

Abstract.

The views of various writers on abortion are discussed. Kenny quotes the Bible saying abortion is murder. Kenny's errors in readings from the Bible, and his ignoring self-defense, are discussed, along with the use of the Bible to discuss American law and our morals. Warren uses philosophical arguments to say a fetus is not a person. These diverse viewpoints are reconciled by saying abortion is immoral but not murder. Moral questions regarding abortion are discussed. A novel philosophical idea, the reality of organization, is introduced to differentiate between a fetus and a baby. Defining personhood based on organization has implications for the future as computers become more powerful than people.

I. Introduction

We in America are faced with a serious political problem. One opinion maintains that abortion is equivalent to murder, and so must be discouraged and totally outlawed. The other side is convinced that a fetus is merely body tissue, and so a woman can do as she wishes, including the abortion of a late-term fetus. Many people have strong religious beliefs determining their position. Religious beliefs, however, have no place in American legal discussions. The religious person who wishes to quote the Bible in support of a policy can do so only if the Bible is considered as an ancient philosophical and legal system, as a type of precedent. In this case, we must also discuss other legal systems that have influenced American law, and alternative relevant philosophical approaches. Once we discuss philosophy, we must not restrict ourselves to old philosophical thinking. We must permit new creative ideas on the topic, just as scientists permit new scientific thinking to explain phenomena. We must also examine the consequences, including possible future scenarios, just as scientists examine the theoretical implications of a scientific explanation.

Anthony Kenny¹ chose to quote the Bible to oppose abortion, writing a long and serious article discussing when a human being becomes human. His logic is faulty, as he omitted several relevant and critical points. One is that he selectively quoted the Bible, ignoring verses that clearly state abortion is not murder. In discussing the Bible, he failed to note the difference between the Pentateuch, the basis of Hebraic Law, and the rest of the Bible. Hebraic Law is the legal system of ancient Israel. Along with the principle I wrote in the first paragraph, that one could use the Bible only as a philosophical and legal document, it is necessary to distinguish the Pentateuch from the rest of the Bible.

A second criticism of Kenny is his failure to mention self-defense, an integral part of all legal systems and of many religions.

Finally, Kenny failed to mention other thinkers on this topic, making his article one-sided. He ignored Mary Anne Warren², who has given definitive arguments of what characteristics entitle an entity to be considered a person, and shows that killing a fetus is not the same as killing a person. The puzzling and troubling fact that after Warren write her definitive article, people like Kenny still write confusing ideas that Warren already discussed. This shows the need for more clarification and emphasis of Warren's ideas.

We will discuss each point in order. In addition, we will introduce a novel philosophical idea, that we define an entity by its *independent organization*. We show that this idea can be used to distinguish a fetus from a baby, which is an extension of the ancient idea of distinguishing a baby from a fetus by the baby's independent breathing. We conclude with speculation of future implications of this philosophical idea.

II. The Bible and Hebraic law

Kenny mentions how abortion is hinted at in the Bible. The story of Onan in Genesis is “an offense against life.”³ He mentions verses in Psalms and Job supporting the idea that conception is the beginning of life. What is surprising is that Kenny and others fail to mention those parts of the Bible that are explicit in defining when a human being becomes a person. Instead of looking at verses that give mere hints, there are very explicit verses.

The Pentateuch is the foundation of Hebraic Law, the legal system of ancient Israel. In the modern State of Israel, Hebraic Law has become one of the lesser ongoing sources for contemporary Israeli civil law, which developed along the model of British common law. Here we find the laws concerning murder. First-degree murder is a capital crime.

Laws in the Pentateuch are given in the form of specific examples from which the general principle is determined, in contrast to American law, where the principles are given, with the specific examples left to the courts. The specific examples about killing a fetus determine the principle of when a person becomes a person.

The verse that Kenny omitted is in Exodus⁴. If two men fight, and one hits another and kills him, the killer must be executed. If they hit a pregnant woman (literal translation) and kill her, it is also a capital crime. If the woman is not hurt, but the fetuses (literally plural) are lost (literally “and her children went out”), then the killer must pay a monetary fine. It is not a capital crime. This establishes the principle that a person does not become a person until birth for killing a fetus is not a capital crime. This is true even if the fetuses were twins (fetuses in plural). When we think first-degree murder as a capital crime, we must not think that abortion is the same type of thing. It is very wrong to say, as some do, the widespread practice of abortion is like a Holocaust.

I have given simple literal translations of the text. There are many interpretations and references to older literature that one can delve into. We must not ignore the simple meanings of the text. As an example of the complexity that I do not wish to delve into, consider Exodus 22:28: “The first of your sons you shall give me.” Some theologians say this refers to human sacrifice. Most interpret this verse as the redemption of the son.

Exodus 20:13, “*You shall not murder.*” This verse is often mistranslated “*Thou shall not kill.*” This refers to first-degree murder – the killing of a human person, a capital crime. Abortion is not a capital crime. Killing in self-defense is not murder. However, if we translate it as “Thou shall not kill,” then killing in self-defense is murder. The legal interpretation of Hebraic law is that killing in self-defense is not murder.

The conflict between Exodus and the sections of Psalms Kenny mentions are not significant, as Exodus is part of Hebraic Law, whereas Psalms is not.

There is no justification for omitting this section from Exodus when discussing the attitude of the Bible towards abortion. Ignoring this is intellectual dishonesty. I am very surprised how widespread this is. Very few people refer to this verse.

Joyce Arthur⁵ writes more comments about the attitude of the Bible towards abortion. There are very many verses in many locations that can shed light on this subject. In this paper, we just want to highlight the source that most strongly clarifies abortion.

Baldwin⁶ discusses Hebraic law and its influence on American law.

We must distinguish Hebraic Law, the law of ancient Israel based upon the Pentateuch, with *Halacha*, the code by which Orthodox Jews live, based upon the Pentateuch plus rabbinical modifications.

III. Self-defense

Let us go to the next point, self-defense. This concept is central to legal and religious systems. If an abortion is necessary to save a woman's life, clearly the abortion is acceptable, regardless of our opinion of whether the fetus is a person or not. The position of the Catholic Church, that it is better for the woman to die, is a minority opinion, and not in accordance with Western law. Self-defense is not optional, for refusing to defend one's life is equivalent to suicide, and is illegal. Self-defense is mandatory.

The position of some members of the pro-life group is dishonest, as they ignore the life of the mother. These people say they are pro-life when they do not care about the life of the mother. We may want to ask them directly what their attitude is, and if it is extreme, we should know about it.

The question is if the mother's health is in danger. This point came up when Congress passed a law against abortion ignoring the mother's health. If we consider the fetus a person, then we are asking the mother to sacrifice her health for the other person. It may be noble to sacrifice for another, but it is not noble to *compel* one to sacrifice her health. If the mother refuses to do what is necessary to save her life, she is not doing anything noble; she is committing suicide. If we consider killing the fetus as a crime, but not a capital crime, then the health of the mother is primary. This means that the right to an abortion may be based upon the right to self-defense, even if she does not explicitly claim self-defense.

IV. Warren's arguments about what is a person

The issue that roils people is that there is no physical distinction between a fetus immediately prior to birth and the newborn baby. We all agree that infanticide is murder. The logic based upon physical looks, is that we should consider killing a late-term fetus as first-degree murder. Indeed, some states have passed laws to this effect.

There is a subtle difference between Kenny and Warren. Whereas Warren discusses the idea of person or "human", Kenny focuses on the concept of human life. Warren says that a fetus is neither a person nor a human, and therefore it is not immoral to kill a fetus. A fetus does not have the same rights as a person. Kenny, on the other hand, claims that human life begins before birth, maybe even at conception. He discusses the question when the life of an individual person begins. Again, Warren discusses whether a fetus is a person, and Kenny discusses when the life of a person began. According to Kenny, although a fetus is not a person, since the life of the person began as a fetus, it is immoral to kill a fetus, and a fetus has the same rights as a person.

Warren states "neither a fetus's resemblance to a person, nor its potential for becoming a person provides any basis whatever for the claim that it has any significant right to life. Consequently, a woman's right to protect her health, happiness, freedom, and even her life, by terminating an unwanted pregnancy, will always override whatever right to life it may be appropriate to ascribe to a fetus, even a fully developed one." Kenny rejects this argument by saying that the question is not whether a fetus has the right to life, but that the fetus is actually human life.

I wish to give a novel argument to support Warren. I will give another argument to define a human being, giving a unique quality the baby has upon being born, by applying some concepts from physics. Use of physics to clarify this issue is legitimate, as our bodies obey the laws of physics.

Warren discusses that since a fetus has the potential for becoming a person, does this fact endow it with some of the same rights as people? Her response is that it does not.

Here is the example from physics. If we pass a beam of helium atoms through a narrow slit, the atoms will behave as particles, as we expect. If, however, we pass the beam through a *pair* of slits, they will behave as waves and interfere as waves. The beam will display fringes on a screen. That is, initially the atom is potentially a particle or a wave, after passage, it actually becomes a particle (or a wave). The ancient Greek philosophy of potential and actual helps clarify this. We normally think of helium as a gas consisting of particles. In the double slit experiment, the potential particles actually become waves. This is just an illustration that we must not make decisions based upon potentialities, as Warren states. The birth process changes the fetus from being a potential person to being an actual person. This just gives a picture in your mind to support Warren.

The change from particles to waves is very different from a phase transformation like ice into water. A wave is a very different entity than a particle.

The mathematical expression of the above is this. There is a complex function ψ that describes the beam. The only thing we know is $|\psi|$ - this is the actual reality. The imaginary part of ψ is the potential reality.

Potential reality is reality, and not simply something that does not exist. This is a touchy and confusing point. The fetus is indeed *in a sense* a person. Therefore, abortion should not be permitted. However, potential reality is not the same as actual reality. Killing a fetus is not the same as killing a person. In the Biblical account of men fighting and aborting a fetus, we see that it is a crime to abort a fetus, but not a capital crime.

There are several points that we must understand when discussing Warren's ideas. When we make laws or establish moral principles, we do so in a general fashion. When we give criteria for a person being a person, and then say that a baby satisfies these criteria and is therefore a person, this does not imply the converse. If a baby is born that does not satisfy these criteria, such as having almost no brain, we do not say that this baby is not a person and we can practice infanticide. Since most babies do satisfy the criteria of personhood, then we consider *all* babies as persons.

Another point is that Warren's ideas by themselves do not stand up. For example, she says that a person has the capacity to solve new and relatively complex problems. Since a baby does not have this capacity upon birth, it is not a person. *The concept of independent organization discussed below may help resolve this difficulty.* The new organization, the baby independent of immediate physical attachment to the mother, determines personhood. This new organization will have reasoning capacity, and so the baby is a person immediately. We need both ideas together, Warren's personhood and organization.

V. Human life and organization

Let us now discuss Kenny's point about human life. His article consists of many subtle hints that there is something special about human life, and this special something makes it immoral to kill a fetus. This point is not clearly stated, and so is a challenge to refute. I will attempt to challenge it using a concept from physics.

We spoke above about helium gas. If we cool it enough, it liquefies. As we cool it further, it becomes something physicists call a superfluid. Although we picture helium gas as a collection of atoms bouncing around, we cannot picture a superfluid as a collection of atoms. It is a single entity. The atoms have lost their individual entities to become a collective whole. This change is instantaneous as we lower the temperature.

The concept of a collective group as being different from its parts is basic to physics. Other examples are the concepts of temperature and entropy in thermodynamics. There is no meaning to the temperature of a single atom. The brain is another example of a collective group, different from its parts.

I ask my students what is a molecule. They say it is a collection of atoms. No, I reply! Take a drop of water, a tiny drop, the tiniest drop you can take. This is a molecule of water. A molecule is the smallest object of something that is the same something.⁷ Break that, and you get hydrogen and oxygen. An atom is a molecule of an element. Break that, and we get electrons, protons, and neutrons. Entities exist because of organization. A molecule of water is fundamentally different from its parts, hydrogen and oxygen. *The existence of the entity depends upon the organization.*

Here is a simple, clear example. The atoms of graphite and diamond are the same. The difference is the organization. Graphite atoms are arranged in hexagonal sheets, whereas diamond atoms are arranged as pyramids. To deny the reality of organization is to deny the reality of the differences between graphite and diamond. Diamond is more than carbon atoms.

Imagine taking graphite and subjecting it to high pressure and temperature so that it becomes diamond. At the moment it became diamond, the reality changed. When ice melts, the reality has changed as the organization of the water molecules has changed. Again, as the organization changed, a new reality came into existence. Try telling a woman who just received a diamond ring that the diamond is really just carbon. She will not agree! She knows diamond is different!

A raindrop is an independent organization of water vapor around a dust particle. Although water vapor and raindrops are made out of the same molecules (except for the dust particle), no one would say they are identical. Once the water vapor organized itself into a raindrop, a different entity came into existence, as we know when a raindrop hits our windshield. We do not say raindrops and vapor are the same, as they are both water. Likewise, we do not say a fetus is the same as a baby, just because they look the same.

A corporation is another example of a group as being more than the sum of its parts. It is interesting that a 19th century U.S. Supreme Court decision⁸ stated that corporations have legal rights as persons.

A further example of the idea of independent organization is the idea of a nation.

Of course, at fertilization a new quality is produced from the unfertilized egg to a zygote that is a different structure from the molecular point of view. The zygote is a new organization. However, a zygote is not a person. *We need both organization and personhood.*

We have demonstrated that Warren's ideas can only be understood by accepting the reality of independent organization. The converse is also true. Suppose we reject this notion of organization, saying that there is nothing special about organization. We then have to say that there is no difference between a late-term fetus and a baby, for they are physically identical, as many people say. This is contrary to Warren's thesis. That is, the notion of independent organization leads to Warren's thesis, and conversely Warren's thesis leads to the notion of independent organization. Using language from mathematics, we say independent organization is a necessary and sufficient condition for Warren's thesis.

Warren discussed what would be in the future as computers become more powerful. However, she did not go far enough in her analysis. At some time in the future, a desktop computer will be more powerful than the human brain. (This may possibly happen, or it may not.) These computers will not be androids, as science fiction writers assumed, for all these computers will be connected via the Internet. They will form a single logical entity that will exist forever, for people will not be able to destroy it. People will communicate with this entity in a fashion that people communicate with each other. We do not know what people are thinking and what they will say or do. Likewise, we will not know what this entity is thinking or what it will say. People will relate to it as a living entity, as people consider God as living. Of course, this is speculation, but it sounds probable. We do need to think seriously about the issues that will arise.

The point is that today we do not, of course, consider computers as living, even though they have the same physical form as the future computers. There will be a transition point in the future when this may happen, because of its complexity and organization, and separation from human control. This is analogous to the birth process. The fetus is not a living human even though it physically has the same structure. Upon birth, with the organization and separation from the mother, the fetus becomes a living human.

This argument shows that the notion of human life is based upon a collective complex independent entity. Examples such as this may help the confusing concepts like human life, and show why Kenny's arguments are not valid.

We do not need to postulate the existence of the soul to explain human behavior. The concept of collective complexity is sufficient. The idea of the soul is what confuses people like Kenny, who say that the fetus also has a soul.

The pro-life movement poses the wrong question regarding abortion. The question is *not* when life begins. The question is *not* can we destroy life in order to enhance a woman's health. If someone donates blood, the blood is life, but can be destroyed. The question is this - when *does the fetus becomes a person?*

We need philosophical and legal analyses in order to determine when the fetus becomes a person, defined by saying that killing the organization is murder, i.e., a capital crime. We cannot rely upon Catholic teaching, but must rely upon all that have contributed to American law and culture. We have to examine Hebraic law to see how it influenced our government at our beginnings, and how it is relevant today. We must be careful not to use the power and force of government to compel people to follow one idea. We must respect the basic principle of minority rights.

VI. Morality

Kenny makes a few more points, which help in clarifying this complex issue. He states:⁹

It is more common for moralists to take the rejection of infanticide as a starting point for the evaluation of other positions. Any argument used to justify abortion, or in vitro fertilization, or stem cell research must undergo the following test: would the same argument justify infanticide? If so, then it must be rejected.

This introduces considerable complexity into the argument. If the mother's life is threatened, then of course the abortion is permissible as an act of self-defense. We are allowed to kill other people in order to save our lives. This is the moral justification for war. If the abortion is necessary for the mother's health, we may also justify the abortion, for poor health reduces life expectancy; although this point is controversial. If the sole reason for the abortion is convenience, that is, the mother simply does not want the baby, we again may, stretching the argument, justify the abortion as an act of self-defense. The reason is that statistics clearly show that a woman has a greater chance of survival by having an abortion. It is wonderful and noble for a woman to give birth, but it is immoral for us to compel her to be noble and not permit her to opt for actions that would increase her chances of remaining alive. The fact that women do not mention the self-defense issue does not mean we can ignore the argument. If an action results in improving one's chances of living longer, we may be able to use the argument of self-defense even if the person did not.

Self-defense includes actions that increase the probabilities of living longer, not just to save your immediate life. The same is true for nations. A country is allowed to go to war to defend itself even if the danger is not imminent. A nation does not have to wait until it is attacked. If it is going to war to prevent a future danger, this is saying it is going to war to increase the probabilities of survival as a nation. Of course, this is very tricky.

A frequently heard counterexample is this. Simple convenience cannot be justification for abortion – pregnancy is a natural phenomenon produced by a conscious act of two persons who know the consequences of their act. What about pregnancy caused without the woman's consent? Actually, these points are not relevant. Regardless of the cause of the pregnancy, if now there is a danger to the mother, self-defense justifies the abortion.

This issue is complicated. For example, if someone kills a person sitting near him who is smoking, saying that he does not want to breathe the second-hand smoke and thereby risk his life, we do not justify this murder, even if it was impossible to leave the room. You

see how the logic gets messy, and this is my point. I will elaborate below showing the complicated messy logic.

There is another issue. What happens if a man rapes his sister, and the woman wishes to have an abortion? Most legal codes permit abortion in cases of rape and incest. It is hard to find justification based upon the logic presented here. The logic would have to be that it the immorality of raising such a child counteracts the immorality of the abortion; however, I cannot justify this argument.

We see that using basic principles of morality do not give clear answers to the questions of aborting a malformed fetus or a fetus resulting from rape or incest. We must not be disturbed that our basic principles do not give clear answers. K. Gödel proved mathematically¹⁰ that one cannot deduce all true statements starting from a given set of postulates. An extension of Gödel's idea shows that no matter how we define the principles of morality, there will always be issues for which we cannot decide. Using this idea in human affairs may be overkill, but may be necessary due strong emotions. We cannot legislate all possible preferred outcomes.

English¹¹ stated that the concept of a person does not suffice to settle the abortion issue, for the biological development of a human being is gradual. She also states that whether a fetus is a person or not, abortion is justifiable early in pregnancy to avoid modest harms and seldom justifiable late in pregnancy except to avoid significant injury or death. She gives long and serious arguments for these positions. What is surprising is that although this paper was written decades ago, people today seldom mention her valid arguments.

Let us mention briefly some thoughts about morality. Abortion is immoral, as we discussed above. We do not have the moral right to do with our bodies everything. English discussed this point at length, using additional arguments. On the other hand, it is very moral to protect one's health. A case may be made that the morality of protecting one's health is superior to the immorality of abortion. The public is confused about this point, for the health issues may not be immediate. That is, it may be moral to perform an abortion for the sake of one's health.

Embryonic stem cell research is a moral activity, as the research will lead to treatments to improve health and save lives. The fact that the research results are not immediate does not detract from the morality of the research. On the other hand, the research can be considered immoral as it involves the destruction of potential human lives. Here again the morality of health and life is superior to the immorality of destroying *potential* human life. Furthermore, if the cells are developed in the laboratory, they are not even potential human lives, in spite of the fact that when fertilized embryos are implanted into uterus they may develop in to a child, because the action of implantation is needed to create the potential life. Just because it may happen that the embryo may be implanted does not mean that *now* it is a potential life. A sperm is not a potential human because it may meet the egg. When we say the cells are potential human lives, we mean that if the natural process continues, without further actions on our part, the cells may become people.

This type of thinking and analysis removes the objections many politicians have to permitting embryonic stem cell research.

VII. Abortion is wrong, but not a capital crime

Let us make it extreme. Let us assume there is absolutely no issue of the woman's health, even if I maintain that this assumption is false. In this case, Kenny's argument, that since we do not justify infanticide we cannot justify abortion, is valid. We now have the complicated contradictory conclusions that abortion is justified and it is not justified. People who make statements about abortion say either that abortion is first-degree murder or say that it is permissible, as the fetus is part of the woman's body, saying abortion is no worse than drawing blood thereby killing the blood cells. Kenny's argument about not justifying infanticide complicates the issue. Abortion is not first-degree murder as we discussed above, and abortion is not justified as we cannot justify infanticide in a similar case.

The one place in the literature that I have found that discusses abortion rationally dealing with the above contradiction is the Hebraic law approach. If a man strikes a woman killing her, it is a capital crime. If he destroys her fetuses, the punishment is a monetary fine. The point is that abortion is immoral. The exception is, of course, if the woman's life is in danger, for in most legal systems, it is permitted to do whatever necessary to save one's life. The Bible clearly states that abortion is not justified. A woman cannot say that she can do as she wishes for the fetus is part of her body. On the other hand, abortion is not first-degree murder, for the punishment is only a monetary fine. Most thinkers on the topic lose this subtle and important distinction between abortion and infanticide. The resolution to the conflict is that there are circumstances where abortion is morally wrong, but we should legally permit it.

We can justify abortion saying the fetus is not a person, and we cannot justify it because we would not similarly justify infanticide. *The resolution of these contradictory statements is that abortion is immoral, but not as immoral as infanticide.* There are different levels of immorality. Abortion is not morally acceptable except for circumstances that would justify it. However, this does not mean that the government must mandate what they see as morally acceptable. The government does not have the right to mandate that people avoid eating unhealthy French fries. The government does, however, have the right to mandate that a person not mutilate his/her body. The problem is that many people on both sides of the debate take extreme positions, and are unable to think of the complexity of the gray in-between areas.

Kenny makes another point. The fetus before birth and the baby after birth are the same individual, whereas the life that began at conception is not this same individual. Therefore, killing the fetus is killing an individual human being, and so is immoral, which is not the case for killing the embryo. Although this argument is valid, the above argument, namely, a person does not become a person until birth when the organization is complete, is also valid. Killing a fetus (before birth) is not the same as killing a person, and so is not first-degree murder. This is the same as the point of the previous paragraph. Abortion is immoral but is not first-degree murder.

Is the abortion of a malformed fetus okay or not? On the one hand, we may want to insist that women carry malformed fetuses to term, because the danger to the woman is not present, and this is the only justification for abortion. However, there is another way of looking at this. Since abortion is not absolutely immoral as is infanticide, we can say that agreeing to carry a malformed fetus to term is also immoral, as since it is very expensive to raise a malformed child, society will pick up the tab. It is immoral for a person to act in a way that results in compelling society to help financially. It is immoral to accept charity if we have the opportunity to work and so avoid accepting charity. It is noble to give charity, but it is immoral to ignore reality and become dependent upon charity. In the case of the malformed fetus, we need to look at the broad picture and decide. Again, this is not the case for infanticide, which is immoral, with no mitigating circumstances.

VIII. Summary

In summary, the fact that people supporting a certain viewpoint of the nature of the human being selectively quote from the Bible, ignoring explicit statements contrary to their view, shows intellectual dishonesty, making it difficult to understand this complex situation. We must fully discuss the *subtle* moral issues.

Insisting on viewing a person as merely a collection of organs and flowing blood hides the reality of the amazing organization that is a person. Focusing thinking on narrow lines further makes it difficult to anticipate the next step of the evolution of life on earth, which is the worldwide network of supercomputers, which will probably act as a single permanent living mind. Since all that we really are is organization, what will be as this organization evolves?

Meanwhile, let us not deny the right of people to preserve their health. Furthermore, we must not be excessively dogmatic, due to the complexity and partial contradictory aspects of this problem. Let us think clearly and courageously about the present and the future.

¹Anthony Kenny, "The beginning of an individual human", *Daedalus*, **Winter (2008)**.

² Mary Anne Warren, "On the Moral and Legal Status of Abortion", *Biomedical Ethics*, 4th ed., T.A. Mappes and D. DeGrazia, Eds. New York, McGraw-Hill, Inc., pp. 434-440 (1996). Available on http://instruct.westvalley.edu/lafave/warren_article.html

³ Genesis 38:9, "When [Onan] came to his brother's wife he would destroy to the ground in order not to give seed to his brother." [Free translation]

⁴ Exodus 21:22

⁵ Joyce Arthur, First published in *Humanist in Canada*, **22** (3), Autumn (1989).

Revised and expanded August (2001). See <http://mypage.direct.ca/w/writer/abortion.html>.

⁶ Baldwin, Edward Chauncey, "The Permanent Elements in the Hebrew Law." *International Journal of Ethics* **25** (April 1915): 360-71. http://www.dinsdoc.com/baldwin_e-1.htm

⁷ "Teaching and Helping Students Think and Do Better", S. Aranoff, amazon.com (2007).

⁸ <http://www.ratical.org/corporations/SCvSPR1886.html#118US394>

The 1886 Supreme Court decision granting corporations the same rights as living persons under the Fourteenth Amendment to the Constitution. The defendant Corporations are persons within the intent of the clause in section 1 of the Fourteen Amendment to the Constitution of the United States, which forbids a State to deny to any person within its jurisdiction the equal protection of the laws.

⁹ *Daedalus*, **Ibid.**, p. 16.

¹⁰ <http://www.exploratorium.edu/complexity/CompLexicon/godel.html>. In 1931, the mathematician and logician Kurt Gödel proved that within a formal system questions exist that are neither provable nor disprovable based on the axioms that define the system. This is known as Gödel's Undecidability Theorem. He also showed that in a sufficiently rich formal system in which decidability of all questions is required, there would be contradictory statements. This is known as his Incompleteness Theorem. In establishing these theorems, Gödel showed that there are problems that cannot be solved by any set of rules or procedures.

¹¹ Jane English, "Abortion and the Concept of A Person", *Canadian J. of Philosophy*, **5** (2), Oct. (1975).