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Undressing Dolly:
A Clone’s 12 Months Gestation Period in the UK Press

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Undressing Dolly

Synopsis

The UK press within my 12 months sample (February 1997 – February 1998) presented themselves nominally on behalf of the reader, as providing critical and analytical coverage of the facts pertaining to the science and ramifications of cloning. However contributors sought not simply to reflect on developments but imbue them with wider significance, thus influencing public opinion. The most striking facet of the UK press ‘agenda-framing’ in light of sheep Dolly is that immediately the press extrapolated the result of ‘cloning’ one sheep to the potential applicability of the technology to humans. The framing therefore quickly centered on four initial questions, ‘Can the technology be used on humans?’, ‘Will it happen?’, ‘In what circumstances?’ and concomitantly ‘Should it happen?’ Thus commentators became imbricated not only in the process of actually weighing the ‘pros’ and ‘cons’ of human cloning but also in constructing a social need for it. In order for this to happen consensus had first to be won over the definitions and meaning of cloning, this involved not only specific argumentation but also the marginalization and discreditation of counter-interpretations. Analysing the voices given space and authority and what they said provides an opportunity to look at the actual dynamic process of constructing the public face of cloning.
Introduction

“Like a red flag, cloning would alert the world to the awesome possibilities that loomed ahead and thus serve as a catalyst for public participation in life and death decisions that might otherwise be left by default to the scientists”

David Rorvik, (1978:29), In His Image: The Cloning of a Man

February 23rd 1997 provided the occasion to test the prediction of the above quote when it was announced in the British newspaper The Observer that the Roslin Institute outside Edinburgh had successfully cloned an adult sheep. She has perhaps grown into the most famous sheep in history. Her name is Dolly. Whilst it has been said that “the world is a different place now that she is born” (Kolata, 1997:4) her birth did not provoke ‘public participation’ in scientific decision making. It is the overarching aim of this paper to contribute to a reason why.

Dolly has proved a catalyst if not for participation then for discussion about the relationship between self, society, science and technology and at multifarious levels. Much has been claimed in Dolly’s name. Analogies have been made with Copernicus, Darwin and Freud in their belittling of human self-importance. She has been said to destabilize some of the foundational tenets on which our very civilisation rests, such as the Enlightenment notion of the autonomous ‘self’ or the Judaic-Christian belief in the unique individual soul. Thus, Dolly prompts questions of ontology, what is it that makes us human? She also provokes epistemological uncertainty, questions about the value of knowledge, perhaps evidencing the fact that sometimes we are better off not

1 David Rorvik had published a book in 1978 in which he claimed to have been an observer of a successful experiment to clone a millionaire. The book was published as fact but derided as a hoax by
knowing. Indeed her birth prompted politicians around the world to seek expert ethical and legislative advise most prominently with President Clinton of the US calling for his National Bioethics Advisory Commission to submit a report in 90 days. Yet, Dolly was both more and less than the realization of a scientific quest with profound consequences. She is also artefactual, the embodiment of a technological processes which its creators and advocates claim will alleviate human suffering.

One of the central ironies of the Dolly story is that she was tangential to the aims of the Roslin Institute that created her. Their goal was to add human genes to livestock such that their milk could produce therapeutic proteins extractable for pharmaceuticals. Yet, to achieve this required solving a biological ‘puzzle’. The research team at Roslin led by Dr. Ian Wilmut had perfected a technique called Nuclear Transfer. This enabled them to take a cell nucleus and reverse its genetic specialisation which had occurred during embryonic development such that it was once again ‘totipotent’, capable of turning on the entire genome contained within to create the organism once again. This donor nucleus was injected into an enucleated egg cell and subjected to a jolt of electricity which ‘tricked’ the egg into thinking it had been newly fertilized and jump started it into development. But this they had achieved in 1995 with the birth of two lambs, Megan and Morag, cloned from embryos. In other words for Roslin, Dolly was not a ‘breakthrough’ rather confirmation of the veracity of the Nuclear Transfer technique itself, that it could be

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the scientific community. It is evident in retrospect that his intention had been to blur the distinction between fact and fiction in order to provoke debate.

2 The ultimate aim of Roslin is to use cows to produce pharmaceuticals because of their high milk productivity. Yet Roslin had used sheep for experimentation because they; produce more offspring are less expensive and their gestation period is shorter.

3 Cloning theoretically provides a means to produce more of the animals that have successfully taken up the human genes, which is at present a ‘hit and miss’ affair.
applied to the even more differentiated cells of an adult⁴. As Roslin’s Director said, “in a way Dolly was a sort of detour” (Grahame Bulfield In Klotzko, 1998:131)

Within this paradox of research treated in one specialist commercial field as a ‘side-issue’, having immense ramifications outside not only for society but also for other areas of science, lies much fruitful material for investigation. Dolly seemed to have come out of nowhere but had in fact been the result of a decade long research project at Roslin. In fact cloning has its own scientific history, though largely due to fears of scaremongering and alienating the public scientists had discouraged ethicists from discussing cloning from the late 1960s onward on the grounds that it remained impossible.⁵ Additionally, Dolly actually shocked the scientific community as she had sprang from an ‘unsexy’ discipline, ‘agricultural embryology’ which accords less attention than other fields in biology. Yet, while cloning seemed under-anticipated, it had also been over-anticipated particularly by science fiction where it had remained a favourite trope. Therefore, most immediately perhaps Dolly calls for an examination of the production, dissemination and access to knowledge about scientific ‘advances’ and how these shape and are shaped by social values.

It is a truism to say that the vast majority of people who first heard of Dolly did so via the media. Therefore, it is reasonable to suggest that with the seemingly arcane knowledge and specialist lexicon of the science of ‘cloning’ and the technique of Nuclear Transfer the media provided a clarifying orientation. Given that it was the press that broke the Dolly story, in what follows I will analyse the way in which the story was shaped in the UK press over 12 months. I want to explore how is it that

⁴ Their true goal was realised with the birth of Polly in July 1997, cloned from a foetal cell that had successfully taken up a human marker gene.
within the space of less than a year, headlines in the same newspaper changed from, ‘The Spectre of a human clone’ (Independent, 26/2/97) to ‘Cloning? Get used to it: Human genetic engineering is coming- and it will be good for us’ (Independent on Sunday, 25/1/98). Chapter 1 will be a theoretical positioning. I will address the role of the press in popularizing science for the general lay public. I will demonstrate that this communication is not linear nor value free but recursive and ideologically laden, therefore the most effective way to proceed will be to analyse science in the press as constituting a social discourse. Furthermore it is not scientific knowledge that is primarily at stake here but rather the struggle for public acceptability, and this is particularly true for emerging science such as ‘cloning’. Chapter 2 will focus on the early stage of press coverage, a time when there are multiple participants attempts to fix the definitions and meaning of the debate’s pertinent issues. I will divide this period into three; the ‘extrapolation from one sheep to humans’, ‘speculative fears’ and ‘containment of fears’. In Chapter 3, I will argue that the debate started to narrow towards the consensus that human cloning was ‘inevitable’ and that this remained the dominant frame. Argumentation provided in support of this was based on the construction of needs and demands, not all of them human. Furthermore, this consensus building required the marginalisation of opposition. Chapter 4 will claim Dolly and cloning both in terms of fears and fascinations for culture, by arguing that she is an Icon, Sign, Psychoanalytic Entity and Postmodern Body. The point I will make here is that these constitute a subtext which the rational debating sought, unsuccessfully to elide.

5 See Kolata (1997) for more on the history of the science of cloning.
Chapter 1

Science and Journalism

“The validity of a scientific idea must be assessed within the scientific community, because other people lack the knowledge to do it. The priorities as to what science should be carried out, that clearly is a social judgement”

Ian Wilmut
Interviewed In Klotzko, (1998:135)

I. Purity and Contamination in ‘The Traditional View of Popularization’

Traditionally looking at the popularization of science issues in the media has been approached via the ‘diffusion model’. The central tenet within this model is that specialist knowledge is conveyed to the lay public in a noble attempt to spread enlightenment and education, so increasing ‘public understanding of science’. Thus, in ideal science communication the ‘truth’ or essence of the knowledge itself should remain unchanged in the transmission, in short it should remain ‘pure’. When popularization through the media is disparaged by scientists it is usually on the grounds that through simplification or omission the knowledge has been distorted. Therefore, from this perspective popularisation confers the risk of the contamination of knowledge. Consequently, analyzing ‘science issues’ in the press has frequently involved quantifying newspaper articles for scientific accuracy. Perhaps inevitably given the aforementioned bias, the findings are frequently considered disappointing by scientists. Yet, this binary demarcation of ‘pure’ versus ‘contaminated’ is ideologically self-legitimating and tautological. By definition ‘pure’ knowledge is
conceived of as the rightful preserve only of the 'experts'. The public is then established as 'ignorant' due to their exclusion from knowledge production and so in turn requires 'properly' orchestrated popularization practices and 'expert' instruction by scientists.

However, the public doesn't acquire knowledge in a social vacuum. Wynne (1992) argues that they do in fact display a tacit understanding of scientific procedure especially at the wider level of institutional practice, social organisation and cultural implication, all more relevant to their everyday life. Levy-Leblond (1992) sums up objections to this notion of the public when he asks, "are we not asking more from the lay people than from the scientists?" (1992:20)⁶ Furthermore, science today is so highly specialised and fragmented that it is no longer meaningful to talk of science as one cohesive enterprise.⁷ Thus, the notion of the 'public' for popularization can be expanded to include other scientists. Secondly, as constructivists have demonstrated, knowledge production is itself dependent upon popularization practices which alters the knowledge, that is its point. Claims must be transformed through inscriptive practices such as journal articles and citations or rhetoric such as peer review discussion such that "a sentence may be made more of a fact or more of an artefact depending on how it is inserted into other sentences" (Latour 1997:25). This translation of knowledge encourages an advocacy which is necessary to turn a contention into a 'black boxed' stabilised fact. There is no original, pure or absolute moment for a truth claim and facts are not considered as such at the time of their production.

⁶ Levy-Leblond (1992) also goes on to challenge the assumption that in order to participate in scientific public debate within a democracy, the public must display informational competence. He argues that this is not the case with the jury system which places conscience above expert competence.
The most important value of the ‘diffusion model’ of popularization is that it “remains a useful political tool for scientific experts” (Hilgartner 1990:530). It facilitates ‘boundary work’, the maintenance of an illusionary conceptual demarcation between the ‘inside’ and ‘outside’ of science. This view of what should happen when knowledge leaves its specialist community sets up scientists as the guardians of esoteric knowledge and science as a monolithic self-defining entity fully separable from broader intellectual, historical, political, economic and cultural change. It gives scientists great flexible authority in the public domain, particularly with regards to the media. As Dolby (1982) astutely points out what are initially justified as cognitive barriers pertaining to the accumulation of a stock of knowledge, come to function as social and institutional barriers for who has the right to speak on behalf of science in society.

II. Science and Journalism as Institutions

Despite the fact that in the UK only half a million people read the broadsheet newspapers, there are ‘multiplying effects’. This means that the same issues will appear in the morning papers as in the evening papers as well as on the TV news. Newspeople operate in an enclosed, self-referential world where editors from different newspapers as well as other media cross-check what stories are surfacing elsewhere, resulting in a high degree of similarity as to what issues are covered. It seems reasonable to suggest that the more media messages, the more ‘salience’ or priority these issues are taken to have by the public, though not necessarily reflected

7 This fragmented nature of modern science was evident from the shock of the microbiology community at the Dolly announcement.
by ‘real-world indicators’. This is further amplified by the commonsensical observation that people inform each other in casual conversation about what they have read or seen in the news. Thus the press-agenda has a high degree of influence on setting the public-agenda. It is this ability that has so concerned advocates of the ‘diffusion model of science popularization’. From their perspective irresponsible reporting even by a minority due to the multiplication effects on ‘issue salience’ will have an exponentially negative effect on the public image of science, working almost like a virus. Scientists are therefore particularly sensitive to any coverage which does not fit in with their own conception of their research or field. They frequently lambaste reporting, most commonly for sensationalism.

Yet, like journalists in other areas, science reporters do not see education as their primary objective, rather to follow news values. The most obvious news value is that the issue should be ‘recent’, preferably within the last few days. Another allied value is ‘novelty’. It is apparent that absolute novelty in the press does not really exist, as it would be by its very nature, incomprehensible. Consequently, by far the most important news values are those that aid the assimilation by readers of new information quickly. For the reader to understand the story it should be rendered ‘meaningful’ and for them to bother to read it, it should be considered ‘relevant’ to their life. This is augmented if the story is “consonant with their existing beliefs or attitudes... it has to fall within the scope of what people normally think about” (Gregory & Miller, 1998:110). The effect is further increased if these tropes concern as many people as possible and are in some way connected to stories that are or have recently been sources of public interest as these ‘prime’ expectations and

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8 Within agenda-setting literature ‘real-world indicators’ are an objective quantification or index (often
interpretations. Finally, while scientific journals portray knowledge as an anonymously discovered universal truth, often journalism likes to personalize and make it more specific, to concentrate more on the 'who' and 'why' rather than the 'what' and 'how'. Taken together, these news values have the effect of giving scientific knowledge 'epideictic appeal' (Gregory & Miller (1998:115)^10, making it more evocative and emotive. Thus journalistic norms shows that the transformation of scientific knowledge once it enters the press is not the result of willful 'distortion', rather the result of professionally inculcated news values.

III. Science and Journalism as Discourses

Looking at science in the media by stressing the different operational procedures between the two practices, offers an explanation for why scientists often blame negative public images of science on the 'misrepresentation' of journalists. The weakness in this approach is that firstly, it largely ignores similarities between science and journalism. Secondly, just as approaching science in the press through the 'diffusion model' defers authority to science, there is the danger when concentrating on journalistic norms in simply doing the reverse. Therefore, this paper while mindful of the aforementioned as valuable to practitioners of science and journalism will regard science in the press as constituting a social discourse.

There are a number of assumptions which both journalism and science share which constitute an ideology. One of the most fundamental is that both operate in an

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9 Cloning is a good example as it is conceptually inserted into prior knowledge schemas on genetics and reproductive medicine (particularly IVF technology).

10 Dorman (1990:62) argues that one of the main but rarely spoken motivations making science more emotive is not simply due to the specialist and thus alienating language of science, but that without providing a 'narrative', science is frequently dull.
increasingly competitive environment. Newspapers want to maintain and increase circulation and advertising revenue. Scientists are constantly lobbying for funding, competing with other organisations within their field or those without. While seeking to downplay this commercial drive, it tempers and informs their work, not only in terms of the questions that are asked but also in the presentation of answers. Additionally, they both achieve and maintain social authority through institutionalized rhetoric; journalism seeking to inform the public in a democracy, with science pursuing social health and happiness. Crucially, this self-legitimization relies on the assurance of objectivity. Journalists and scientists have a vested professional interest in claiming that they are simply reflecting the facts in a neutral manner acquired through investigation. Central to this for science but also frequently for journalism is the decontextualising of knowledge from wider cultural ‘bias’. In sum, both practices are founded on a belief in the ability to represent the world in an accurate and supremely rational manner, with "belief in the integrated and autonomous subject, and the tendency to neat dualisms and polarities such as rational/irrational...and logical/mythical" (Dahlgren & Sparks, 1993:9).

However, both science and journalism can actually be thought of as persuasive practices. They do not merely discover but produce and reinforce what is taken for 'truth'. This is done largely through the rhetorical power of inscription, which undertakes to induce interpretative compliance through some remarkably similar elements. For example, foregrounding direct firsthand description, signs of precision (usually numerical, such as statistics) and imparting causality to the sequence, consequence and often predictability of events. Given these ideological and operational similarities it is not surprising that the discourses of science and
journalism actually often blend into one another. For example, it is said that press coverage is “an essentially positivist portrayal of science as heroic, apolitical, and inherently rational endeavour” (Dornan, 1990:5). On the other hand science lends “its authoritative power to journalism” (Van Dijck 1995:137).\footnote{Good examples of the blurring of science and journalism discourses are press ‘illustrations’ of scientific procedures or artefacts. For journalists they invoke the ‘scopic’ power of science, demonstrating that the journalists understand the issues because they are supplying visual proof. For science they reinforce the ‘black boxing’ or stabilizing as fact what is in actuality tentative and contingent. Taken together with the accompanying text, illustrations create persuasive ‘scriptovisual documents’ (Jacobi & Schileo, 1989).}

A pragmatic reason for this blending of discourses is increased cooperation between scientists and the press. One of the main motivations being scientists hope for more accurate reporting, but this frequently spills over into attempts at manipulation. Evidence can be found in a plethora of new scientific organizational forums. For example a Briefing Paper for scientists entitled ‘Dealing with the media’ from the European Federation of Biotechnology states that, “the importance of effective press releases can hardly be exaggerated”. The reasons given are twofold. Firstly, it will encourage the journalist to return again to that source and secondly, owing to deadlines they may be used verbatim. The paper finishes with the statement “they need your help, just as you may need theirs”. This indicates a much more important motivation for scientists to cooperate with the press, that in the best case scenario the press can become almost an ‘advertisement’ for science. And given journalists predilection for inculcating epideictic appeal, an extremely powerful promotional tool. The increasing sensitivity to this role of the press is evidenced by the widespread adoption of Public Relations personnel by science institutions, to assist in the management of information flow. It is this aspect of the blurring of discourses
between science and the press that is especially acute for 'emerging science', particularly for that emanating from 'biomedical research'.

IV. Genetics and Public Acceptability

Biomedical science engages the attention of the public more than any other science issue. Indeed, investigation bears this out. As part of a survey on the 'Public Understanding of Science' Durant et al (1990) conducted a survey of 'self-reported interest' in science and technology among 2009 UK respondents. They found that medicine was rated most highly. This finding is common sense when it is considered that research on the processes of life and death and potential cures for illness and disease are of great interest to everyone because they affect everyone. Yet, biomedicine by taking the human body as its object has destabilized categories long taken for granted. For example, transplant surgery problematises where the 'inside' or 'outside' of the body lies, where its borders are. As Douglas (1966:115) argued this has acute socio-cultural implications because, "the body is a model which can stand for any bounded system". In short, she proposes seeing "in the body a symbol of society". Thus, when biomedicine announces 'new advances' these have to be socially as well as cognitively evaluated. Currently, the biomedical research field, which is accorded most prescience, is that of genetics.

When it comes to media representations of genetics, scientists seem to be in agreement that what is portrayed constitutes a distortion of the facts framed in excessively negative and sensational terms. Lewis Wolpert, Professor of Embryology (University College, London) has dubbed this 'genetic pornography'\textsuperscript{12} damaging to

\textsuperscript{12} Professor Wolpert is also chairman of the British Committee on Public Understanding of Science
both public support of and morale within the genetics community. As indicated media representations of the new genetics should not be viewed according to the 'diffusion model of popularization'. One very good reason for this is that geneticists do not see themselves as completely powerless in the process of representation, nor as ensconced in a bounded community removed from the vagaries of everyday life. As Turney says, "biomedical scientists, in particular have become very conscious of the way their science may be seen ... and of the need to develop political strategies for dealing with this" (Turney, 1998:208). Geneticists, it seems, have learned much from the failings of the nuclear industry in the 1970s to inculcate public trust. Therefore, the goal for the 'new genetics' is the establishment of public acceptance. This must be forged against a backdrop of public ambivalence. For, while there is an appreciation for scientific skill, genetics is shot through with controversy. By its very nature genetics is not simply 'pure' science, it is quintessentially value laden. The chief reason for public ambivalence towards the new genetics is that it also implodes any distinction between what Ian Hacking (1983) has called 'representing and intervening'. With the new genetics, to see is to alter. Thus, popularization in the press becomes a significatory battle, for the persuasive capability of the press can work both for and against the 'new genetics'. These posit a range of potential diagnostic and therapeutic applications with profound ethical, legal, commercial, social and psychological implications. The number of possible users, increases the size of likely public interest, and the potential market yet also the chances of an organized emotional responses from the public. What is at stake is less technical accuracy than a struggle for the 'public image of science.' It is achieving hegemony over this and not the public understanding of the science itself which effects whether or not its various fields, tropes, applications and products are conceived of as socially permissible or not.
V. The Evolution of Consensus: The Need for Biomedicine

"The world will look different to different people, depending...on the map that is drawn for them by writers, editors and publishers of the [news]papers they read"
Bernard Cohen (1963:13)

Approaching science in the press as constituting a social discourse provides a means to neither a priori privilege science nor journalism as the dominant fulcrum for analysis. As Van Dijck (1998) suggests it allows a thinking of science in the press as part of a 'public performance' with actors, scripts and an evolving plot. However, we must be careful how we conceptualize the press for it is not merely a 'stage'.

It is the professional lore of journalism that it provides two vital organizational functions for geographically dispersed and socially diverse publics, those of 'surveillance' and 'correlation'. In other words, it has the resources both to garner and track information, while also providing a conceptual space in which to, "bring together contrasting ideas and views within the attentive public, report to its members what others think, and thus help to organize its collective reaction" (Price 1992:81)\textsuperscript{8}. But newspapers actually do much more than simply provide a forum for various opposing actors. The press has the resources and cultural authority to shape and direct both the terms and the meaning of debates. Broadly speaking, two phases can be discerned with the introduction of 'emergent biomedicine' into the press.

Firstly, the battle for public acceptability, and ideally appeal, is especially prominent in the early stages of a public debate. Given new values the press has the immediate job of inserting the emergent biomedicine into a meaningful framework for the reader.
Despite similarities these values still retain a dissonance between the professional needs of scientists and journalists. For example, discussions of methodology are not considered particularly interesting for the lay reader so journalists tend to very quickly seek an “illustrative case to bring the science alive” (Kitzinger & Reilly 1998:326), this provides an early ‘tag’ to capture reader interest. It can be a historical analogy or broad speculation about the consequences, the main criteria being dramatic appeal. During this stage the press does not aspire to deductive veracity for its claims rather plausibility, therefore a variety of voices can be heard fighting to define and interpret the meaning of the emergent biomedicine. Both scientists and journalists vie for this power, utilizing various strategies to bolster their position. Journalists can accuse scientists of secrecy and can draw on their resources to find oppositional and speculative voices accorded the exalted status of ‘expert’. Scientists can argue that speculation is irrelevant to immediate concerns, that fears are unrealistic or containable and stress again the preeminence of scientific values.

Yet, both science and journalism are founded on the ideological tenets of the Enlightenment, therefore the rhetoric of rationality over emotionality comes to dominate. Discussion about public acceptability often settles on questions of social value and ultimately use. One of the favoured means of doing this is by speculating about potential applications, not according to a ‘good’ or ‘bad’ judgement but rather to weigh the “balance between the potential and the admissible” (Van Dijck 1998:14). The discourse begins to ask specific questions, who might benefit, why and frequently when. As the answers to this are based on current social trends, by constructing an image of the type of people or situations where the biomedicine could be applied it undergoes a process of ‘naturalization’ and ‘normalization’. In other
words it is presented as simply an extension of what already exists, and is therefore contrived as simply commonsense.

Hence, what often begins as seemingly egalitarian speculation about consequences and discussion of social or ethical acceptability narrows into a series of consensual agreements as arguments are mobilised, some winning favour over others. What nominally begins as a ‘debate’, over time becomes an issue of finding a social need and frequently demand for the emergent biomedicine. In this negotiation, potential markets are in effect located and the biomedicine commodified, positioned as a product and commercial service. Press popularization of emergent biomedicine is never simply about technical detail or scientific accuracy, but is rather informed by social and cultural values. Ultimately the discursive creation of a need and engendering of demand is the result of the projections of social and psychological hope and fear onto the technology. This rethinking of the term ‘popularization of science’ through the press indicates that it functions not simply to render scientific information familiar, but to familiarize it, such that, even before it is readily available as a practical option, a social meaning has been pre-established.

If the ultimate aim of this significatory battle is to reach consensus as to the public acceptability and desirability of emerging biomedicine, one way of judging the social success of this process is the extent to which a disputed interpretation or opinion is ‘black boxed’ beyond further negotiation. The most effective way of doing this is through legislation. The press play a crucial role here because “by creating public issues out of events, the press can force regulatory agencies to action simply out of concern for their public image” (Nelkin 1995:75). The agenda-setting of the media
impels policy makers to justify their action, or inaction, in front of a larger audience. Kosicki (1993) distinguishes five stages in the formation of public and policy agendas, “issue identification, solution formation, policy adoption, implementation, and evaluation” (Kosicki 1993:112). He concludes that the media’s influence is strongest during the first two stages where what counts as a definition of the situation (whether ‘problem’ or ‘opportunity’) and therefore what can be taken as a suitable solution, “are still in flux” (ibid.).

Crucial to all, policy makers, journalists and scientists in ‘public debates’ over the social use and value of emerging biomedicine is the fight to simultaneously represent and influence ‘public opinion’. What is lost within the ideological assumptions of these actors is that the etymology of the term ‘opinion’ reveals that it has historically been accorded two definitions. It can refer “both to rational/cognitive and to *nonrational*/social processes” (Price, 1992:8-emphasis added). It refers to a considered evaluation, but at the same time the impact of customs, traditions, and expectations. Neither the rational nor irrational have precedence, as they are never fully separable. Rather they feed on and inform each other. This is an aspect of ‘public debates’ that seems to be lost as in the Enlightened consensual discourse of both science and journalism based on the primacy of ‘facts’. The rational subject is conceived of as atomized, forming opinions and attitudes in isolation from wider psychological and symbolic associations. However, within discursive contexts, “beyond the invocation of logos, there are frequent appeals to pathos and ethos to persuade a general audience of the validity of a specific interpretation” (Van Dijck 1998:11). Thus, pathos and ethos constitute a *subtext* to debate, which can explain not just popular appeal but also fears, fantasies and fascination. This subtext exists in the
collective unconscious and cultural memory of society, repressed but never completely lost.

VI. **Study Rationale: Inspiration, Methodology and Sample**

Durant et al (1996) carried out a study on ‘Public Understanding of the New Genetics’ in Britain. Part of their study looked specifically at portrayals of the Human Genome Project\(^\text{13}\) (HGP) as appeared in a range of British daily newspapers. Findings included that while there was much press reference to ‘genetics’ there was little to the project itself.\(^\text{14}\) Given, as previously shown, that the public and press-agendas accord high significance to biomedicine this is perhaps surprising. Additionally, they argue the HGP issues appearing in press discourse were essentially present from the beginning. The situation they present is essentially static where discourse is “characterised by enthusiastic accounts of the great promise of this research, and secondly, less sanguine discussions of the many ethical, legal and social concerns” (1996:242) dubbed simply the discourse of ‘great promise and great concern’\(^\text{15}\).

My paper drew its inspiration partly from the aforementioned study broadly speaking for two reasons. Firstly, in an attempt to understand why it is that the HGP has failed to excite the press and public imagination by looking at a case (Dolly) where perhaps for the first time a technology linked to the ‘new genetics’ generated a wealth of media interest. Dolly provides an interesting case for the shaping of the ‘public image of a science’ because she embodied so many possible interpretations. Cloning could be presented as a contribution to the ‘pure’ science of nuclei genetic expression, as a

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\(^\text{13}\) The Human Genome Project is biology’s big science project. It is an internationally co-ordinated attempt to map and sequence the estimated 50,000-100,000 genes that make up each person.

\(^\text{14}\) In fact between 1986 when the suggestion to map the human genome was first announced in the British press and 1988 they only found 10 articles referring to it.

\(^\text{15}\) This schema has subsequently been picked up by other researchers such as Kitzinger & Reilly (1997) researching the ‘new genetics’.
research tool for instance to track genetic mutation in various environments, as a medical technique for cell manipulation or as evidence of the diabolic nature of science to usurp the natural order. Secondly, Durant et al point to the need for a new methodological approach to science in the press beyond using the 'diffusion model of popularization' or the sociology of journalistic production, which better represents its influence on public attitudes and opinion. They focus on 'social representation theory', where "within a given theme the unfamiliar is anchored in the familiar...key issues are characterised by means of recurrent images, icons or metaphors...a phenomenon of the group that reveals itself in recurring patterns of knowledge, belief and expectation" (1996:24)

Methodology: 'Narrative' and 'Frame' Analysis

By accepting that 'emergent biomedicine' in the press is not merely a reflection of fact and truth but imbricated in a discursive struggle for the hegemony of social meaning we can think of it as an ongoing construction. Yet, if we are to understand how consensus is reached, a means must be found to think of and trace its evolution, and one that does not simply describe the sequence of events but rather analyze strategies, tracking change and continuity. For this I propose using 'framing' augmented by 'narrative' analysis. Though the two are intertwined.

'Frames' have been defined as "persistent patterns of cognition, interpretation and presentation, of selection, emphasis and exclusion, by which symbol handlers, routinely organize discourse" (Gitlin, 1980:7). For journalists the immediate advantage in 'framing devices' is that it enables them to process large quantities of information expeditiously but also very importantly to routinely package it for their
audiences. The media literate audience comes to expect these frames and have an investment in them as recognizable modes of interpretation. By discerning where these frames lie it is possible to locate the way in which at key heightened moments discourse is not descriptive but prescriptive, impelling some ways of thinking about an issue and at the same time precluding others. One of the principal framing devices is that not all voices are given equal opportunity or authority to an opinion or fact, institutional voices tend to be privileged, thus reproducing dominant ideology. So maintaining an alertness as to how contributions and opinions are ‘framed’ affords an opportunity analyze the interpellation of the reader to accede to specific goals, values and expectations. In this sense, press power can be said to reside in the fact that it decides what alternatives are ‘realistically’ on offer.

‘Narrative’ analysis augments framing because it looks at the ‘causal coherence’ of the text itself, the way communication is itself packaged. This allows an explanation for the way in which meaning itself is generated or more accurately “assigned coherence by language users” (Van Dijk, 1988:62). A close reading of the text as a narrative detects implicit codes and conventional categories such as; setting, timing, characters, crisis/tension and resolution. Text is not so much ‘read’, as implicit messages decoded where newspapers actually discipline, condition and subtly construct their reader. As Nelkin (1995) points out, if science fits into a narrative of new and exciting frontiers, it makes it harder to argue in favour of stricter regulatory limits. If, on the other hand, it indicates forthcoming crisis then this rouses the necessity for further control. Hence the recurrence of metaphors is paramount where “some words imply disorder or chaos; others certainty and scientific precision. Selective use of adjectives can trivialise an event or render it important...define an
issue as a problem or reduce it to a routine" (Nelkin 1989:66)\textsuperscript{16}. The continual reproduction of certain narratives in society (whether in the media, public, government or enshrined in policy) creates, inscribes and reinforces wants, needs, rights or responsibilities

Therefore, by analysing the press through frames and narratives allows a means to critically track the creation, development and maintenance of discursive relationships and nexus of associations. To look at who is given the power to speak, what, when and how they say it, and to infer from this, why. This methodology allows what can be thought of as the reverse engineering of discursive hegemony. It should be pointed out though that discourses do not move in discrete linear stages but rather overlap. Thus, this paper will not be a description of the sequence of events but the tracking of a general trajectory.

\textbf{Sample}

My sample consisted of 12 months of UK newspaper articles on ‘cloning’ in light of sheep Dolly between 23/2/97 – 23/2/98. This contained the ‘dailies’; \textit{The Times}, \textit{The Financial Times}, \textit{The Guardian}, \textit{The Daily Telegraph}, \textit{The Independent}, \textit{The Daily Mail} including their weekend editions. All told the sample held 165 check articles. (see references).

The articles were collected from a ‘Newspaper clippings’ file specifically on cloning collated by the Wellcome Trust Information Service, London. The sample itself was

\textsuperscript{16} It should be stressed that this is not to suggest that the relationship is entirely unilinear, moving from the media, to the public and finally enshrined in policy. Rather it displays a circularity and recursivity as all agendas influence each other with their discourses overlapping, they are never completely and finally separable.
therefore representative of not only the UK press treatment of cloning but also the concerns of one of the most attentive institutional publics in the UK for biomedical science. The Wellcome Institute is involved with giving policy advice (through its PRISM organization) as well as a main funding body for biomedical research. The fact that the ‘clippings file’ only contained one UK tabloid (The Daily Mail) is itself significant when it be remembered that “quality papers are predominantly read by professionals and people in executive and decision-making positions” (Hansen, 1992:2).

The hypothesis is twofold:

- That repeated usage of strategic ‘frames’ and ‘narratives’ over time by privileged actors, will serve to direct the ‘debate’ from a broad discursive base with multiple interpretations to a narrowing consensus. Furthermore, the most important stage will be the early period when the battle for ‘primary definitions’ to establish what the discussion is ‘really about’ is most acute.

- That establishing consensus will necessitate the marginalization of alternative or oppositional discourses from the rubric of ‘rational’ debate, but that a cultural subtext of underlying cultural and social investments will remain latent and unexplored within the manifest context of the debate.
Chapter 2

Establishing and containing fears

"So what have we gained? A healthy respect for the tenacity of the media in full cry, satisfaction at getting over scientific facts accurately, and relief that week-end papers are dismissing so many ridiculous fears raised in earlier media coverage"

Harry Griffin and Dr. Ian Wilmut In New Scientist, 22/3/97, (Page 49)

I. How the Story Broke.

In this chapter I will analyse the early stage of the debate, a period in which ‘speculative fears’ of cloning were first established then contained.

Dr. Ian Wilmut et al’s research paper announcing the first mammal (sheep ‘Dolly’) cloned from an adult cell had been submitted to the reputable weekly journal Nature in January 1997(Vol. 385, 27 February 1997). The protocol for making work public is that journalists are sent a ‘tip sheet’ via e-mail which contains abstracts of forthcoming articles one week in advance of publication. This then gives them time to research and prepare articles. In return journalists agree a self-imposed embargo which guarantees not to run the story in advance of publication to ensure the journal maximum publicity. Should one journalist break the embargo, this renders the agreement void for others. However, The Observer managed to run the story on the 23rd February 1997 without breaking the embargo due to its Science Editor obtaining information independently of the tip sheet. This information had come through the cooperation of the Roslin Institute itself with a television company making a documentary about ‘gene therapy’ research for the series, ‘Network First’.
It became the received wisdom that Dolly was completely unexpected, taking the media as well as the scientific community by surprise. It was often claimed by the Roslin Institute itself that the scale of the ensuing furore was unexpected. Yet, the prior decision by Roslin to co-operate with a British documentary company on the making of a programme to be broadcast after the publication of the *Nature* article, indicates an awareness as to the likely impact and historical significance of the event. Additionally, the Roslin Institute had in fact hired a PR company to advise on the presentation of information through the media. The plan had been to hold a press conference on the 25th February just before *Nature*’s publication. This obviously indicates an appreciation of the influence which social reception could have on the public image of cloning and so PPL Therapeutic’s (the commercial partner of Roslin) stock value.

The documentary itself entitled ‘All in the Genes’ was screened on the 11th March 1997. It is easy to see what motivated the Roslin team to take part. As a review of the programme at the time stated, “in its structure, there was no question that it had taken on an advocate's role” (*Independent*, 12/3/97). It began and ended with visitors to the graves of dead children in an area of Northern England called ‘Childhood Wood’. Here a tree had been planted for each child to have died from MPS, a genetically inherited degenerative disease, usually killing those afflicted before their teens. In between we are treated to an exposition of the rise of genetics to the forefront of medical advances culminating in the hopes for gene therapy. Cloning is framed as evidence of progress in understanding the science of gene expression to alleviate “distress in young children” (Dr Wilmut). When being interviewed one of Wilmut’s
main aims is obviously to contain fears, he says at one point that the “image of the monster is not going to happen”. It is thus ironic that involvement with this documentary, intended to launch a pre-emptive strike against hyperbolic speculations, was partially responsible for them. It enabled The Observer to break the story and journalists starved of specific information (the Nature article was not published until a week later) to let their imaginations run riot. It testifies to the fact that while cooperating with the media can benefit both parties, the media cannot simply be overtly manipulated at will. Inculcating a favourable public image for cloning was going to require a process of negotiation that could not be won overnight in one quick-fix PR exercise.

II. Extrapolation: Making the Leap from Sheep to Humans

The Observer (23/2/97) story which enabled journalists worldwide to break the Nature embargo contained the front-page headline, ‘Scientists clone adult sheep: Triumph for UK raises alarm over human use’. It was accompanied by a photograph of a sheep’s head held by the neck and looking slightly demonic, (side profile, with her mouth open, tongue out, showing the whites of her eyes). Thus the first observation to be made about the UK press coverage of Dolly, is the immediate usage of the term ‘clone’, which did not appear anywhere in Wilmut et al’s original article. In fact the title of the Nature article had been ‘Viable offspring derived from fetal and adult mammalian cells’. Within the journal’s introductory abstract the cloning procedure was described as enabling “offspring to develop from a differentiated cell...after nuclear transfer” (page 810). At no point does The Observer explicitly give a definition of ‘clone’ beyond the information that, “Dolly is genetically identical
to the sheep from which the cell was taken”. This surely indicates the assumption of a level of tacit, cultural if not scientific, understanding on the part of the readership.

Secondly, The Observer used the name ‘Dolly’ whereas in the Nature article she had been given the experimental tag of ‘6LL3’

Thirdly, right from the very first report there was an extrapolation from the context of Dolly as the first viable mammal to be cloned from an adult cell, to the possibilities for human cloning. The only justification given in The Observer article for the jump from sheep to the fear for use in humans is in the last paragraph which reads, “a sheep is a complex mammal, after all, so cloning one raises concerns”. Yet there is no attempt to compare the embryology of sheep and humans and explain why this ‘complexity’ commensurate between species. Despite the lack of evidence being proffered, other newspapers picked up on this immediate extrapolation to humans. For example on the front page of The Times (24/2/97) the headline reads ‘Warning on ‘human clones: Fears follow production of sheep from single cell’. For the extrapolation from sheep to human to be given credence the newspapers ideally needed corroborative statements by a designated ‘expert’. This need was partially satisfied by Dr Dixon. His quoted justification in The Daily Mail (24/2/97) for the extrapolation was to say that, “history has shown that what you can do with a mammal, you usually do with humans”. Indeed the rationale scientists proffer to defend animal experimentation is that while differences in physiology are taken into consideration, similarities allow precisely for this extrapolation, yet this was not given as a justification. It is therefore evident that the early extrapolation rested very much

17 As Kolata (1997:27) says of the article it, “conformed to the stylized form of scientific writing that is as rigid as a haiku”.
18 Chapter 4 will explore the cultural ramifications of this in more detail.
on an analogical inference with no argumentation as to the transferability of the
technique to humans.\textsuperscript{19}

At this early stage however, while discussion of human cloning was foregrounded, it
was not yet dominant in the discourse. What developed was a contest over the
signification of cloning where the meaning and definition of the term was still open to
interpretation. In other words cloning did not have to mean ‘human’ cloning. Indeed
equal weighting in the press was given to arguments, principally by Roslin and PPL
Therapeutics’ scientists, against extrapolation to humans. They sought rather to limit
the discourse to their actual sheep experiment and its intended aims
(pharmaceuticals). The favoured means to do this had several strands; to reject
extrapolation as fantasy, as pointless, as well as on ethical, legal and technical
grounds while at the same time stressing the benefits of livestock cloning for
medicine and biological research. Indeed this strategy looked promising. The
Independent (24/2/97) article the day after the announcement focuses predominantly
on the technical problems and scientific questions\textsuperscript{20} of cloning by Nuclear Transfer.
This article is successfully restricted to sheep with no serious extrapolation to
humans. The Daily Telegraph (24/2/97) devotes the vast majority of the article to a
detailed account of the science, as well as the projected efficacy and benefits of
cloning animals. The text reads almost like a company information brochure.\textsuperscript{21} Indeed

\textsuperscript{19} A major difference between sheep and humans is that a “sheep’s genome is activated between the 8-
16 cell stage...humans apparently activate their genome at the 4-8 cell stage” (Keith Campbell, In:
Klotzko, 1998:130). In other words cell differentiation occurs earlier in humans and therefore may
make it much harder to clone humans by NT.
\textsuperscript{20} These principally were that as Dolly’s genome had come from an adult sheep, the genes may have
been damaged due to exposure to environmental toxins and thus render her more prone to cancer or
less resistant to disease. Secondly, a cluster of chemicals at the end of the chromosomes called a
telomere depletes every time a cell divides and so may have increased the chances of rapid ageing in
Dolly.
\textsuperscript{21} The journalist seems to have relied heavily on the Roslin Institute and PPL Therapeutics themselves
for information.
The Guardian (24/2/97) carried a story with the headline, ‘Scientists scorn sci-fi fears over sheep clone’. By Tuesday 25/2/97, with scientists seeking to contain fears by the aforementioned strategies and newspapers more than willing to provide a forum for this, it is possible that press discussion of Nuclear Transfer cloning may have remained at the level of farm animals for medical products. Those postulating human cloning could have been successfully derided as fantasists. So what happened to give credence to speculations on human cloning? Another question is to ask what happened to keep the press interested? The answer is indicative of the power and influence of social and political events to set the agenda for the sculpting of the public face of science.

Firstly, it was widely reported that the US President Bill Clinton had ordered the National Bioethics Advisory Committee (NBAC) to look at the issue of cloning (particularly its potential human applications) and report back in 90 days. This served to further frame ‘human cloning’ as emanating from more than simply ill-informed fantasy, but actually as a potential crisis and given the fact that the NBAC had only three months to deliberate, an immediate one. 22 Secondly, Dr Wilmut himself gave credence to the possibility of human cloning as a technical feasibility at some point in the future. 23 Thus The Times (26/2/97) carried the headline ‘Human copies possible says team’s leader’, while The Guardian’s (26/2/97) went with, ‘Scientists able to create human clone’. The fact that he had been talking about therapeutic cloning of embryos made little difference. The debate moved on from extrapolating the result

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22 This ‘framing’ of crisis was further augmented on Friday the 28/2/97 with the widespread reporting that Jacques Santer the President of the European Commission had ordered a European team to analyze the ethical, social and legal ramifications of Dolly and come up with recommendation for a European policy.
with one sheep to humans which had never been effectively augmented with scientific evidence, to assuming it as a mere certainty, the only relevant questions now being ‘when will it happen’.

After various speculations, though none substantive, Dr Wilmut himself gave an answer to the question of a time frame in the 7/3/97 editions of the papers. The occasion was a session of the Commons Select Committee on Science and Technology hastily set up to examine the issue of cloning, no doubt largely in response to the media’s immediate extrapolation to humans they had to be seen to be doing something. During the session he was specifically asked how easy it would be to clone a person. His subsequent response leading to the front-page headlines, ‘Human cloning could be possible within two years’ (*The Times*) and ‘Human Clone in two years’ (*Daily Telegraph*). This despite his efforts to qualify the possibility with the caveat that Dolly had taken more than 1,000 unfertilised eggs which would make it an unrealistic practical proposition for humans as donor eggs even for present ‘assisted reproduction’ practices were in short supply.

**III. Speculation: Constructing ‘Irrational’ Fears**

Yet, despite the fact that there had been no embryological evidence proffered within the UK press for why this Nuclear Transfer technique would be a viable option in humans, the week after the story broke the press began also to focus on the questions of ‘why, how and for whom?’ In other words the extrapolation to humans from the

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23 Even when denying its likelihood the possibility had always been implicit for example Wilmut states in *Daily Mail* (24/2/97) that, “everybody in the group would find it offensive to work with human material. We would find it unethical, unacceptable and it would also be illegal” but not impossible.
success with one sheep had taken place by shifting the burden of proof from science onto the imagined needs of society.

Dr Dixon had provided the media with what they needed, an ‘expert’ willing to speculate. He began in *The Times* (24/2/97) by relating that he had been contacted by a woman only the previous week wanting to know how she could clone her dead father, carrying the clone to term herself. Dr Dixon then offers a list of people who may consider cloning. Contained within this small list of scenarios are some of the motifs that came to dominate the press speculation on human cloning applications in this early period. The images of potential human clones then became, the ‘dictator’ (Saddam Hussein and Hitler being most frequently cited), the ‘wealthy megalomaniac’, ‘replacements for lost loved ones’ and the creation of a clone for ‘spare parts’. Dr Dixon’s speculative scenarios were continually evoked within this early period.²⁴

Yet, Dr Dixon was not simply a neutral observer called upon by the press for elucidation. He is Director of a company entitled Global Change Ltd, which seeks to advise Fortune 500 companies on ‘global trends’. Global Change has a ‘Media Response Unit’ which is advertised as giving “high impact, authoritative comment on global and ethical issues”²⁵. Therefore, Dr Dixon had a professional and financial interest in maintaining a high media profile by positioning himself within debates about new technologies. On

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²⁴ For example the *Daily Telegraph* (25/2/98) headline read ‘Cloning is interesting option for the rich’ and *The Daily Mail* (24/2/97) talks of “the possibility of dictators creating exact copies of themselves”.

²⁵ The Global Change Ltd. Website is at [http://www.globalchange.com](http://www.globalchange.com)
his Internet cloning webpage\(^{26}\) he claims that initially Dolly’s significance had been missed by the media because “genetics is complicated and understood by only a few journalists in any depth.” He presents himself as taking on the role of responsible town crier alerting society to possible misuse. He mentions that the BBC only gave Dolly news value after he had succeeded in getting the Press Association and the Sunday Telegraph to run the story, by informing them that The Observer were going to make it their lead. In this early period where various voices were competing for the authority to shape the meaning of cloning Dr Dixon sought to simplify the cloning issues by framing them in garish terms rendering them immediately familiar to journalists’ news values and favourite public fears. He had hoped to provoke public outcry, for as he says, “the biggest battles are not won in Parliament but in the living rooms of the nation”\(^{27}\).

During this first week the press extrapolated from Dixon’s list and latched on to the notion of genetic essentialism, that ‘genes R us’ (Wilkie, 1996:133). This was used to explore one of the oldest cultural and religious myths, that of immortality. The cloning previously portrayed in Dixon’s list as a technology ripe for fearful misuse is subtly repositioned as a technology, however misguided, to overcome fears. The Guardian’s (1/3/97) headline was ‘Fearful symmetry, Nobody would want to clone a human being? Meet David Pizer, the man who wants to be cloned and so escape mortality’. It makes the mythological connection explicit saying, “science to him and his fellow thinkers, is a powerful new religion”. The article also seems to be implying that the desire for cloning is in some sense inherent, it quotes a Professor as saying “if you believe in the selfish DNA theory...then this is the ultimate.” Thus, cloning was

\(^{26}\) Dr Patrick Dixon’s website on cloning [http://people.delphi.com/patrickdixon/clonech.htm](http://people.delphi.com/patrickdixon/clonech.htm)

\(^{27}\) (ibid.)
already being posited as integral to human hope and fears and given more poignancy and immediacy within this article in that it was personalized. The reader had someone and something (fear of death) to identify with. This story was specifically set up to counter attempts by scientists to keep the debate to animals by implying that technologies such as cloning belong to the ‘people’, they present opportunities. The insinuation being that either these dismissive scientists were naïve, dishonest or unfair.

Perhaps of all the early speculative stories in the UK press as to the possible uses of cloning technology for humans, the most notorious became the Daily Mail (28/2/97). The front page headline read ‘Nightmare scenario as the cloning debate rages COULD WE NOW RAISE THE DEAD’ (their capitals). With usage of the word ‘raise’ in the headline and ‘brought back’ in the first paragraph this article implies the possibility of actual ‘resurrection’. It attempts some kind of clarification by saying that “some experts believe people could soon be donating tissue samples to be stored in freezers and turned into physically-identical clones after their death”. These ‘experts’ remain unnamed and the fact that deceased obviously cannot be ‘turned into’ anything, their genotype merely recreated in another person, is not elaborated upon. As in The Guardian (1/3/97) article it seems to have been enough simply to assume a belief in genetic essentialism on behalf of the public, to enable the introduction of the immortality theme and science with God-like power to overcome death.

This Daily Mail (28/2/97) story was cited at the Edinburgh Science Festival lecture ‘Happy Birthday Dolly’ (5/4/98) as the apotheosis of irresponsibility for the public understanding of cloning. However, despite the dismay that scientists have expressed
they have to take some responsibility for its inception. Roslin had admitted belatedly, using frozen tissue to supply the donor somatic cell that created Dolly. As The Times (27/2/97) which also ran the story\(^{28}\) pointed out, Roslin had previously said using frozen cells would be impossible to use as they would be destroyed in the process. Indeed just four days prior to the Daily Mail story Wilmut is quoted as saying “there is absolutely no way that we can clone from a frozen animal or human” (The Times, 24/2/97). This new disclosure then allowed The Times (27/2/97) to write that, “scientists conceded that human cells subjected to controlled freezing using protective chemicals could possibly be cloned, bringing a replica of the person back to life”. The use of the term ‘conceded’ implies that previously there had been a reluctance to tell the whole truth, that pertinent pieces of information were omitted. Yet, this seeming contradiction\(^{29}\) potentially evoking a mistrust of science is not followed up as it undoubtedly would have been within the political arena. Scientists got off relatively lightly which indicates the degree to which the UK press were beginning to normalise cloning not as ‘unnatural science’ but as offering ‘great promise’.

These speculative clones did not emerge from an exposition of technical feasibility but from preexisting social fears and concerns. For example Saddam Hussein is frequently invoked by the press as ‘the kind of person’ or ‘tyrannies’ the kind of regime, that present the most immediate danger for the use of biological or nuclear weapons, cloning is simply grafted on to this prior but unrelated construction.\(^{30}\) The collective unifying factor for these early speculative potential users and uses for

\(^{28}\) The Times (27/2/97) headline had been ‘Scientists ‘close to recreating the dead’

\(^{29}\) Technically it isn’t a contradiction because they had not cloned from a ‘frozen animal’ but from cells and these had not only been frozen but also bathed in protective chemicals.

\(^{30}\) It is not surprising to find that during this first week of coverage it was very widely reported that Joseph Rotblat, the British physicist who won the Nobel Peace Prize in 1995 for his campaigning against nuclear weapons, had warned, “other advances in science may result in other means of mass
cloning was that cloning was portrayed as, “the kind of technology that would appeal to people who are pathologically unable to accept the fact of death” (Hopkins, 1998:10-emphasis added). These stories were simply confirming the ideological and political status quo, a fear of those considered to be somehow ‘outside’ of social control therefore deviant and dangerous. Evidencing the way in which science is used to justify prevailing beliefs and prejudices, as though they were ‘natural’. The examples given, the dictator, wealthy megalomaniac, bereft parent or chaser of immortality are presented as ‘irrational’, unable to accept truth, fact or limitation. Ultimately, in some sense morally corrupt with an inflated sense of their own importance, seeking control over life and death. In short the very same accusation which we would expect to see leveled at the Roslin scientists, that of ‘playing God’.

In this sense these speculations can be thought of as actually displacing and projecting fear onto social stereotypes, evidencing again an ideological investment on the part of the press in the tenets of science and more specifically genetics, which was never itself an overt source of criticism.

In the first few days of the debate, press coverage developed in two strands, seemingly split between two irreconcilable extremes. On the one hand, a constant striving on the part of scientists to limit discussion to one sheep as evidence of an incremental biotech process to improve ‘pharming’ methods. On the other ‘speculation’, with its incumbent fearful hypothetical scenarios partly prompted by a self-proclaimed ‘futurist’ seeking to reinforce his professional and public standing (Dr

destruction... Genetic engineering is quite a possible area, because of these dreadful developments that are taking place” (Independent, 26/2/98).

31 This is clear in all cases, but obviously foregrounded in the Guardian (1/3/97) and Daily Mail (28/2/97), which both introduce the theme of immortality through DNA.

32 A combination of ‘pharmaceuticals’ and ‘farming’ to denote the new means of creating and delivering drugs by cloning and transgenics.
Dixon). As has been argued in Chapter 1, the press as social discourse seeks to reach consensus. This required either one strand to prevail or a rapprochement established. In fact the latter proved to be the case. Extrapolation to humans had been firmly fixed in the symbolic landscape. Thus, commentators in the press reframed discourse by critiquing some of the assumptions behind the speculative fears. In this sense the speculative frame served as an inoculation for what was to come.

IV. Containment: Dismissing ‘Irrational’ Fears

From as early as late February 1997, articles within the UK press started to distance themselves from speculative stories. The ‘voices of rationality’ were mobilised to quickly contain fears of human cloning. The crucial point is that unlike the attempts by Roslin and PPL to dismiss cloning humans outright as impractical and immoral, the discursive intention was not to argue that human cloning was unrealistic but that our fears of it that were. This containment had two key strands, firstly to dismiss fears of cloning as science fiction fantasy and secondly to dismiss the specific fear that clones would be human ‘copies’. The press thus provided a forum for cloning to be accorded public acceptability.

A curious ‘Comments’ piece appeared in The Guardian (26/2/97). The first part of the headline read, ‘The future behind us: Cloning? Didn’t they do that decades ago?’

Ostensibly the central contention was that cloning heralds the “the arrival of the wearily familiar future” given that technoscientific developments are discussed and negotiated within popular culture well in advance of their arrival. Rather than being

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33 Those at Roslin and PPL held fast to their line about only developing ‘pharming’ methods.
34 I borrow this term from Latour (1987) as it indicates the difficulty of conceptually separating science and technology.
taken as evidence for their predictive or evaluative, the main argument was that because ‘advances’ such as cloning were so expectantly popularized our reactions to these discoveries arouse “a large baggage of concepts, prejudices, and fears”. As remnants from another age these, it was argued, were no longer contemporaneously valid and therefore create a barrier to discussions. On the same day, The Times (26/2/97) ran an article seeking to review ‘expert reaction’ to the cloning speculation, stating in it’s headline that cloning is a ‘topic deeply distorted in the popular understanding by the lurid nightmares of science fiction’. The piece claims that, “science fiction has had too long a free run, fillings our minds with outlandish and horrible ideas that not only make little sense but are unlikely to happen”. Speculative fears rather than alerting the world to possible misuse and so mobilizing regulatory decisions had become science fiction and should not be allowed into the debate, which must be more narrowly and ‘rationally’ defined.

‘Frankenstein’ and ‘Brave New World’ were the two most frequently cited examples of the science fiction genre used in reference to public apprehensions of cloning despite the fact that neither content included the speculative fears then being dismissed. Neither were their insights into the society and science relationship elaborated upon. Rather their only defining factor, and indeed unifying factor, within the discourse seemingly being that they engender what can be portrayed as impulsive reactions. I want now to highlight two specific aspects of science fiction content repudiated as irrational. Firstly, the status of Dr. Frankenstein, the scientist as an arrogant and ultimately dangerous ‘Faustian knowledge-seeker’ (Turney, 1998:36). Secondly, clones feared as, “the nightmare of swarming indistinguishable sameness” of Brave New World (Huxley, 1994:190). In other words we need to look briefly at
representations of Wilmut himself as well of that of the clone, as the control over their representation was crucial to contain fears of human cloning.

The possible framing of Dr Wilmut as a later day Dr Frankenstein never really surfaced in the UK press. Perhaps this is because in actuality the popular conception of biotechnology is not so much one of the solitary Dr Frankenstein, but rather that of large multi-national corporations, peopled by large anonymous research teams. As The Sunday Times puts it referring to the entrepreneurial biotech companies on the US West Coast, “strangely, this shock did not emanate from one of these eerie buildings with their teams of jogging, teetotal scientists” (2/3/97). Instead the article goes on to say that, “it came from the whisky-sipping, fell-walking, bearded, Barbour clad Dr Ian Wilmut”.35 I only came across one biographical article specifically on Dr Wilmut himself. This article is again keen to portray Wilmut’s ordinariness, stating “he lives a quiet life, with his wife”. It also quotes Dr Ron James, the Chief Executive of PPL Therapeutics describing him as, “careful, diligent, honest and thoughtful” (Daily Telegraph, 26/2/97). These portrayals though brief are important. By emphasizing Wilmut as ‘down-to-earth’ and as a family man, coupled with his repeated attempts to limit discussion to animal cloning, he is posited as the antithesis of a ‘mad scientist’. Indeed in most of the accompanying newspaper photographs he is pictured either in agricultural settings looking almost like a benign farmer or as his conscientious public persona, smartly dressed, generously giving of his time to explain the science of NT and quell fears. He comes across as both benevolent, making his contribution to social health as part of a larger effort (the ‘new genetics’) and a concerned member of the public. One of the important ramifications of this

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35 Indeed he had been described by The Independent (26/2/97) in almost identical terms.
portrayal is that it served to force argumentation for human cloning onto the discourse of press commentators. For example, an article in The Sunday Times (2/3/97) states that, “even the amiable but perhaps naïve Wilmut said ‘we can’t see a clinical reason to copy a human being’.” The journalist then claims, “I can”, before providing a list of possible reasons. Undoubtedly it was not ‘naiveté’ on Wilmut’s part but a conscious strategy, remembering that Roslin had given much thought to how they portrayed cloning and themselves prior to the announcement. As Kolata puts it after an interview, “he told himself...to refuse to be drawn into debates on what cloning might mean”. He had added, “I’ve got an image that works” (Kolata 1997:193)

The second science fictional myth which had to be refuted was that of the status of the would-be clones themselves, as evoked particularly by the frequent citing of Brave New World and The Boys from Brazil as in some way lacking autonomy and thus being amenable to, usually malevolently, control. The highly effective way in which this was accomplished repeatedly, is introduced within the following, “we need to forget the science fiction idea of clones as some kind of mass produced robotic slave, and think instead of identical twins” (Independent 28/2/97). Identical twins became the dominant resource for the containment of fears surrounding cloning humans, based on two premises. Firstly, that cloning would therefore be nothing new as nature itself can be shown to produce clones and secondly, that recreating the same genotype does not recreate the person, due to environmental factors, such as upbringing. This last allowed for the quashing of a number of speculations, for example those of ‘mad dictators’ as potential abusers of the technology. One article stated that, “Saddam’s clone, particularly if he were raised in a good home, might be a charming fellow” (Daily Telegraph 28/2/97). However over and above providing dismissal of specific
speculations, the framing of twins as the ‘acceptable face of human cloning’ also redefined the term ‘cloning’ itself. The *Daily Telegraph* states, “these scientists have not produced robots or a man-made form of life. They have adapted nature so as to produce time-delayed identical twins” (28/2/97). The first sentence obviates against lingering ‘Frankensteinian fears’ of parthenogenesis, while using the phrase ‘adapted nature’ in the second seeks to normalise and naturalise cloning. The term ‘adapted’ is tame in comparison to alternatives such as ‘controlled’ or even ‘altered’. The piece also saliently states that “it is not possible to clone human beings if by clone we mean replicate”. Thus by mobilising the idea of monozygotic twins a distinction is made between the technique of ‘cloning’ and our cultural understanding of ‘clone’, which was shown to erroneously imply replicating the whole person not just the genotype.

The notorious ‘raise the dead’ article (*Daily Mail*, 28/2/97) indicates that science extrapolation and speculation are not simply the workings of an over enthusiastic and irresponsible press, but rather the result of a negotiation between both science and press in their attempts to manage information flow. Roslin had withheld the fact that Dolly’s donor cell was frozen and this itself prompted an article. Admittedly early extrapolation and speculations were fuelled by the lack of specific information given that the *Nature* article had not yet been published. Therefore, for journalists rushing copy into print it was easier to refer to popular cultural (or science fictional) imagination of cloning. They had appeal because they plugged into already meaningful frameworks or schemas both for the reader and journalist. Dr Dixon had

[^36]: Literally ‘virgin birth’ or asexual reproduction. Commonly associated with the image of the scientist attempting to ‘create life’.
[^37]: *The Independent*, (1/3/97) had said, “the words carbon copy or Xerox are never applied to twins, not because they are insulting but because they are plain wrong”
fully understood this. His research had previously concentrated on cloning and he understood the needs of the press for preformed familiar and emotive narratives and he obviously had press contacts which he was able to use to provide himself with a forum. Hence, the discourses of science, journalism and ethics were not separate but rather entangled.

The usage of identical twins to contain ‘unnecessary’ fears was not simply the result of applied rationality and certain knowledge, but rather selective positioning of the twinning phenomena. A hegemonic usage of identical twins was not assured but rather won. In other words, identical twins became metaphors for clones. They were constructed as a symbol of hope and understanding for human cloning by eliding further discussion of altered or confused familial lines. While the analogy makes sense at the level of the genotype it ignores the ‘time-delayed’ factor of cloning an adult, which obviously differs with ‘natural born twins’. In fact the usage of twins as the publicly acceptable face of cloning, was never backed up by scientific studies. Behavioural geneticists, somewhat notorious for their penchant for twin studies, themselves have not reached a true consensus as to the statistical correlation between genome and behaviour. It is instructive that not only were twin studies not cited, behavioural geneticists not included in the debate but the voice of twins themselves were missing rather strategically framed. These evocations rather than purely rational were therefore appeals more to our socio-cultural acceptance of identical twins as individuals. As the debate progressed this frame was even further augmented when

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38 Wilmut et al (1997)
39 For example the fact that human cloning would only create time-delayed identical twins is also explicit in the following yet it the fearful possibilities, “THE CHILLING prospect of a woman giving birth to an identical twin of her own father ...” (The Times 24/2/97- their capitals).
40 However one twin embryo can be frozen and implanted later.
the issue of 'mitochondria' DNA entered the equation. Mitochondria DNA surrounds the nucleus of cells, therefore a clone by Nuclear Transfer would not receive the DNA from the nucleus donor but from the egg donor. This allowed commentators to go even further in allaying fears by arguing that Dolly "is less a clone than are identical twins" (Daily Mail, 29/3/97). By January 1998, this refrain had reached ascendancy.  

41 By being part of the debate and arguing for the importance of the environment for behavioural and cognitive development, Behavioural Geneticists might have done much to offset against their poor
Chapter 3

Establishing Inevitability & Subsuming Opposition

"Never in the history of modern science had the world seen such an instant, overwhelming condemnation of the application to humanity of a scientific breakthrough."
Gregory Pence (1998:1) on cloning

I. The Consensus Builds

Deriding speculative conceptions of cloning as unrealistic science fiction nightmare scenarios had contained fears of human cloning. Invoking the example of identical twins as current socially acceptable examples had ameliorated uncertainty as to the status of clones themselves. Discourse then began to focus more on questions of whether human cloning was likely or even desirable. The consensus came to be that not only was it likely, given current social propensities it was in fact ‘inevitable’. Yet, the justifications were again not technical but rather based on the selective representation of social norms, values and prejudices. However, unlike those early speculative narratives of potential use these were posited as ‘rational’ irrefutable argumentation. I now want to track three narratives, which constructed this dominant frame of inevitability. The first can be thought of as ‘economic determinism’. With the discursive creation of a need for human cloning it was considered axiomatic that this indicated a market niche which would be filled. Secondly, that cloning provides a

public image, especially as regards eugenic fears.
potent new medical tool to relieve suffering for the unlucky and vulnerable, that if properly regulated would be immoral not to use. Thirdly, the teleological notion that technoscience has its own agenda, moving rapidly forward outside of the influence and control of society.

II. Economic determinism: The Demand for Cloning

Exactly one week after the Dolly story broke The Sunday Times (2/3/97) carried an article whose headline read, 'Who says Mother Nature knows best? Human cloning could save lives and end the anguish of infertility'. The degree to which the debate is redeployed from the speculative frame of human cloning being the prerogative of the 'mad, bad and rich' is obvious in the highly emotive terms 'save lives' and 'end of anguish'. Its author Dr Silver (Professor of Molecular Biology at Princeton University) focuses primarily on the applicability of Nuclear Transfer cloning for reproduction. He begins by rhetorically asking, ‘why are so many scientists ready to damn human cloning when some of us are willing to consider that it might be ethically acceptable in certain situations?’ Silver then listed circumstances where human cloning could be applied, according to current social norms and what he conceives of as needs. The ‘needful’ included women rendered infertile after their first child, sterile men and lesbian couples. On the same day The Observer (2/3/98), aiming at a summary of the debate so far, drew on the postulations of Dr Silver. Regardless of the obvious intention to distance itself from speculation⁴², it conceded succinctly that, “cloning fulfills a need, and that provides motivation. We must therefore conclude that human cloning is inevitable” (emphasis added). This

⁴² The headline had been ‘But will there ever be another you? Robin McKie, who broke last week’s story, agrees human clones are possible, but can’t see the point’ (Observer, 2/3/97)
conclusion highlights the way that discursive framing sets up a whole narrative antecedent limiting what can then be considered intelligent comment.

The Daily Mail (24/2/97) had concluded early that, “there is a market out there”. Yet the frame of the market-place as one of the most realistic determinants of whether or not human cloning would take place, is not simply a neutral truism. Rather it contains a web of ideological tenets and expectations. Contained within this frame is the self-legitimating tautology of capitalism, that a need confirms economic viability and this in turn is conceived of as a niche to be filled. Thus those seeking treatment are not conceived of as ‘patients’ but as consumers. Faith is seen to lie not in the public sector but in the private, where reproduction is commodified into a series of transactions. The prevailing view within this paradigm holds the consumer as having freedom of choice. Indeed as The Sunday Times (2/3/97) states, “genetically identical armies of you, your loved ones and your sports heroes would seem to be a new consumer option”. Ideologically it is not hard to see why this frame is attractive to newspapers given that they exist in a highly competitive environment ever sensitive to the changing readership trends.

This discursive frame of economic determinism plugs into a previously won consensus over new reproductive technologies where infertility is medicalized as a ‘condition’ to be ‘treated’ by the benevolence of science. Yet it should be reminded that “infertility is not a life-threatening disease” (Van Dijck 1995:11). Therefore, conceptions of it as a problem are socially and ideologically inscribed. The underlying coercive dogma being that not to want a child even when the ‘problem’ can be

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43 This Daily Mail (24/2/97) article had been referring to the woman who had expressed to Dr Dixon a desire clone her dead father.
rectified is abnormal, antisocial or ultimately inhuman. The burden then subtly falls on couples more specifically women to seek out a remedy or live with guilt over their ‘lack’. Yet to position cloning as a reproductive technology alongside IVF also normalizes it. It does so partly by countering nature as the yardstick for what counts as normal, this is clear in the title of Silvers piece ‘Who says Mother Nature knows best?’ (The Sunday Times, 2/3/97). Here nature is perceived as eminently fallible and technology by correcting ‘her’ mistakes, is superior. Rather than being unnatural it is propounded as actually reestablishing the natural social order. Indeed, later in the year this view had reached such hegemony that the argument began to surface that actually reproductive cloning might be more efficient than nature. The reason given was that, “clones will be less liable to genetic damage...abnormalities are most commonly the result of some failure during the process when sperm and egg combine genetic material” (Sunday Telegraph, 11/1/98). Additionally, potential uses for the technology have now moved from vague projections of social fears onto pathological bogeymen, and now rather lie with ordinary individuals simply seeking to overcome having been dealt a bad hand and be granted the right to love their own child.

Establishing a need for cloning, combined with the previously won consensus that ‘infertility was a problem’ moves the debate further towards the issue of rights. As Mr. Pizer, the would-be clonee prepared to spend as much as it takes for cloning technology proclaims, “citizens are not going to have their rights to be cloned taken away by government”. (Guardian, 1/3/97). The consumer is a modern hero of enlightened self-determining rationality where ultimately individual choice is sovereign represented as the antithesis of the early pathological speculative users.
This individual, inviolable right to ‘make up ones own mind’ is presented as *asocial*, as having no social consequences nor of having been inspired by social processes in the first place. Allied to this general liberal emphasis on the rights of the individual is the right to bear genetically related children, to have ones own ‘flesh and blood’ and to use whatever enabling technology is available. An obvious retort to this argumentation when looking at the UK is that ‘reproductive rights’ are not enshrined in the legislation and national psyche to the same degree as they are in the United States for instance. However this objection is effectively counter-balanced within the framing of the ‘market-place’ itself.

The case of Diane Blood the on 27/2/97, provided a timely opportunity for the UK press to illustrate that national boundaries are obsolete when the market-place is in reality global. Diane Blood had been refused the right by the Human Fertilisation and Embryological Authority (HFEA), the licensing body for fertility treatment in the UK to be artificially inseminated with her dead husband’s sperm, and then refused the right to travel to Belgium to have the procedure. The Appeal Court ruled in her favour arguing that under EU law she had the right to travel wherever necessary to obtain medical treatment. Her case was extremely widely reported at the time and very frequently invoked within articles on cloning, particularly when discussing setting national legislation. More often than not press reports were damning of the ineffectiveness of the HFEA to police individual rights. As *The Independent* (28/2/97) put it, “the decision…makes a mockery of the British law on fertility, and the same is likely to happen to the British ban on human cloning”. If a need for a potential service is not considered a ‘right’ and so cannot be acquired in ones own country, all that is required is to travel to where it is on offer. By January 1998 this frame of economic
determinism had reached ascendancy with one commentator summing up with, “when such companies span the globe {reproductive cloning clinics}, it will be a tribute to the power of the desire for children. It will also be a testament to the power of the free market” (Sunday Telegraph, 11/1/98). To a considerable degree what allowed for the conclusion that human cloning was inevitable, was the setting up of a binary opposition between ‘them’ and ‘us’. ‘Them’ being ‘unruly’ countries where regulation and so morality was supposedly more lax and so might allow human cloning. ‘Us’ being the ‘civilised’ UK with foresighted legislation. The underlying assumption being that it would be better if ‘we’ developed it.\[iii\]

III. Socio-Medical Determinism: The Need for Cloning

Integral to early human cloning speculation had been the possibility of producing ‘spare part’ clones providing tissue and organs for transplantation, thus guaranteeing 100% donor compatibility.\[iv\] However as The Times (26/2/97) maintained producing a whole body clone for ‘spare parts’ would constitute ‘genetic bondage’ and so “would almost certainly offend against slavery laws” rendering it unacceptable. Thus, it seemed to have been derided as fantastical and immoral. However, using cloning to produce human ‘spare parts’ was the one potential application that looked closest not only to discursive consensus but also to actual legislation by the end of my sample period of February 1998. The basic premise remained of maintaining ‘bio insurance’ against the body ‘failing’, what was significant is that it was reframed in press commentary.

\[iv\] As the cells would be recognized by the immune system as containing the same DNA they would not be rejected by the immune system.
For a start, advocates stressed the technology of Nuclear Transfer, using the term ‘cloning’ less frequently. This served to elide further discussion about the uncertain and contested status of clones themselves and concentrate on possible applications techniques and the detail technical issues. The Daily Telegraph claimed that a “human application of the technology is to use the cloned cells as a source of tissue for transplant. This may be acceptable for some uses” (25/2/97). This highlights another crucial alteration in terminology, the ‘human’ in ‘human cloning’ was redefined by utilizing the mechanistic and reductive tropes of science. The body was compartmentalized such that it became a series of disparate units. For example cloning ‘cells’ was frequently considered unproblematically acceptable, as they were only small negligible units. This reductionism then allowed the word ‘human’ to be effectively dropped from coverage on socio-medical need. Thus, ‘human’ and ‘spare-parts’ were replaced with more neutral and abstract terms such as ‘biomaterial’. This term is worlds away from the highly emotive notion of Frankensteinian harvesting or plundering’. ‘Biomaterial’ had the added advantage of being eminently flexible. More frequently talk of uses came to apply not only to cells but more often also embryos. An indication of how far this reductionism had been established and the ideological tenets behind it is that Wilmut is quoted in March 1997 as saying that “such work involving embryos would be offensive and should be prohibited” (Times, 7/3/97). In February 1998 The Sunday Telegraph (22/2/98) reported him condoning cloning of human embryos for disease research with the justification that they were “just a little ball of cells”.

45 The next day (26/2/97) The Times, Daily Telegraph and Guardian all carried similar assertions within their articles.
Once the ‘human’ had been broken down into a series of interrelated potentially ‘malfunctioning’ parts, framing was able to play an important role in providing a forum for speculation about the sheer range of possible restorative medical applications. Cloning had become a ‘catch-all’ technology, a panacea cure for any illness or disease associated with genetic or cellular disorders, which virtually includes them all. Possible medical treatments included; cloning skin cells for burn victims, nerve and brain cells for Parkinson’s and Alzheimers disease. The ‘pure’ science insight itself about gene expression and replication was touted as promising insights into cancer. Telomere shortening at the end of the chromosomes could provide ‘vital’ information about ageing. Tellingly cloning was also posited as useful for studying and possibly treating CJD (the human form of ‘mad cow disease’) which was one of the most frequently reported health scare issues during my sample period. In short, human cloning was undergoing a medical promotional drive where to stop funding or apply punitive laws would be nothing short of cruel. Fears were assuaged because “doctors and scientists do their work because they want to promote good and relieve suffering”. (Daily Mail, 29/3/97)

The press frequently shifted the onus of responsibility from the medical profession to the private realm of the family. More stories started to appear pitting ethical objections against tragic hypothetical dramas. Favoured scenarios were those involving life-threatening illnesses coupled with the highly emotive example of children. As the year progressed leukaemia provided the dominant ethical challenge. The Daily Mail (6/6/97) for example poses the moral conundrum, “imagine a six-year old girl, an only child, dying of leukaemia so aggressive that only a full bone-marrow transplant can save her. The problem is finding a compatible donor.” It goes on to
conclude without equivocation that, “the answer is a clone.” The usage of the term ‘aggressive’ and giving the hypothetical girl the vulnerable age of ‘six’, obviously heightens the tension but also the moral culpability. The narrative frames the question in such a way that it would be impossible for the reader to imagine arguing against cloning in this situation without incurring responsibility for the girl’s inevitable death. Furthermore Dr Silver pointed out in *The Sunday Times* (2/3/97) that he already knew couples who had had a second child specifically to provide transplantable bone-marrow, despite the fact that the chances of compatibility between siblings was no more than 25%.\(^4^6\) Not only was cloning naturalized by positioning it as a ‘life-saving’ technology with no harm done, it was also promoted as further evidence of biomedical-science providing ever more exacting and efficient therapy than what is currently available. Demonstrating that the basic principle of creating another person as a means to an end already existed normalized it.

The frame of socio-medical need for cloning actually showed signs of being transferred into a *right*. Steve Jones, Professor of Genetics (University College, London) gives the example of a woman dying from cancer originating in the blood stem cells. The answer he claims would lie in taking the nucleus from one of her healthy somatic or body cells, injecting it into one of her own eggs (as in the NT technique), culturing it in a test-tube then filtering for the necessary stem cells. He concludes, “this is certainly human cloning that great moral affront...but who would stop a dying woman from using her own DNA, and eggs, to save her life?” (*Daily Telegraph*, 5/3/97).\(^4^7\) Additionally, despite the fact that the HFEA Chairwoman Ruth

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\(^4^6\) Leukaemia was the most frequently occurring example in the UK press throughout the 12 months.

\(^4^7\) Professor Jones goes on to argue that further down the road it may not be enough to use cell culture, rather the cloned egg may have to be allowed to develop further into an embryo, perhaps even inside the mother to enable the required cell specialisation to develop.
Deech had spoken of the ‘repugnance’ which many would feel at replicating an adult, she did concede that there would be some cases where it might be ethically acceptable. She gave the example of women who suffer from rare inherited mitochondria disease, which would be passed on to their offspring. Therefore she argued for the Nuclear Transfer cloning technique, as it involves replicating DNA from the nucleus alone. Crucially, her comments had been made when giving evidence on cloning to the Select Committee on Science and Technology. The Independent (6/3/97) evidences the way in which again various social discourses interrelate and are rhetorically positioned. Despite accusations of ‘extreme’ and ‘negative’ press reactions Deech also warns, “you can imagine a situation where there’s a baby which needs some treatment that is only available through cloning technology. The media would coo and there would pressure to send the child somewhere where there were no controls on the technology”. Deech advocated keeping the door open for human cloning on a case by case basis, retaining ‘legal flexibility’. The underlying contention being that it was an issue best left to the ‘experts’, for policy makers to worry about the definitions and details of what counts as ‘human’ and ‘life’. The headlines of the time are an indication of what emphasis the press gave to the hearings, with The Times, (6/3/97) containing, ‘Embryo watchdog backs trials in human cloning’. Again, early in the debate a consensus had been reached, within this frame for the inevitability of human cloning, in this case if limited and overseen by the appropriate regulatory body.

IV. Technoscientific Determinism: ‘Cloning out of our hands’

The Sunday Times on 2/3/97 contained an illustrative box beside its main feature on cloning with the heading ‘Milestones on the path to progress’. Within this box were
cartoons depicting 'giant strides in biology', beside it was expository text which sought to explain the list of key dates and discoveries, the heading of this text was 'Rule No 1 in the science lab-never say never'. The key 'progress' dates included Watson and Crick's double-helix discovery in 1953 and the birth of Louise Brown in 1978. The illustration is woven into an arrow at the end of which the lies a book entitled 'The Book of Man' indicating 2005 as the completion of the Human Genome Project. Unashamedly the piece portrayed the biological sciences in a supremely positivistic light, as ever advancing, overcoming hurdles in a linear, progressive and incremental fashion. The same day The Observer (2/3/98) ran a small side article entitled 'Want to see the future don't ask a scientist'. The article lists scientists' predictions that certain technologies would not proliferate. Examples include that 'Rail travel will asphyxiate'. The point is to offset against claims by scientists that human cloning 'will never happen'. What unites both articles is that they portray science and technology as advancing independently of control even by their 'creators'. As one report puts it, "science always pushes to create new frontiers and the cloning of human life is now an achievable goal" (Daily Mail 6/6/97). In other words science is portrayed as anthropomorphized, as alive and somehow setting the agenda and direction of 'discovery'.

Perhaps this is not surprising given that right from the very first report, the Nuclear Transfer cloning technique was portrayed as a "landmark in biological research" (Observer, 23/2/97). In fact the single most common adjective for Nuclear Transfer cloning was 'breakthrough'. This epideictic metaphor is imbued with the associations of crossing a threshold and solving a puzzle. Yet it was continually unclear whether the breakthrough was in terms of basic cellular science, genetics theory, the
procedural method itself, agricultural efficiency, economics or it's list of potential
technological applications, principally medical. Dolly had simply become a metaphor
for science in general, progressive, and awe inspiring in its efficacy. Furthermore,
portraying Nuclear Transfer cloning as a breakthrough intimated a new epoch, where
resistance would seem inverted.

Scientists like to make a conceptual distinction between science and technology thus
largely offloading responsibility for applications onto society or regulators. Yet
Nuclear Transfer cloning was posited from the beginning as an implosion of both.48
Thus stories about the ‘progressive’ accumulation of knowledge by the ‘life sciences’
also enabled an opportunity which stressed technological determinism. By using the
term ‘technology’ it carried over the implication of change to our whole way of life as
it elicited many conceptual associations to fundamental alterations in history (for
example the ‘Industrial Revolution’). One commentator feels able to argue that
cloning is inevitable because, “technology is the most potent agent of change of any
society-economies and ideologies adapt to technologies, not the other way around”
(Independent on Sunday, 2/3/97). This quite obviously ignores the fact that
technology is the result of the ideology of control, dominion and mastery over nature,
that technology requires human motivation and design in the first place. However the
advantage of invoking this generalized frame is that articles can then conclude, “if it
can be done, it will be done; people living in a technologically hypnotized age are like
that” (Sunday Times, 2/3/97). This determinism proves a very potent recurring,
leitmotif for the press. Perhaps the most beguiling motivation for a technoscience with
its own internal logic is that it absolves responsibility. It was perhaps particularly

48 Indeed this implosion is implicit within the term ‘biotechnology’ where enterprise comes from
applying findings.
attractive to the press (especially science writers and editors) as their credibility had been challenged by Dolly. They were genuinely shocked that they had not been prepared for Dolly, that they hadn’t seen science moving in that direction. One article contains the overt headline ‘Why weren’t we ready for Dolly’ (Independent on Sunday, 2/3/97). The answer frequently given lay in positing technoscience as springing from nowhere almost a magical force, as autonomous and teleological. One of the favoured metaphors to describe technoscience was that of the ‘genie’.

The additional advantage of this reactive narrative was that it could be argued that once one scientific step has been made there can be no turning back. According to a neurobiologist, “with Dolly, the genie was released from the bottle… The technology can’t be disinvented.” (Daily Mail, 6/6/97). The implication being that invention automatically involves application. All that remains for society to do is simply acquiesce and hopefully adapt as attempts to halt or redirect the path of technology are considered as a priori futile. Indeed, one of the most frequently cited arguments in favour of the view that social objections acquiesce to the progression of technology and not the reverse, was that of IVF. The Guardian (1/3/97) contested the perceived unlikelihood of human cloning by asking, “who could have believed there could be a Louise Brown after all?” The piece goes on to add, “but that was long, long ago, in less-perplexed times. That’s right, in 1978”. This last comment is indicative of another argumentative strand which also helps corroborate the inevitability of human cloning, that of the perceived speed of developments. To present them as occurring so fast that they are de facto uncontrollable, always ahead of our social and moral pronouncements. Dr Silver claims that, “the pace of scientific progress is so rapid that today’s miracle is tomorrow’s routine” (Daily Mail, 29/1/98). This argument becomes
tautological, with related technologies framed in such a way as to serve the purpose of supplying irrefutable evidence. Despite differences in technique\textsuperscript{49} when two rhesus monkeys were cloned from embryos The Sunday Times concluded, human cloning is only “a couple of ‘tweaks’ away” where “only moral and legal questions now prevent scientists from creating clones” (31/8/97).

V. Containing and Constraining Opposition

Patrick Hopkins (1998) argues that the dominant frame in US media coverage had been cloning as ‘an ethical problem’. Within the UK press oppositional voices were certainly framed by the catch-all moniker of ‘ethical objections’. However, these were tactically positioned to corroborate and reinforce human cloning as ‘inevitable’. Including ethical concerns presented a sense of ‘balanced’ reporting, but were positioned simply to be disabused as irrelevant or distracting. It is instructive that the only time I came across a quote from CORE, ‘the anti-cloning pressure group’, potentially a good source for dissent it read, “The Boys from Brazil and all these other nightmare scenarios concerning cloned Hitler’s and other monsters are about to come true” (Sunday Times, 31/8/97). No mention of utilitarian objections or worries about risk, rather an apt quote confirming them as ‘irrational fantasists’.

One of the most effective ways in which ethical fears were contained was that Roslin and PPL Therapeutics themselves subsumed them. Dr Ian Wilmut particularly was very visible in proffering explanatory information on NT for livestock while continually stressing opposition to human cloning and not being drawn into

\textsuperscript{49} The monkeys were cloned from two embryo cells, by embryo splitting at the 8 cell stage, therefore the technique was different from that of Nuclear Transfer. Additionally they came from different embryo sacs and so were only 50% genetically related, in fact brother and sister
argumentation in its favour. An article in The Times (26/2/97) which contained confirmation that human cloning was possible devoted much space to interviewing Alan Coleman Research Director at PPL, who admitted he found it "frightening science" and mentioned having many conversions with his wife and son about the ethical implications. As Dr Silver says commenting on the reticence of many scientists to come out in support of human cloning, "what better way to gain the public's respect than to stake out the moral high ground right from the beginning" (Sunday Times, 2/3/97).

The favoured tactic to consolidate the dominant frame of 'inevitability' was to discredit ethical objections and so further reach hegemonic consensus. An important means to do this with regard to the status of clones, was to argue as Professor Wolpert did in his column in Independent on Sunday that "in all the righteous indignation I have not found a single new relevant issue" (23/3/97). As demonstrated, once identical twins were brought into the debate the fear of 'threatened uniqueness' was effectively silenced as it portrayed identical twins as contemporary socially accepted clones. Secondly, the objection that human reproduction would become production rendering 'an act of love' into a mere commodity was countered with the claim that "we are already acclimatised to the production of children without sexual intercourse...Louise Brown" (Sunday Telegraph, 11/1/98).

When addressing the status of 'cloning' as a procedure the press separated motive from outcome by subjecting objections to the press favourite of hypothetical

50 Wilmut stressed his support for a ban or moratorium on human reproductive cloning at the annual conference of the American Association for the Advancement of Science, rhetorically asked, "Is it in the child's interest? My judgement is no" (The Independent, 14/2/98).
scenarios. One article concludes for instance that, “cloning might sometimes provide the only means by which infertile couples could produce the child they desperately want” (Independent on Sunday, 25/1/98-emphasis added). The usage of the definitive article relies on the previously won consensus that for the desire for a child to be ‘desperate’ it must be one which is genetically related, a right ‘denied’ by nature. Thus ethical objections were overruled because there is a social need for these ‘tools’ (NT cloning) and a right of access to them. This argument was also applied to the accusation that cloning would inaugurate eugenics. ‘Positive’ (eugenic) policies were promoted by associating cloning with the promise of other ‘genetic tools’. In an article nominally examining the ethical debate a spokesman for the US Bioindustry Association argues that focus groups have demonstrated that “people have strong views, but there is a basic consensus...to cure disease genetics is fine.” (Financial Times, 7/12/97). The fact that this view was represented by an industry spokesman and in the Financial Times evidences the commercial interest in its construction and reinforcement. The article did not have anyone speaking against cloning but included an ‘expert’ arguing that “I get rather frustrated by all the talk about ethics, when there is so much need for better information and education about genetics”. In other words if only objectors understood the issues they would see the self-evident advantage and stop wasting scientists’ time giving them a chance to promote freedom of informed (consumer) choice. Implicit within this frame is the notions that parents have a moral responsibility to understand genetics in order to improve their child’s chances of health and happiness. Indeed Professor Wolpert turns the common ethical accusation of ‘hubris’ or scientists ‘playing God’ around and says, “having a child raises real

52 One of the few arguments against human cloning looking at it from the point of view of the would-be clone was that, “they lose their right to an open future”. (Glenn McGee in The Independent, 14/2/98). The problem here however is that the promise of genetic therapy is precisely to make reproduction
ethical problems-as it is parents who play God not scientists. " (Independent on Sunday, 28/12/97). The conservative and elitist implication being that some people are simply not fit to be parents.

The preferred means to elide the 'hubris' tag was to attack religious epistemology itself. Dr Silver says, “this religious faith- which by definition is unverifiable-is not universal, even among believers” (Sunday Times, 2/3/97). In other words he compares its efficacy to scientific methodology as thought the two were in any way commensurable. Taking this one step further the Independent on Sunday maintained that, “all of the great religions were conceived in a different age, with different problems, and their precepts do not sit comfortably with modern knowledge” (25/1/98). Another way of putting this would be to say that religion is pre-modern, and has now been superceded. This obviously pays little regard to the fact that it still powerfully supplies meaning for many people. It also assumes that modern knowledge is intrinsically scientific knowledge, assuring its continued dominance.

When specifically religious\textsuperscript{53} views were voiced they were roundly dismissed. Perhaps the best example of policing the boundaries of the debate came from a vitriolic article by Professor Dawkins\textsuperscript{54}. He lamented that including the ‘religious lobby’ in debate resulted in the “consumption if not waste, of time... {and}...often has the effect of lowering the level of expertise and intelligence” (Independent, 8/3/97). In

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\textsuperscript{53} In fact religious voices were simply missing from the press debate. One of only two specifically religious articles I found reported that the Israeli chief rabbinate had stated that if it were confined to embryo cloning for transplant material it would be ethically acceptable. As the article says this was, “the first religious leader to indicate support-albeit tentative-for human cloning” (Daily Telegraph, 23/1/98).

\textsuperscript{54} Professor of the Public Understanding of Science, Oxford University. Author of popularising biology books and one of the most ‘visible scientists’ in the UK
other words the items on discussion could only usefully determined from a scientific perspective. Dawkins concludes by stating that spokespeople of various traditions or communities retain unwarranted privileged access to the media and the parliamentary process (committees) hence his usage of the term ‘lobby’. This further shores up the representation of science as an egalitarian community not seeking to influence by dint of social status but simply present the facts.\footnote{55 One of the targets for Dawkins attack, Dr Donald Bruce\footnote{56}, fought back asking the question “who is the ‘expert’ who alone is qualified to speak in the public arena?” (Independent 13/3/97) However, these sentiments were effectively hidden among the Readers Letters.\footnote{iv} Within my newspaper sample I found this the best place to locate oppositional voices. Placing them here indicates an understanding on the part of the editors that they constitute genuinely alternative opinions worthy of printing, yet not worthy of constituting a full article. One of the important aspects of looking at the Readers Letters is that it alerts one to the plethora, not just of individual voices, but of organisations that were effectively absent from the press representation of the debate.}

‘Ethics’ was invoked by the press as a voice of opposition but in such a way as to place it in a position of either inferiority to that of science or worse as an irrelevance to debate. It actually served to strengthen the dominant frame of the ‘inevitability of human cloning’ because it was continually said that ethics must always trail behind science. One implication of this was that turning to ethics committees for guidance was pointless as their judgements “stand only until the might of commerce or the next childless couple click the ratchet of acceptability to the next notch” (Independent on Sunday, 2/3/97). Even more powerful was the ideology underlying the

\footnote{55 I find ironic that Dawkins was able to air his views in a full page article in a national newspaper.}
technoscientific deterministic arguments, that “Cloning...{is}... now an inevitable part of human progress” (Dr Silver, Daily Mail, 29/1/98). Once a technology is conflated with the notion of ‘progress’, ‘ethical’ objections then are seen to have become outmoded, antiquated and de facto a social barrier to advancement. This was further accentuated when ‘progress’ was then linked to the notion of the ‘inherently’ curious nature of human beings. Ethicists were left as laughably or pathologically ineffectual, “displacing our real problems with unreal ones” (Independent on Sunday, 23/3/97).\(^5^7\)

VI. **Cloning a Consensus**

It should be clear from the previous analysis that most of the dominant discursive ‘frames’ and ‘narratives’ were established by March 1997. This bears out my first hypothesis that the early period is the most important phase, when ‘primary definitions’ are established. Containment of speculative fears had evolved into a consensus as to the ‘inevitability’ of human cloning due to market demand, socio-medical need and technoscientific determinism. But this consensus was not reached due to the technical qualities of cloning by Nuclear Transfer, but rather through naturalising and normalizing cloning and clones by assimilating them into current socio-cultural values and practices. Additionally substantiating the first part of my second hypothesis, consensus had necessitated and been strengthened by marginalizing and subsuming ethical opposition. January 1998 brought corroborating evidence for the dominance of these frames in the form of a ‘consultation document’

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\(^{56}\) Director of the Society, Religion and Technology Project’ Church of Scotland

\(^{57}\) By the end of 1997 they had become in his eyes simply the “moral masturbators” (Independent on Sunday 28/12/97).
launched by the Human Genetics Advisory Commission (HGAC). The document received much press promotion often referred to as inaugurating a ‘public debate’.

The HGAC had been formed in 1996 and met for the first time on 27th February 1997, four days after Dolly was announced. Cloning was the main topic on the agenda. Its ‘First Annual Report’\textsuperscript{58} states that the HGAC “takes an impartial view” on developments from the ‘new genetics’ and is “committed to open and public debate”. However narrative analysis reveals a bias towards consensus formation. Among their remits includes their intention to, ‘build public confidence in, and understanding of, the new genetics’\textsuperscript{59} (emphasis added). The same features, which have been traced in the press framing and narratives, were evident in HGAC discourse, which indicates anew the degree to which discourses overlap facilitating consensual definitions. For example, Sir Colin Campbell the commission chairman, is paraphrased as stating “it was important to dispel the “fantasies and fears” (\textit{Independent}, 30/1/98) of the new genetics. Additionally, Campbell argued that objections to full reproductive cloning could not rest on ‘uniqueness’ because compared to identical twins the “individual would have a different experience in the womb, a different birth, a different mother and a different environment”\textsuperscript{60}. Therefore, clones would be \textit{even less similar} than identical twins. Rather objections were posited as lying in the risks of pre and perinatal birth defects. The degree to which discourse had turned towards risk assessment is perhaps indicative of the consensus for its desirability as it posited cloning as something which government should support towards improving efficiency. This

\textsuperscript{58} The First Annual Report can be found at their website address: http://www.dti.gov.uk/hgac
\textsuperscript{59} The other two stated aims of the HGAC were to (i) ‘keep under review scientific progress’ (ii) ‘report on issues...expected to have wider social, ethical and/or economic consequences’
\textsuperscript{60} It was continually stressed that ‘reproductive cloning’ should be separated from ‘therapeutic cloning’ (embryo experimentation up to 14 days). Yet the issue of ‘mitochondria’ disease was brought up again as a potential case meriting full reproductive cloning.
explains why it was that Dr Seed was so roundly dismissed as a 'charlatan' by the press when he announced the intention to set up human cloning clinics, because the matter was being considered at the policy level and Seed threatened consensus by negatively effecting public opinion. Yet perhaps the most powerful means by which the HGAC sought consensus was by effectively 'subsuming ethical opposition' for the debate was to include recognised ethical and religious organisations.

Rather than initiate a genuine 'public debate' the HGAC seemed to be seeking to establish consensus for policy, nominally on behalf of the public. Indeed Campbell seems to admit this when saying that, "we want to do this before the science becomes a reality rather than after" (Independent on Sunday, 11/1/98)vi. From a cynical perspective it seems to have been more a self-legitimating PR exercise with a predetermined agenda. Indeed the HGAC reports to the Department of Trade & Industry not the Department of Health for example. This bias is reflected in the composition of the commission, that all are professionals in the field of genetics, either with commercial or academic interest. The only non-professional is a BBC newsreader Ms Moira Stuart, one official is quoted as saying, "Her role is not to be qualified... we need someone the public can relate to" (Daily Mail, 28/2/97). The headlines of the time evidence this bias by once again framing the issue in terms of the inevitability of human cloning. The Independent on Sunday, (11/1/98) ran with 'UK moves closer to cloning of humans'.vi The central point I want to get across here is that prior press framing and narratives had been highly significant in providing

vi Indeed the article speculated that "ministers could give the go-ahead for the first experiments to start in 1999". (Independent on Sunday, 11/1/98)
consensual terminology which enabled the debate to shift from 'issue identification'
to 'solution formation' Kosicki (1993)
Chapter 4

Return of the Repressed

"Is there some deviant logic unfolding more powerful than that provided by reason?"
JG, Ballard, Introduction to ‘Crash’ (1995)

The press framing analysed in Chapters 2 & 3 evidences the fact that “the scientific community in Britain failed to address the cultural significance of Dolly’s birth” (Wilkie & Graham 1998:150). In line with my second hypothesis these cultural elements were recurring, a sign that the public face of science is not apprehended in a vacuum, ‘the culture of no culture’. Despite repeated attempts to reach consensual agreement for clones and cloning, definitions kept on slipping. The press tacitly acknowledged that Dolly undoubtedly functions as “a cultural product” (Franklin, 1997:429). One article reported that as well as scientists wanting to study her “artists want to paint her. School children want to cuddle her. A U.S. prime time chat show has even offered big bucks to fly her over for interview”. (Daily Mail, 7/6/97). But what was completely missed was that Dolly was not only a product for culture but a product of and in culture.

It is this that I now wish to introduce by making a distinction between ‘context’ and ‘subtext’ in the debate. The ‘context’ was the rationally prescribed debate of enlightened discourse, towards a formation of consensus by attempting to set a boundary between what could and could not be reasonably said. The voices within
this context were largely institutional representing the ideology of science, journalism and policy makers. The ‘subtext’ can be thought of as the shared cultural assumptions and unconscious evocations which begins to explain why "Dolly is a Rorschach test" (Nelkin & Lindee, 1998:145). She has provided a focal point on which we project, and through which to explore not only public apprehensions of science but ancient issues and concerns, such as identity and uniqueness. A means to ask not simply how we should define these terms, but why they have proved ontologically and historically important to us, and why they linger in the collective unconscious. I will group these cultural concerns under the rubric of ‘boundary uncertainties’ to point towards alternative cultural readings of cloning. I will introduce; Dolly the Icon, Dolly the Sign as a site of linguistic struggle to fix definitions against the inexactness of language, Dolly the Psychoanalytic Entity destabilizing notions of ‘self’ and finally Dolly the artefactual Postmodern Body representing the crisis of representation. This begins to explore how it is that Dolly proved such a phenomenon with such ‘epideictic’ appeal. Furthermore this appeal was both one of fear and fascination.

**I. Dolly as Cultural Icon**

Nelkin & Lindee claim “the responses to the Dolly phenomenon mirrored those we found in the popular culture reactions to the Human Genome Project” (1998:145). While within the context of rational debate this may be true, as with the HGP there was argumentation for better diagnostic and therapeutic tools posited against ethical and moral concerns I think it misses instructive aspects of the ‘Dolly phenomenon’. Dolly goes beyond that of the undoubtedly evocative nature of the HGP precisely

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62 The ‘culture of no culture’ is Sharon Traweeks (1992-reprint) phrase for how scientists’ view of their work.
because we identify with her. Scientists have been cloning genes since 1973 yet this did not provoke the same responses to cloning. As Turney says, "the immersion in a molecular world, the description of the cell and organism in terms of the 'discourse of gene action' seems worlds away from real, embodied creatures" (1998:218). This offers an explanation for why while undoubtedly the HGP will have a much more significant impact scientifically, medically and socially, it has failed to excite the publics' imagination to the same extent as Dolly. The closest the HGP has come to eliciting mobilising metaphors for the 'new genetics’ were in evoking the spirit of the quest, most commonly in the form of 'mapping' and in the guise of 'a vision of the Holy Grail’. It was hoped that 'mapping' would endorse a sense of adventure in discovering new frontiers and that the 'grail' would tap into Judaic-Christian mythology implying also the need for faith in such a 'big science project'.

Yet, the territory to be charted is our interior space. The externalized representation of this reduces the excitable 'grail' and 'frontier' into abstracted bioinformatics, sequences of computer screen 'laser-activated fluorescence-tagged DNA molecules' or binary code on a CD which Gilbert assures us, we can one day pull out and claim "here is a human being; it's 'me'" (Gilbert 1992:96). The point is that the new genetics has lacked a truly emotive symbol, a spectacle. Genetics even in the form of the iconic freefloating 'twisting double helix' while representing 'life' does not

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63 Another major concern which Dolly evokes is that of confused 'heredity' for reasons of space I will not include this here.
64 See Wilkie, (1994) pages 58-62 for further exposition of the cloning of genes
65 See for example Gilbert (1992) for an attempt to engender excitement by utilising the metaphor of the 'Holy grail'
66 While this may provoke 'cyberpunk' fantasies it fails to excite the public imagination as it loses the investment in embodiment.
readily equate with our embodied selves of daily experience. Whereas Dolly allowed The Sunday Times to conclude, “since we first found we could manipulate the genetic code in the early 1970s, genetics has kept thousands of scientists employed, generated millions of words of speculation and billions of dollars of investment, but produced no big visible proofs of its effectiveness. Until last week... genetics, so long on the way, has finally arrived” (2/3/97). Crucially, Dolly has become a comforting, hyper-familiar symbol of the new genetics offsetting against overt disgust. She is cuddly and slightly comical, perceived to be docile and timid, in need of protection. Sheep are very much favoured representations of the pastoral and tranquility. But definitely not evocative of monstrosity or immediate threat. As one commentator says, “the great Dolly, I can report is in fine shape... Yet we are assured that she is a very strange creature in deed, totally alien to anything nature has ever produced” (Daily Mail, 7/6/97-emphasis added). She functions as a symbol of a new era to excite the public imagination and ease the transition. Dolly’s importance transcends her biological or experimental origins, she goes beyond being merely a mascot for genetics. As Nelkin (1998) claims she is a ‘cultural icon’. The term icon is appropriate because icons are a physical manifestation and conflation of a variety of religious, historical, traditional and psychological phenomenon. I want to briefly outline three reasons why she taps into cultural associations which informed the subtext of cloning discourse.

Firstly, Dolly functions as a perfect cultural icon for cloning, in that icons to be effective must in some common-sensical way resemble and embody that which they seek to represent. The more steps removed from a direct resemblance the harder the

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67 For one thing every organic life form is made up of genes, thus the notion of a code or blueprint can actually serve to dedifferentiate us from other species bearing in mind for example that there is only
connection and thus the more cognitive work that has to be done to make the association. The representation has then lost the immediate jolt of ‘commonsensical’ recognition. A sheep was perfect as the first mammal to be cloned from an adult cell. The irony with Dolly is that despite the fact that she is ‘unique’ in the scientific sense, obviously we couldn’t pick her out in a line-up. As The Daily Mail (7/6/97) pointed out one of the reasons she is isolated in her own enclosure is that “she looks so alike the other sheep that her keepers might have difficulty bringing her home in the evening”. Jokes, cartoons and phraseology all attest to the fact that it is the perceived wisdom that sheep ‘all look alike’, they are considered indistinguishable. Take for example the folkloric wisdom that ‘counting sheep’ is a good way to beat insomnia due to the mind numbing sameness of the animals. Additionally, they are herd animals thought of habitually in collective terms as part of a ‘flock’ by itself a sheep is considered ‘lost’. This again is reminiscent of how we culturally apprehend clones.

Secondly, what excites our imagination and invites identification is the anthropomorphic, reading an aspect of ourselves in ‘otherness’. Mammals have historically been imbued with this significance. Religious mythology has always accepted the mammalian as intertwined with and instructive about the human. Animal-human chimeras have featured culturally as a sign of embodied divinity (for example Egyptian mythology) or as omens or portents, warnings from the divine about moral disorder. For the Hebrews and Greeks animal sacrifice allowed the mammal (and the sheep was one of the favourites) to ‘stand in’ for the human and to

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1% difference between the genome of humans and chimpanzees.

68 The more cognitive stages between symbol and referent the more the is indexical not iconic (see Myers (1990))

69 For example see Sheehan & Sosna, 1991 for an elaboration of this.
reaffirm dominion over nature. Particularly within Jaedo-christian mythology the sheep (more precisely the lamb) was a symbol of original innocence and purity, indeed the Bible talks of the ‘blood of the lamb’ as a metaphor for Christ. The Bible also explicitly likens humans to sheep, (particularly in Psalm 23), thus enabling the metaphor of God the shepherd protecting his vulnerable flock on earth. This religious subtext continually recurred in the UK press even in articles attempting to keep the debate rationally guarded. Far from being playful trivia, this subtext of Dolly facilitates in social discourse discussion of the natural order as indexical of the supposed superior place of the human within it and questions of ‘hubris’ or playing God. For example, we find the phrase “faced not with the Lamb of God but with the Lamb of Man” (Daily Mail, 24/2/97) and often the quote from the poet William Blake, “Little lamb, whom made thee?” (Independent, 1/3/97)\textsuperscript{70}

Perhaps, the most critical aspect of the familiarization of cloning is precisely that we talk of this sheep as ‘Dolly’. By giving her a name, she has been accorded ontological status. She has been domesticated, naturalized and anthropomorphized, given the same affiliation to us as that of a household pet, regarded as almost an extended member of the family. As Professor Graham Bulfield Roslin’s director said “she’s more like a dog because she’s had so much attention.” (Daily Mail, 23/9/97). This was obviously a PR decision to obviate against horrific portrayals. The creatures of science fiction typically do not possess names, their horror so amorphous, uncontainable and so ultimately unnamable that they are saddled with monikers such as ‘the thing’ or in this case ‘the clone’. By giving her a name it also, ironically given her pedigree, individuated her. Witness the irony of the world’s media travelling all

\textsuperscript{70} This was also the title of Newsweek’s feature on Dolly (10/3/97, Page 41)
the way to a small Scottish town to photograph a sheep looking like any other sheep. Dr. Wilmut gives as his reason for choosing the name Dolly, that Dolly Parton (country & Western singer, actress) also ‘possessed a significant set of mammary glands’ remembering that Dolly had been cloned from a frozen mammary gland cell. This also helped to diffuse the horror by highlighting the humour and so humanity of the scientists involved. I also think it significant to remember that ‘dolly’ is also slang for a doll. Two important aspects of dolls are that they are toys to be played with and therefore fully under ‘our’ control but also they are models of the human form. A psychoanalyst could read much into assigning her this name exploring the inherent unconscious scientific drive to manipulate life. Braidotti has written, “the scopic drive is linked to both knowledge and control or domination...In this sense the curiosity that pushes the child to break his/her toy to see how its made inside can be seen as the most primitive form of sadism” (Braidotti, 1994:67).

Once Dolly was given a name it became easier to imbue her with personality, thus to humanize her. Due to the visual nature of the medium this process came across more successfully on television news reports than in the press. However, there were frequent attempts to include it within press coverage, with one of the most frequently recurring narratives being Dolly as celebrity. As The Times (22/9/97) put it quoting Roslin’s director,71 “she enjoys her star status”. Another report states that, “she gambols across her deluxe pen to greet visitors and with her front hoofs on the gate rail and a well-timed ‘baa’ can charm just about anyone” (Financial Times, 6/7/97). The degree to which this PR strategy was successful to quell public hostility is evident in the number of headlines which dropped the explanatory tag, ‘the cloned sheep’,
such as ‘Diet that will get Dolly in shape for love’ (Daily Mail, 23/9/97). In this instance Dolly was to be mated, which was scientifically important as it could provide information on how ‘normal’ her reproductive capacity was and also the health of clone offspring. Yet it is framed as a social drama which we can all relate to, again the subtext being that Dolly is not that different from us. For instance, we are told in the article that she has is fighting a ‘weight problem’. Through this cultural baggage some intention some simply fortuitous, Dolly had become truly naturalized, in effect no longer a Roslin experiment but rather part of ‘our’ symbolic landscape.

II. Dolly as Sign

The fact that this clone was a ‘mammal’, specifically a ‘sheep’ and was given a name evidences the utility of language to shape representation. However, the debate also pointed to the limitations of language as a resource for mutually agreed description and understanding. Dolly became a sign, not only straddling science and culture but ultimately imploding the division, powerfully evidencing science as culture. Utilizing semiotics to view Dolly and cloning as ‘signs’ provides a means to explore the signification process, as interpretative codes for members of communicative systems. One of the prime advantages is that this retains sensitivity to meaning as a matter of social convention and agreement. Semiotics does not privilege an authoritative voice for definitions, rather looking to language uses and users. It foregrounds an awareness of the historical and cultural context which necessarily inform readings of these signs. In the case of the cloning debate it is clear that such a consensual code had not been established.
Professor Wolpert suggests maintained that cloning, "is a term which we cell biologists often use in order to describe the relationships between cells" (Independent on Sunday, 23/11/97). This quote can be seen as a typical attempt at boundary demarcation between science and non-science in the quest for authority to decide and fix definitions. The implication being that the meaning which 'cloning' conjures up for non-scientists is simply erroneous. Yet, as Kolata (1997) points out among the first to use the term 'clone' was J Haldane\textsuperscript{72}, a British biologist speaking at a conference of scientific futurists in 1963. The word apparently has its origins in the Greek word for 'twig'. His speech was entitled 'Biological Possibilities for the Human Species in the Next Ten Thousand Years', in it he proposed participant-evolution by cloning the social elites; intellectuals, artists etc. Implicit was the assumption that talents and abilities lie inexorably with nature. The term 'clone' was the product of an explicit attempt at popularizing an area of biology and immediately loaded with ideological assumptions about the ideal social order. Additionally, it emanated precisely from speculation as cloning an adult (even a mammal) was not then possible and thus was never a term that 'belonged' to the reductionist tropes of biology. The social discourse of the press continually signaled the attempts by scientists to claim the term, but continually failing.

Dolly, as a material entity, was a 'signifier' in that she referred to something other than herself as a sheep, the 'signified' of 'cloning' or 'clones'. Yet things got complicated when trying to pin down exactly what these terms mean. The problem is that signs are not stand-alone phenomenon. Rather they interact with and are understandable in relation to other signs, forming 'chains of signification'. Signs

\textsuperscript{72} Interestingly also according to Midgely (1992:26) Haldane was one of the principle sources for the idea of creating 'artificial wombs' which Huxley critiqued in Brave New World.
interact particularly because they are paradigmatic, in other words within a sign
system there are linkages with words and images which are conceptually similar.
Thus for example discussions of mammalian cloning reminds that we too are
mammals (a lexical link won by the popularization of taxonomy in the nineteenth
century\textsuperscript{73}) and so prompt immediate extrapolation to humans. One of the main
problems with attempting to fix the signification of ‘cloning’ is that it is most
frequently described with recourse to the word ‘copying’ (try to think of NT cloning
without the concept of ‘copying’ coming to mind, it is then reduced to the \textit{technique}
of genetic material \textit{transfer}). When an individual uses the word ‘copying’ its meaning
depends on the underlying conditioning structures and syntactic rules of language,
which then shape how this is interpreted. These underlying subtextual rules are
determined by a culture over time and quite difficult to alter in the short term.

‘Copying’, ‘copied’ and ‘copies’ depending on the context can have radically
different consequentiality. A copy can have ‘ambivalent’ or ‘equivalent’ status. For
example paper money as legal tender is regarded with ‘equivalence’, in that one copy
of a banknote has equal status with another of the same denomination, indeed the
financial exchange system is predicated on this understanding. Yet, copies of art
works are regarded with marked ‘ambivalence’. Critical theorist Walter Benjamin
famously wrote in the 1930s “that which withers in the age of mechanical
reproduction is the aura of the work of art” (Benjamin, 1973:217). In attempting to
describe what this aura might be he uses the phrase “unique existence” where artistic

\footnote{The fast extrapolation from sheep to human which took place in the press, rather than being evidence of a misunderstanding of embryology or genetics could be taken as evidence of understanding of taxonomy in biology, the procedure of charting similarities in life then establishing categorical relations, most frequently in terms of species.}
copies for him are always only imperfect emulations, inherently inferior. Therefore within this semantic paradigm copies are only understandable in comparison to the notion of 'original'. This in turn evokes the idea that something is 'lost' through copying, which has been dubbed its 'authenticity' (the value placed on original signatures is a good example of this). While this may all seem obvious what these terms do is automatically mobilize a whole range of associated readings and these by necessity impel value judgements. For example, if copies lack authenticity they evoke the fear of being tricked by 'artifice' or worse 'forgery' because these terms exist within the same lexical paradigm. The crucial point to be made is that these slippages of meaning and value are inherent to our language system regardless of whether we are talking of paintings or human beings.

This is evidenced by the language of Mr Pizer, the would-be clonee seeking immortality introduced in Chapter 2. His self-justification was to say that, "I want either myself or an exact duplicate copy-and I mean exact duplicate-of myself to exist" (Guardian 1/3/97). It was not enough for him to simply say 'copy' fully aware of the word's ambivalence he augmented it with 'exact' and 'duplicate' as though these would accord it equivalence. This kind of confusion is not surprising, one science journalist tried to explain cloning by stating that "it could also be used to 'photocopy' animals" (Guardian, 24/2/97). While this may be an attempt to popularise the technique utilising an everyday term, it ignores the fact that photocopies in many contexts do have equivalence and therefore creates the impression that with humans it may also. Even Dr Wilmut (leader of the team that created Dolly) himself as a

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74 This challenge to uniqueness Benjamin extends to that of humans with the example of an actor before a camera saying that it "is basically of the same kind as the estrangement felt before one's own image in the mirror. But now the reflected image has become separable, transportable. And where is it transported?" (1973:230)
language user couldn’t avoid this. He frequently attempted to quell fears by saying, “we can’t see a clinical reason to copy a human being” (Daily Telegraph, 26/2/97).

What continually frustrated scientists policing the terms of the debate on cloning, was precisely that they could not pin down a definition once and for all. Once a metaphor within this paradigm was assigned it was continually prone to slippage. I would like to introduce the term of ‘catachresis’ to describe this aspect of the cloning debate. ‘Catachresis’ has been described as “a term unable either to ground itself adequately in a referent or to assert a common logic to unite its various referents.” (Halberstam & Livinston, 1995:14). Indeed, Van Dijck (1998) has argued that when a new metaphors are introduced they are initially taken to be ‘figurative’, but over time their use becomes so entrenched in everyday language that they develop into ‘root metaphors’ emerging “out of common sense to become conceptual archetypes, just prior to becoming icons or myths” (P. 22). It was naïve of scientists to think that they could use the term ‘clone’ which is imbued with so much cultural baggage as though it could be restricted to scientific terminology. An admission from the very beginning that the term ‘cloning’ had as much if not more cultural resonance than scientific definitions may have avoided some of the tension. At the very end of her book on cloning, Kolata quotes one of the pioneers of Nuclear Transfer (Steen Willadsen) on being asked if humans will be cloned as saying that undoubtedly it would happen, but “it probably won’t be called cloning” (1997:211).

One of the key advantages of this semiotic approach is that it begins to critique and untie the application of ‘rationality’ continually called for within the debate. As
though reason alone could solve the matter, it quite obviously did not. The idealized subjects of the Enlightenment, privileging rational autonomous ego are seen to be partly a "product of the language to which they are subjected" (Craib 1989:117). In other words language speaks us, as much as we speak it.

### III. Dolly on the Couch

However, Dolly and cloning incites more than the psychoanalysts' tool of 'word association' she is also a 'Rorschach test' (Nelkin, 1998:145) onto which we project our hopes, fears and uncertainties. Implicit within the talk of 'lost uniqueness' was the notion that the status of the clone would be in some vague sense metaphysically suspect. The inability to fix meaning in the significatory process is inextricably tied into ontological questions about the 'self', ultimately betraying its fragility and constructedness. The debate on human cloning hinged on two extremes definitions of the 'self', as genotype and as transcendent (embodying the notion of the Christian soul). What was completely missing was the 'self' as a psychological entity. Furthermore, another overlooked vital ingredient in uncertainty towards cloning was the fact that a clone would also reproduce the phenotype, a close approximation of what an individual recognises visually as their own embodied self.

The 'twinning phenomenon' has always had and retains a cultural mystique, precisely because it touches on the psychologically apprehended self. For example fiction in film and book often plays on both a mythologised psychic connection between monozygotic (identical) twins and their ability to confuse those around them. Twin

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75 The exact extent to which a latter born twin would come to look like the donor at the same age is obviously as yet unclear
76 The plot of the David Cronenberg film Dead Ringers being a case in point. Both twins were gynaecologists, one cruel the other gentler. Both were involved with the same woman unknown to her.
folklore is replete with anecdotal examples of 'strange' abilities, such as that of one twin detecting illness in the other pair member even having had no direct contact. The meaning of 'twinning' within the press coverage was nominally reduced to scientific research, specifically the old chestnut of nature 'v' nurture. No specific research was included, it was thought that the voice of science was sufficient to imbue credibility. Furthermore, conspicuous by their absence was the voice of twins themselves. Yet the fascination prevailed. The philosopher, Mary Midgley (Guardian, 25/2/97) stated that, "even identical twins can sometimes make us uneasy, and the idea of a doppelganger- a shadowy duplicate of oneself-is deeply disturbing...Its symbolism is unquestionably sinister, but it is by no means fully understood". Her attempted explanation is to claim that fascination for cloning is "primarily a fantasy about power". I think it correct to discuss cloning in terms of 'fantasy', the realm of the unconscious and it is undoubtedly partly about power, but as has been shown fascination was not the only trope, it also provoked anxiety. I want to introduce a different psychoanalytic reading.

Even in a book which was designed to be a popularization of scientific, principally behavioural genetic twin studies (published during my sample period), contains phrases such as "you feel like you are being smothered by sameness" (Wright, 1997:138) to describe the experience of being a twin as imagined by a singleton. The last chapter of the book presents the scenario of the reader suddenly bumping into his/her 'human mirror' (twin) with the resulting discovery of incredible similarities prompting the favoured scenario of the two actually swapping lives. It states that "this widespread fantasy" is the "most narcissistic encounter imaginable-to be able to ...experience your almost-self as others must experience you". (Wright, 1997:137)

Despite the compassion felt by the kinder twin he still ends up mistreating the woman he loves as he is psychically unable to separate from the diabolism of his twin.
Wright himself gives what I believe is a crucial element to understanding the psychic unease which cloning provoked. He concludes his imagined encounter by saying, “perhaps there is an element of the uncanny in your new relationship” (Wright, 1997:137).

Psychoanalytically the defining symptom of the uncanny is a lack of psychic certainty, a situation where the rules of social understanding and appropriate responses normally taken for granted, no longer convincingly apply. Twins and doppelgangers are favoured motifs for the uncanny (as fantasized by singetons) because psychoanalytically they reinvoke a point of ontological crisis a questioning of the boundaries of ‘self’. Significantly, Freud (and later Lacan) located this crisis in childhood during the ‘mirror stage’ (between 6 and 18 months) when the child recognizes its reflection as ‘same’, as itself, but at the same time ‘other’, thus promoting self-alienation. The fantasy of a clone destabilizes precisely this certainty of autonomy, self-mastery and coherence, producing a hesitation in the signification of ‘self’. Someone who looks like a ‘mirror image’, the only situation where we see ourselves as ‘complete’ and as others do, once again renders the ‘self’ straddling the boundary between ‘same:other’. It is that hesitation which threatens dissolution of the individual ego, the feeling that the "self” or ‘I’ is not fully containable or in control.

Additionally, the uncanny is related to unease at distortions in the order of space and time, where ‘here’ and ‘there’, the ‘past’ and ‘present’ are problematized. This implosion is also central to the debate on human cloning where “the technologically

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77 Recent reworkings of Freud especially by Jacques Lacan have used semiotics to stress that it is language itself through its ability to name and categorize (same:other) that ameliorates the anxiety of the ‘mirror phase’ enabling the boundaries of the self to be rendered psychically unified and coherent. Lacan actually argues that the unconscious is structured like a language.
added value of nuclear transfer is essentially time-compression” (Franklin, 1997:433). Obviously, a major difference between identical twins and a cloned adult and clone offspring would be the time lag before the child would gradually come to resemble the adult. This adds to the suspense of awaiting the moment of self-recognition. Yet this is not to argue that the uncanny, as both familiar and strange, is singularly fearful, it also displays elements of pleasure. It is instructive to note that for all the talk of the Boys From Brazil which is now twenty years old, the most recent film specifically on cloning was Multiplicity (1995) which treated the phenomenon as comic. Even such a vehement guardian of the debate’s terminology as Professor Dawkins, continually stressing that clones would never be copies, can’t avoid a fascination when he writes, “mightn’t it feel almost like turning back your personal clock 50 years? And wouldn’t it be wonderful to advise your junior copy on where you went wrong and how to do better?” (Guardian, 1/3/97).

Thus the ‘uncanny’ implicit in a psychoanalytical reading of cloning, is an area of unsettling liminality, a space where the self is no longer convincingly enclosed. This subsequently problematizes notions not only of individual identity but of social order. As Midgley said, “in, a sense of the uniqueness of individuals does seem to be something profoundly important to our social responses” (Guardian, 25/2/97). One of the important missing aspects of the debate was not settling definitions of the individual, but the importance of being able to recognize an individual. At the very

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78 The rationale for cloning animals being to speed up production of pharmaceuticals. 79 Frequently within the debate the discursive guardians of rationality would allow themselves the right to speculate, reminiscent of the point made in Chapter 1, that what are presented as ‘cognitive barriers’ become institutional. In other words scientists have the right to speculate, non-scientists don’t. According to The Independent, Dr Silver one of the most frequent contributors to the debate “Is a scientist who is not afraid of being a science fantasist. He says this is because he has tenure and can say what he likes” (22/1/98)
least introducing psychoanalysis as a narrative of the development of the psyche and self, highlights the significance accorded to vision over all other senses. The experience of the clone as ‘uncanny’, as a failure of signification, is thus a psychic jolt, a reminder that the relationship between signifier (my reflection) and signified (‘I’) is not pre-ordained but the outcome of social expectations and norms thus more arbitrary than we like to admit.

IV. Dolly as a Postmodern Body

Semiotics allows a thinking of the subject not simply as using or relying on language but as forged in and of language. Psychoanalysis provides a way to explore the latent meaning in the anxiety of human cloning, as the subject is exposed as ‘incomplete and fluid’ never stable and absolute. However a weakness in solely using these approaches is that they perhaps posit cultural and ontological signification in universal and ahistorical terms. Dolly was introduced to the world, and exists in a particular point in time and place, the sensibilities of which in turn influenced her status.

Dolly is a ‘postmodern body’. She symbolizes a disruption of a plethora of boundaries and modernist binary oppositions. In the contemporary imagination the loss of these to stabilize meaning, is felt acutely. Dolly’s cultural significance is that she embodies a ‘crisis in representation’. She breaks down the barrier between the ‘individual’ and the ‘group’. She blurs the distinction between ‘inside:outside’ or ‘surface:depth’. She is both ‘public’ in the sense that she has entered into public discourse, but remains very much ‘private’ property, hidden within her own secure pen to ensure Roslin’s investment. She is also both ‘object’ and ‘subject’, imbued with personality, almost an
agent or actor in her own unfolding drama but constitutively an experiment in reversing the specialisation of gene expression. She is both ‘organic’ and ‘artefactual’, living proof of the perfection of the technique of Nuclear Transfer. She implode[s] the ‘past’, her twin/mothers unique genome existing at one time in evolution and ‘present’ the recurrence of this same genome.

Dolly is the ‘original’ the first for debates on adult cloning, but where is her origin? The simple answer is to say from the sheep from which she was cloned, yet this sheep had been long dead before her ‘conception’. Not only that the donor had been a solitary frozen cell, none at Roslin even knows what happened to the sheep from whence Dolly came. Additionally, the vast majority of us were introduced to Dolly via the media. What we apprehended were photographs of a sheep, immediately putting our faith in the credibility of photographs to evidence reality. Yet what we take for ‘the real thing’, a clone, is a two dimensional image. This we see after an absolutely mediated process of photographic manipulation. Furthermore, we then take the dot matrix representation of these photographs in mass copied newspapers and magazines as evidence of the original. Thus Dolly as a Postmodern Body contains a disjuncture between the ‘real’ and ‘artificial’ and Dolly as a body in postmodernity is circulated within a culture where our technical abilities have allowed us to “use copies to certify originals, originals to certify copies, then we stand bewildered” (Schwartz, 1996:212). Meaning is now so arbitrary that signification requires a willing suspension of disbelief, in Baudrillard’s term a game of signs. The

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Photographs are carefully composed and then doctored either on computer or in the darkroom to fit into specific message ‘frames’ in this case naturalising Dolly as just another cute, docile ‘sheep’. See for example Bazin (1971) or more recently Lister (1995) on the status of photographs to represent reality.

To extend Latour’s Actor Network Theory a little the camera and printing presses became as much actors in ‘black boxing’ Dolly as did the pipettes and petri-dishes.
Dolly of postmodern culture can be thought of as a “model of a real without origin or reality: a hyperreal” (Baudrillard, 1988:166).

While the press sought to construct the debate along rational consensual lines, in terms of pros and cons, assigning positions and mobilising arguments along this axis, confusion and often hostility prevailed. The debate hinged on a failure of agreed definitions and meanings for ‘clone’ and for ‘individual’. It was saturated with ambiguity, embodying the open-ended nature of the signification process itself. This showed itself in the hardening of boundaries, and polarizing of opinion with ethicists as ‘moral masturbators’ and scientists as ‘inaugurating destruction comparative to the development of the atomic bomb’. Ironically what united both was that they evidenced the importance of a continued investment in individuality and uniqueness, neither challenged it as a basic right. From this perspective there is a double move within postmodernism both the loss of the real with the allied reification from both camps of the genome as actually solidifying the individual as inviolable. Perhaps, one of the most important outcomes of the human cloning debate was that it reminds that, “it was the dominance of the ideology of individualism in the West that shut our ears to ways our identities never were single” (Martin, 1995:269). That our ancestry is full of cross-pollinations and hybrids between self and other and human and non-human, whether animal, God or contemporaneously machine.

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82 Professor Wolpert, Independent on Sunday, 28/12/97
83 Guardian (28/2/97) ‘Letters to the Editor’
Conclusion

"If cloning were to startle and offend the world, all those glittering hopes of genetic science might be dashed or at least substantially set back"
David Rorvik, In His Image: The Cloning of a Man (1978:27)

Seemingly one of the biggest ironies of the press discourse on human cloning was that ‘public opponents’ invoked the human right to genetic uniqueness as the foundation of their argument. Scientists citing identical twins, didn’t miss the opportunity to triumphantly argue that genetic uniqueness is not a birth right. They also took much pleasure in informing that what we conceive of as ‘unique’, traits and behaviours, are not replicable by reproducing the genotype therefore it was opponents not they that were exercising genetic essentialism. The irony was that it had been the perceived wisdom that public ethical objections to genetics were centered on skepticism and hostility towards attempts to reduce ‘us’ into the four letter chemical nucleotides (GATC) of DNA. Therefore one reading of the ‘public’ abhorrence at human cloning is that genetic essentialism has been overly successful in establishing hegemony in the popular mind as “the locus of the true self” (Nelkin, 1995:2).

By conflating public opposition with ‘speculative fears’ such as the cloning of Saddam Hussein it was possible to maintain that the ‘public’ had fundamentally misunderstood the science involved. Perhaps this was most overt in the beginnings of the ‘solution formation’ phase (Kosicki, 1993) of my sample period indicated by the entry of the HGAC onto the stage. Chairman Colin Campbell was able to assert that “public revulsion is based on misunderstanding” (Independent on Sunday, 11/1/98). Therefore, the only way forward was pronounced to be ‘education’ of the public, in other words the ‘diffusion model’ of the popularization of science introduced in
Chapter 1. I have argued that the popularization of science can best be viewed as a significatory battle for the public acceptance of cloning. This allows a reading of the strategic usage of the term ‘public’, which does not focus on their supposed ignorance. For it must be remembered that it was never actually demonstrated that the public does in fact believe in genetic essentialism nor that they did display ‘revulsion’. There was no mass mobilization of opposition staging demonstrations outside the Home Office, which licensed the Roslin experiments. Therefore the question remains, looking at the 12 months period as a whole what was the point in framing ‘public opposition in this manner?

I posit that the overarching narrative frame of the social discourse within the press was human cloning as a psycho-social drama around the archetypes of ‘threat and containment’ and ‘crisis and resolution’. This can be seen in the recurring dissonance between newspaper headlines or illustrations which played on the notion of ‘copying’ and actual textual content which sought to explain that a ‘person’ couldn’t be copied throughout the year. Even after the frames of containment and argumentation had reached hegemony (as argued in Chapters 2 & 3 by March 1997) this drama of threat remained. As Hopkins says “at one and the same time, then, the media showcases, exaggerates and mitigates concerns that clones will be dignity damaging, individuality damaging copies.” (Hopkins, 1998:9, emphasis added). The function of the mitigation within the social discourse was actually not to educate the public as to the workings of gene expression (which after all only code for proteins), rather to introduce an imagined public abhorrence, then persuade that clones pose no threat. Consequently, this frames remaining unease as pathological ignorance. In this way cloning and clones were continually normalized and naturalized. Evoking the fear of threatened
uniqueness rather than constituting an obstacle was actually an integral part of consensus creation. In actual fact this was implicit within the narrative of *The Observer* (23/2/97) article which broke the story. The text reads, after concentrating on the promise of pharming, “however, it is the prospect of cloning people, creating armies of dictators, that will attract most attention”. Public or speculative fears provided a target to be continually disabused (or repressed) by reinserting more forcefully the authority of rationality and its institutional representatives, scientists, journalists and regulators. The danger then came not from science or technology but from irrationality, speculative fears and science fiction (ignorance and emotion). Towards the end of my 12 months sample period these rational authoritative voices became the only credible force to re-establish social order and cohesion.

It is interesting that the word citizen was never used rather ‘public’ an “ideological construct without any clear sociological referent” (Price 1992:12). ‘The public’ were only virtually present, a construction, and crucial to reaching consensus as to the ‘inevitability’ of cloning. In this sense reaching hegemony over the public image of cloning also involved struggles to fix the free-floating signifier of public, comments and assumptions were made on their behalf to fit the needs of those given the authority within the press to an opinion. The social discourse inscribed within the text of the newspapers thus simulated a ‘public debate’. For example not one of my sample articles interviewed or was written by monozygotic twins, rather commentators spoke on their behalf. Would their experience not have been highly relevant? Particularly those of twins unknowingly separated at birth then reunited. Given that human cloning would require the active participation of women where were their voices? Would the opinion of ‘surrogate’ mothers bearing genetically
unrelated children not have been pertinent when ‘debating’ the implications of fractured familial bonds? In December 1997 John Battle the UK government Science Minister announced that the HGAC would organise widespread public consultation exercises, his reason, that “we have to get the public debate up to speed” (Financial Times, 7/12/97). Implicit within this is that the speed is ‘theirs’ and the direction predetermined. Yet, simply by giving the manufacturing of consensus the moniker of ‘public debate’ legitimacy had been conferred.

Far from evidencing an ‘anti-science movement’ press coverage displayed the degree to which we ‘the public’ are interpellated to put their faith in science. Dr Wilmut and his team were able to return Dolly’s donor cell to a state of quiescence or resting by depriving it of nutrients to regain its totipotency but did not understand the biochemical mechanism involved. As the Assistant Director of Roslin admitted, “to be honest…we don’t know yet whether this was just a huge stroke of luck” (Daily Mail, 7/6/97). A success rate of 1/277 nucleus and egg cell fusions is poor performance for a science seeking the mass production of animals for pharmaceuticals, never mind humans. Indeed, this leads to the biggest irony of all, that despite a year of breathless reporting involving speculation, containment and argumentation no ‘proof’ had been offered for the fact that Dolly was in fact a clone! The extent to which the media had reinforced faith in the efficacy of science is supported by the fact that it took a year (fittingly at the end of my sample) before Dolly the clone was challenged on scientific grounds. Two scientists viii wrote a letter to the journal Science in which they stated
that “only one successful attempt out of some 400 is an anecdote, not a result” (Science Vol. 279, 30 January 1998).  

As far as is known no human clone had been produced from an adult cell via the Nuclear Transfer technique. Furthermore, by the end of my sample the technique had only been achieved in one sheep. Therefore, the frames and narratives of the press leading to the consensus that human cloning was inevitable can be thought of as discourse determinism. They created consensus and expectation in advance of the fact, establishing need and demand. The advantage in the simulation of public debate and the aforementioned ‘psycho-social drama’ is that commentators can claim based on no empirical evidence that “just nine months after the Dolly announcement people are beginning to see the potential advantages of cloning research” (Financial Times, 7/12/97).

The Roslin scientists’ success had been in reversing the specialisation of an adult cell back to a time of ‘totipotency’ (a time when it could produce anything). I have sought to attempt something similar with the UK press discourse, to reverse discursive specialisation. To trace the mechanisms responsible in less than a year for changing a headline reading ‘The Spectre of a human clone’ (Independent, 26/2/97) to ‘Cloning? Get used to it: Human genetic engineering is coming– and it will be good for us’ (Independent on Sunday, 25/1/98). Given that there had been no fundamental alterations in the science itself between February 1997 and January 1998, the change in perspective must be explained by the persuasive power of representation over this

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84 Dolly’s status as the clone of an adult cell was confirmed by ‘microsatellite analysis’ of Dolly’s DNA reported in Nature, Vol. 394, 23 July 1998. In the same edition it was reported that the technique had been replicated in mice by researchers in Hawaii
period, and this process is unavoidably ideologically, culturally and socially loaded. The first headline alludes to the anxiety of the unknown and indefinable. As is obvious from the second headline discussion has moved from talk of the metaphysical status of clones themselves. This second headline evidences that what was at stake with Dolly was more than ‘cloning’ but rather the promise of ‘genetic engineering’ in general as “cloning has long been one of the possibilities used to symbolize the powers of new biological technology” (Turney, 1998:211). Dolly was thus reframed as a progressive ‘capstone technology’ hurrying along research towards the day when genetic products would become not merely a promise, but an imminent feasibility.

The advantage of framing and narrative analysis in looking at the social discourse of cloning in the UK press has been a means to resist looking at the debate purely descriptively, by following one group of contributors and so losing the dynamic general trajectory through which ‘voices’ are symbolically interrelated. It avoided looking at the debate as a static preformed map or schema posing cloning as either ‘good’ or ‘evil’, opinion being either ‘for’ or ‘against’. Studies such as this would benefit greatly from comparative country analysis. It is unclear to what extent the establishment of discursive consensus of my sample period is the influenced by socio-political features peculiar the UK. For example it has been suggested that in the case of science and technology controversies “the British approach is to leave policy and decision making to elected representatives and private individuals on specialist committees” (Bijker et al, Section 5. P1). Additionally, much more work is required on a methodological means to build a bridge between the media as social discourse and the formation of public opinion. Focus groups and consensus conferences could be helpful here if sensitivity is retained as to who the funding body is. Finally, as well
as research on the manufacturing of consent, future work should also look to attempts
to engender dissent, for example by looking ethnographically at the work of 'pressure
groups' and 'public campaigns' against specific, in this case biomedical research.

At the time of writing perhaps hopes for a wider 'public debate' can be gleaned
precisely from the realization that Dolly functions as a 'cultural icon'. This then opens
the tropes associated with her up to the exploration and creative recontextualisation of
artists. Promisingly, in response the Dolly, the Director of the Institute of
Contemporary Arts in London has suggested an exhibition based on the notion of
'originality and replication' which would seek to bridge the 'two cultures' gap of
science and the arts. Additionally, the British Government has announced the
establishment of a National Endowment for Science, Technology and the Arts (Nesta)
funded by National Lottery money to set up projects exploring the interconnectedness
of all three.
Appendix

Most cells in an animal’s body contain the complete organism’s genome or genetic ‘blueprint’ which codes for the proteins necessary to build it. But the genes in these cells have become specialised or differentiated, some genes have been switched off to allow the active genes to contribute to the body part task at hand. This specialisation begins after the first few cell divisions of a fertilised egg. What Wilmut et al (1997) did was to reverse this specialisation of a somatic cell such that it once again contained the complete genome capable of forming the whole organism. This they did by manipulating the cell cycle. The cell enters a stage called Gap 1 when it checks its DNA is intact then begins stage Synthesis when DNA is copied before cell division begins, then the cell checks the copied DNA for mistakes this is called the Gap 2 stage. Yet cells also have a ‘resting stage’ called G0 where they are in a kind of ‘suspended animation’. Keith Campbell, Wilmut’s colleague, worked out a way to achieve this state by starving the cell of nutrients. This proved to be the perfect stage for cloning. See Wilmut, et al, 1997 Nature, Vol. 385, 27 February 1997 or Kolata (1997 Chapters 7&8

Public Opinion research has postulated that within a public debate, 4 types of ‘publics’ can be discerned (see Price 1992) (1) the ‘active public’ who form elite groupings, they tend to be professional or organizational representatives. (2) the ‘attentive public’ consciously following debates as they unfold and therefore more likely to write letters to newspapers or join demonstrations. (3) ‘issue publics’, who will select an issue to follow often on the basis of whether or not it will directly affect their day to day life. (4) the ‘passive public’, largely disinterested in following public debates. It should be stressed however that the membership of these groupings are never fixed but alter over time, depending partly on the ways the issues are represented.

Discussion of this presumed laxity in the regulations of other countries spilled over into socio- cultural, political, economic and moral comparisons, invariably in Britain’s favour. The Daily Mail (24/2/97) states that, “there must be the implication that having cracked this major problem...people in other countries would do the same in humans... people there may not have the same moral objections”. The argumentation was uncorroborated but the implication clear that 'our' morality is superior. Often these countries remained unnamed which made argumentation easier as it was not hindered by the need for convincing evidence. However occasionally the target of these fears was made explicit. Just four days after the story broke the Daily Mail wrote, “fears are growing that the process could already be taking place in other countries, particularly in Eastern Europe or Asia” (28/2/97). In other words for countries that have in recent years been struggling to embrace the free-market, cloning would prove to be economically attractive. These speculations about lax countries served the immediate purpose of providing a repository for the projection of
not only ‘our’ fears but also fantasies. They contained the subtext, that if ‘others’ went ahead, due to a lack of ‘proper’ regulation the ramifications would be worse than if at some unstated time in the future it was to happen in the UK. For example Professor Johnson of the HFEA is quoted saying “the important thing isn’t to raise fears about what might go on (in the UK) but elsewhere.” (Independent, 26/2/98). In other words ‘we’ have the self-restraint the Calvinistic asceticism to ‘control’ cloning whereas a country that would allow it would be a slave to vulgar excess, remarkably close to the way that ‘emerging economies’ and their societies are routinely portrayed.

The vast majority of reports on the laxity of regulation in other named countries pointed to the United States. On the 26/2/97 both the Daily Telegraph and The Independent carried stories which mentioned the liberal history of the US when it involves reproductive rights. Additionally repeatedly cited was the schism in the US between federal and private funds for embryo research, federal funding being illegal with the private funding situation unclear. Perhaps the degree of self-assurance as to the UK situation is evidenced by the fact that after Clinton ordered the NBAC report there was no press call for a similar decision by the then British Prime Minister John Major.

iv Readers letters
For example on the issue of clones being equivalent to identical twins, a Professor of Cell Biology at the Leukaemia Research Fund Centre writes that, “to regard them as equivalent is to obfuscate and reinforce the suspicion that some scientists regard human life in purely mechanical terms” (Sunday Times, 23/3/97). This holds true for the most frequently heard oppositional voices in the ‘Readers Letters’ that cloning technology increases animals suffering. The same occurs over objections to the patents of life-forms, a valid concern considering the Roslin Institute gave PPL Therapeutics the licensing rights to the technology. Yet I only found one article within my sample looking at this directly (Guardian, 2/7/97, P4-5). This article mentions the fact that the Roslin patent covers the technique applicable to humans as well as animals but goes on to say, “Dr Wilmut...says that their motive is to ensure others could not use the technique to produce a human clone. But...it is right to trust the policing of human cloning to a company”. Yet once again the issue of patents had come up in the Readers Letters section, with one writer asking, “is society being blackmailed by commercial interests” (Guardian, 20/12/97). The writer argues that the patenting not only of technology and techniques but genes and gene sequences gives corporations the commercial incentive to heavily promote their services.

v
Richard Seed’s ambition was first reported in the UK press by The Independent on the 7/1/98 where he was said to be negotiating with a clinic and to have the co-operation of a medical Doctor (unnamed) to enable him to set up a clinic for reproductive cloning. What becomes clear is that from the next day on, Seed and his proposed enterprise take on a symbolic value, become a rallying point to those that had fought for control of the signification of human cloning. Reports began to criticize his ability. Professor Winston who had been an advocate of cloning technology and involved in fertility work himself (at Hammersmith Hospital, London) wrote a piece in which he claimed “This man seems to be making the claims of a charlatan... As far as I am
aware, his only publications related to fertility are in journals taken not the slightest bit seriously by established scientists” (Daily Mail 8/1/98). As time moves on the attacks are not simply directed at his credentials but at demonizing him personally. The Observer, (11/1/98) stated that “If you wanted to create an Identikit mad scientist, Richard Seed would be hard to beat.”

One voice, rarely heard since the height of news coverage the previous year resurfaced, that of Dr Dixon, who was instrumental in prompting much of the early speculation. He gave credence to Seeds aim by stating in the Independent (8/1/98) “This clinic could provide a whole library of hundreds of frozen cloned embryos. The technology is here, and the scientists are here who want to do it”. Yet unlike February 1997 when he first provided the press with a list of potential clonees, his opinions did not provoke much comment and almost no further speculation. Additionally, unlike the early period of framing (February and March, 1997) where the nuclear transfer technique was portrayed as essentially easy, suddenly virtually every report made mention of its ineffectively centred on two elements, the quantitative inefficiencies in terms of the number of successful births and pre-natal and post-natal abnormalities. Given my argument that the UK press had decided that human cloning was ‘inevitable’, it seems odd that Seed was not picked up as an example of their predictive powers. Yet this dismissal of Richard Seed did not constitute a volte face on the part of the press. As with the framing in February/March 1997, there were repeated articles invoking twins as an example of current clones (containment) and more comments about the dominance of market forces and still claims of scientific determinism (argumentation). Which begs the question, why was Seed dismissed so thoroughly?

The answer lay in the following comment by Professor Winston (Daily Mail, 8/1/98) that Seed’s “proposal flies totally against serious public opinion. By making this announcement he throws an important technology into disrepute…” . This is the crux of the problem that Seed presented, a consensus had been reached by opinion makers as to the ‘inevitability’ of, but perhaps more saliently also the ‘desirability’ of limited human cloning, as has been argued by analysing the discourse of the HGAC. Seed was considered to be inciting public fears, undoubtedly giving policy makers pause for thought particularly as regards funding and legislation, so jeopardizing this consensus. Thus Seed had to be derided. This effort to maintain the stability of the consensus is obvious from the following, “the real story…is that British scientists, who lead the world in this field, could begin work on human cloning within a year. And perhaps because the research is led by the eminently sensible and British Ian Wilmut …the implications seem considerably less frightening” (Independent, 12/1/98).

Indeed the HGAC consultation document itself lists a series of questions in the sections entitled ‘Your Comments’ as it says ‘It would be helpful if your response could be structured around the questions set out below’ (HGAC consultation, 1998:20).
Human Genetics Advisory Commission Consultation Document

The following are questions which the ‘Your Comments’ Section (9) suggests as Structuring for replies.

Q1 - would research using nuclear replacement technology raise any new ethical issues in relation to what is permitted in work with embryos in the 14 day period?

Q2 - Are there any medical or scientific areas that might benefit from research involving human nuclear replacement?

Q3 - To what extent can a person be said to have a right to an individual genetic identity?
Q4 - Would the creation of a clone of a human person be an ethically acceptable act?

Q5 - Would the likely cost in terms of failure and/or malformations inevitable in developing a programme of human reproductive cloning be ethically acceptable?

Q6 - What ethical importance might be attached to the distinction between artificial processes for which there are parallels in natural processes and those for which there are not?

vii

As Nelkin says in a short Internet essay in which she mentions ‘Multiplicity’ (1995) “Suddenly clones are fun”. Nelkin points out that media images reflect changing social agendas and asks, “What, then, is the meaning of associating cloning with fun as in Multiplicity? Does this new film imply an uncritical acceptance of genetic manipulation?” While the film does provide further evidence for her thesis that the gene has a essentialistic cultural quality (over and above its scientific value), the narrative of the film makes it clear that the clones who emerge as ready-made adults, while looking identical are from the very first behaviourally distinct (indeed one of them is retarded). In actual fact the fantasy of cloning emanates primarily for the central character dubbed No.1, from a lack of time for himself due to conflicting social demands. The Doctor who clones No.1 explains “we make miracles” and then later says, “I create time”. Thus the notion of cloning affords an opportunity to control his schedule more effectively, one clone to take care of family commitments and the other to take his place at work so that ‘No.1’ the central character, can enjoy more leisure time. The clones throughout remain his private fantasy, they are hidden above his garage to enable his subterfuge. Thus the clones can be thought of as an unconscious attempt to control feelings of powerlessness and resolve conflicting demands in a frenetic world. It is instructive that one of the key scenes has No.1 wrestling in his office with a fax while fielding phone calls. The subtext being that the technology which has allowed us to extend ourselves time and space, also threatens to tear us apart which calls for a new form of agency. However despite the element of fun, the answer to the ‘demands’ of technology is still more technology.

98
Norton Zinder and Vittorio Sgaramella of the Rockefeller University in New York and of the University of Calabria in Italy suggested that as the ewe from which the donor mammary cell had been obtained had been pregnant, it was possible that what they had cloned was a stray foetal cell in the mother’s blood. This critique was partly motivated by the fact that the technique had not been replicated in another adult. Roslin’s response was to inform that they had commissioned an independent team to compare the DNA of the donor cell source with Dolly’s.
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