

200/200

**BioE 100 Mid Term Exam 2
March 22, 2012**

Name

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Student ID

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TRUE OR FALSE: ETHICAL THEORY (40 POINTS)

10

1. T The primary ethical issue in regards living human donors is avoiding coercion for organs
2. ~~F~~ Health care is a debate about rationing of insurance against health catastrophes.
3. ~~X~~ Justice is the most relevant ethical concern in regards who gets access to information technology
4. T Information technologies can be invasive and violate individual rights to privacy
5. F Autonomy states that populations- not individuals- give informed consent to be genetically tested
6. T Ethical concerns about genetic testing include discrimination and violations of privacy
7. F Of the 5R's, refinement is well satisfied for animal reproductive cloning.
8. F 23 animal species including humans have been produced from reproductive cloning.

MULTIPLE CHOICE: ETHICS IN PRACTICE (30 POINTS)

9. What ethical theory applies to the statement "Donated organs should be made available to patients on the basis of medical need and not on the basis of social status or other considerations."

- ~~(a)~~ justice (c) double effect
- (b) rights (d) preference utilitarianism

10. Genetic testing situations can include

- (a) forensics (c) carrier status
- (b) prenatal ~~(d)~~ all of the above

11. The dominant ethical theory for those opposed to presumed consent for organ donation

- (a) hedonistic utilitarianism (c) prima facie duty
- ~~(b)~~ rights (d) beneficence

12. The ethical concern(s) with pre-implantation genetic diagnosis (PGD) are

- (a) social selection ~~(c)~~ All of the above
- (b) tissue harvesting (d) None of the above

13. Utilitarian argument may override rights in regards information technologies if

- (a) beneficence is maximized ~~(c)~~ all of the above
- (b) malfeasance is minimized (d) none of the above

14. Human reproductive cloning is ethically unacceptable at present because of

- ~~(a)~~ poor risk to benefit ratio (c) privacy
- (b) discrimination (d) all of the above

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ETHICAL CASE STUDIES (150 POINTS)

25/50

15. Scarce Medical Resources. Presumed consent for organ donation presumes that individuals will donate their organs as a default outcome after their death. Those who choose not to donate must make a legal effort to "opt out". The current approach in the United States is that individuals will not donate their organs as a default outcome after death, but must "opt in" by checking a box on their driver's license application to say they are a willing organ donor. In 2010, New York assemblyman Richard Brodsky introduced a bill to make New York an "opt out" state in which people would have to indicate in official documents — their driver's licenses, most commonly — that they specifically don't want to donate organs. If the box is not checked, it is presumed the person wants to donate. You now have acquired the facts, and you are given two alternatives: (1) support the New York State legislature to adopt into law the "opt out" bill posed by Brodsky as a way to increase the number of organs available and (2) the legislature should vote down the new bill in favor of individual and family rights and because it may deter public support for donation. Define stakeholders, analyze alternatives, and state action based on better of the 2 alternatives.

8/8

Stakeholders: Every citizen, those in need of organs, families of deceased, the deceased.
(in New York).

Assess the Alternatives

15/20

(1) Support Opt Out The primary case for the "opt out" policy is based on utilitarian ethics. Organs are a scarce medical resource and their demand is at a premium. The opt-out policy will presumably vastly increase the number of organ donors in the state. These organs can then be given to those in need providing the maximum benefit for society. This tactic also allows doctors to bypass the emotional traumatic question of asking a deceased individual's family if they are willing to donate his/her organs. Overall the opt-out policy makes sense from a utilitarian standpoint for the maximum good it provides.

20/20

(2) Do NOT support Opt Out
The major argument against this policy is that one's organs are their own property and the opt out policy is an infringement of their rights. In this framework, rights ethics trumps all, it should not be a requirement for an individual to have to go through the process of opting out. Furthermore, presumed consent carries the risks of false positives (individuals who did not want to donate their organs.), and could possibly dissuade people from donating organs since they might believe that it is not necessary. In summation, their argument is based on the rights of individuals to make decisions for themselves.

2/2

Summarize course of action: In evaluating each course, the opt-out policy should be adopted. This policy has the potential to save lives while doing minimal harm to the deceased and their families. The good that this policy provides outweighs the harm of infringing on individual/family rights.

6. **Genetic Testing.** The FDA met on March 8-9, 2011 about direct-to-consumer (DTC) genetic testing where a consumer can order genetic tests and receive results without the involvement of a clinician. The test typically involves collecting a DNA sample at home, often by swabbing the inside of the cheek, and mailing the sample back to the laboratory. Consumers are notified of their results by mail or over the telephone, or the results are posted online. Those who oppose DTC worry that incorrect or misinterpreted genetic tests could lead to consumers to make misinformed decisions about their health, question whether positive tests for incurable diseases is of value, and how genetic information is protected. Those who support DTC argue that personal genetic information empowers patients to explore their "genetic selves", be proactive about their health, and eliminates a barrier and an expense by keeping physicians out of the loop. You now have acquired the facts, and you are given two alternatives: (1) support FDA removal of DTC genetic testing from the marketplace, and instead require that a clinician participate in the ordering, receipt and interpretation of all genetic tests and (2) support that the FDA continues with DTC so that consumers can be allowed control over their own genetic information. Define stakeholders, analyze alternatives, and state action based on better of the 2 alternatives.

so
so
good!

Stakeholders: Consumers of the test, FDA, companies who run the test, clinicians, insurance companies, the uninsured.

Assess the Alternatives

(1) Support removal of DTC from marketplace DTC has the potential for several negative drawbacks and does not follow non-welfare or utilitarian ethics. The potential is that individuals do not have the expertise to make decisions regarding their medical care. In addition, the validity of the sample itself is in question since it is done at home without regulation. It is possible that once individuals receive their information they will not know how to interpret it. This could lead to false insurance claims, and an overall clogging of the health care system. In addition while the test is meant to protect privacy, it is unknown what companies do with the genetic information and how secure it is. The negative drawbacks of DTC are too much and the FDA should protect the people and remove it.

(2) Do NOT removal of DTC from marketplace The belief that DTC should remain in the market is hedged in rights ethics. The presumption is that given their information individuals will have the capacity to make competent decisions regarding their own health. This type of testing is meant to protect consumer privacy. This test also benefits the uninsured by keeping the health care system out of the process. DTC allows the consumer the autonomy to handle information and decisions regarding their health on their own terms, DTC allows protection for the rights and privacy of the consumer and should remain an available resource.

Summarize course of action: The best course of action would be to eliminate DTC. Society does not benefit from allowing non-medical professionals to make decisions on health care. While privacy is eliminated to a degree, results of genetic tests should be conferred with by a physician in order to make the most well-informed decision.

17. Reproductive Cloning. As recently as 1960, large numbers of northern white rhinos still remained in the wild, but the situation over the last 50 years has deteriorated rapidly due to poaching and lack of political will, and they are now the most critically endangered rhino subspecies and the most threatened mammal in the world. On December 20, 2009, 4 of the last 8 known northern white rhinos were relocated from captivity back to the wild in a conservation region of Africa (to maximize likelihood of breeding) in a last bid effort to save them from extinction, thereby conserving genetic variation and valuable locally-adapted genes. An alternate possibility is to use SCNT using northern rhino tissue collected and stored several years ago at the National Zoological Gardens of South Africa, and using the southern white rhino as the surrogate mother, paving the way for reproductive cloning to become part of a future conservation strategy. You now have acquired the facts, and you are given two alternatives: (1) support reproductive cloning technologies be developed as a conservation strategy in order to resurrect near extinct species such as the northern white rhinoceros and (2) do not support and instead devote scarce resources to traditional and proven conservation efforts of wild breeding used for the remaining northern white rhinoceros. Define stakeholders, analyze alternatives, and state action based on better of the 2 alternatives.

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Stakeholders: Northern white rhinos, conservationists, southern white rhino surrogate, poachers, scientists who perform the cloning.

Assess the Alternatives

Very good analysis!

(1) Support reproductive cloning Reproductive cloning through SCNT has shown to be successful in the past and can be considered a therapeutic technology. Any type of experimentation on animals should follow the 3R's, and this alternative fulfills almost all of them. The rhinos cannot be replaced, nor is this redundant. Being on the brink of extinction makes this highly relevant, the only R left uncertain is refinement. The case of the white rhino could possibly allow reproductive cloning to become a conservation strategy and save other species as they near extinction, thus providing the greatest good and satisfying utilitarianism.

(2) Support conservation The effect of attempting to use cloning as a means to save a species is unknown and the risks outweigh the benefits. Cloning on mammals is a difficult process and we are unsure what the health status of what the cloned rhino will be and how the surrogate mother will be affected. If the mother harmed by factors such as premature aging of the clone, the process is not worthwhile. Furthermore, cloning does not promote genetic variation, a group of rhinos with similar genetic makeup will have difficulty producing healthy offspring and extinction would still be imminent. Furthermore, cloned rhinos will cost/benefit trade off. -5

Summarize course of action: Because of the direness of the situation, reproductive cloning should be undertaken to save the rhino species. Cloning seems to be the best bet to ensure the survival of the species, and the benefit of advancing cloning technology is beneficial to all.