Genetic Evolution Tournament

AFg6K7h4fhy2

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Preface

Figure 1: From Wikipedia (2024-10-16): *Before the play begins, Kronos, the ruler of the pre-Olympian gods (the Titans), had been overthrown by an insurgency led by Zeus. In that revolt, Prometheus had sided with Zeus. As the new king, Zeus intended to destroy and replace humankind. Prometheus frustrated this plan, showing humans the use of fire, which Prometheus had stolen. Prometheus also taught humanity the arts. For these acts of defiance, Zeus intends to punish Prometheus by chaining him to a rock in the mountains of Scythia.*

From the repository's README:

This repository contains most of the source materials (not including references) for the *Genetic Evolution Tournament* (hereafter referred to as GET), a tournament broadly concerned with human genetic modification and reproduction protocols, for the purposes of both treatment and enhancement (predominantly enhancement). GET is being privately hosted on Metaculus. Eventually, Metaculus community forecasts made on GET questions will be ported to this repository and analyzed.

NOTE: All feedback is welcome; however, feedback that enhances (1) the epistemics of claims made in this tournament's questions (and other files), (2) the visibility and or utility of this tournament, or (3) other exact properties of the tournament (such as an additional question or an alteration in the structure) is *particularly* desired.

Summary Introduction

- Private tournament on Metaculus
- Focuses on human gene modification and reproduction for enhancing human capabilities
- 150 questions across 5 categories
  - Ethical, Legal, and Societal Implications
  - Technological Advancements and Clinical Applications
  - Regulatory and Policy Developments
  - Accessibility and Demographic Shifts
  - Healthcare and Insurance System Evolution
- 15K USD in prizes
  - 5k USD for forecasting accuracy
  - 10K USD for comments, in stages
- Tentative end date of 2035

To view tournament files, please head to `./GET/source/`

Example Questions

Extended Introduction

NOTE: This description, which contains various inadequacies, is a minimally viable placeholder. Beyond the content detailing GET, there are many unsubstantiated claims. At some point, this tournament might be developed into a pre-print, in which case the author will

more strongly evidence claims regarding the landscape of current capabilities for human enhancement and treatment via genetic and reproductive means. GET questions often contain references to research literature, but these are far from comprehensive. The Extended Introduction section is liable to change.

This introduction starts with some motivating remarks on possible future(s) for human reproduction and human genetic constitution. Following this, the author briefly describes GET, which is currently under development and due to be released on Metaculus (as a private tournament) sometime between now and August 2024.

Scientific progress in genetics, genetic engineering, and assisted-reproduction continues at a rapid and accelerating pace, with current technological capabilities far exceeding those imagined by researchers and policy-makers in biotechnology at the start of the 21st century.

Frontier events in genetic engineering, such as the He Jiankui affair, have required all of humanity to consider scenarios and possibilities—ranging the gamut of expected value from fantastical to catastrophic—concerning the manipulation of human biology.

Although extreme-fidelity human gene modification (as in precisely exacting desired genetic outcomes) or, more broadly, modification of human biology at a caliber similar to what we might expect to be employed in *Brave New World* or *Gattaca*, is yet unrealized, developments in the aforementioned fields steer evermore towards this capacity.

Fortunately, considerable anticipatory work in ethics and governance have coincided with scientific and technological progress in genetic and reproductive research fronts. Ethical work on directed use of technology on human biology has involved some degree of implicit and or explicit scenario analysis, but this analysis (in the author's sampling of the literature) has infrequently employed forecasting.

Handling anticipatory blind spots and reducing uncertainty on futures involving humanity's possible genetic evolution via forecasting seems important for coordination between researchers, the public, and policy-makers in directing outcomes and safeguarding certain aspects of humanity's future.

Despite the expected outcome for GET being that most community traction will occur within the Effective Altruism, Less Wrong, and Metaculus communities, GET seeks to occupy the general niche of uncertainty reduction on futures involving varying levels of human-targeted DNA and assisted-reproduction technologies.

GET will ideally contribute, via the forecasts collected across its lifespan, to a broader scenario modelling effort occurring across discussions on the future(s) of human genetics and reproduction. These forecasts and their analysis might inform individual and policy decision-making on the technologies and procedures involved in human genetics and reproduction.

With respect to the forecasting platform for GET, given both Metaculus's status as a reputable human judgement forecast (HJF) aggregator (this is the author's impression) and the author's familiarity with the site (the author is biased in this way), Metaculus was chosen as the site to

host GET. The particular language and norms adopted in public tournaments on Metaculus typically incentivize forecasters to make clear and well-reasoned comments and to forecast as honestly and as accurately as possible. For example Metaculus tournaments, see this page.

GET currently consists of 5 question categories:

- (1) Ethical, Legal, and Societal Implications
- (2) Technological Advancements and Clinical Applications
- (3) Regulatory and Policy Developments
- (4) Accessibility and Demographic Shifts
- (5) Healthcare and Insurance System Evolution

Each category was intended to have between 15 and 25 questions; the intention was to between 75 to 125 questions in total.

To incentivize forecaster participation, there are prizes totaling 15K USD. Prizes are partitioned into a forecasting accuracy component (5k USD), with questions scored via Metaculus's default scoring procedures (peer scores), and a commenting component (10k USD).

Originally, within the commenting component, 2.5k USD was allocated to comments on questions that are part of the forecasting accuracy component (shorter-term questions) and 7.5k USD was allocated to comments on longer-term questions. However, after some deliberation, a decision was made to break the commenting section of the tournament into 5 stages, each with 2k USD. The tournament is expect to last roughly 10 years. There is the possibility for additional funding altering the structure of the tournament.

Dedication

This tournament is dedicated to all of humanity.

Acknowledgements

1 Overview

In summary, this book has no content whatsoever.

2 Structure

3 Hosting

Part I

Q: Ethical, Legal, & Societal Implications

4 Introduction

5 Question 01

Part II

Q: Technological Advancements & Clinical Applications

Part III

Q: Regulatory & Policy Developments

Part IV

Q: Accessibility & Demographic Shifts

Part V

Q: Healthcare & Insurance System Evolution

Part VI

Announcements

6 LW & EAF

7 Elsewhere

Part VII

Resources

8 Scholarly Articles

9 Books

The author, in working on this tournament, has found the following books useful. At some point, links might be added connecting the author's notes to these books.

9.1 Choosing Children: Genes, Disability, And Design

Link: https://academic.oup.com/book/11973

Citation:

> Glover, Jonathan. Choosing children: Genes, disability, and design. Oxford University Press, 2006.

Bibtex:

```
@book{glover2006choosing,
  title={Choosing children: Genes, disability, and design},
  author={Glover, Jonathan},
  year={2006},
  publisher={Oxford University Press}
}
```

9.2 Clinical ethics at the crossroads of genetic and reproductive technologies

Link: https://www.sciencedirect.com/book/9780443190452/clinical-ethics-at-the-crossroads-of-genetic-and-reproductive-technologies

Citation:

> Hostiuc, Sorin, ed. Clinical ethics at the crossroads of genetic and reproductive technologies. Elsevier, 2023.

Bibtex:

```
@book{hostiuc2023clinical,
  title={Clinical ethics at the crossroads of genetic and reproductive technologies},
  author={Hostiuc, Sorin},
  year={2023},
  publisher={Elsevier}
}
```

9.3 Creating Future People: The Ethics Of Genetic Enhancement

Link: https://library.oapen.org/handle/20.500.12657/58965

Citation:

> Anomaly, Jonathan. Creating future people: The ethics of genetic enhancement. Taylor & Francis, 2020.

Bibtex:

```
@book{anomaly2020creating,
  title={Creating future people: The ethics of genetic enhancement},
  author={Anomaly, Jonathan},
  year={2020},
  publisher={Taylor \& Francis}
}
```

9.4 Enhancing Human Capacities

Link: https://onlinelibrary.wiley.com/doi/book/10.1002/9781444393552

Citation:

> Savulescu, Julian, Ruud ter Meulen, and Guy Kahane. "Enhancing Human Capacities." (2011).

Bibtex:

```
@article{savulescu2011enhancing,
  title={Enhancing Human Capacities},
  author={Savulescu, Julian and ter Meulen, Ruud and Kahane, Guy},
  year={2011},
  publisher={Wiley Online Library}
}
```

9.5 The End Of Sex And The Future Of Human Reproduction

Link: https://www.hup.harvard.edu/books/9780674984011

Citation:

> Greely, Henry T. The end of sex and the future of human reproduction. Harvard University Press, 2016.

Bibtex:

```
@book{greely2016end,
  title={The end of sex and the future of human reproduction},
  author={Greely, Henry T},
  year={2016},
  publisher={Harvard University Press}
}
```

10 LW & EAF Posts

11 Wikipedia

Part VIII

Appendix

12 Glossary

13 Trends

14 Additional Remarks

See here.

See here.