the second direction of development in the period, NASA and its engagement with the possibilities of life out there. Clearly, in the latter case, the striking feature is how far distant life elsewhere has been projected. It is also worth remarking, given the trouble the Air Force had to go to in order to rid itself of the troublesome flying saucers, that a collateral group of scientists and engineers, relying on the same range of largely military technologies and industrial contractors, were prepared in the same period to take up the theme of life elsewhere in such a similar form: they dropped the vulgarities of flying saucers but kept the notion of life

out there intact, including the possibility of advanced civilizations on other planets with their own technological development and an interest in communicating between planets.

This adoption of a portfolio of ideas can in part be explained because NASA has from the start (1958) been a political project, linking national identity with science and technology, arising in the context of the Cold War and promulgated through the new medium of television, taken as a means of democratic education and participation, to offer a narrative of who we are at our best. The NASA narrative was built from the outset on publicity, technology, and space exploration. Dean (1998) draws a parallel in this narrative between astronauts and abductees: both are witnesses who can speak in a representative fashion (through television) for an exceptional human condition, going to the boundaries of possible experience; ordinary people with an extraordinary relation to space. Life out there was bound to play a part in the motives and ends of such a programme.

Once more, the possibility of such life is not separate from the world of science and technology, to be imposed upon it only by muddled thinking; rather, it is intimately involved with that world from the start, and takes its form and substance from contemporary technologies while, in return, contributing to their existence through the complex politics of funding and its accompanying narratives. We know a bit about the evidence for such life forms, which is that it will be manifested not so much in distant objects and acts – messages received, saucers seen, civilizations contacted – but more in human networks and events, witnessed perhaps above all in what I have called ‘unseemly effects’, in quarrels, anomalous happenings, and breakdowns in organization.

In this perspective, the split between SETI (the Search for Extraterrestrial Intelligence) and Exo-, later Astro-, biology in the early 1990s is exemplary. The two projects are based upon the same range of technologies – rocketry, radio telescopes, spectrum analysis, computing (all given form in the Second World War) – and share the same scientific credibility (Dick 2012). However, NASA was forced to drop one and to promote the other, in a history in which politics and funding decisions were all, and scientific interest and technological possibility played little or no part. Astrobiological Jacob received the blessing, while SETI Esau departed into the Wilderness, doubtless to found other nations. One may argue the merits of the respective projects, which come down to whether, in space exploration, one leaves all power of initiative in human hands or imagines some alternative source of

intentional action, but the hybrid nature of the decision is worth noting, as are the resemblances it bears to episodes earlier in the same story. In that perspective, we may anticipate further twists in the tale, for discarded candidates have a way of reappearing in new guise.

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What are the lessons of this case study? We might make a general point that, in the modern world, 'the sciences are historical and the humanities are technical' (Sale and Salisbury 2015: xxviii). Or say that the provable and the unprovable cannot be fully separated and that their interactions play out over time, in a fashion that cannot be anticipated but can only be reconstructed retrospectively. This is not then an attempt to relativize scientific achievements, but rather to historicize them and to note the crucial role of discarded hypotheses in the construction of new understandings.

From this case study, we can say that without Madame Blavatsky (the founder of Theosophy) and without her pulp progeny, who added little to her extraordinary synthesis, there would have been no interplanetary hypothesis. And without the interplanetary hypothesis, any notion of space exploration, even as a possibility, would have taken a very different form. We might have developed rockets, the better to kill one another, and even space platforms, from which to threaten to do so, but whether we would have undertaken further space exploration for purely utilitarian ends seems improbable. In practice, the interplanetary hypothesis allowed the hatching of the space programme, a successor to the Manhattan Project, the deployment of home radar, and the development of communications systems to transmit early warnings, which in turn underwrote the emergence of the computer industry. The interplanetary hypothesis permitted the creation of a big, state-funded project which built on these and other technologies and which was not simply focussed on national defence and warfare, but on scientific progress and a national horizon of hope for the future. In short, no flying saucers, no manned space programme ...

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