CHAPTER THREE

COME ON, BE SERIOUS: POSITIONING AND FRAMING IN THE POWER PLAY OF CLASSROOM-BASED REPRODUCTIVE AND GENETIC TECHNOLOGY DEBATES

Introduction

In this new era of upstream communication, scientists and science policymakers are expected to involve non-scientists earlier in technological decision-making (O'Mahony and Schäfer 2005; Wilsdon and Willis 2005). One of the earliest points of entry must surely be a secondary school classroom. It is here that young citizens can explore the choices they might one day make as clinicians or technologists in future policymaking, or indeed as parents, in future moments of crisis. The use of new reproductive and genetic technologies (NRGTs) is one arena for these choices. This essay describes a type of biology class where science meets its young publics—a classroom debate using films and presentations by a bioscientist as the basis for discussion about reproductive decisions and their implications for identity and society.

The aim of this essay is to report how young people connect in such a forum to wider NRGT discourses in news reports, films, comics and other media. It draws on ethnographic research in six secondary level schools, with students aged from 15-17 years throughout the Irish province of Leinster. I will look at the positions young people take on an NRGT debate in the form of physical, embodied self-representations on the classroom floor, as well as personal status in debate relational to other classmates. I wish to trace also their framing processes—how the debate is shaped by individuals using tactics of emphasis and verbal omissions. There is, as will be shown, a complex relationship between common

discursive practices of "positioning" and "framing." The data is analysed in the structure/action tradition of Bourdieu (1990) and de Certeau (1984), but also in that of practice-based science studies such as Schatzki *et al.* (2001).

Much has been written about the types of activities that demonstrate opposing perspectives on so-called "socioscientific issues"[1] in classrooms, such as role-playing and fictionalised scenarios (for example, see Ødegaard 2003; Osborne *et al.* 2002; Rose 2003; Weingart and Pasengrau 2003). Like many other science curriculum developers, Ireland's National Council for Curriculum and Assessment (NCCA) is currently proposing major changes to the biology curriculum which will increase the exploration of social and ethical implications of both genetic and environmental science, meaning that these types of activities will be more in use by teachers. As welcome as these innovations are, we should not accept these activities solely in terms of a more "open" way of learning about the social implications of science. I want to focus here on how young people might be part of wider debates; a democratic inclusion—in terms at least of democratisation of discourse—of the voices of the young. Participating in the practices of NRGT discourse gives young people the tools to participate further in the discursive complexities of late modernity. In addition, exploring views on issues such as stem cell research or genetic screening allows us to observe how young people make commonsense understandings about human/nature interfaces and the late modern politics of the body (Berg and Akrich 2004; Rose 2007) through acts of "serious play" in the classroom. This serious play involves debate and argument based on mediated information, performative practices as ritual in front of peers, and existential topics brought into a playful forum.

Theoretical background: practices, frames and positions

For an overarching theoretical framework I draw on Giddens's (1984) structuration theory and Goffman's performative action (1959) and framing (1974) theories, as well as the positioning theory of Harré (Harré and van Langenhove 1999). These may be considered "practice theories" (Schatzki 2001). Theorists within a practices framework, such as Giddens, Taylor, Foucault and de Certeau, often speak of "fractured" identities and consumption in late modernity. Young people draw from many forms of mediated information, resonances from popular culture, and salient imagery from their lives. Stories from news media or entertainment feed into their out-of-school learning experiences. There are complex, intertwined narratives being channelled into concept formation about

NRGTs, whether from a computer game, a movie blockbuster, or a friend on Bebo.[2] Identity construction processes draw from sometimes contentious global discourses on controversial socioscientific issues, from NGOs, faith-based groups, technologists or clinicians, all with competing interpretive packages; that is, varying ways that tap into popular understandings of the way the world is or ought to be. Young people make their own assumptions from these, as well as peer-informed collective judgements on NRGTs, and narratives in the classroom link in with these (Ødegaard 2003).

Gamson (1992) has written about the dominant themes resonant in popular culture and how the everyday talk of publics can subsume or resist them. De Certeau (1984) very skilfully traces what he calls the "strategies"—explicit or otherwise—of those in power, and the "tactics" of everyday practices of ordinary people resisting and repurposing these themes through play, "making do", or simply living their lives. Giddens (1991) and Fairclough (1999) also place importance on mediation for identity construction. Within this context, there is the sustenance "of a coherent yet continuously revised, biographical narrative" (Giddens 1991, 5). The late modern self reconstitutes a combination of direct human experience and media information that contains both expert and popular culture references to—in this case—genetic screening or engineering. For Beck (1992), a sub-politics emerges in the "risk society", a collective action from outside mainstream politics. Resistance against technocratic or technoscientific forces often characterises this type of politics—the many environmental social movements, opponents of genetically modified organisms (GMOs), and pro-life groups against NRGTs are examples.

The Gamson model of resistance (Gamson and Modigliani 1989) exists in public forums, where "media discourses" and "public opinion" are complex processes that interact and influence one another and are ultimately bound together, making it difficult to isolate causal relationships. Thus, we might consider media representations of the biosciences to be both controlling and controlled. The focus in this essay is on how young participants in classroom discussions reacted to—perhaps even resisted— dominant themes about NRGTs in media discourse. Some claims made by participants about the progressive or destructive force of NRGTs reflect fictional characters' views, although there is often an expansion of the argument. The approach shares the perspectives of the "collage effect" of news from sociolinguistics (Chouliaraki and Fairclough 1999; Chouliaraki 2000) and conversations about known facts from experience and media representations (Gamson 1992). These interlinked discursive practices respond to hearing about news stories, watching sci-fi films and

understanding the immediate consequences of an issue like pre-implantation genetic diagnosis (PGD), a form of genetic screening of embryos. They are brought into classroom discourse through the representational tactics of arguing for or against a film character's decision in a film and asking a bioscientist questions about, for example, cloning.

In debate over issues of science and society, the mass media contributes to discourse by not only providing scientific and policy information but also raising the profile of competing positions (Bauer and Bonfadelli 2002). For example, in technologies involving the embryo, news stories may present a reductive polarisation of viewpoints (O'Mahony and Schäfer 2005). The "pro-life" frame may create an identity for the opponent as "anti-life", whereas the "pro-choice" frame might construct opponents' identities as illiberals frowning on individual freedom of choice. Yet these dichotomies might best be described as "positions" rather than "frames." Gamson and Modigliani (1989) refer to a media frame as a

> central organising idea … making sense of relevant events, suggesting what is at issue … [and which] typically implies a range of positions, rather than a single one, allowing for a degree of controversy among those who share a frame. (Gamson and Modigliani 1989, 3)

Frames emphasise certain aspects of a localised reality, shoring up some information to strengthen the frame, while other information is ignored. O'Mahony and Delanty (1998) describe how "discourse coalitions" can be constructed from different positions of opinion. Certain types of intentional frames bring groups together around a cause (Gamson 1992) or religious edicts, such as in abortion discourse (Ferree *et al.* 2002). However frames need not be intentional or strategic. There can be a passivity to them. Where there is interactive social grouping in "live" discourse or debate, young people may collectively frame biotechnology and NRGTs in ways of common interest or engage with issues by calling on media resources. Gitlin (1980) describes the active framing in conversational interactions drawing from media frames: "Frames are principles of selection, emphasis and presentation composed of little tacit theories about what exists, what happens, and what matters" (Gitlin 1980, 6).

The concept of positioning is useful for further analysis of local discursive practices that do not necessarily involve speaking. While carrying out pilot workshops, I became aware of the performative nature of young people's interactions as they debated NRGT decision-making and clashing worldviews. Following de Certeau's (1984) spatial stories

and considerations in current cultural anthropology, there are interactions to be traced out here between media and local cultures (Brown 1998; Hirsh 1998; Hughes-Freeland 1998), in how local classroom groups argue to defend characters' actions. Role-play is a common mechanism in classrooms for doing this. A role-play might have involved participants choosing and adopting another character's or participant's position, thus exploring multiple perspectives. Positioning is "paying close attention to the local moral order, the local system of rights, duties and obligations, within which both public and private intentional acts are done" (Harré and van Langenhove 1999, 1). Davies and Harré's (1990) theoretical concept of position rather than role is chosen here, allowing participants, as actors, more flexibility to manoeuvre their loyalties. They are less static, more subject to immanent thought and action, yet are still inevitably tied to "outside" discourses. Asking young people to deliberately change allegiances would have forced them into role-changes and "play"; it was better that this occurred spontaneously as part of how they believed they felt about the issue and in relation to others. This is what I would call "positional play" rather than role-play. It is Gadamer's (1975) idea of "spiel", of imitation in creativity which challenges the centrality of reasoned discourse. This interplay of media and classroom discourses, external and internal positioning, removes the dichotomised methodological tensions that exist in media/audience "effects" of genetic understandings in popular culture (cf. the debate between Condit *et al.* and Nelkin and Lindee in Condit *et al.* 1998; Condit 1998).

Classroom data: power play from screen to students

In this section, I want to reflect on certain interactions between method and empirical data in my ethnographic research. These show the performed nature of school audience discussion in response to the two films about NRGTs. The films used to present reproductive decision scenarios were *The Gift* (1999), developed by Y-Touring and the Wellcome Trust, and a BBC drama documentary, *If... cloning could cure us* (2004). *The Gift* is about three generations of a family who have a genetic predisposition towards Friedreich's ataxia, a rare disease that causes progressive deterioration of the nervous system. Annie Kay, a 16-year-old football enthusiast, begins to develop the symptoms of the disease in 1998. When she is diagnosed, her family react in different ways. Her mother, Barbara, who has already lost her husband, is devastated and over-protective of Annie's brother, Ryan. The years 2012 and 2028 deal with the implications for Mark, Ryan's son, following his discovery that

embryo screening was used in his case, not just for the absence of Friedreich's ataxia, but also for genetic markers for sporting abilities. Following the presence of the genetic disease in his family, Ryan has become a geneticist. It becomes clear that his family background was a major influence on his decision to select Mark for his own interpretation of "best traits", a decision he takes without the consent of Mark's mother Jennifer, and with which neither Mark nor Jennifer are happy with. The film raises issues such as eugenics, failing health, individual identity, children's rights to independence and genetic testing; as well as traditional dramatic themes like jealousy, betrayal, and sibling rivalry.

If… Cloning Could Cure Us (2004) is set in the year 2014 where a "maverick" scientist, Alex Douglas, attempts to harvest stem cells from a 19-day-old embryo to develop treatment for the victim of a climbing accident, Andrew Holland, who is paralysed from the waist down and in danger of dying. In doing this she is defying UK legal restrictions on using embryos older than 14 days. The film explores Alex's professional and personal motivations through a courtroom drama and includes real testimonies from "talking heads" such as leading scientists, bioethics legal expert Professor John Harris and Dr Suzi Leather, then head of the Human Fertilisation and Embryology Authority.

Students were asked to defend the decision-making of those characters who represented their own views, as well as engaging directly with the visiting bioscientist. Students were asked to complete a questionnaire with eight statements or points of view relating to decisions made by characters (for example, "Ryan was right to …") and to indicate how strongly they agreed or disagreed. The group was then asked to imagine a line running across the room, one end being "Strongly agree" and the other end being "Strongly disagree", with three intermediate points of agreement in between. The eight statements were read out through the session and the class asked to stand at a point corresponding to their questionnaire responses. However, it was of little importance if participants took up a different position than the one they had recorded on the questionnaire: the physical movements and interactions themselves were the key points of interest. Individual positions and gender were marked on a paper version of each statement's Agree/Disagree line, and clusters of participants who stayed together identified. Individual students were then picked to explain their perspective to the group. Students were encouraged to argue their case in a fair and non-threatening environment. They were also asked to shift position if their opinion had changed given the preceding discussion, and to record this change of position on a second questionnaire.[3]

Young people may not realise, or may even deny, that they are involved in a form of politics when they position themselves in their views on NRGTs. When a student says she is against all NRGTs she is making a political statement, as defined by the new life politics[4] of NRGTs: she is positioned as someone who is against NRGTs in society. She may, however, be against NRGTs as they relate to a film she has just seen, or be responding to peer pressure. Students, in a forced event such as the discursive activities used here, use their cultural capital resources of immediate classroom experience as well as life histories. There are also gender expressions brought forward by young males and females who interact differently about reproductive issues. Such factors have a profound impact on the pedagogy of NRGTs.

Hughes-Freeland (1998) compares active media consumption with ritualised agency within non-mediated cultures. Similarities are drawn between active audience participation with television, and performative audiences in non-Western rituals: tension is created between the dramatised and the real. Similarly, Goffman describes the important relationship between the real and the fake: "what is sovereign is relationship, not substance" (Goffman 1974, 560-561). Students talk about what and how they know, and what it means to them. Yet the tension exists in that film keeps these life political issues "sequestered" from their lives, at a safe distance (Giddens 1991). Engagement and participation with a film can manifest itself in retelling the story in discussions afterwards, and using creative forms to re-present, or even re-perform, the text. Techniques include synopsising, turn-taking, or repeating lines from the film, as the examples below show. In this case students are referring to the scene where a doctor tells Annie she has ataxia:

A: [Annie] knew what was going on and yer man [the doctor] didn't and he was kinda sitting there…

B: He just wasn't very good at explaining… He was afraid to say anything! *[laughs]*

A: … and he didn't know what to say … he was just afraid to say anything to her.

B: And she was real like, "There's no cure, there's no nothing" and he was like…

A: … "Yeah. No there's no cure."

B: She was like "I'm gonna get much worse, aren't I?"

A: And he was: "Yeah you are."

            …………………………

C: [The disease] could creep up on him the way it did his sister.
(*The Gift* film discussion, all female)[5]

"I'm gonna get much worse, aren't I?" and "creep up on him" are
direct quotes from *The Gift*. Both *The Gift* and *If… Cloning Could Cure
Us* are within the bounds of credibility in the range of events and
characters they portray, because they follow contemporary dramatic rules.
Narrative codes of characterisation and story contribute to decisions within
each film. Some of the characters are archetypes. For example, Alex is
portrayed as a woman operating in a man's world, as well as in the world
of science, fighting for recognition, power, fame—a lifestyle that appears
to be presented as incompatible with the scientific world. Arguably, there
are also sexist undertones to Alex's characterisation: her sexual
relationship with the main prosecution witness, who also worked in her
lab, brings her professional integrity into disrepute; in one scene she
obsesses over a pair of Jimmy Choo's. In *The Gift*, we are asked to view
the actions of Ryan (the father who selects the embryo) in terms of his
experiences of seeing his sister Annie suffer, yet events in his wife
Jennifer's past which might have informed her decision to "let nature take
its course" are never clarified. This implies that moral decisions within the
narrative to use NRGTs for sex and trait selection require explanation, but
that siding with nature, principle, or belief does not. There is a simplistic
rationale behind Ryan's actions, which sets him up as the "villain," and
which demarcates actions as acceptable (removal of disease) or
unacceptable (selection of sex and traits).

However, heavy-handed representations may successfully use the
characters' identities as representative of public opinion about NRGTs in
both films. When participants recall the story by quoting lines, are they, as
de Certeau might imagine, resisting a media strategy through a ruse of
reconstruction? Semi-Proppian storylines and characterisations fulfil
expectations, and the interpretation of these can, in today's mediated
society, be reflexively appreciated by a very active media audience.
Students may well read the codes, and know the pantomime villain and
screen hero to be cyphers. The second prosecution witness in *If…* is a
fertility doctor who unsuccessfully tried to clone himself, causing birth
defects in the process. He says at one stage that there is a tendency for
mutations to occur in all cells after cloning. The lighting and his manic
stare present him as a mad scientist. "This technology," he says, darkly, of
embryo cloning from the witness stand, "will be the undoing of us all."

It was possible to identify sub-plots unfolding during debate as
students were released from the usual constraints of a seated classroom.
For example, in two schools (one rural, one inner city) students registered
their protest at having to participate at all by remaining seated. In another
small town school, arguments became overheated and out of control.

Strikingly, however, even after vehement arguments, students diametrically opposed to one another cordially had lunch together afterwards. Despite sometimes heated exchanges, and having raised fraught issues such as abortion, debate was part of the "play" of the exercise. Similarly Damien and Derek, from an inner city Dublin school, were consistently antagonistic towards each other and took opposite sides: in their case it seemed that the politics and rhetoric of debate were intentional. The group seemed to enjoy the joust between these two, but in keeping with the shared performance fulfilled their audience role by groaning or tutting in mock disapproval as each opponent spoke. In other performed examples, as each session progressed participants could anticipate other positions before they were taken. Thus, peer power was a major factor in how people responded to film characters' justifications.

Classroom data: framing and positioning examples

This section looks closer at the dynamics of framing, following work on communication strategies by Benford and Snow (2000) and conversational resource strategies by Gamson (1992). First, it is useful to take a closer look at frame alignment strategies.

One particular school is in a socially disadvantaged part of inner city Dublin, with large steel and glass doors that barricade the institution from the outside world. The school presents a strong Catholic ethos to the outside. Des, a fifth year student from this school, positioned himself as "pro-life". As we shall see, despite his firm opinion on the sacredness of the embryo, there is potential flexibility in Des's arguments. It must be emphasised that frame alignment does not always mean fluidity of a position—this can remain solid. It is also notable that the framing described below takes place outside the power play of the class, in one-to-one interviews. Frames transform and change shape during justification, but ultimately there can be solidity in a relational stance towards the use of a technology. Such alignment repackages the frame (Snow and Benford 1988). Sometimes this alignment takes the form of collective action, a "them and us". The opinion is shared by "someone else" who might back it up, while other people, it is suggested, have an opposing view. Des's framing of the embryo was strengthened by the performative nature of the debate; the way it evolved within the discourse. In the extended extract below (from a one-to-one interview), he sets himself up as in opposition to Damien, a classmate, saying that he was "not as extreme as him". He also chooses an opposing position to another classmate, Derek.

Initially, Des had never thought about the possibility that the destruction of embryos might be an outcome of some IVF procedures. I explain to him that there is no regulation as yet in Ireland but that in the UK there is the option to donate to infertile couples, or to research, or to allow them to "perish". Des suggests gamete donation or sharing as solutions to infertility. Des's strong position is the protection of the embryo at all costs. When it is put to him that people may want to have their own biological children, he offers a further, desperate solution, at times laughing nervously, showing discomfort:

Des: But, am maybe they'd want to select like … people to donate. D'y'know what I mean? They wouldn't want to just select some random [person] cos you wouldn't have a clue … really.

PM: So you see … where there could be this potential … in IVF where there are spare embryos, maybe nobody wants them?

Des: Yeah, yeah I know what you mean yeah

PM: What do you think could happen there? What should be done?

Des: What should be done? What should be done with the embryos or what should be done to prevent sperm…?

PM: Well maybe prevent, yeah prevention *[slight laugh]* or … or …

Des: Could you not … if someone wanted that, could they not … let's say if they wanted a random one then. Could they not wait until they ask for one and then fuse them and then implant them? Like eh, does it … or else could … more people would want, if they could, select *friends*. Which is a bit weird maybe but …

PM: Yeah.

Des: *[laughs]* I now it's very…

PM: But … there's still a problem of … supposing the first thing a couple might want is their own [child], so if, if there's this … only technique that can be done … the medical procedure will tell them "Look we've got to make eight and see which is the best. That's all we can do, because some of those, they won't …" *[notices resistant expression, laughs slightly]*

Des: I know. It's definitely grey … Always in life I think when it comes to those problems it might be a bit, I don't know … and … and what would be … and what do you mean by "choosing the best?" I mean would some not use properly and some …?

The term "best"—meaning an embryo that was more likely to implant and develop—was perhaps carelessly chosen by me in this instance. This utterance allows Des to bridge from a what I would call an "*embryo as person*" frame to one more focused on the "*rights of future humanity*", opposing an implicit eugenics by a discursive technique of challenging the

term "best" embryo. A *rights* frame for the embryo did not have the same strength and defined border in discussions as an *embryo as person* frame did. In order to argue against using NRGTs, the personhood rights of the individual embryo can be appealed to; if this seems to fail, there is a shift to a wider frame about the effects the technology might have on the next generation or future society. Des then offers more solutions to shore up his original frame, that is, a "sacredness" of the embryo.

> Des: I obviously don't know much about it but am … this just could be a suggestion. I mean would they not try one and if that fails then that's fair enough, that's failed? I wouldn't have a problem with that and then they try one at a time until one fuses. And then try that and let's say if that fails, that's failed naturally, so I don't see a problem with that . D'you know what I mean? But anyway, right.
>
> PM: So you …
>   You're saying that they should be ah … the ethics as far as you're concerned they should actually be thinking about each individual … each time they, they decide to do this?
>
> Des: Yeah just preventing …
>
> PM: … and be thinking about, what … is this going to be used, is this not going to be used?
>
> Des: Yeah. That's it *[laughs]*

This is a form of "frame amplification" (Benford and Snow 2000)*,* a solidifying of his position. Science will not offer him an answer here as he concedes he knows too little about it. During the film discussion with the group, he employs a similar bridging strategy, from *embryo as human*—"I think it stinks anyway. I mean you're just killing an embryo"—to what might be thought of as a "*runaway*" frame, suggesting that technology will be out of control (following another student's comment about how "everyone will be the same" once unlimited PGD is allowed). The conversation in this group session continues:

> H: I don't really believe in … that like you should be able to select embryos before they are born. I think it should happen naturally, so … Like I can see where they're coming from, like why they'd want their child to be born without disease and what the intentions that were behind what they did. But I don't agree with what he did. Like I know they were only trying to do the best for their child. But I don't agree with being able, to actually being able to y'know down to being able to pick whether it's a son or a daughter or whether its *[inaud]* or …

O: Cos if you are making someone good at sports you want him to be
         good at sports. And a lot of people are going to make people good
         at sports.

Des then interrupts by talking again about "variety" in the human
population:

Des: … I mean there wouldn't be enough variety. I don't … I just think
         it's definitely wrong to start putting certain attributes to certain
         people.

Even within one sentence, Des has bridged from a *runaway* ("there
wouldn't be enough variety") to a *rights of a future child* (it is wrong to
give people "attributes") frame. Despite bridging a frame, he sticks to his
core position:

Des: I mean if you're going to decide like that.
PM: So you think that overshadows everything else?
Des: It overshadows a lot of
         these little things about whatever attributes and everything
         [inaud]. And then again when it comes to disease, I'd still *[inaud]*
         about that, y'know.
PM: Yeah. But you …
Des: I just think it is wrong.
PM: But you think the main thing here is what about the other …
Des: Yeah cos it's basically abortion.

It was interesting to observe Des's frame transformation at the end of
the interview relating to *The Gift* film. In interview, I asked Des about a
collective understanding about this sacredness:

Like for instance I remember Derek [also in the class] making out…saying
that the embryo isn't a person, like it definitely isn't. I mean he mightn't
have thought of it as much. I mean, I don't know. I mean, that's *his* view. I
do think other people ... for instance we'd have conversations about
abortion. And then people were all against abortion, y'know? But then
when it came to this [debate] it was a completely different *[inaud]*
everyone was all for that … So abortion … A lot of them were against it
but with this…So I dunno. And then they were all kinda saying "well I
don't think we should ever" and "that's murder" and all that. And then
when it came to that, just cos it's just a cell it's different. So that was …
the only thing I'd have a view doubts [about] there. About people putting
actual thought into it *[laughs]*.

This is Des identifying a collective position; most haven't thought seriously about it. Derek is singled out as the opposition, alongside other students' conflicting distinctions between stages of foetal life, giving Des the higher moral order. He goes on to demonstrate flexibility, suggesting that he might change opinion himself. This time Damien—a positional ally who is against PGD on the grounds that it may negatively affect evolution, a "*scientific rationalism*" frame combined with a "*harmony with nature*" frame—is the "enemy" because of the solidity of his position. Des has a controversial opinion here and uses the conversational resources of media and personal experience to justify his opinion, as the following extended extract shows:

PM: Do you think people might change a bit when it comes to … a particular situation or…?

Des: Yeah I know. But even myself, when, when it comes to things like disease I would … I … I … wouldn't … I'm not that like I may … I might kinda give the impression that I'm really, really solidly against it but I think there are some situations that I would think about like …

This becomes preparation for what might seem like a u-turn:

Des: For instance I think as far as I could see, Damien he was really, really solidly against it in … so … I agreed with him. But I found that am … yeah like uh with some diseases … and if it was inevitable that someone was going to have a horrible life or was completely mentally and physically handicapped then I think it would be right ... it *could* be right to select cos I don't know if … if they're going to live a life of pain and aren't going to be properly conscious and they're going to be really like basically wrecking the lives of parents and things. I reckon, I don't know … cos I know a friend of mine has a sister who is a … as actually … as it happens there she's a twin …

PM: Mm.

Des: The twin … one of the twins is completely normal and healthy and one is completely mentally and physically handicapped.

PM: Really?

Des: She's just am … and I don't even know the name of the condition or anything, but she's mentally and physically handicapped so I've had a bit of experience … I mean in that kind of thing as well. Cos my sister's best friends … one of my sisters best friends had ah—is it cerebral palsy I think when …

PM: Yeah.

Des: You're mentally OK is that right? Well basically it was a condition
       where she couldn't talk or speak. She couldn't … and she couldn't
       move. She was in a wheelchair. And she couldn't … her voice …
       but she was perfectly normal in the head. And em, its well known
       anyway, I'm not sure. But she ended up … and she had a good job
       and that's why, no-one could understand and she got so much
       hassle and stuff. And she ended up actually killing herself.

Des uses experiential knowledge from another's tragic life story to
back up his NRGT argument. To continue this passage, it is evident that he
begins to foreshadow an altogether more controversial angle, and then
quickly draws back to use a media resource in his argument (note, once
again, that the laughs are of the nervous variety):

Des: But em. So there's a bit of like … some diseases are hard to—I
       don't know *[laughs]* but especially when it comes to mental things
       am, I think that maybe that before birth … and when we saw that
       video *[laughs]* … I don't know if you've ever seen that video
       about that woman—or was it a man—that had the skin disease
PM: *The Boy Whose Skin Fell Off.* I saw parts of it.
Des: And he said himself—and his mother said—if there was some way
       … like they even said about abortion, they would have aborted.
       Like he said it, he wished he was, and his mother said that. So
       y'know, I don't know *[laughs]*.

Des then returns to a view of rights and consciousness:

PM: Do you think those kind of experiences—you were thinking of
       those as you're watching this kind of film?
Des: Yeah. And definitely with … diseases there's going to be a line
       drawn. If they find out they have asthma or something like that. I
       mean I have asthma like. I don't think then that would be justified
       if someone has some sort of diseases that isn't going to be life
       changing especially. I don't know why I have a thing about mental
       diseases because I just think that's kinda just the worst. No matter
       how physically disabled you are I think when you're mentally
       disable that's kinda when … I don't know.
PM: Although there are … people would say, who have mentally
       handicapped kids and all, who would say they're … they're people
       as well.
Des: Oh yeah definitely.
PM: And even if there's a whole school of thought who say they aren't,
       but do you think there is maybe an implicit or even a small bit of
       discrimination if you were to say these people shouldn't be born at
       all?

Des: Well, well I wouldn't say they shouldn't be, be born. I just … I think that … I don't know really.. and especially with just the people … it'd just be the fact that they're not conscious. And again I'd say severe … severe mentally handicapped … I mean if they're not mentally conscious. I think there might be circumstances in really, really severe cases they're … they should be allowed … well maybe should be allowed select *[laughs]* and again I'm not even sure myself on that one *[laughs]*.

In this long passage of conversation, Des has transformed:

1. from a frame where the embryo is the immovable object, the central actor in the discourse;
2. to bridging the frame of the sacredness of the embryo to a frame about the ethics of how it would be possible to select the *best* embryo—in other words how a "best" embryo could be defined;
3. to moving back and amplifying the original frame, by offering solutions for infertile couples which maintain the integrity of every embryo used in IVF (when this becomes the topic of discussion);
4. to introducing a certain flexibility into his frame again when reflecting on other people's stories and media instances, which caused him to transform the frame into one that is a central position in discussions (that perhaps PGD should be used for disease but his own experience of asthma tells him that a line should be drawn).

This is quite a shifting around of frames for Des, a staunch pro-embryo defender in discussions. His position remains strong until the end when he gives way to some flexibility. To media analysts who observe arguments in NRGT discourse, these switches are not new. Our understandings of NRGTs and the embryo in interviews were, of course, co-constructed. There was no element of tricking him into an opinion. Also, the latter quotes were from one-to-one interviews, outside the socialised play of debate. Yet Des also showed awareness of the flexibility of other positions. He positioned Derek as an enemy for changing his stance based on other discussions: the film discussion seemed to bring out a different opinion from Derek, which irritated Des. In his last frame alignment in the conversation above, Des introduces the notion of negative eugenics, the possibility that some embryos could be screened for undesirable traits, and curiously, and perhaps contentiously, considers the possibility of consciousness as one deciding factor, a notion that has been advanced by Peter Singer (1996), among others. Ultimately though, for Des, treating disease "before birth" is not the issue—the impact on the embryo is

central. "The main point that overrides all this", he says on more than one occasion, "is PGD is abortion".

As seen with Des above, various framings of the same position can utilise a combination of media resources and the experiential.[6] Few participants reflected on anecdotes from experience, however, although many were willing to use a popular phrase: "No-one knows until they're in that situation themselves".

Conclusion

I identified three very basic categories of opinion during data collection among young people's conversations and debates on NRGTs. These were "pro-life" (or "pro-embryo"), "neutral" and "pro-technology". The categories do not fit the criteria of a frame presented earlier, however. They were not processes of discursive selection and omission tied up with multiple media influences. Rather, they are positions rather than frames, sometimes linked to how media coverage might frame abortion or a NRGT issue.

A closer analysis of the classroom discourse has revealed a considerable amount of complexity. Des and Damien may both agree that PGD should not be allowed, but each represents this view differently with regard to frames and positions. They take the same position but frame their views differently—Damien used a *scientific rationalism* frame to explain how evolution would be affected by PGD whereas Des, as we have seen, used various *sacred* and *rights* frames to explain how the embryo or the future child will be affected. The complexity of the frame relationship is further increased by the fact that a *scientific rationalism* frame can be used to argue in support of ideas rooted in ideas of *harmony with nature*. The demarcation occurs in how the frame appeals to a cultural background story—in other words to whether a *scientific rationalism* or a *harmony with nature* theme is dominating the argument. This flexibility or "fluidity" of positioning contrasts with the static nature of pro- and anti-frame analysis on technological subjects presented in Gamson's (1992) research.

Has this contextual, performed type of framing implications for young people's considered reflection on the seriousness of NRGTs? The discussion environment was often fun, in the sense that the science class became emotive, argumentative, and political. The issues were removed from the intensity of the real and placed into a space which Boltanski (1999) calls a "distant morality". The TV audience becomes a safe, social space for "concern without action or discussion without engagement"

(Tester 1998, 96). These moments of ambiguously serious yet playful rhetoric on NRGTs may be very necessary in late modernity. According to Giddens (1991, 155), we need a "sequestration of experience" in the everyday in order to survive; an exclusion of morally and existentially challenging aspects of daily life and the taboo. This allows us to frame and re-frame, position and re-position. These discursive encounters may have implications for the popular calls for "informed" debate on these matters but the point is not that young people—or indeed their older counterparts—are sufficiently scientifically literate. Science may be an important component to a PGD debate but it is not, as we have seen, the foundation. In addition, young people's moral judgements, resistances and positionings rely on experiential knowledge, media references or "popular wisdom" (Gamson 1992)—a form of commonsense or that which "everybody knows". Film, narrative, and stories nonetheless link those experiencing them with a wider social world (Nisker and Daar 2006). In education, this is a link between external issue cultures and political ideas in classrooms.

The variances in positioning and framing on NRGTs suggest that the content of young people's moral perspectivising should not be the main focus of attention. The central moral arguments represent an agency that *wants* discourse, from the creation of fun in an interactive classroom all the way up to a point in certain "meta-debates" where participants called for greater student input into curriculum development. Understanding framing and positioning processes by young people on a controversial issue such as NRGTs can help both educators and curriculum developers to provide a background for new models of science-as-culture or science-in-context, when viewed through the prism of discursive practices. A reflexive life politics occurs in the self-awareness of the dynamics of debate, where perspectives are always open to contestation. These young people may not represent a political force in the traditional sense—they sometimes show little interest in news media coverage of NRGTs—but their interests can be aligned with a new politics of life enhancement below the level of conventional political representation. They have been involved in positional play about the serious issues of an uncertain future—a future that we all envisage will require more sophisticated methods of technological decision-making.

Acknowledgements

Notes

1. That is, issues of science in society, such as moral, political or economic questions around science or medical policy.
2. Bebo is an online "social networking" site where young people exchange images and ideas of common interest. It is similar to myspace or facebook, but generally attracts teenage users. See www.bebo.com.
3. This activity was developed by the Wellcome Trust for *The Gift*.
4. Giddens (1991) defines "life politics" as personal identity construction in late modernity through discursive action that attempts to address those "sequestered" issues that have been "driven out" of discourse because of their taboo nature—sickness, death, madness. NRGTs might be placed among these taboo body processes. As Giddens further describes how the conditions of late modernity allow self-identity and global discourses to interact with one another, life politics is thus an embodiment of his structurational theory.
5. In the transcripts, A, B, C, etc. are students. PM is the facilitator and author. A broken line occurs where a section of transcript has been removed. Overlapping speech is indicated by the position of text; laughter or inaudible speech is shown in square brackets and italics.
6. Sometimes "bioethical" storylines in soaps such as *Coronation Street* or the Irish soap *Fair City* were brought into focus. There were some—though not many—references to sci-fi TV, film, or the human effects of biology; as well as people students knew who were required to use PGD.

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