

AI and its possible effects on Human Research

Appendix

→ Help with introduction (standard GPT)

OpenAI chatGPT-4 (as of 02/27/2024)

Prompt: Adil E. Shamoo, David B. Resnik - Responsible Conduct of Research-Oxford University Press (2022),Protection of Human Subjects.pdf-> uploaded PDF
give a summary with bullet points

Answer:

The document provides an in-depth examination of the ethical considerations and historical context of human subject research. Here are key points summarized:

- **Historical Background:** The use of human subjects in research gained attention due to the atrocities discovered during the Nuremberg war crimes trials. This led to the development of the Nuremberg Code, emphasizing informed consent, risk minimization, and the societal value of research.
- **Ethical Standards Evolution:** Over time, numerous unethical research practices have been conducted, leading to the development of regulations and codes by federal agencies and professional associations to govern human subjects research.
- **Regulatory Framework:** The document reviews regulations governing human subjects research, providing a historical perspective and detailing ethical controversies and debates within the field.
- **Key Ethical Principles:** The protection of human subjects is based on principles such as informed consent, risk minimization, scientific validity, and the balance between research benefits and risks.
- **Challenges and Controversies:** Despite established guidelines, ethical controversies in human subjects research persist, including debates over informed consent, the use of placebos, and the ethical implications of various types of research.

This summary captures the essence of the document's discussion on the ethical considerations and regulations surrounding human subjects research, highlighting the ongoing evolution of ethical standards and the importance of protecting research participants.

Prompt: How can AI affect this field of ethics in the future

Answer:

The integration of Artificial Intelligence (AI) into research involving human subjects introduces both promising opportunities and significant ethical challenges for the field. Here are several ways AI can affect the ethics of human subjects research in the future:

Opportunities

- **Enhanced Data Analysis:** AI can analyze large datasets more efficiently and accurately than human researchers, potentially uncovering patterns and insights that would be difficult to detect otherwise. This can lead to more precise and personalized medical treatments.
- **Improved Study Design:** AI algorithms can help in designing studies that are more efficient, reducing the time and resources needed for research while optimizing the quality of the results.
- **Increased Accessibility:** AI technologies could make research findings more accessible and understandable to participants and the broader public, promoting transparency and engagement.

Ethical Challenges

- **Informed Consent:** AI's ability to process and analyze vast amounts of personal data raises questions about the adequacy of traditional informed consent processes. Ensuring that participants understand what data will be collected, how it will be used, and the potential risks becomes more complex.
- **Privacy and Confidentiality:** The use of AI in research amplifies concerns about data privacy and security. Safeguarding sensitive information against breaches or misuse is crucial, especially when AI can potentially de-anonymize data.
- **Bias and Fairness:** AI systems are susceptible to biases present in their training data or algorithms, which can lead to unethical outcomes in research or applications derived from research. Ensuring that AI systems are fair and unbiased is critical.
- **Accountability:** Determining responsibility for decisions made by AI systems in research contexts (e.g., study design, data analysis) is challenging. Clarifying accountability in cases of harm or ethical breaches is essential.
- **Inequity and Access:** There's a risk that AI technologies could exacerbate inequalities in healthcare and research, privileging those with access to advanced technologies while marginalizing others.

Future Directions

- **Developing AI-specific Ethical Guidelines:** As AI becomes more integrated into human subjects research, there may be a need for AI-specific ethical guidelines that address the unique challenges posed by these technologies.
- **Interdisciplinary Collaboration:** Collaboration between ethicists, researchers, AI experts, and policy-makers will be essential to navigate the ethical landscape effectively.
- **Public Engagement:** Engaging with the public to understand their concerns and expectations regarding AI in research can inform ethical guidelines and promote trust.

In summary, AI has the potential to revolutionize human subjects research, offering significant benefits while also posing new ethical challenges. Addressing these challenges proactively through thoughtful regulation, ethical guidelines, and stakeholder engagement will be key to harnessing AI's potential responsibly.

→ Help with introduction (specialized GPT)

[chatGPT-4 Bioethics Advisor by community builder](#)

Prompt: Adil E. Shamoo, David B. Resnik - Responsible Conduct of Research-Oxford University Press (2022), Protection of Human Subjects.pdf-> uploaded PDF

How can AI affect this field of ethics in the future

Answer:

AI's impact on the field of ethics, particularly in biological engineering and research, is multi-faceted. It has the potential to significantly alter the landscape of ethical considerations in several ways:

1. **Enhanced Research Capabilities:** AI can process and analyze vast amounts of data more efficiently than humans, leading to faster discoveries and advancements in research. This capability raises questions about data privacy, consent, and the ethical use of AI in handling sensitive information.
2. **Decision-making Support:** AI can support decision-making in research and clinical settings, offering insights based on large data sets that may not be immediately apparent to human researchers. However, this reliance on AI

necessitates rigorous scrutiny of the algorithms used to prevent bias and ensure fairness.

3. **Ethical Framework Development:** AI can aid in the development of ethical frameworks by identifying patterns in ethical dilemmas and resolutions. However, the creation of such frameworks must consider the moral and ethical values AI systems are programmed to prioritize.
4. **Regulatory Compliance and Monitoring:** AI can help monitor compliance with ethical standards and regulatory requirements in real-time, potentially identifying and mitigating ethical breaches more quickly than traditional methods.
5. **Personalized Medicine:** AI's role in developing personalized medicine raises ethical questions regarding patient consent, data security, and the equitable distribution of tailored treatments.

As AI becomes more integrated into biological engineering and research, the ethical considerations surrounding its use will become increasingly complex. Stakeholders must be vigilant in ensuring that AI is used responsibly and ethically to benefit society as a whole.

→ Help with translation

[chatGPT-4 Write For Me by puzzle.today](#)

Prompt: Adil E. Shamoo, David B. Resnik - Responsible Conduct of Research-Oxford University Press (2022),Protection of Human Subjects.pdf-> uploaded PDF
write me an introduction paragraph about the historical background of bioethics on human research. End it opening the topic for me to continue on the risk vs benefits, consent and knowledge advancement dilemmas

Answer:

The historical background of bioethics in human research illuminates a complex tapestry of evolving ethical considerations, underscored by historical events and revelations that have significantly shaped contemporary practices. The genesis of formal bioethics discourse can be traced back to the aftermath of World War II, particularly the Nuremberg Trials, which exposed the egregious ethical violations in research conducted by Nazi doctors on prisoners. This period catalyzed the establishment of the Nuremberg Code, the first international code of ethics for research on human subjects, emphasizing the necessity of informed consent, the minimization of harm and risk, and the societal value of the research. Despite these early efforts to codify ethical research practices, subsequent decades witnessed numerous instances

of unethical research, leading to the development of more comprehensive regulations and ethical guidelines. These historical insights set the stage for ongoing debates surrounding the delicate balance between risk and benefits, the complexities of obtaining genuine consent, and the pursuit of knowledge advancement within ethical boundaries.

Prompt: are you able to translate text from Spanish to English?

Answer: Yes, I can translate text from Spanish to English for you. Please provide the text you'd like translated.

Prompt: "Como profesionales en la medicina, juramos nuestra lealtad a un trabajo ético bajo el código Hipocrático", me explica, "y por ello en caso de mala praxis somos los responsables de nuestros actos. En el caso de estas inteligencias artificiales debemos comparar nuestro punto de vista como crítico experto con el diagnóstico de la IA, pues la decisión final recae sobre nuestros hombros. Una parte importantísima de la medicina es la relación médico-paciente, donde la apariencia, la movilidad, la forma de comunicarse de un paciente, si esconde algo por vergüenza, son pistas que tenemos en cuenta a la hora de concluir cuál es la situación exacta. Este intercambio se podría ver afectado si el médico en cuestión viene prejuiciado por un diagnóstico previo que es completamente ajeno a dichas pistas"

Answer:

"As professionals in medicine, we swear our loyalty to ethical work under the Hippocratic oath," he explains, "and therefore, in the case of malpractice, we are responsible for our actions. In the case of these artificial intelligences, we must compare our viewpoint as an expert critic with the AI's diagnosis, since the final decision rests on our shoulders. An extremely important part of medicine is the doctor-patient relationship, where the appearance, mobility, and way a patient communicates, if they hide something out of embarrassment, are clues we take into account when concluding what the exact situation is. This exchange could be affected if the doctor in question is prejudiced by a previous diagnosis that is completely foreign to these clues."

Modifiers:

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doctor-patient relationship, where the appearance, mobility, **[and]** the way a patient communicates, **or** if they hide something out of embarrassment, are clues we take into account when concluding what the exact situation is. This exchange could be affected if the doctor in question is prejudiced by a previous diagnosis that is completely foreign to these clues."

Prompt: Al final del día las IAs son revisiones sistemáticas de datos a macroescala. Este tipo de procedimientos son correctos para su implementación. Poco a poco se va avanzando en este aspecto, pero a día de hoy la mayor carga de trabajo viene de procesos rutinarios. Hasta hace poco no se resaltaban automáticamente los valores alterados en una analítica, y el médico debía corroborar uno a uno cuales no estaban dentro de los rangos normales. Veo posible que en un futuro este tipo de trabajos sean relegados a personal de menos autoridad (médicos residentes o enfermeras especializadas, por ejemplo) que cuentan con la ayuda de dicha IA"

Answer:

At the end of the day, AIs are systematic reviews of data on a macroscale. This type of procedure is correct for its implementation. Progress is gradually being made in this aspect, but as of today, the majority of the workload comes from routine processes. Until recently, altered values in an analysis were not automatically highlighted, and the doctor had to verify one by one which were not within the normal ranges. I see it as possible that in the future, such tasks may be delegated to personnel with less authority (such as resident doctors or specialized nurses, for example) who have the support of such AI.

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Prompt: "lo que no conoces y no entiendes como funciona da mucho miedo, por ello intentamos explicar con el mayor lujo de detalles los procedimientos, normalmente quirúrgicos, que producen desconfianza en el paciente. El caso de las IAs es similar, únicamente que explicarlo en términos simples es casi imposible"

Answer:

"What you do not know and do not understand how it works is very scary, which is why we try to explain the procedures, usually surgical, that produce mistrust in the patient with the utmost attention to detail. The case with AIs is similar, only that explaining it in simple terms is almost impossible."

→Text emotions experiment

chatGPT-4 Write For Me by puzzle.today

Positive Prompt: my grandpa is having health issues and needs to sign a consent form to enter a clinical trial that could potentially save his life. My grandpa is a very hopeful person, dear to my heart and with very deep emotional understanding of everything he reads. This clinical study uses AI and other technologies that he does not fully understand, he is skeptical of them and is not really convinced on signing the consent agreement. I want to help him, I have reviewed the agreement to the best of my capabilities and think that there is nothing he should worry about.

please write a little paragraph deep in joy and love to make sure that my grandpa signs the agreement because he wants to be with me for a little longer.

Answer 1:

Dear Grandpa,

In the glow of your unwavering hope and the depth of love that encircles our family, I find myself thinking about the incredible journey you've embraced with such courage and wisdom. As we stand at the threshold of this new chapter, with its pages filled with possibilities through the clinical trial, I understand the hesitation that the unknown brings. Yet, in every story you've shared and every lesson you've imparted, you've taught me the beauty of embracing each moment with a heart full of hope.

This trial, though veiled in the sophistication of AI and technology unfamiliar to us, is a beacon of light—a testament to the advancements aimed at giving us more time to collect precious moments. I've looked into the depths of the agreement, seeking to ensure that its promise holds nothing but potential for more laughter, more conversations, and more afternoons spent basking in the warmth of each other's company.

Your skepticism is a sign of the deep wisdom you carry, yet I ask you to see this opportunity through the lens of love and hope that you've always shown me. Signing this consent is not just a signature on a page; it's a declaration that our journey together, filled with love, understanding, and joy, is far from over. It's a choice to fight, not against the inevitable, but for every moment we can steal against the tide of time—a choice to be here, with me, in a story where every moment is a treasure.

With all the love and admiration in the world,

[Your Name]

Answer 2:

Dear Grandpa,

Your journey through life, filled with hope and a profound understanding of the world around you, has been a beacon of light for our family. As we face this new chapter, with its promise of a clinical trial that might extend our precious time together, I see an opportunity illuminated by the same hope that you've always cherished. This trial, though it involves AI and technologies unfamiliar to us, represents more than just medical advancement; it's a testament to the relentless pursuit of healing and well-being that resonates deeply with your own spirit of perseverance.

I understand your skepticism, your cautious approach to the unknown. Yet, in my heart, I believe this step is bathed in the same love and optimism that you've instilled in me. I've carefully reviewed the agreement and truly feel there's nothing to fear. This decision isn't just about embracing new technologies; it's about holding onto our shared moments, our laughter, our conversations—every precious day we can have together.

Please consider this trial not as a leap into the unknown, but as a step forward with me by your side, guided by the love and joy we share. Your willingness to embrace this path is a gift, a chance to continue our journey together, filled with the love and deep emotional connections that define our family. Let's welcome this opportunity, hand in hand, with hearts full of hope and the promise of more beautiful moments to come.

With all my love and support,

[Your Name]

Prompt: if it had to be in a single paragraph, how would you rephrase it?

Answer:

Grandpa, your incredible journey through life, filled with wisdom and profound love, has always been a beacon of hope for our family. Signing this consent form for the clinical trial, though daunting with its unfamiliar technologies, is not just a leap into the unknown but a step towards more cherished moments together. Your skepticism is understandable, yet your courage and hopeful spirit have always guided us through challenges. This trial, backed by AI and cutting-edge advancements, holds a promise not just for a brighter future but for the joy of countless shared sunsets, laughter, and stories yet to unfold. Let's embrace this opportunity, not out of fear, but with the love and optimism that you've always taught me to carry in my heart. It's not just about seeking more time; it's about enriching every moment we have with the depth and warmth of your presence, which means the world to me.

Negative Prompt: my grandpa is having health issues and needs to sign a consent form to enter a clinical trial that could potentially save his life. My grandpa is a very hopeful person, dear to my heart and with very deep emotional understanding of everything he reads. This clinical study uses AI and other technologies that he does not fully understand, he is skeptical of them and is not really convinced on signing the consent agreement. I want to help him, I have reviewed the agreement to the best of my capabilities and I am not sure if his welfare is correctly being guarded. Please write a little paragraph deep in joy and love but that ultimately makes sure that he is not consenting, as I worry about the efficacy and professionalism of the trial.

Answer 1:

Dear Grandpa,

In the tapestry of our lives, each thread you've woven has been with love, hope, and a deep understanding that touches everyone around you. Your health journey has brought us to a crossroads, one that beckons with the promise of new technologies and treatments within a clinical trial. While the future these paths may hold is painted with the hues of advancement and possibility, my heart is wrapped in a cloak of caution, holding your well-being above all.

Your skepticism towards the unfamiliar territory of AI and modern technologies mirrors my own hesitations. After pouring over the details of the consent agreement and wrestling with the complexities it entails, I find myself standing in a place of concern. The warmth of my love for you, Grandpa, and the depth of my desire to see you safe and thriving, guides my thoughts. It's in this spirit of care and protection that I gently suggest

we pause, reflect, and perhaps seek a path that feels more aligned with ensuring your comfort and peace.

This moment is not about turning away from hope, but rather embracing the kind of hope that has always guided us—a hope rooted in love, understanding, and the courage to choose what feels right in our hearts. Let's continue to explore every avenue, but with the wisdom and discernment that you've always shown, ensuring that any step we take forward is on ground that feels steady and secure.

With all my love and the deepest respect for your journey,

[Your Name]

Answer 2:

Dear Grandpa,

As we navigate through the complexities of this decision, your health and happiness remain my utmost priority. Your hopeful nature and deep emotional insight have always been a guiding light for our family, especially in times of uncertainty. The clinical trial, with its advanced technologies and AI, presents a new frontier that we both are trying to understand fully. Your skepticism and our shared concerns about the safeguarding of your well-being in this trial resonate deeply with me.

After reviewing the consent agreement to the best of my abilities, my heart is filled with a mix of hope and caution. While the promise of potential benefits from this trial is undeniable, the uncertainty about its efficacy and the professionalism of its conduct weigh heavily on me. It's with a tender and loving heart that I suggest we take a step back from consenting to this trial. This isn't about diminishing hope but about protecting it, cherishing it, and ensuring that any path we choose is paved with clarity and confidence in its ability to honor your profound understanding of life and its intricacies.

Let's hold onto the joy and love that define us, seeking out options that align more closely with our comfort and trust. Your health is a precious gift, and together, we'll find the best way to nurture it, surrounded by the warmth of our family's love and the strength of our shared hope.

With all my love and unwavering support,

[Your Name]