**Designer Children: Motivations and Concerns**

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William Hawse, Johns Hopkins University  
Natalie Kantz, Queens College, CUNY  
Kenneth Ober, Bard College  
Mehrdad Safavian, Xavier University  
Elisa Sandvik, RPI

“It is human nature to do everything to save a life and just as human to agonize over everything we do.” – Lisa Belkin

**Current Technology**
- Genetic Screening (e.g. Trisomy 21)
- *In vitro* Fertilization (IVF)
- Non-human Mammalian Cloning
- Non-human Genetic Engineering

**Possible Developments**
- Human Cloning
- Human Genetic Engineering

**The Reasons**
- The “GATTACA” Issue (I): Prenatal treatment and/or prevention of  
  – disease or abnormality  
  – unwanted characteristics
- The “Weird Science” Issue: Ensuring wanted characteristics through design
The Reasons

- Different genetic abnormalities can be detected
  - Sickle Cell Anemia, Cystic Fibrosis, Down Syndrome, Thalassemia, Tay-Sachs Disease, Hemophilia, Duchenne Muscular Dystrophy, Fragile X Syndrome, and Marfan’s Syndrome

- Most commonly screened: Down’s Syndrome
  - 33 yr. old woman → 1/592 births
  - 36 yr. old woman → 1/287 births
  - [Link](http://www.altonweb.com/cs/downsyndrome/index.htm?page=risk.html)

- The “Oscar” Program
  - [Link](http://www.mothersbliss.com/nine/special/down.asp)
  - 13,000 women tested
  - 50 with a DS fetus
  - All 50 terminated pregnancy

The Concerns

- The “Jurassic Park” Issue: How much should we control nature?
- The “A.I.” Issue: How would it affect the quality of the child’s life?
  - Expectations
  - Identity Issues

- The “GATTACA” Issue (II): Discrimination of “unmodified” people

Pros and Cons

- Every parent wants the best for their children, e.g., better schooling, better nutrition. Why not better genes?
- Tendency for parent to “select” traits that they lack. Eventual loss of individual diversity, but increasing rift between social cultures.
- Will the cost of selecting these traits be subject to economic factors such as “supply and demand”? Will commercial genetic companies always offer financially viable options for traits belonging to a reclusive community?

Your Take-Home Message

- New technology will be developed; who will control it?
  - Validity of an argument is context-dependent
  - Case by case determination is necessary, but not possible
- “The Made-to-Order Savior” – Lisa Belkin
  - “How could you?” vs. “How could we not?”
A Special Thanks To

- Duquesne University, Undergraduate Research Program
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Resources for Further Education

- J. B. Green et al., *Cell*, 71, 731-739 (1992)