

When Science Meets Politics: The Rhetoric Surrounding Proposition 71

**Leading up to Proposition 71**

Politics and human embryonic stem cell (hESC) research have been long at each other's throats. In 1995, congress passed the Dickey-Wickey Amendment as a rider to an appropriations bill. The amendment effectively banned all federal funding toward any experiment involving human embryos and sent human stem cell research toward the private sector. (Dunn) By 1998, James Thomson of the University of Wisconsin generated the first human stem cell lines, prompting the Clinton administration to allow stem cell research funding by using a legal technicality that stem cells are not human embryos. In August 2000, the National Institute of Health (NIH) published guidelines with the blessings of the administration on human embryonic stem cell research that would qualify for federal funding. By late 2000 the NIH was already reviewing grant applications. However, in 2001 the hopes of many scientists who saw great potential in hESC research were distinguished before even a spark. President Bush rolled back on the Clinton guidelines banned all federal hESC related funding except for only 22 stem cell lines that had already been created; the ban even covers the use of federally-funded equipment for hESC. (Dunn)

Despite the federal ban, states and private institutions began to act independently to support hESC research. In 2002, California endorsed hESC research and Stanford University establishes Stem Cell Biology and Regenerative Medicine Institutes (Heyman 2002). In April 2004 the New Jersey legislature passes bill A2840 establishing its own stem cell research institute (Mansnerus 2004). The largest challenge to the ban came in the summer 2004, when real estate developer Robert N. Klein II initiated Proposition 71, the California Stem Cell

Research and Cures Initiative as a state constitutional amendment. The initiative established the California Institute for Regenerative Medicine (CIRM), a research institute that issues grants and administers hESC as well as adult stem cell research. The cost of the bill is \$3 billion over 10 years funded by issuance of bonds and cannot be removed from the budget easily. The initiative passed in the California November 2004 elections with almost a three-to-two margin. (California Healthcare Foundation) Despite being a victory for stem cell research, the campaigns for and against Proposition 71 converted it into a highly publicized and debated political issue, fueled by rhetoric and misrepresentations of science from both sides.

### **Saving vs. Destroying: The Value of a Human Life**

An important issue of contention from both sides is the question of whether the scientific benefits of hESC research outweighs its ethical and moral costs. While new methods such have been developed since, the major way to harvest hESCs in 2004 occur at the early blastocyst stage in excess embryos from *in vitro* fertilization clinics; the process will destroy the embryo in the process. (Thomson et al. 1998) The harvested cells are pluripotent and can thus have the potential to treat and repair damaged tissue. (Pittenger et al. 1999) Other methods have also been developed since then to obtain pluripotent stem cells without using embryos but have not been yet been put to wide use due to complications.

Proponents of the proposition place heavy emphasis on the potential of hESCs to treat or even cure diseases previously thought to be impossible. This is clearly seen in the naming of the proposition as “California Stem Cell Research and Cures Initiative.” Thirteen archived ads from the proposition’s proponents all use either a current patient of a debilitating disease, a famed academic, a celebrity to reiterate how the research on stem cells can bring cures; none of them

even mentions the science involved or the cost of the embryo. While scientists themselves may take a stance against the special moral position of the embryo, they are simply shut out from the campaign due to the intense politics. Opponents of the stem cell research, on the other hand, maintain that a fertilized zygote is a human life by the fact that it can grow into an adult if placed into a womb. By this virtue, it should be treated as such and deserves the equality and respect of another human being. Opponents pointed out that the proposition calls embryos as excess “product,” (Cohen, 2004) comparing embryos to raw materials and depriving it of its dignity. They also suggested that this argument does not instantly make the opponents all “religious fanatics” although religious groups were largely against the proposition. Instead, they argue that the moral argument is built on the scientific discovery of diploid DNA being made in a zygote, which gives it the special moral status. (Coleman, 2004) For the opponents, the emphasis on the highly ethical nature of this question became a success as the election went on, as seen in 10% of the voters against the proposition citing this as a reason in September and 21% citing the same reason in November. (California Healthcare Foundation)

### **It’s All about the Terminology: Cloning vs. SCNT**

Another part of Proposition 71 that came under contention was CIRM’s funding projects that involved transferred a nucleus containing genetic information into a denucleated hESC, a process known by its technical term somatic cell nuclear transfer (SCNT). By performing SCNT, a hESC is made to contain the same genetic information as where the source nucleus came from. (Semb 2005) In other words, the hESC is cloned from the cells of the nucleus donor by the definition of cloning. While SCNT is the same technique that brought to the world the first cloned animals such as Dolly, its usage on stem cells is not for the same purpose. By performing SCNT using nuclei from the patient, the stem cells are made more compatible with the patient

who will receive the cells since it has the identical DNA, thus eliminating complications resulting from immune system rejections. (Semb, 2005) This is known as “therapeutic cloning.” However, for the general public, the term “cloning” immediately brings up the idea of reproductive cloning, with images of Dolly and a perhaps ominous science fiction overtone of the genetically identical taking over the world.

The writers of the proposition have predicted this and exclusively used “SCNT” instead of “cloning” in the text. However, this generated a significant backlash from the opponents. Unlike “therapeutic cloning” which is highly supported by the scientific community and nations such as Britain and China, reproductive cloning in humans are widely seen as unethical and banned in most countries as well as in the UN. (Lynch 2005) During the campaign, opponents widely used the term “cloning” synonymously as “reproductive cloning” during the campaign and criticized the writers for using the name “SCNT.” (Cohen 2005) Opponents also tried to make cloning the central focus of the proposition, calling it “California’s cloning proposition” and ignoring other parts. (Cameron 2004) This resulted in the in the proponents suing the opponent’s campaign for “misleading” usage of the term “cloning,” with the judge siding with the opponents that SCNT was cloning. (No On 71 campaign). While the judge made no mistake in affirming the terminology, the emphasis placed on “cloning” rather than the solid science as a political tactic was a mild success for the opponent’s campaign, with 13% of those voting no citing cloning as the major reason. (California Healthcare Foundation)

### **Putting a Price on Science: Monetary Concerns**

When scientists file grant applications to the NIH, budgetary concerns are usually second in importance after the scientific quality of the proposal. However, when science directly asks for

funding through the public electorate as in the case of proposition 71, it becomes a major issue. In 2004, California is already infamous for its high budget deficit and a mounting \$33 billion debt. (California healthcare foundation) (The number stands at \$52 billion in 2009.) The \$3 billion for Proposition 71 is funded through issuing of general obligation state bonds with a five-year deferred interest period and does not raise taxes. Opponents point out that the \$3 billion proposal would end up costing \$6 billion after interest over 10 years and would further lower the credit of the state. (No on 71 campaign) Proponents however claim that the bond is self-funding for at least five years and then will cost the state only \$200 million per year for 30 years, an amount that is easily absorbed into California’s giant budget. (Yes on 71 campaign). The proponents further claim in an economic analysis that the proposition will create new jobs directly in the research and peripheral industries from increase in investment and generate up to \$4.4 billion dollar in increased tax revenues.

The funding sources for each of the campaign also received attention. Proponents attempted to single out religious groups such as the Discovery Institute, the advocates of intelligent design as the opposition funding source. Meanwhile, the opponents labeled it as a “raid” by “venture capitalists” upon public funds (Smith 2004), due to the fact that biotech companies contributed to the campaign and could gain from a possible research grant. Unfortunately, financial figures from both sides seemed to involve dubious number crunching and could not be taken at face value. With a possibly important scientific breakthrough on the line, the monetary argument over Proposition 71 focuses rather on its impact on the state budget and petty attacks over each other. This effectively ignores the consideration for any scientific merit and results unrealistic claims about the efficacy of stem cell research in producing cures.

### **Economic Feasibility of Science**

Most federal funding for research does not ask for anything in return other than the results of the experiment and any new conclusions discovered. In contrast, the campaign for Proposition 71 came close to selling cures for disease via hESC research for public funding. As a result, the scientific feasibility of hESC research itself came under attack. As mentioned earlier, proponents emphasized the possible cures from stem cell research in its campaign. They even claimed that the results from such research could end up saving up to \$7 billion per year for the state from healthcare costs. (Yes on 71 campaign) These claims are based on pure assumptions that stem cell research will generate such results within a limited time. Science is not something where one creates a timeline and pinpoint exactly when a novel therapy will be developed; many major scientific breakthroughs are even accidental. Opponents tended to go one step further and completely denounced the efficacy of hESC research, citing little results from hESC lines and but results from adult stem cell lines. (No on 71 campaign) This claim clearly does not take into account the importance of a reliable funding source in science to produce results. Overall, the campaigns from both sides do not contribute positively towards the scientific understanding of the stem cell issue, relying rather on attractive and speculative claims to attract voters.

### **The Aftermath of Proposition 71 and the Future of CIRM**

Since the passage of Proposition 71 in 2004, CIRM has survived legal attacks from the opponents as well as budget difficulties but since then committed \$693 million toward research grants (CIRM 2008). The ethical dilemma of destroying an embryo to obtain pluripotent hESCs is coming toward a solution as more ways to obtain pluripotent cells have been developed. Many of the political issues left from Proposition 71 remain, however. The resistance against therapeutic cloning and SCNT remains strong and CIRM has been rumored to disfavor grants involving SCNT in its grant selection process. (Jensen 2008) The state budget nightmare

envisioned by opponents has come to be with a weekend-long legislature lockdown drama in 2009 to overcome a budget shortfall. President Obama had recently reversed the bush restrictions on federal funding for stem cell research, leading some to believe that CIRM is no longer necessary. Meanwhile, stem cell therapies have seen breakthroughs but are still years away from cures.

It is unfortunate that stem cell research as a scientific discipline has been subjected to so much political turmoil, as exemplified by Proposition 71. When science meets politics, it is subjected to many distortions to transform into political rhetoric and its scientific core become lost from debates in finances. Aside from necessary consideration in ethics, stem cell research would be better served through normal NIH funding away from the influences of the mass politics.

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