

Media(ted) fabrications: How the science–media symbiosis helped ‘sell’ cord banking

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Abstract

This paper considers the problematic role of the science–media symbiosis in the dissemination of misleading and emotionally manipulative information regarding services offered by CordBank, New Zealand’s only umbilical cord blood banking facility. As this case study illustrates, the growing reliance of health and science reporters on the knowledge capital of medical specialists, biogenetic researchers, and scientists potentially enhances the ability of ‘expert’ sources to set the agenda for media representations of emerging medical and scientific developments, and may undermine the editorial independence of journalists and editors, many of whom in this case failed to critically evaluate deeply problematic claims regarding the current and future benefits of cord banking. Heavy reliance on established media frames of anecdotal personalization and technoboosterism also reinforced a pro-science journalistic culture in which claims by key sources were uncritically reiterated and amplified, with journalistic assessments of the value of cord banking emphasizing potential benefits for individual consumers. It is argued that use of these media frames potentially detracts from due consideration of the broader social, ethical, legal, and health implications of emerging biomedical developments, along with the professional, personal, and increasingly also financial interests at stake in their public promotion, given the growing commercialization of biogenetic technologies.

Keywords: science journalism; science–media symbiosis; stem cells; cord banking; anecdotal personalization; technoboosterism.

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1. Introduction

In March 2005, New Zealand’s *Metro* magazine published a detailed exposé alleging factual inaccuracies, misrepresentations, and emotionally manipulative content in the promotional materials and public representation of New Zealand’s only (privately owned) umbilical cord blood banking facility, CordBank (Philp 2005). Drawing heavily on a paper concurrently published in the *New Zealand Medical Journal* by Sullivan et al. (2005), *Metro*’s exposé is remarkable for two reasons. First, because it was heavily dependent on this local scientific critique as opposed to the more traditional investigative journalism on which this magazine’s reputation is based. In part, this reflects the growing reliance of journalists on the knowledge capital of those actively engaged with emerging medical and scientific developments, and raises a number of critical questions regarding the nature, conduct, and content of science and health reporting within contemporary mediascapes. Second, this article is remarkable because it was so long in coming. Christchurch pediatric oncologist Dr. Michael Sullivan had publicly raised a number of concerns about CordBank’s claims as early as June 2002. These were quickly sidelined in favor of media coverage that was largely upbeat and positive, and which enthusiastically reiterated misleading information about the actual and potential therapeutic benefits of banking umbilical cord blood.

In this paper, I suggest that print media coverage of CordBank can be understood as a product of the (biomedical) science–media symbiosis, and illustrate how CordBank’s promoters were able to utilize local media for public relations purposes, to such an extent that local journalists continued to restate and indeed amplify inaccurate and deceptive claims about the nature and value of CordBank’s services in the face of growing local and international criticism of private autologous cord banking. I suggest that the ability

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of certain 'expert' sources to publicly misrepresent, under the guise of news, the actual and potential applications of autologous cord banking for potential commercial gain is the predictable outcome of a 'concordance of interest' (Condit 1994) between journalists and medical and scientific professionals, a small but growing number of whom are simultaneously biomedical entrepreneurs. The analysis offered here thus draws on a theoretical understanding of the increasingly problematic symbiosis between medical specialists, scientists, and media professionals in Western capitalist nations; a symbiosis which I suggest clearly operates in the New Zealand context.

2. The science–media symbiosis

While much of the more relevant literature pertains to other national contexts, local research suggests broadly similar processes are likely to occur here, particularly given the highly commercialized nature of New Zealand media production and significant foreign ownership (Bell 1995). As Lealand (2004) notes, New Zealand is effectively 'media-saturated', with a large number of metropolitan and provincial daily newspapers, free community papers, and local magazines. Newspaper ownership is heavily concentrated in the hands of Fairfax New Zealand Ltd. (owned by John Fairfax Holdings Limited of Australia), or APN New Zealand Ltd., also Australian owned. Most major magazine titles are owned by Kerry Packer's Australian Consolidated Press. With few exceptions, local media operate according to commercial imperatives. Print media outlets in particular face intense competition for readership and advertising, with many daily newspapers facing declining circulation and increased competition from free suburban papers (Lealand 1998).

These difficulties are compounded by significant understaffing in many newsrooms. Regular national surveys of New Zealand journalists suggest a feminized and comparatively youthful local workforce (Lealand 1998, 2004). While 60% of local journalists have completed a university degree, most degrees were in the arts or social sciences, and only 7% of these were Masters degrees (Lealand 2004). The dwindling number of senior journalists has sparked concerns about declining skill levels and journalistic standards, loss of institutional memory, and a lack of critical acumen within the profession as a whole (Lealand 2004). A lack of resources is also seen to contribute to editorial policies discouraging in-depth investigation of complex issues, along with greater reliance on New Zealand Press Association stories, freelance journalism, and syndicated features. Increased competition and commercial pressures are further held to contribute to the 'dumbing down' of news stories, and a blurring of distinctions between news and entertainment.

Many senior journalists are concerned about the implications of these trends for editorial independence, and for the maintenance of journalistic principles of accuracy, balance, and objectivity (Lealand 1998, 2004). Sixty-seven percent of journalists surveyed in 2003 agreed that local journalism was unduly influenced by corporate ownership and by the needs of advertisers (Lealand 2004: 193). These trends are not dissimilar to those identified in other national contexts where media are heavily commercialized, suggesting that existing research may bear considerable relevance locally.

Numerous scholars have noted that the selection, framing, and organization of information presented by news media are shaped both by the original source(s), and by established journalistic codes and conventions, news routines, and the professional and economic imperatives underpinning commercial media production and circulation (Gans 1979; Gitlin 1980; Philo 1990, 1993; Schudson 1995; Conrad 1997). In terms of the former, journalistic conventions require the use of credible and qualified authorities as sources. Thus, the voices of highly qualified and institutionally affiliated specialist doctors, scientists, and researchers are consistently privileged in health and science news (Van Dijck 1995, 1998). This privileged status reflects also that many journalists lack advanced medical or scientific training in areas that are rapidly evolving in extremely complex ways, and so rely on these key sources for both a practical understanding of new developments, and for 'clarification' of their nature, importance, and potential implications (Dunwoody 1986; Friedman 1986; Nelkin 1987; Karpf 1988; Van Dijck 1995; Sweet 2003).

Consequently, scientists, medical specialists, and medico-scientific organizations have become an especially powerful interest group that has considerable input into the nature of media representations of new developments in their field. Increasingly, group members seek to influence news media by hiring communications and public relations managers to handle media interactions, issuing press releases highlighting 'major breakthroughs' or profiling new medical services, providing journalists with information packages, establishing educational and promotional Web sites, and actively lobbying journalists and editors to cover issues in ways that uphold their interests (Friedman 1986; Nelkin 1987; Karpf 1988; Lewenstein 1995; Van Dijck 1998; Nisbet and Lewenstein 2002). A classic example of such media management recently occurred locally when public relations consultants, Communication Trumps, tried to 'engineer public opinion' by means of 'propaganda and secrecy' to effectively cover up disturbing physical abnormalities in salmon resulting from genetic modification carried out by King Salmon (Weaver and Motion 2002: 341).

This active management of media representations is especially vital for the biomedical/scientific project

at this time to allay public anxieties over controversial developments such as genetic modification, stem cell research, and human cloning.¹ As Weingart (1998: 871) notes, 'the stronger the dependence of science on public consent, the more important is attention and consent of the media.' By cultivating positive relationships with media and carefully managing the public representation of research and development in their area, 'media-savvy' medical specialists, scientists, and researchers are often able to garner positive publicity that fosters public and official enthusiasm for their work, thereby helping to secure funding (Dunwoody 1986; Nelkin 1987; Karpf 1988; Petersen 2001).

In turn, news media are now heavily reliant on information provided by official, institutional, and other scientific sources, and frequently reproduce it with little mediation (Candy 1982 and Soloshi 1989, as cited in Nisbet and Lewenstein 2002; Logan 1991, as cited in Petersen 2001; Sweet 2003). The highly specialized nature of emerging biomedical developments means journalists are increasingly dependent on reiterating the same terms, metaphors, images, rhetorical strategies, and frameworks of understanding used by scientists and medical specialists in relating the nature and value of their work (Nelkin 1987; Van Dijk 1995; Petersen 2001). Hence, mainstream media potentially serve as a conduit through which scientists, medical specialists, and medico-scientific organizations attempt to assert the legitimacy of, and win consent to, their shared worldview or 'regime of truth' (Foucault 1989 [1971]) by controlling how particular issues and new developments are represented to the general public (see also Corner et al. 1990).² By influencing the way new developments are discursively framed and represented in media, these interest groups exert considerable power over public and political responses to them. Effectively, they are often able to set the agenda for subsequent discussion and debate on their own terms. Once this agenda is set, it becomes very difficult to shift the media focus and broaden the parameters of the debate (Gitlin 1980; Nisbet and Lewenstein 2002). Issues, critiques, and voices of dissent that are marginalized or excluded are unlikely to enter widespread public consciousness, resulting in a 'spiral of silence' (Nisbet and Lewenstein 2002: 363) that ultimately favors a 'consensus' or hegemonic perspective.

While authoritative sources play a key role in framing the information they provide, journalistic codes and conventions, news routines, professional training, and economic imperatives all impact upon the mediation process. Science and health journalists must 'translate' complex research findings and highly technical details into simplified lay language, while also producing an interesting and readable story that has considerable 'news value' (Friedman 1986; Nelkin 1987; Lewenstein 1995). Industrial and professional constraints mean that stories often need to be

researched quickly and reported in just a few columns (Dunwoody 1986; Karpf 1988; Weingart 1998). These factors encourage journalists to rely on an existing pool of established 'expert' sources and to construct news stories that fit within established 'media frames' (Gitlin 1980; Nelkin 1987; Nisbet and Lewenstein 2002). Further, media privilege certain understandings through determining the story's 'hook' or angle, by using particular words and metaphors that implicitly convey a particular worldview, by allocating greater space to certain speakers, and through the selection of headlines, captions, and accompanying images (Gitlin 1980; Nelkin 1987; Nisbet and Lewenstein 2002).

Today's news media are also in the business of telling and selling stories to a general audience. Decisions about which 'media frame' or angle to adopt are often informed by an underlying economic imperative of attracting and keeping readers, the basis of considerable advertising revenue (Bell 1995; Weingart 1998; Underwood 2001). This latter imperative fuels an increasing reliance on 'market-oriented' and 'soft news' stories emphasizing sensation and drama (Underwood 2001; Nisbet et al. 2003). In the case of health and science reporting, complex medical and scientific issues and debates are often simplified into 'human interest' stories that require less time to research and write and make for emotionally compelling reading, helping boost sales (Cook 1998 and Patterson 2001, as cited in Nisbet et al. 2003).

This is reflected in the growing reliance on a media frame that Nisbet et al. (2003: 48) term 'anecdotal personalization', wherein the potential benefits and implications of emerging biomedical treatments and technologies are introduced and explored using the personal testimony of individuals as the primary frame of reference, in a way that Condit (1994) suggests invites readers to identify with characters and share in their personal struggles and triumphs. As noted by Karpf (1988), Conrad (1997), and Petersen (2001), anecdotal personalization is used to create interest and make 'high-tech' procedures and technologies more relevant and personally meaningful to lay audiences by demonstrating their value for particular individuals. Problematically, however, this personalized focus often occurs at the expense of detailed technical information or contextualization of the issues raised, and risks oversimplifying and potentially misinforming the public about important details (Nisbet et al. 2003)—a point expanded upon below.

Mainstream media also routinely exhibit a pro-technology bias. Key sources, established news values, and professional routines all encourage reporters to emphasize the positive benefits of new scientific and biomedical developments, and to 'overrate and overhype "high-tech" solutions', in a process some refer to as 'technoboosterism' (Parrott and Condit

1996: 8). Technoboosterish coverage typically represents medical and scientific research as progressive, beneficial, and as offering hope of imminent cures for the sick and afflicted. Often, purely hypothetical future benefits of emerging technologies and treatments are emphasized and celebrated as though they inevitably emerged from the unstoppable march of scientific progress (Van Dijck 1995, 1998). Conversely, as Petersen (2001: 1263) notes, 'potential disadvantages and dangers are either ignored or provide only a minor sub-theme.' It is also common for a small number of positive research findings relating to the therapeutic uses of stem cells in particular to be highlighted and then extrapolated or 'telescoped' (Parrott and Condit 1996) to hypothetically encompass potential treatments for the full range of chronic and genetic disorders, with journalists frequently reiterating the unqualified declarative statements of a few cited experts.

In this respect, traditional journalistic conventions of objectivity and balance are less frequently observed. As Nelkin (1987) suggests, science is often regarded by journalists as 'the ultimate authority', reflecting an underlying presumption that medico-scientific knowledge is objective and entirely disinterested, and thus that those conducting the research or initiating a new health service can also legitimately evaluate its importance and potential significance. The failure of many journalists to acknowledge the social, political, and economic contexts in which medical and scientific research takes place means many are literally unable to perceive the various ways in which the self-reporting of specialists and scientists is in fact often highly interested (Nelkin 1987; Weingart 1998; Sweet 2003). The increasingly close ties between industry and research are infrequently acknowledged, and journalists often fail to recognize key sources' potential conflicts of interest (Moynihan 2000, as cited in Sweet 2003). This lack of critical interrogation of the aims, conduct, and interests underlying much research ascribes medical specialists, scientists, and researchers considerable leeway to shape the agenda for how certain new developments are understood and debated in the public domain (Karpf 1988; Nelkin 1987).

Essentially a form of media bias, the absence of critical evaluation largely reflects a *symbiotic relationship* (Karpf 1988; Weingart 1998) between health and science journalists and their most privileged sources. As Condit (1994) notes, journalists rely on the knowledge capital of medical specialists, scientists, and researchers, both in order to report on new developments in their fields, and to maintain their journalistic credibility. Newspaper and magazine editors and owners also need to maintain and hopefully increase the market share of their publications, the basis of vital advertising revenue. The kinds of stories emerging from the 'brave new world' of reproductive and biogenetic medicine are often inherently interesting,

topical, credible, and newsworthy. They make for compelling reading, and help sell magazines and newspapers.

For their part, journalists offer specialists and scientists an avenue for public exposure and an opportunity to shape public perceptions of their work and its significance (Condit 1994). Stories about how a particular research project or a given procedure may one day prevent or cure disease, heal the impaired, or end human suffering help facilitate public acceptance of even the most controversial research, and reassure legislators and funding agencies of its potential social and medical benefits. Such stories have the added benefits of attracting consumer (and perhaps also shareholder) interest and acceptance, potentially fuelling market demand (Van Dijck 1995, 1998). Thus, scientists and media personnel have a strong *concordance of interest* in the positive representation of medical and biogenetic technologies (Condit 1994). It appears that in the case of CordBank, this shared interest prevailed over journalistic integrity and editorial independence, leading to unbalanced technoboosterish coverage and a lack of critical interrogation of CordBank's deeply problematic claims.

3. Methodology

The following discussion is informed by a detailed narrative and discursive analysis of the full complement of regional and national print media coverage devoted to CordBank since its launch in June 2002. Twenty-five newspaper and magazine articles were located using the electronic databases Index New Zealand and NewsText Plus. The following analysis also draws on the results of a larger-scale survey of print media representations of reproductive and genetic technologies conducted from 1 May 2002 to 1 September 2003, and from 1 August to 1 December 2004, which used the same databases to locate 170 texts, of which 32 specifically related to some aspect of stem cell research and/or cord banking. Included in this wider survey were the national daily paper, *The New Zealand Herald* and *Weekend Herald* (circulation 208,419; owned by APN New Zealand Ltd.); the national weekly *Sunday Star Times* (210,898; Fairfax Sundays), and three regional daily papers: Christchurch's *The Press* (90,828; Fairfax New Zealand Ltd.), the Wellington-based *The Dominion Post* (98,229; The Dominion Post); and the Hamilton-based *Waikato Times* (41,849; Fairfax New Zealand Ltd.). Fairfax's relative domination of print media ownership in New Zealand means there was some sharing of news stories and perspectives, with some articles (re)presenting verbatim portions of previously published articles. Also included were four high circulation magazines thought likely to contain

relevant content: *New Zealand Woman's Weekly* (97,769; New Zealand Magazines Ltd.), *New Zealand Listener* (75,177; New Zealand Magazines Ltd.), *Next* magazine (66,836; ACP Media), and *New Idea* (58,591; Pacific Magazines NZ).³

I should emphasize that this was not a study of media production, but rather of media *representation*, or more specifically of the published outcomes of the interactions between CordBank's medical director and promoters, its marketing and publicity materials (including the CordBank Web site), selected clients who publicly endorsed the service, local journalists, and to a lesser extent, dissenting specialists. Thus, I have not investigated the motivations or decision-making processes of the journalists and editors who were specifically responsible for the stories that were published, although I believe some insight can be gleaned from the considerable body of research reviewed above, and from the published texts themselves. Nor have I specifically investigated the expectations, understandings, and decision-making processes of parents choosing to utilize CordBank's services. However, given that client endorsements very frequently appear within the media reports, the views of *some* parents will be discussed. My primary focus remains, however, on the narrative framing and discursive representation of CordBank in print media coverage of this service.

On the basis of the results of both surveys, significant evidence suggests that the science–media symbiosis encouraged most local journalists to actively promote CordBank's services while marginalizing and downplaying any critiques in favor of extensive anecdotal personalization and technoboosterism. Also apparent is that this process was actively facilitated by the considerable agenda-setting capacity of certain prominent specialists and scientists in the New Zealand context.

4. Agenda-setting: A 'specialist' role

This capacity is openly acknowledged by local fertility 'guru' Dr Richard Fisher, a founding director of New Zealand's largest private fertility service provider, Fertility Associates, which also holds contracts to deliver publicly funded treatment in several main centers. Fisher can be regarded as the local equivalent of British reproductive specialist and media celebrity Professor Robert Winston, and has been profiled in several newspaper and magazine articles over the past ten years.⁴ While yet to host his own documentary series, Fisher is perhaps New Zealand's most frequently cited medical specialist on a range of issues, and evidently well aware of his ability to shape public understandings of reproductive and related genetic technologies by actively 'mediating' their public representation, as the following remarks indicate:

- (1) (as cited in Hewitson 2004: A28; emphasis added)

[I've] grown into this area, so I've watched it develop and *it's under my control*, in a sense. I have two to three years to think about it *before I signal it*. You see, what I have done for the last 10 years is . . . *raise it in the media*, let everyone get over their knee-jerk reactions. *You get an opportunity to personalise it . . .* Most people say, 'Oh yuck, that's not in the context of how I see the world' [referring to the use of pre-implantation genetic diagnosis for sex selection]. *Give them three months to think about it and they can usually find someone in their peer group for whom it might have been a good idea.*

These are telling remarks given that, at this time, Fertility Associates was awaiting ethical approval to offer sex selection via pre-implantation genetic diagnosis, or PGD.⁵ They are also indicative of a particularly cozy (biomedical) science–media symbiosis that permits prominent medical specialists involved in commercial service delivery to set the agenda for media representations of emerging biogenetic treatments and technologies in terms of *how they might benefit the individual consumer*. Indeed, this was precisely the predominant frame adopted by local media in discussing the use of PGD for sex selection, as reflected in headlines such as 'I would have loved to have had a daughter' (Catherall 2002a), 'Genetic screening new way to a healthy, balanced family' (Catherall 2002b), and 'Boy or girl . . . your choice?' (Course 2003).

More recently, Dr. Mary Birdsall, Fisher's colleague and protégé, has captured centre stage. Described by one reporter as 'poised, [and] seemingly media-trained', Birdsall is fast becoming 'the female equivalent of the much-quoted Richard Fisher' (Philp 2005: 52). In Winston, Fisher, and Birdsall, we see the active *personification* of science as 'The inherent benevolence of technology is projected in the scientist as a person' (Van Dijck 1995: 66). As privileged 'expert' sources, these individuals are effectively granted the opportunity to utilize local media to direct attention toward the benefits and potential uses of new and at times controversial lines of research and associated technologies and services, and to shape public perceptions of emerging developments in the fields of reproductive and biogenetic medicine. More problematically, given the growing commercialization of these fields in New Zealand and elsewhere, Fisher's and Birdsall's privileged status enables them to utilize their symbiotic relationship with mainstream media to extol the virtues of, and fuel consumer demand for, expensive, medically nonessential services that they themselves have developed, financed, and will potentially profit from, with little (if any) critical interrogation of claims made. This is precisely the situation that appears to have occurred with CordBank.

5. 'Selling' CordBank: The role of media(ted) fabrications

5.1. Background

CordBank, Australasia's first dedicated umbilical cord blood stem cell collection and storage facility, was established in June 2002 by Birdsall, an obstetrician–gynecologist experienced in the use of cryopreservation through her work at Fertility Associates in Auckland. It is one of a small number of 'spin-off' commercial ventures associated with this private fertility service provider.⁶ Birdsall established CordBank in partnership with Jenni Raynish, director of the public relations consultancy firm, Raynish and Partners, and the slick nature of its publicity, marketing, and press materials reflects professional input. CordBank also has a small number of private shareholders drawn from among Birdsall's colleagues, family, and friends (Philp 2005). It offers a service in which umbilical cord blood is collected at the time of birth, cryogenically preserved, and stored at an Auckland facility in return for an initial outlay of NZ\$4,300, which includes the first 18 years of storage.

As something of an emerging medical and media celebrity, Birdsall has featured actively promoting her 'brainchild' in various newspaper articles, magazine profiles, and in television appearances such as TV3's *20/20* program (see also Malcolm 2002; *New Zealand Health and Hospital* 2002; Barton 2004). News stories have also reported the uptake of CordBank's services among regional communities, frequently offering the personal endorsements of local users as well as the professional backing of CordBank's medical advisor, Dr. Lochie Teague, clinical director of hematology and oncology at Starship Children's Hospital, who is often cited stating that the service 'could definitely help save lives in the future' (Adams 2003: 3). Celebrity endorsement has also been forthcoming from a local television personality, Mary Lambie, whose daughter Grace was the first baby to have blood stored at CordBank (Lynch 2002). It is also noteworthy that many of these newspaper and magazine articles include details of how to register by phoning 0800 CORDBANK or via the Web site, and thus effectively constitute free institutional advertising in the guise of news (Van Dijk 1995).

Extensive publicity and marketing materials have also been produced and widely disseminated, including pamphlets distributed to medical centers, midwifery clinics, and at antenatal classes. CordBank services have also been marketed through displays at Parent and Child Shows, and through its quarterly newsletter, *Safe&sound*. Thanks to this extensive public relations and marketing campaign, CordBank has become firmly established as a four-million-dollar business (Philp 2005). At the time of writing, however, not a single client has derived any benefit from

this service. Not one of over 2,400 stored cord blood samples has been used (Hogan, A. [CordBank Communications Manager], personal communication, 6 May 2005).

5.2. Obfuscating a crucial distinction

In order to understand the problem with how local media have (mis)represented CordBank, it is necessary to clarify the precise nature of the service it offers. CordBank is audited and licensed by Medsafe, a division of the Ministry of Health. Under its current license and in accordance with the 1956 Health Act, stem cells stored by CordBank can only be used to treat the person from whom they are collected through an *autologous* transplantation.⁷ However, almost all existing treatments using cord blood stem cells (including many of those cited in CordBank publicity materials) actually involve *allogeneic* transplantation, using stem cells donated by a family member or a matched but unrelated donor (European Communities 2004). In the case of genetic disorders, this is because the individual's own stem cells are likely to contain the same genetic defect causing the illness being treated, and thus have no therapeutic value. In other cases, such as leukemia, treatment harnesses the graft versus leukemia effect—caused by introducing someone else's immune system into the diseased person—to enhance the efficacy of chemotherapy. As Sullivan emphatically emphasizes, no specialist would recommend an autologous stem cell transplant for childhood leukemia (as cited in Philp 2005).

To date, there are only a dozen or so conditions in which an autologous transplant *might* be used as part of the treatment regime instead of a bone marrow transfer, and in only one case would it be specifically indicated—the very rare condition known as aplastic anemia. Even in the few cases where an autologous transplant might be indicated, however, cord blood is unlikely to be the only potential source of stem cells, as these can also be sourced from peripheral blood or bone marrow (European Communities 2004; Sullivan et al. 2005). From the very outset, however, CordBank was represented in ways that obscured this crucial and absolute distinction between autologous and allogeneic transplantation, and thereby grossly 'oversold' the benefits of cord banking in ways that appear to have misled journalists and clients alike.

5.3. Technoboosterism and the 'hying' of cord banking's (dubious) benefits

This misrepresentation began from the very outset in media coverage heralding the launch of CordBank, with *The New Zealand Herald* devoting a full half-page feature to an interview with Birdsall, pictured smiling while holding a syringe used to extract

umbilical cord blood, under the headline ‘Lifetime guarantee’ (Malcolm 2002: G4). As the subheading for this story exclaims, ‘Storing precious stem cells from the cords of your newborns could save them from distressing diseases of middle age.’ As noted by Ericson et al. (1991), media are inclined to persist with the interpretive frame originally assigned to a particular story, even in cases where conflicting information later comes to light. Given the number of subsequent stories that draw on very similar terms and phrases, this article appears to have enabled Birdsall to set the agenda for subsequent media discussion of CordBank, an agenda premised on inaccurate and misleading claims regarding the actual and potential benefits of the service currently on offer. In the text of this story, Birdsall refers to the virtually boundless regenerative potential of stem cells as the rationale for cord banking, in a classic example of techno-boosterism:

(2) (Birdsall as cited in Malcolm 2002: G4)

The reason for storing them is that cord-blood stem cells provide the child, and then the adult, with their own backup immune and blood system. *At present this can be used, without any fear of rejection, to fight about 50 serious diseases if they occur later in life. For instance, if a child develops leukaemia the stem cells would be able to be used instead of a bone marrow transplant ... feeding stored stem cells back into the blood is a simple procedure with no dangers.*

Here, Birdsall fudges the distinction between autologous and allogeneic stem cell treatments in a way that neatly ‘telescopes’ the therapeutic benefits of the latter to encompass the former. In the process, she grossly overstates and indeed falsely represents the current therapeutic uses of a person’s own stem cells, erroneously suggesting these cells can be used to treat every parent’s worst nightmare, childhood leukemia: Feeding a person’s own stem cells back into their blood *has no curative potential in cases of childhood leukemia*. She goes on to make the questionable suggestion that stem cell research is on the cusp of delivering even more remarkable therapeutic benefits:

(3) (Birdsall as cited in Malcolm 2002: G4; emphasis added)

The future of stem cells could be enormous. There’s a huge amount of research going on worldwide. In the not-too-distant future, stem cells could be turned into brain cells, heart cells or liver cells. If someone develops some disease, such as Parkinson’s or Alzheimer’s, and they have stored stem cells which express their own DNA, they might be turned into replacement tissue.../. . . More than 1500 cord blood transplants have already been performed for a range of illnesses.

Not only does Birdsall fail to note that virtually all of the 1,500 transplants she cites involved allogeneic donation (European Communities 2004; Sullivan et al. 2005), but she follows up a series of inaccurate and speculative claims with the emotional clincher: since ‘The potential use for stem cells is going to be far greater than it is now . . . *storing them might mean the difference between the life and death of your baby in future*’ (Birdsall as cited in Malcolm 2002: G4; emphasis added).

Many of the articles subsequently published reiterate similar claims, and state or strongly imply that cord blood stem cells have numerous autologous uses. For example, one story states that ‘Dr Birdsall said umbilical cord blood was unusually rich in stem cells that were *an exact DNA match for the baby*. *These stem cells could be used in the treatment of many cancers and blood diseases by replacing diseased cells with healthy stem cells*’ (Batchelor 2003: 3; emphasis added). Other articles routinely claim that an individual’s own cord blood can be used in the treatment of at least 45 life-threatening illnesses, including leukemia, Hodgkin’s disease, lymphoma, testicular cancer, multiple sclerosis, rheumatoid arthritis, sickle-cell anemia, and some immune disorders (Brooker 2002b; Gosgriff 2003; *The New Zealand Herald* 2004). In reality, very few of the conditions listed can be treated with a person’s own stem cells, and in no cases is autologous transplantation of cord blood stem cells specifically indicated (European Communities 2004). It is important to note, however, that local journalists did not merely repeat the erroneous claims of CordBank’s promoters. Many actively *amplified* them by developing the ‘human interest’ angle to further illustrate cord banking’s potential benefits for individual consumers.

5.4. *Anecdotal personalization, or ‘how cord banking could help save your child’s life!’*

As is often the case in media discussions of emerging medical treatments and technologies, several articles rely on extensive anecdotal personalization and provide detailed endorsements of CordBank from users under headlines such as ‘Mother-to-be backs private cordbank’ (Brooker 2002b: 3), ‘Oliver’s cord blood banked for the future’ (*The Timaru Herald* 2003: 3), ‘Parents bank on a health plan for baby’ (*Howick and Pakuranga Times* 2003: 4) and ‘Blood saved as insurance’ (*The Evening Standard* 2003: 2). In these and other stories, cord banking is represented at times in an overwhelmingly positive way, with personal testimony used as the primary frame of reference ‘guaranteeing’ its actual and potential value. Thus, consumers attest to their desire not to miss this ‘once-in-a-lifetime’ opportunity to save their child from future suffering, while also revealing prevailing misunderstandings of the actual and potential therapeutic benefits of autologous cord banking:

- (4) (Unnamed woman suffering from rare blood disorder, as cited in Brooker 2002b: 3)
‘My sister’s children have leukaemia on both sides of their family’ ... ‘If my daughter ends up with the same condition as me, I want to be able to cure her.’
- (5) (Marie Cooper, mother, as cited in Batchelor 2003: 3)
‘It was the same principle as you buy any insurance really. You buy your car insurance hoping you’ll never need to use it but you have it there anyway.’
- (6) (Robbie Gerard, mother, as cited in *The Timaru Herald* 2003: 3)
‘[I]f something did [go wrong] and we had had the opportunity to do this and we hadn’t, then we’d probably kick ourselves.’
- (7) (Clair Belch, mother, as cited in *Howick and Pakuranga Times* 2003: 4)
‘When I first heard about CordBank I read as much as I could about cord blood banking and decided I definitely wanted to take advantage of this once-in-a-lifetime opportunity for our baby’ .../.... ‘I hope Charlotte never needs to use this. But at least I know it will be there for her should the unthinkable ever happen. It’s given me peace of mind.’

The timing and very similar content of seven stories published in regional newspapers within a few weeks of each other over April/May 2003 illustrates the success of CordBank’s promoters in defining the media agenda. All exhibit extensive anecdotal personalization in the form of testimony from a local couple (in most cases with an accompanying photograph) who describe the benefits they perceive in cord banking, statistics on the uptake of cord banking in the local region, details of the cost involved and the nature of the procedure, and in all but one case, no reference whatsoever to critiques of autologous cord banking (Adams 2003: 3; Batchelor 2003: 3; Gosgriff 2003: 4; *Howick and Pakuranga Times* 2003: 4; Nichols 2003: 3; Rankin 2003: 2; *The Timaru Herald* 2003: 3). These common features, along with portions of identical text in several of the articles (including the same verbatim quotations from Birdsall and Teague) clearly suggest these stories were initiated, not by journalists, but as part of CordBank’s ongoing public relations campaign, most probably in the form of tailored press releases issued to various regional newspapers, along with the contact details of a local client willing to endorse the service.

As an increasingly dominant media frame, anecdotal personalization privileges the experiences and testimony of individuals at the expense of in-depth interrogation and critique. As is increasingly the case with crime news (Ericson et al. 1991; Soothill and

Walby 1991), health and science stories are often framed as personal concerns affecting specific individuals, rather than as public issues. Such media framing in turn shapes public understandings of emerging (bio)medical developments, their potential benefits, effects, limitations, and costs (Nelkin 1987; Conrad 1997; Petersen 2001; Nisbet and Lewenstein 2002). In the media representation of CordBank, disease was consistently framed as having *genetic* causes, which can be circumvented by individuals (or rather, their parents) taking out appropriate genetic health ‘insurance’ with a private service provider. In the process, journalists failed to acknowledge that there are rather more significant social and structural causes of disease and ill health, along with important social and ethical implications stemming from the commercialization of health services that warrant public discussion and debate. Evidently, such issues did not fit with the established media frame and agenda, and were thus excluded from the CordBank story.

In the process of framing the CordBank story in terms of anecdotal personalization, journalists also uniformly failed to consider the wider economic and political context in which this service has been offered and so actively promoted. This context is one marked by sweeping reforms in the health sector during the late 1980s and early 1990s, underfunding of the public health system, privatization and commercialization of many nonurgent health services to the detriment of public facilities, and resulting social inequities in terms of affordability and access. While umbilical cord banking is hardly a health priority (given the small number of individuals likely to benefit from it), it should also be noted that the establishment of a private facility serves to undermine the case for a far more useful public allogeneic cord banking facility in which stored blood could be more extensively used to treat the donor, a blood relative, or matched recipient (European Communities 2004; Sullivan et al. 2005). Serious examination of these wider issues was effectively ‘crowded out’ by the focus on the personal testimony of private individuals apparently convinced that significant benefits may derive from banking their children’s umbilical cord blood. In effect, anecdotal personalization framed media discussions of this service in a way that limited the kinds of questions that might be asked to just one: ‘how might cord banking help save your child’s life in the future?’ Thus, the rather more important question of whether the claims being made about the value of autologous cord banking were themselves credible was placed safely off the media agenda.

Further, the predominant use of anecdotal personalization appears to have served an important function in terms of encouraging public acceptance of cord banking, increasingly perceived by a significant number of New Zealand parents as a useful and desirable form of ‘health insurance’ (Philp 2005). Such

acceptance appears largely due to the success of the CordBank publicity machine in utilizing mainstream media as well as other forms of advertising to assert its preferred understanding of the service offered. It also appears that many local journalists and editors have seen it as *unnecessary* to question the claims made regarding cord banking's actual and potential benefits, perhaps because the personal endorsements of users were routinely supported by two 'expert' medical commentators: Birdsall and Teague. The fact that Birdsall clearly has professional as well as financial interests at stake in CordBank's commercial success appears to have entirely eluded most local journalists, and casts a shadow over her ascribed 'impartiality'. Thus, rather than interrogating her claims about CordBank as likely to be biased and partial due to her status as a biomedical entrepreneur, local media reiterated and amplified them. In headlines, subtitles, and captions, journalists and subeditors drew on the same phrases, metaphors, and images used by Birdsall and in the endorsements of those utilizing her service; in particular, the notion that cord banking provides some kind of 'future proofing' or 'life insurance'. Clearly, many of those using, publicly endorsing, and reporting on CordBank have been misled regarding its current and potential applications, since few of the cited conditions can in fact be treated via autologous transplantation, while future therapeutic options remain purely speculative.

5.5. *Media(ted) misperceptions: The role of the CordBank Web site*

Such misperceptions are hardly surprising given the inaccurate and misleading nature of CordBank publicity materials, including its Web site, a key source of information for journalists as well as prospective clients. Despite separate requests in October and December 2004 to amend problematic information (Philp 2005; Sullivan et al. 2005), this Web site continues to make highly emotive and deceptive claims such as 'saving your baby's umbilical cord stem cells could save your baby's life' and is 'your only chance' to provide them with 'lifelong health insurance' (<http://www.cordbank.co.nz/why/>). Such claims are disputed by Sullivan et al. (2005), who note that cord blood is by no means the 'only' nor even the most desirable treatment for most of the conditions listed. As they note, stem cells are not exclusively or uniquely available in cord blood, and can also be sourced from the patient's own bone marrow, peripheral blood, or from a matched donor: 'Very few life-threatening conditions needing an autologous stem cell transplant will specifically require cord blood derived stem cells' (Sullivan et al. 2005: para. 10). Further, alternative existing treatments (such as chemotherapy, a bone marrow transplant from a matched donor, or an allogeneic transplant of cord blood

imported from overseas) can in most cases achieve the same ends. At the time of writing, CordBank publicity neglects to mention all but one of these alternative treatment options,⁸ and continues to reiterate misleading claims regarding the autologous uses of stem cells under the dubious heading 'Your only chance':

- (8) (<http://www.cordbank.co.nz/why/>; emphasis added)

Now you can provide your new baby with their very own back-up immune and blood system. Just by saving the blood from your baby's umbilical cord, *you're giving your baby the chance to survive some of the most deadly diseases and debilitating conditions...* Because these stem cells are compatible with your child's immune system, *they can be used to fight more than 45 diseases*, including leukaemia and Hodgkin's disease, with no risk of rejection.

Elsewhere on this Web site, recent scientific developments utilizing allogeneic transplantation are used to 'substantiate' the claim that 'when you save your baby's cord blood stem cells you are giving your child access to a huge number of potential future medical treatments' (<http://www.cordbank.co.nz/experts/articles.asp>). Through a process of omission, distortion, exaggeration, and misrepresentation of the benefits of autologous cord banking, CordBank publicity materials continue to imply that *unless* parents utilize its services, their children may be deprived of their 'one and only' chance of surviving a range of debilitating diseases in later life.

In light of growing criticisms, links have recently been added to separate pages that more clearly differentiate between autologous and allogeneic uses of cord blood stem cells (<http://www.cordbank.co.nz/why/diseases.asp>), but this distinction continues to be obscured in more prominent areas of the Web site—as the above quote demonstrates.⁹ Further, Sullivan et al. (2005) argue that the techniques for collecting and storing blood remain experimental, with no evidence that stored cells will remain viable over a person's lifetime. This is an important point, since several of the degenerative diseases cited in media coverage as treatable with stem cells are unlikely to appear until that person is in their sixties. In the highly unlikely prospect that CordBank's current fee structure held static for 60 years, the cost of storing cord blood until the time it is most likely to be needed would be in excess of \$10,000. A very high price to pay for a very small chance of any benefit: Estimates of the possibility that any particular individual will benefit from the storage of their own cord blood vary greatly, ranging from one chance in 5,000 (according to CordBank) to a more conservative one in 200,000 (Sullivan et al. 2005). Added to that, there is no guarantee that the small quantity of blood stored

will even be sufficient to treat a grown adult. Almost without exception, local media failed to acknowledge these crucial points.

5.6. *The marginalization of dissenting voices*

While the vast majority of media coverage has positively reaffirmed the benefits of cord banking and the value of (frequently hypothetical) stem cell therapies, a handful did note the controversy raised by Sullivan's initial criticisms of CordBank, originally published in *The Press* in an article entitled 'Baby-bank doubts' (Brooker 2002a). Here, Sullivan charged that this facility was of dubious benefit given the very slim chance of a child ever using his or her stored blood, and risked 'exploiting parental fear' (Brooker 2002a: 1). This article also alludes to the misleading nature of some of the claims made on the CordBank Web site. However, the same journalist followed this story up less than a week later with an enthusiastic endorsement of CordBank from a prospective client (Brooker 2002b), in the process illustrating how anecdotal personalization increasingly serves to stifle much-needed critical interrogation and debate through recourse to the ultimate arbiter of value in contemporary capitalist societies—the *individual consumer*. Sullivan's criticisms are merely noted in passing in a few subsequent articles. Two of these also report the findings of a British Royal College of Obstetricians and Gynaecologists study released in 2001, which concluded that the routine commercial collection and storage of blood from umbilical cords was not justified on scientific grounds, and that it was speculative to suggest stem cells might be used to cure a wide range of illnesses. But rather than prompting further interrogation of CordBank's claims, dissenting views are merely included as a minor subtheme, and not developed further. A 'spiral of silence' gradually develops; by 2003, any critique of CordBank is evidently off the media agenda, replaced by what can best be described as PR spin.

Indeed, it wasn't until March 2005 that the extent of CordBank's misrepresentation was publicly revealed in *Metro's* in-depth exposé entitled 'Cold comfort farm' (Philp 2005), alleging factual inaccuracies, along with misleading and confusing information in CordBank promotional materials. This article also notes that CordBank publicity overstates the number and range of diseases and disorders for which a child's banked cord stem cells might currently be used to treat that child, and is emotionally manipulative of parents. Such views are supported by the European Commission's Group on Ethics in Science and New Technologies (European Communities 2004), which described private cord banking for autologous use as having little current scientific value. As they note, the chances of a donor's own cord blood being used to treat them are *negligible*:

- (9) (European Communities 2004: 8–9; emphasis added)

[I]ndications to store cord blood at birth in view of a future autologous graft are for the present time almost non-existent. . . . [I]t is not evident that the use of patient's own cord blood would be preferable to the use of his/her own bone marrow or to well-matched allogeneic stem cells from donation. *It is therefore highly hypothetical that cord blood cells kept for autologous use will be of any value in the future.*

In their view, the endorsement of autologous cord blood banking by medical doctors potentially raises ethical issues of trust. They go on to suggest that the misleading and inaccurate marketing of such services risks preying on parental fear and guilt at a vulnerable time. Burgio et al. (2003: para. 6) support this view, and argue that 'the promise of future autologous use seems unrealistic and deeply exploitative of vulnerable new parents who have the economic means to afford it'. In 2002, the French National Consultative Ethics Committee offered a somewhat harsher assessment: 'Such banks raise hopes of utopia and disguise a mercantile project using assistance to children as a screen' (as cited in European Communities 2004: 15).

6. Some ethical considerations

As noted by Resnik (1998), medical specialists, researchers, and scientists (including those involved in commercial ventures) bear a particular professional responsibility to ensure that the information they provide to journalists or in the form of advertising does not misinform, deceive, or confuse the public, and should ensure that principles of honesty, accuracy, and social responsibility are upheld in all dealings with media. This includes a special duty to avoid misrepresentation, exploitation, and manipulation of laypersons through making false claims or promoting false or unrealistic hopes among the general public. Similar sentiments have been formalized by the American College of Physicians, which takes the view that advertising by physicians or medical institutions is unethical 'when it contains statements that are unsubstantiated, false, deceptive, or misleading, including statements that mislead by omitting necessary information' (American College of Physicians 1998: 586). Failure to observe these principles not only breaches well-established medical and scientific ethics, but potentially contributes to flawed policy decisions, misguided public opinion, and misinformed decision-making by individuals, with potentially considerable economic and psychological costs (Resnik 1998).

In applying these ethical principles to the advertising and promotion of CordBank's services, I submit that many of the statements made by Birdsall and

reported by local media were confusing, misleading, and deceptive, and that several of the claims asserted via the CordBank Web site remain ethically problematic. In effect, Birdsall utilized her privileged status as an expert media source to disseminate, via mainstream media and Internet, misleading information about a commercial venture that she serves to profit from. While Birdsall is just one of a growing number of local physicians and scientists pursuing opportunities for biomedical entrepreneurialism, the fact that she was engaged in a business venture does not exonerate her from the same ethical requirements borne by other medical professionals and scientists. No matter how fervently a scientist or medical specialist believes in the positive potential of a particular service, treatment, or therapy, he or she retains a number of professional and ethical obligations with respect to public communications about this matter—whether these communications take the form of media statements, press releases, or marketing and advertising materials.

These obligations are, first, to accurately represent and precisely specify the actual nature and applications of the service, treatment, or therapy on offer, as currently permitted within the relevant regulatory context; second, to openly and fully disclose all relevant information regarding the dangers, limitations, and possible effects of a service, treatment, or therapy; third, when discussing possible future applications of a service, treatment, or therapy, to make clear that these are hypothetical as opposed to inevitable developments; fourth, to declare in all communications any financial interests in the commercial success of the service, treatment, or therapy being promoted; and fifth, to avoid acting in ways that are or could be perceived as exploitative or manipulative of the general public or media personnel, since as Resnik (1998) notes, such behavior has the potential to call their profession into disrepute should deception be subsequently exposed or insinuated.

More specifically in the case of the public promotion and advertising of CordBank's services, there is a professional and ethical obligation to explicitly clarify the crucial distinction between autologous and allogeneic applications of stem cell therapy using umbilical cord blood; to explain the significance of this distinction; to avoid presenting information in ways that imply allogeneic and autologous therapies are synonymous; to avoid emotionally manipulative marketing claims that inaccurately represent the benefits of banking cord blood; and to make clear that under current New Zealand law, umbilical cord stem cells can only be stored for future autologous use, and that autologous stem cell transplantation in fact has very limited therapeutic application.

While ethical breaches on the part of CordBank's founder and medical director clearly occurred in this case, it is also concerning to note the role of local journalists in actively perpetuating misleading and

manipulative information on behalf of CordBank, and in failing to interrogate or critically assess the claims made, despite early indications of their problematic nature. The case of CordBank usefully highlights the professional obligations of journalists to remain objective, balanced, and accurate in their reporting of the news, which should be clearly differentiated from PR spin. Regardless of the professional medical or scientific credentials of a source, and irrespective of the perceived value or worthiness of the service, treatment, or therapy they are advocating, journalistic integrity and independence should be maintained. Journalists must also be mindful of the rapidly changing spheres of science and medicine, in which emerging possibilities for biogenetic entrepreneurialism generate clear conflicts of interest among traditionally privileged 'expert' sources. These conflicts of interest must be explicitly acknowledged and their implications explored. Now, more than ever, a greater degree of journalistic integrity is necessary if news media are to remain in the service of informing the public rather than in the service of business, big or small.

7. Conclusion

As this discussion of local media representations of CordBank demonstrates, New Zealand print media frequently echoed the very same terms, metaphors, images, and frameworks of understanding used by prominent medical specialists in promoting the value of a service offered on a private, commercial basis. In-depth interrogation of the goals, benefits, costs, and potential implications of private autologous cord banking remained largely absent. Little, if any, critical attention was paid to the vested personal, professional, and commercial interests at stake in this venture, and very little of the coverage questions Birdsall's broader assertions regarding the 'boundless therapeutic potential' offered by stem cell research. Rather than the media offering balanced critical assessment of CordBank's claims and acknowledging the interests of those so actively involved in its promotion, a series of overblown, misleading, and emotionally manipulative assertions were enthusiastically reiterated and indeed amplified through the use of media frames of anecdotal personalization and technoboosterism. Once adopted, these frames militated against due consideration of the actual nature, benefits, and potential effects of this new development. While dissenting voices were initially acknowledged in some articles, any critique of CordBank's claims was progressively marginalized and silenced within mainstream media in favor of PR spin.

On the basis of this case study, it appears that the symbiosis between local journalists and certain privileged medical and scientific sources has the potential to facilitate a process whereby key stakeholders are

able to effectively advocate in support of expensive, nonessential medical services from which they potentially profit. That, in the case of CordBank, they were able to do so virtually unchallenged reflects the growing reliance of journalists on the knowledge capital of established medical and scientific sources, along with a related media bias favoring the positive representation of emerging medical and biogenetic research, technologies, and treatments.

Considering the wider implications of the CordBank case, it could be argued that in providing a conduit for the positive representation of emerging medical and scientific developments by individuals and groups that have clear professional and financial interests at stake, media facilitate the process of discursive normalization of controversial and in some cases deeply problematic developments, lines of research, and related commercial ventures. The science–media symbiosis can thus be seen as enabling powerful interest groups to define and delimit the nature and content of media representations on their own terms, largely unchallenged, in a process that possibly aids the further entrenchment of those (already hegemonic) interests within the wider public domain. By actively celebrating the progress of medical science and emphasizing the potential benefits of new developments and services for individual consumers, mainstream media fail to provide an adequate forum for much-needed public debate, interrogation, and critique of the nature, direction, social value, and growing privatization and commercialization of biogenetic medicine.

Notes

1. Such research has sparked attempts to limit exploration in controversial areas, as reflected in the Universal Declaration on the Human Genome and Human Rights, the Council of Europe Protocol to the Convention on Biomedicine and Human Rights banning human reproductive cloning, and the US-backed Costa Rican proposal to ban all forms of human cloning, including therapeutic, via the United Nations, tabled in October 2004.
2. While a ‘preferred’ reception cannot be guaranteed, since readers may be able to draw on other sources of knowledge such as personal experience and professional expertise, the specialized nature of recent medical and scientific developments means most people will lack such alternative sources of information. Hence, the media are likely to exert a major influence on public understandings in this area.
3. All figures sourced on 1 May 2002, from The New Zealand Audit Bureau of Circulations Inc. (<http://www.abc.org.nz>).
4. Two of these were published during the course of this study: ‘This man has helped make more than 2000 babies’ (Fleming 2002), and ‘Up close and personal with ... Dr Richard Fisher: Fertile in mind and in soul’ (Hewitson 2004).

5. Despite Fisher’s best efforts to sway public opinion in his favor, his proposal was rejected. It should be noted that the regulation of PGD is governed by different legislation to that governing CordBank. While the latter is licensed under the 1956 Health Act, the provision of PGD is now regulated by the Human Assisted Reproductive Technology Act (2004), which restricts its use to testing for genetic disorders and heritable diseases.
6. In addition to offering a full range of fertility services, other ‘spin off’ businesses linked to Fertility Associates include egg freezing (promoted to career women in their 30s at a cost of \$7000 plus annual storage fees of \$150) and Egg Check, for which a more modest fee of \$400 is charged (see Johnston 2004; Rowan 2004).
7. Any exception to this policy requires that special application be made to the Ministry of Health for a dispensation. To date, no such dispensations have been granted.
8. Bone marrow transplantation *is* acknowledged, but discounted as the ‘invasive’, ‘painful’, and frequently unsuccessful counterpoint to painless and risk-free stem cell transfusion, said to carry no risk of rejection because the cells are a ‘perfect match’—once again conflating autologous and allogeneic transplantation (<http://www.cordbank.co.nz/why/sct.asp>).
9. In addition to altering some of its publicity material, the growing pressure on CordBank has prompted two other responses. First, a concerted push to change the law so that stored cord blood can also be used in allogeneic transplantations to treat immediate family members (*The New Zealand Herald* 2005). Second, a rather canny marketing strategy: since the current law only allows stored blood to be used for autologous transfer, CordBank now explicitly recommends parents collect blood for *all* of their children, and offers a 15% discount for the siblings of any baby who has already had their cord blood stored. According to CordBank’s Communications Manager, a time-payment plan option is also in the pipeline.

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