Venn's Diagram in Mathematics and Its Application to Theological Ethics

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I
n order to understand theological theories, it is sometimes necessary to simplify them through analogies. This was Jesus' own purpose in his parables. Again and again, Jesus drew new analogies from everyday life. To express it in theological language, we would say that the parables use a certain kind of *analogia entis*, designed to help us understand theological theories. For example, Jesus used the analogy of a father's love for his lost son to help us deepen our understanding of God the Father's love for us (Luke 15:11–32). In another parable, using the analogy of wheat and weeds, Jesus made a point about how wrong it would be for anyone to try to exterminate all the bad people in this world, explaining that injustice might be caused by such radical actions (Matt. 13:24–30, 34–43).

Various *analogia entis* can provide great help as we try to understand theological truth better. According to Paul Tillich, it is possible to model such analogies because of the analogy between the human *logos* and the divine *Logos*.[1] Of course, we cannot construct theological conclusions and new theological axioms on the basis of analogies, especially when the biblical revelation does not give us answers to our questions. That would mean developing a certain *theologia naturalis*. Karl Barth is right when he looks critically upon the *analogia entis* in theology

as the source of new articles of faith. However, Barth goes too far in his critique of *analogia entis* in his discussion with Erich Przywara, when he categorically refuses every *analogia entis*.[2]

If we use *analogia entis* only as parables and analogies to clarify what we already have received in the revelation, then every *analogia entis* (in this sense) is useful. That is to say, analogies and parables were used by Jesus to give us a better understanding of God's Word. In other words, we can say that there is an admissible form of *analogia entis* and an inadmissible form of *analogia entis.* Inadmissible use of analogy aspires to draw theological conclusions from the natural world about the nature of God that either exceed or contradict biblical revelation. Admissible use of analogy accepts the truth of biblical revelation and seeks to communicate that truth by using analogies drawn from the natural world.

However, creating parables drawn from everyday life, as Christ often did in the gospels, is not the only way of using analogies. In this paper,[3] I would like to show how mathematics is also a proper form of *analogia entis* for communication and illustration. I do not wish to develop a new kind of *theologia naturalis.* I only use it for pedagogical clarity as do the parables of Jesus.

We must consciously step back from highly philosophical and speculative scholastic concepts about *analogia attributionis* and *analogia proportionalis*, which we encounter in the teachings of Thomas Aquinas, Duns Scotus, Cardinal Cajetan, Suarez, and, more recently, Erich Przywara. Elementary overviews of these concepts can be found in any theological lexicon under the relevant head-

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ings.[4] Instead of philosophical speculation, we will deal with the practical application of the analogies of mathematics and theology. We can make use of them in elementary education in theological ethics and catecheses.

One Case of Usage of Mathematics in Ethics

In this paper, I would like to deal with one mathematical case, which might well clarify complicated relationships in theological ethics. This is the so-called "Venn's diagram," (see Figure 1 below) which belongs to the mathematical theory of sections. Using these circles, Venn interestingly shows how there can be different relationships among mathematical sets. They can be of triple character, such as in the relation of integration, conjunct, and adjunct. But that is exactly the same for the relationships among various kinds of laws in ethics. Students of theology, as well as high school students in their religion classes, often have a hard time understanding what the mutual relations might be between *lex Christi* (Christ's Sermon on the Mount) and *lex naturalis* (natural law).

Lex naturalis is the highest human principal of the natural moral code. But how is it different from Christ's Sermon on the Mount, and how are these two relatively identical? What is the relation between these two forms of law and the civic moral code, which used to be defined as *lex gentium*, or conventional morality? And what is the relation among all of these three and immorality? Because of the difficulty of these relations, a high school student is often confused. The difficulty comes at those points of intersection of the four sets of laws (*lex Christi*, *lex naturalix*, *lex gentium*, *lex amoralis*), where other ethical subsets arise. Very quickly we can find ourselves in an ethical labyrinth, where it is not always easy to orient ourselves in order to determine proper ethical behavior. Here again the mathematical analogy of the Venn circles can help us understand various kinds of ethical behavior. The application of the Venn circles, which students know from their high school math classes, can illuminate a lot and also can lead to interesting discussions on the questions of theological ethics. (Theoretically sixteen aggregates should emerge. In our diagram, we use only nine because the others are empty aggregates. It would not do to have an overlapping of the *lex Christi* and *lex amoralis*.)
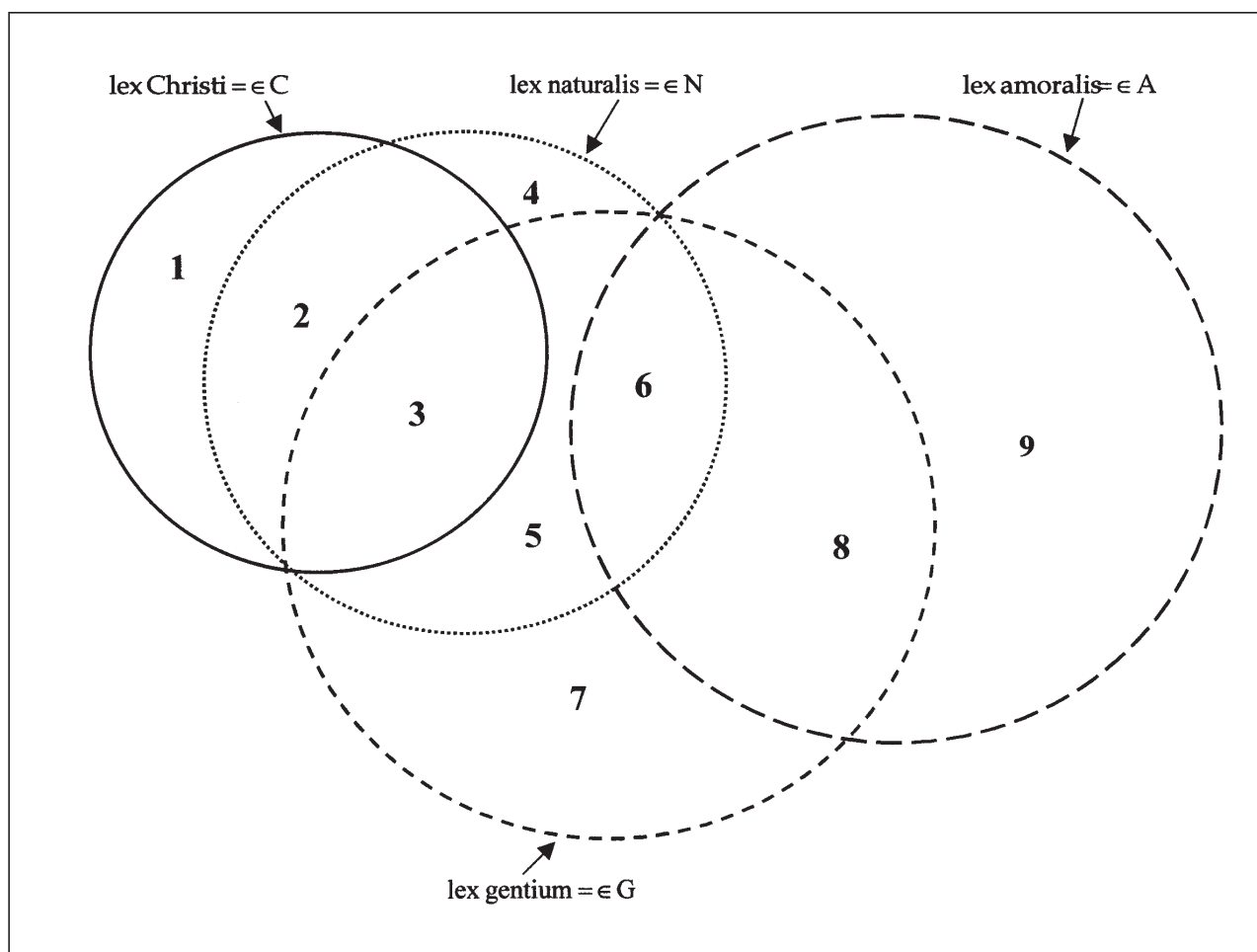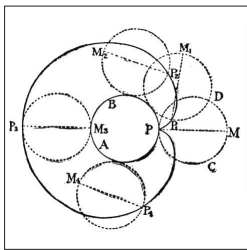

Fig. 1. Graphic description of relationships of various forms of law in theological ethics with the help of Venn's circles.

Communication
Venn's Diagram in Mathematics and Its Application to Theological Ethics

I shall not use the analogy of Venn's circles in the same sense that Thomas is using *analogia entis.* Thomas is making ontological claims about God and the world and I am proposing to use Venn's circles for illustrations and for pedagogical clarity about important ethical matters. Venn's circles can illustrate the complicated relationships among the four normative systems that I cite.

1. *Lex Christi*
Section 1 of the diagram shows that certain ethical axioms belong to the realm of *lex Christi,* and it is not possible to find them in any other kind of law. We can use the command to love our enemies as an example (Matt. 5:43–48). This command belongs first to the individual ethics of the Christian life. It means a Christian cannot use sword and severity for his own sake. He must be the person of mildness and kindness in relationship to his neighbor. The Church also cannot use the inquisition of, and the pressure for spreading the Christian faith as an excuse to be intolerant and hostile to people of another conviction. Christ's law also must impact the Christian community. We cannot place it with social ethics, which is governed by *lex naturalis* principles, shown in Section 2, even though the extreme Anabaptists at the time of the sixteenth-century reformation and Lev Nikolajevic Tolstoj tried to place it there by refusing to use the sword in society at all.

However, the shadow of *lex Christi* must fall also on *lex naturalis.* It must be *lex naturalis humanisata* not only *lex naturalis stricta.* It is similar to Christ's command forbidding divorce (Matt. 5:31–32). It is not possible to make this a legitimate norm for state law, because state law must be valid also for non-Christians. State law must contain divorce laws, unless we want our society to be a mess and have the government system become a clerical one. But due to Christian love, *lex naturalis* must be humanized. In humanized *lex naturalis,* there is no place for free divorces without limitations, but the state law must strive to allow only relatively necessary divorces. Christ's law must supersede the law of governments, where it is possible (Matt. 19:8).

Another example is Christ's command not to take an oath (Matt. 5:33–37). This command also belongs to the individual ethics of the Christian life and within the area of the Church. As a Christian, I should speak only truthfully and authentically, without the necessity of taking an oath. But in the area of state ethics, regulated by *lex naturalis* principles, a Christian also has to take an oath, for example, when he or she enters military service, becomes a state employee, or even a future president. Some ethical commands are valid only in Section 1 and not, at the same time, valid in Section 2.

2. Relative unity of *lex Christi* and *lex naturalis*
Yet there are some ethical axioms that are common to the Sermon on the Mount and natural law. That is Section 2. Examples are the equality of men and women and the equality of different nations. The Apostle Paul understood the law of Christ in this way, prophesying in ancient times: "There is no longer Jew or Greek, there is no longer slave or free, there is no longer male and female; for all of you are one in Christ Jesus" (Gal. 3:28; compare Col. 3:11). *Lex Christi* and *lex naturalis* are relatively the same in this respect, although it was not the same in the time of Plato and Aristotle, because of the imperfect understanding of *lex naturalis* in ancient philosophy.

The likeness of *lex naturalis* and *lex Christi* can be seen in the use of passive resistance in some cases of social ethics. Mahatma Gandhi and Martin Luther King were supportive of this kind of idea. There is no difference between *lex Christi* and *lex naturalis* understood in a human way. Therefore Section 2 exists in ethics where *lex Christi* and *lex naturalis* are relatively the same.

3. Relative unity of *lex Christi, lex naturalis* and *lex gentium*
Section 3 contains not only *lex Christi* where it intersects with *lex naturalis* but also the ethical principles of *lex gentium* (in other words, conventional morality). During the ethics lectures with students, we can discuss which ethical norms carry these signs. Of course, the commandment "Do not steal" belongs here, and many other ethical commandments.

4. *Lex ultranaturalis*
Section 4 is very interesting. Look closely at the diagram. It is neither a demand of Christ nor a demand of conventional morality; and yet some Christians and non-Christians consider it to be high human ethics. Is it possible

that something like this exists in ethics? I think so. I call this section "*lex ultranaturalis.*" People who emphasize the ethical demands of this section think that their actions are highly human and especially moral. Abstaining from alcohol belongs here. Christ did not proclaim abstention from alcohol; therefore, it cannot belong to *lex Christi*. Christ himself turned water into wine by performing a miracle, and his enemies called him "a drunkard" (Matt. 11:19). Many Christians, and even some non-Christians, think their abstinence from alcohol has special ethical meaning. We can use some other examples, such as excessive mercy shown to criminals. I have in mind the highly human act of President Havel, who gave freedom to many prisoners, but later on, it was clear that this was not such a good idea. The highest humanity does not always pay off when applied to ethics, as Section 4 of Venn's diagram tries to show us. Even Jesus does not support it. Consider, for instance, his act of casting the moneychangers out of the temple (John 2:13–16). Even the rationality of *lex naturalis* does not support this idea.

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We also can consider extreme pacifism, the refusal to defend one's own homeland with weapons in hand, to be "ultra human." But Bonhoeffer is right when he says—although with a very different situation in mind—that the one who wants to keep his hands clean and does not want to violate the commandments even if it is necessary, that one serves the devil in the end.[5] Extreme pacifism and ultra humanity can be manifested in avoiding all possible conflict with everybody, even with the evil one, and trying to remain nice and kind to everybody. The result is that evil grows bigger and bigger. It seems as though this kind of Christian believes in some other Christ, one who is far away, not involved with the world, a constantly smiling Christ, and not the Christ who confronted evil when it was necessary. That is why we have to be careful about ethical Section 4, which seems to be human but in reality is an exaggerated humanity.

5. The mixture of *lex naturalis* and *lex gentium*
Now let us look at the ethical actions of a person who acts in accordance with *lex naturalis* together with *lex gentium*, with no support from *lex Christi*, but at the same time his

action cannot be described as immoral. This is Section 5. It contains such things as a necessary divorce, meaning a divorce that comes after a marriage has been morally dead for a long time. Orthodox and Protestant ethics, and also some Roman Catholic theologians,[6] talk about the moral death of a marriage, which ends in divorce. Although divorce is not in accordance with *lex Christi*, it is necessary to keep in mind that we live in a sinful world, that there are valid secular ethics, and that we cannot live according to *lex Christi* here. In a world like ours, a more relative *lex naturalis* is valid and state law allows a necessary divorce. This is also in accordance with conventional morality, which people consider rational. It would not be logical to forbid divorce even if the marriage has been morally dead for a long time. Alfred de Quervain, a Swiss professor of ethics, is convinced that there are some cases of marriage that are no longer God's will. God's will for such a marriage is divorce. In Venn's diagram, the action belongs to Section 5.

6. The mixture of *lex naturalis* and *lex amoralis*
There might be a problem with Section 6. It belongs to the realm of *lex naturalis* and it is in accord with conventional morality—*lex gentium*—but the action is ethically immoral. During an ethics lecture, there might be discussion of what belongs here. Certainly the idea of the inequality of men and women in ancient times belongs here. According to Plato and Aristotle's understanding of *lex naturalis*, women are inferior to men in social life. Our understanding today of the equality of men and women says that this position of Plato and Aristotle is ethically immoral (we can say it is *lex naturalis historica,* an old antique understanding of *lex naturalis)*. They had an imperfect understanding of *lex naturalis*, because *lex naturalis* can never be connected to *lex amoralis*. Many other issues could belong to Section 6, for example, the question of slavery.

7. Conventionalistic ethics
In Venn's diagram, section 7 means ethical action that is commanded neither by *lex Christi* nor by *lex naturalis*, that is not immoral, and yet is considered by civil morality to be very important and having some ethical validity in civil actions. Our question is: What is it with respect to ethics? Here is another topic for discussion. In my personal thinking, this is where I would place temporary, changing social conventions or fashions. Certainly Marxist ethics, but also the ethics of some Christian denominations, emphasize particular temporary and changing conventions or fashions. There was a time during the Marxist regime, for example, when male students were not allowed to have long hair, because it was considered effeminate. In certain Slovak Baptist churches, having a "thick knot on the tie" was not allowed. In the time of the Apostle Paul, women had to have their heads covered with a scarf (1 Cor. 11:5). Islam has a lot of such temporary conventions. We have to keep this section of ethics in mind and remember that these conventions always are temporary. It is the price that
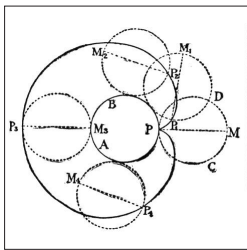
we have to pay for progress in our society and in our churches.

8. The mixture of *lex gentium* and *lex amoralis*

What is interesting about Section 8 is that it has to do with immoral actions that society nonetheless tends to accept and even support. What could that be? Could it be something like usury, interest rates for loaning money that are too high? Could it be charging prices that are too high for new products that people want and need? Could it be ways that students find to cheat on examinations? Certainly it would be frivolous divorce, one that people get for no important reason. Abortion for personal convenience would also belong here. Here is another area for discussion, as we try to clarify our ethical standards.

9. *Lex amoralis*

The last section of Venn's diagram remains. It very clearly includes such specific immoral acts as murder, rape, and pedophilia. We certainly can think of other immoral acts of this kind.

Conclusion

There are many other ethical questions that I have not mentioned. These other problems might generate some good discussion, for example, where in Venn's diagram should we place such questions as euthanasia, homosexuality, the use of 14-day-old embryos for therapeutics? Other vexing particular questions, of course, could be added. Furthermore, a significant area for inquiry would be to explore how Venn´ circles could help to illuminate the ethical orientation of several important contemporary Anabaptist theologians like John Howard Yoder, Stanley Hauerwas, and Glenn Stassen. It is clear that not only does mathematics have its particular problems to be solved; ethics has them too, problems that must be judged and evaluated correctly.   ⁑

Notes

[1] Paul Tillich, *Systematische Theologie* I (Stuttgart: Evangelisches Verlagswerk, 1956) 299.

[2] See Barth, *Kirchliche Dogmatik* I/1, 178–80; compare with the critique of Paul Althaus written about Karl Barth, *Die christliche Wahrheit*, (Gutersloh, Gerd Mohn, 1990), 97.

[3] This paper was presented at the international symposium "Mathematics and Theology" at the Evangelical Theological Faculty of Comenius University, Bratislava, Slovakia, on May 3, 2002.

[4] E.g., J. Klein under the heading *Analogia entis*, *Religion in Geschichte und Gegenwart*, 3rd ed., 1, 348–50.

[5] Dietrich Bonhoeffer, *Ethik* (Munchen: Chr. Kaiser Verlag, 1982), 65.

[6] For example, Bernhard Haering in *Bez vychodiska?* (Presov, 1997), 26 (Slovak translation).

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